2019

Facility Related Finishes

US ARMY MEDCOM
Interior Design Master Plan
Volume 2

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2019

MEDCOM Interior Design Master Plan

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1.
Narrative

2019

Volume 2 of the MEDCOM Interior Design Master Plan addresses the planning, specifications and applications of interior building materials, finishes, lighting, acoustics, Signage and Wayfinding necessary to complete interior architecture features and is considered part of the Structural Interior Design (SID). The recommendations herein provide maximum flexibility, are environmentally friendly, support evidence-based design principles whenever possible, and enhance the building architecture.

The design objectives for Volume 2 are:

- To introduce MEDCOM standards for interior building materials, finishes and lighting, acoustics and signage. All products support UFC 4-510-01.
- To provide guidelines for enhancing the facility's public image and provide a healing environment for patients, visitors and staff.
- To provide color palettes of typical building products and finishes for use in a healthcare facility. Products are identified in either a warm neutral scheme, a cool neutral scheme or a combined neutral scheme for main building finish selections. Accent colors are identified that can be used in combination for a full spectrum color range or used individually. Accent colors are to be used judiciously on items that can be easily replaced over time.
- To provide information on products that aid in infection prevention, sustainability, evidence-based design and life safety.

All recommendations support a consistent and coordinated design approach as developed in Volume 1, and respond to the following deficiencies noted in MEDCOM facilities over the past several years:

- Lack of sense of space and place.
- Non-standardization of materials and finishes.
- Inappropriate use of finishes and design elements.
- Lack of visual organization.
- Outdated appearance.
- High maintenance requirements.
- Uncomfortable and unfriendly environment.
- Environment which does not support evidence-based design principles.
- Materials and finishes in disrepair and in need of replacement.

ACC……Acoustical Ceiling Cloud
ACT……Acoustical Ceiling Tile
AP……...Acoustical Panel
CG……..Corner Guard
CHR……Chair Rail
CPT…..……..Carpet Tile
CR……..Crash Rail
DHR…… Decorative Handrail
DP……..Door Protection
ET…….....Epoxy Terrazzo
GRT……..Grout
GYP…..……..Gypsum Board
HR……..Hand Rail
ICB…… Integral Coved Base
LVT……..Luxury Vinyl Tile
MCT……Metal Ceiling Tile
PFT……Porcelain Floor Tile
PL……...Plastic Laminate
PT……...Paint
PWT……..…Porcelain Wall Tile
QZP……...Quartz Agglomerate
RB……..Rubber Base
RES……...Resin Flooring
RF……..Rubber Flooring
SF……..Specialty Flooring
SRP……...Solid Resin Panel
SS……..Solid Surface
SSM……..Solid Surface Systems
SVF……. .Sheet Vinyl Flooring
SWP……..Stainless Wall Protection
TP……...Toilet Partition
TR……..Tile Trim
TS……..…Transition Strip
VWP… …..…Vinyl Wall Protection
WCT……..Wood Ceiling Tile
WCP……..Wood Ceiling Plank
WM ……..…..Walk-Off Mat
WP……Wall Panel
WS……..…Wood Stain
WT……Window Treatment

For paint and stain, one additional level of coding is necessary to define the finish. (Typical 60 Gloss Meter ranges are shown in parentheses).

a	Flat (Below 5)
b	Eggshell (5-20)
c	Satin (20-35)
d	Semi-Gloss (35-65)
e	Water-Based Epoxy (Semi-gloss finish)

2. Flooring

2.1 Carpet

2.2 Hard Surface

2.2.1 Porcelain Tile

2.2.2 Tile Grout for Flooring

2.2.3 Epoxy Terrazzo

2.2.4 Resin

2.3 Resilient

2.3.1 Rubber

2.3.2 Heterogenous Sheet Vinyl

2.3.3 Luxury Vinyl Tile

2.4 Specialty

2.4.1 Transition Materials

2.4.2 Rubber Base

2.4.3 Walk-off Mat

2.4.4 Physical Therapy

2.4.5 Nutrition Care

2.4.6 Operating Room

2.4.7 Pharmacy

2019

2.1
Carpet

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Contract grade modular carpet tiles are preferred. Carpet to be limited to administrative areas and as noted in UFC 4-510-01, Appendix B, latest edition of Design: Military Medical Facilities. Carpet to be multi-color in medium to medium dark tones. Consider using carpet with recycled content in either yarn and/or backing.
- Face yarn to be solution dyed nylon. Nylon to be Type 6,6.
- Density to be a minimum of 6000. Texture Appearance Retention Rating (TARR) to be greater than or equal to 3.0.
- Flooring is to have Class 1 flammability rating when tested in accordance with ASTM E648; NFPA 253 (0.45 watts/sq. cm. or higher).
- For European projects, Type 6,6 nylon products are preferred, if locally available.

DIMENSIONS

- CPT-1, CPT-7, and CPT-13: 12” x 48”.
- CPT-2 and CPT-8: 18” x 36”, 24” x 24”.
- CPT-3 and CPT-9: 24” x 24”.
- CPT-4, CPT-5, CPT-6, CPT-10, and CPT-11: 9” x 36”, 18” x 36”, 24” x 24”.

Denotes that product meets CRI Plus Standard.

Denotes that product meets NSF-140 Standard.

Denotes that product is made in the U.S.A.

ACCESSORIES / OPTIONS

- Protective treatments include soil/stain protection.
- Some carpets may have anti-microbial treatment.
- Moisture Barrier backing.

INSTALLATION

- Carpet tiles can be installed in monolithic pattern, quarter-turned or ashlar pattern, if preferred and as recommended by carpet manufacturer.
- Carpet installation is anticipated to last approximately 5-10 years in MEDCOM facilities when maintained in accordance with manufacturer’s cleaning recommendations. High traffic areas may require re-carpeting or repair more frequently.
- Direct glue-down method or “peel and stick” method is recommended. Adhesives are to have low VOCs and odors and must comply with applicable federal/state/local air quality requirements. Consult environmental health and safety codes.
- Install carpet tiles using manufacturer’s recommended release adhesive.

COMPARABLE PRODUCTS

- Bentley
- Masland
- Mannington

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

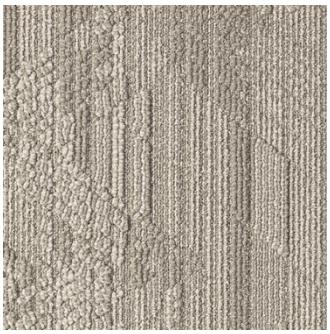
2.1 CARPET

Mannington – Portland Project
Summit
Face Weight: 34 oz/yd²

Bentley – Roadside Attractions
Face Weight: 30 oz/yd²

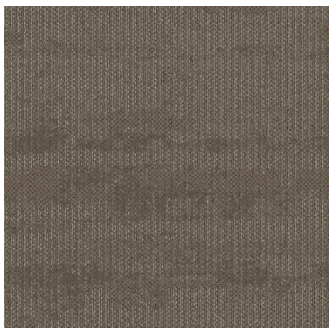
Masland – Distressed Solutions
Lava
Face Weight: 22 oz/yd²

WARM NEUTRAL



CPT-1
Mannington – Summit
Color: #80900 Nomad

CPT-2
Bentley – Roadside Attractions
Color: #802141 Minister's Tree House

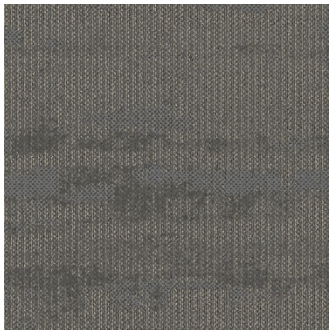


CPT-3
Masland – Lava
Color: #51208 Inferno

COOL NEUTRAL

CPT-7
Mannington – Summit
Color: #10901 Crest

CPT-8
Bentley – Roadside Attractions
Color: #802142 Radon Health Mines



CPT-9
Masland – Lava
Color: #51212 Radiate

Bentley – Outlier
Face Weight: 23 oz.

Bentley – The Outskirts Collection, Repose
Face Weight: 25 oz.

Bentley – The Outskirts Collection, Ritual
Face Weight: 25 oz.

WARM NEUTRAL

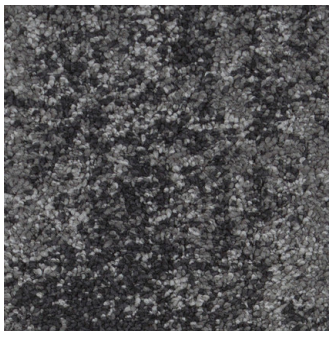
CPT-4
Bentley – Outlier
Color: #801670 Frontier

CPT-5
Bentley – Repose
Color: #800228 Composure

CPT-6
Bentley – Ritual
Color: #800228 Composure

COOL NEUTRAL

CPT-10
Bentley – Outlier
Color: #801678 Subdivision

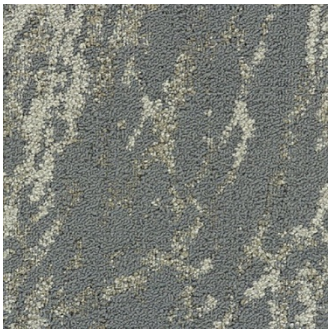


CPT-11
Bentley – Repose
Color: #800221 Social Conduct

CPT-12
Bentley – Ritual
Color: #800221 Social Conduct

Mannington – Design Local
Tucson Collection, Arroyo
Face Weight: 34 oz/yd²

COMBINATION NEUTRAL



CPT-13
Mannington – Arroyo
Color: #13165 Sediment

2.2
Hard Surface

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Made of porcelain with matte finish. Color is consistent throughout and is suitable for a wide range of applications. All applications are to meet the DCOF (Dynamic Coefficient of Friction) of 0.42 for level interior spaces expected to be walked upon when wet. Products suggested are available in neutral color, stone, wood and fabric pattern options.
- Some products utilize “Hydrotect” technology. A unique self-cleaning protective coating for building materials such as porcelain tiles. When used on surfaces and exposed to ultraviolet light, from an artificial source, “Hydotect’s” active surface generates a reaction that cleans the material surface by decomposing organic materials and by oxidizing NOx (nitric dioxide) into a less harmful substance. This process, in effect, purifies the surrounding air and self-cleans.
- Porcelain tile products contain recycled material content.
- Porcelain tiles are scratch, stain and frost-resistant.
- Porcelain tile are non-flammable and does not produce smoke in a fire.

DIMENSIONS

- Dimensions: Tiles are available in rectified and non-rectified. See each pattern for edge type and tile size.

ACCESSORIES / OPTIONS

- Cove Base, Bullnose and other trims may be available. See Solid Surface Systems for shower options.

INSTALLATION

- Install porcelain floor tiles with epoxy grout at locations where bacterial contamination and stain concerns are present. Epoxy grout eliminates the need to seal the grout. Use medium to dark neutral color grout for floors.
- Installation of porcelain floor tiles will be in accordance with TCNA (Tile Council of North America) Handbook installation guidelines and manufacturer’s recommendations.
- Flooring shall be cut to and fitted around all permanent fixtures, built-in furniture and cabinets, pipes and outlets.

SUSTAINABILITY

- Green Squared certification, Pre-consumer recycled content, Green Choice.

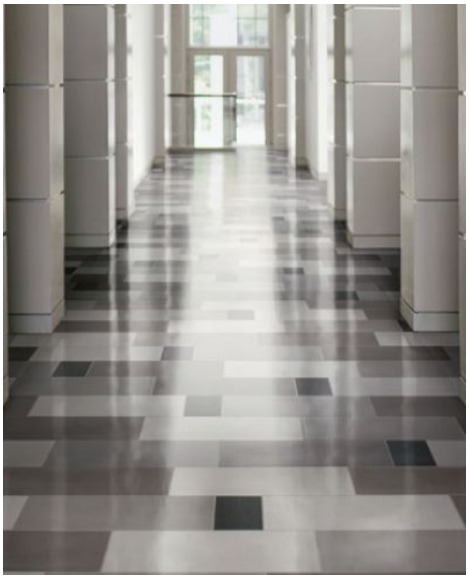
COMPARABLE PRODUCTS

- Crossville
- Iris
- Dal Tile

Denotes that product contains recycled content

Denotes that product is made in the U.S.A.

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.



Crossville – Shades
Porcelain Tile
Rectified – 6” x 24”, 12” x 24”, 24” x 24”

COMBINATION NEUTRAL

PFT-1
Shades – Vapor
AV242

WARM NEUTRAL

PFT-2
Shades – Fog
AV243

PFT-3
Shades – Haze
AV247

PFT-4
Shades – Clay
AV245

COOL NEUTRAL

PFT-5
Shades – Ash
AV246

PFT-6
Shades – Mist
AV244

PFT-7
Shades – Thunder
AV248

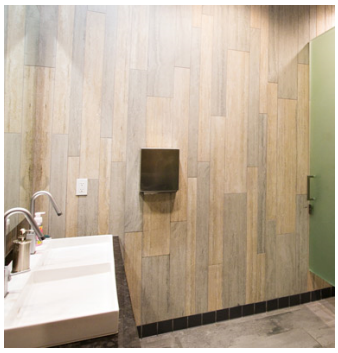
Crossville – Argent
Porcelain Tile
Rectified – 6” x 6”, 6” x 24”, 24” x 24”
Non-rectified – 12” x 12”

WARM NEUTRAL

PFT-8
Argent – Winter Garden
A1401

COOL NEUTRAL

PFT-9
Argent - Clean Slate
A1417



Iris US – Travertini Al Contro
Porcelain Tile
Rectified: 24” x 48”, 8” x 48”, 12” x 24”, 6”x 24”

Crossville – Nest
Porcelain Tile
Rectified: 3” x 15”, 6” x 36”, 8” x 36”

Mediterranea USA – Touch
Porcelain Tile
Rectified: 3” x 6”, 3” x 12”, 4” x 18”, 12” x 12”, 12” x 24”, 18” x 36”

WARM NEUTRAL

STONE LOOK

PFT-10
Travertini Al Contro,
Argento

WOOD PLANK

PFT-11
Nest, Joyous Olive – AV362

PFT-12
Nest, Blissful Olive – AV363

FABRIC LOOK

PFT-13
Touch,
Sun Glow

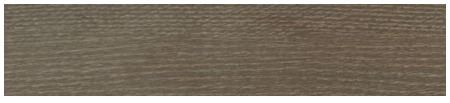
COOL NEUTRAL

STONE LOOK

PFT-14
Travertini Al Contro,
Grigio

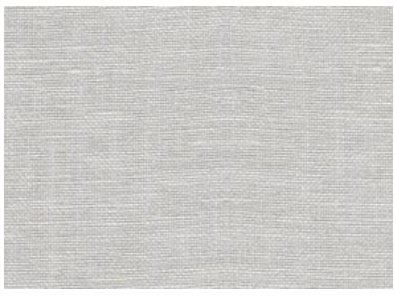
WOOD PLANK

PFT-15
Nest, Mindful Olive – AV364



PFT-16
Nest, Slumber Olive – AV366

FABRIC LOOK



PFT-17
Touch,
Pearl Essence

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Water-cleanable, 100% solids, high strength epoxy, non-sagging, efflorescence-free grout with no shrinkage; provides color uniformity, stain resistance (no sealer required), and is easy to maintain.
- Product may contribute to LEED credit.
- Coverage varies.
- Floor grout to be the darker neutral for cleaning purposes.
- This product is impervious to water (non-porous) and does not support bacteria/fungus; anti-microbial additives are not required with this product.

Product contains anti-microbial treatment .

Product can contribute toward LEED.

INSTALLATION

- Mortar/grouts are to be installed per the manufacturer's recommendation and in accordance with the TCNA (Tile Council of North America) Handbook installation guidelines.

COMPARABLE PRODUCTS

- Laticrete
- Bonsal
- Mapei

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WARM NEUTRAL

Mapei “Kerapoxy” Epoxy grout
#39 Ivory

Mapei “Kerapoxy” Epoxy grout
#09 Gray

COOL NEUTRAL

Mapei, “Kerapoxy” Epoxy grout
#19 Pearl Gray

Mapei, “Kerapoxy” Epoxy grout
#27 Silver

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- An epoxy resin composite material that consists of a cementitious and chemical binder with chips of quartz, marble and granite. Epoxy terrazzo is poured, cured, ground and polished in order to produce a textured surface that is even. Epoxy terrazzo emits no VOC's (volatile organic compounds), is made from recycled content, and the non-porous finish does not support bacterial growth, mold, or mildew. Poured epoxy terrazzo flooring can contribute to the achievement of project LEED certification goals.

DIMENSIONS

- Varies according to pattern and layout, aggregate size and substrate conditions.

ACCESSORIES / OPTIONS

- Stair treads and base may be pre-cast to match.
- Inlaid cost is high.
- Aggregate size may vary.
- Slip and stain-resistant sealers, that meet a Standard Coefficient of Friction of 0.5 or higher (as measured by ASTM D-2047 Test Method) can be applied, which do not affect the physical properties of terrazzo.

INSTALLATION

- Materials furnished and installation methods shall meet NTMA (National Terrazzo and Mosaic Association) specifications/standards.
- Terrazzo floors in lobbies can incorporate an integral, pre-cast, wood, or stone cove base.
- Terrazzo is a custom product.
- Epoxy terrazzo floors shall be installed in accordance with locations shown in the UFC 4-510-01 Appendix B.

COMPARABLE PRODUCTS

- Not applicable

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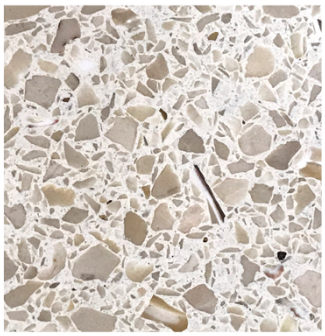
WARM NEUTRAL



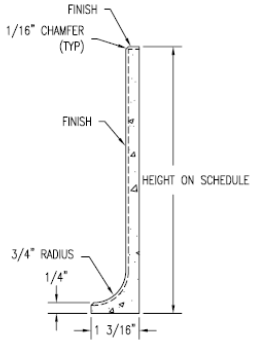
ET-1
Light Warm Epoxy Terrazzo
#TM 14-1780

ET-2
Dark Warm Epoxy Terrazzo
#TM 17-621

COOL NEUTRAL

ET-3
Light Cool Epoxy Terrazzo
#TM 18-163

ET-4
Dark Cool Epoxy Terrazzo
#TM 18-162



Examples of Wall base options for Terrazzo floors
(integral coved, pre-cast, wood base & stone base)

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Multi-component systems in a modified polyurethane. All applications are to meet the DCOF (Dynamic Coefficient of Friction) of 0.42 for level interior spaces expected to be walked upon when wet.
- Broadcast flake systems provide decorative multi-colored finish.
- Seamless flooring provides a sanitary flooring system that is easily maintained.
- Complies with USDA, FDA, OSHA and ABA (Architectural Barriers Act) requirements.

DIMENSIONS

- Thickness varies from 1/8” to 1/4”.

ACCESSORIES / OPTIONS

- Integral Cove Base is available.
- Textured finish of the resinous flooring to be a Level 2, so that cleaning tools (i.e., mops and sweepers) are not damaged during cleaning.
- Solid Color or flake color offered depending on product type and location of use.
- Small or large flake sizes are available.
- Additional top coats available.

INSTALLATION

- Install flooring using a troweled method Multi-component installation.
- Flake systems are broadcast over a troweled polyurethane base.
- Resinous flooring shall be installed in accordance with the locations shown in the UFC 4-510-01 Appendix B.

COMPARABLE PRODUCTS

- Stonhard
- Sika

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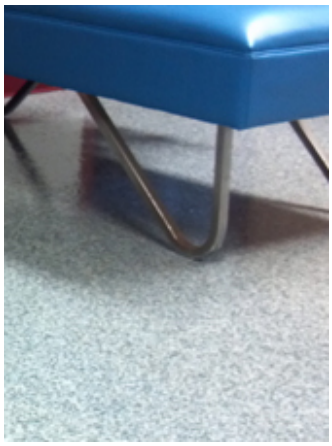
Stonhard – Stonclad UR



Stonhard – Stontec

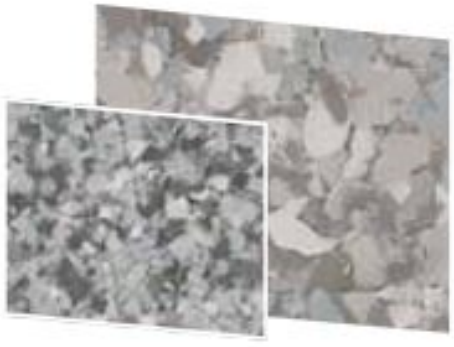
WARM NEUTRAL

RES-1
Stonhard – Stonclad UR
Color: Beechwood

RES-2
Stonhard – Stontec TRF
Color: Silver Sage
Small and large flake.

COOL NEUTRAL

RES-3
Stonhard – Stonclad UR
Color: Pewter



RES-4
Stonhard – Stontec TRF
Color: Smokey Mountains
Small and large flake.

2.3
Resilient

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Rubber compound of synthetic butadiene-styrene type. Superior to vinyl flooring in quality but less resistant to grease and alkalis.
- Buffing with recommended buffing pads will bring out the natural sheen of the rubber floor.
- Rubber flooring offers under foot comfort, noise absorption, ease of maintenance.
- Inherently resistant to bacteria, fungi and micro-organisms – offering improved infection control standards in the facility.
- Low environmental impact - based on rapidly renewable, sustainable raw materials; product may contribute toward LEED credit.
- Resists staining – especially by those chemicals most commonly used in healthcare facilities such as Betadine.
- Flooring is to have Class 1 flammability rating when tested in accordance with ASTM E648; NFPA 253 (0.45 watts/sq. cm. or higher).

DIMENSIONS

- Tile: 24”W x 24”L.
- Sheet: 49’ x 48” W. Heat welded, coved base.
- Plank: 8”W x 24”L, 12”W x 24”L, 16”W x 48”L, 20”W x 40”L.
- Thickness: 3.0mm thick is preferred (2.0mm thickness also available).

Denotes that product is GreenGuard certified.

Product can contribute toward LEED.

ACCESSORIES / OPTIONS

- Matching feature strips are available for custom designs.
- Raised design, smooth finish, and other textures and patterns are available. Light or minimal texture is recommended as the most ideal raised surface design. Raised designs provide under foot traction; however, they should be carefully researched for proper installation to avoid tripping hazards and allow for easy movement of equipment and pedestrian traffic.

INSTALLATION

- Installs quickly over a clean and dry subfloor.
- NtX self-adhesive installation available on some products. Can be installed over existing substrates.
- Sheet rubber flooring requires certified installers.
- Welding rods and heat/cold welding processes shall be provided in accordance with manufacturer’s recommendations.

SPECIAL NOTE

- Rubber flooring is not recommended for Servery areas.

COMPARABLE PRODUCTS

- Nora
- Johnsonite
- Roppe
- Mannington

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WARM NEUTRAL

RF-1
Nora Rubber Noraplan
Environcare
#2945 Lace Vine

RF-2
Nora Rubber Noraplan
Environcare
#2933 Whispering Fog

RF-3
Nora Rubber Noraplan
Sentica
#6505 Silk

RF-4
Nora Rubber Noraplan
Sentica
#6506 Cashmere

RF-5
Nora Rubber Noraplan
Valua
#6714 Mushroom

RF-6
Nora Rubber Noraplan
Valua
#6722 Pine Cone

RF-7
Nora Rubber Norament
Arago
#5178 Calm

Flooring

COOL NEUTRAL

RF-8
Nora Rubber Noraplan
Environcare
#2930 Windflower

RF-9
Nora Rubber Noraplan
Environcare
#2931 Smoky Fennel

RF-10
Nora Rubber Noraplan
Sentica
#6520 Snow Day

RF-11
Nora Rubber Noraplan
Sentica
#6521 Sunday Paper

RF-12
Nora Rubber Noraplan
Valua
#6708 Beach Wood

RF-13
Nora Rubber Noraplan
Valua
#6709 Smoke

RF-14
Nora Rubber Norament
Arago
#5177 Balance

ACCENTS

RF-15
Nora Rubber Noraplan
Environcare
#2958 Fallen Acorn

RF-16
Nora Rubber Noraplan
Environcare
#2967 Moor Grass

RF-17
Nora Rubber Noraplan
Environcare
#2949 Sage

RF-18
Nora Rubber Noraplan
Environcare
#2954 Irish Moss

RF-19
Nora Rubber Noraplan
Environcare
#2779 Evergreen Path

RF-20
Nora Rubber Noraplan
Environcare
#2941 China Berry

RF-21
Nora Rubber Noraplan
Sentica
#6503 Indulgence

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Heterogeneous (layered) vinyl product features no-wax, no-buff, anti-fungal, anti-bacterial and anti-static properties; utilizes nano silver sterilization technology. Vinyl product is slip-resistant and improves hygiene. Flooring surface is embossed and is difficult to scuff or scratch. Semi-matte surface hides soiling and sub-floor irregularities. Can be installed with cold or heat welds. Wood-look product is similar in appearance to real wood flooring.
- Flooring is to have Class 1 flammability rating when tested in accordance with ASTM E648; NFPA 253 (0.45 watts/sq. cm. or higher).
- This product is recommended for use in Labor / Delivery Suites.

DIMENSIONS

- Sheet vinyl: 6’ W to 75’L, 2.3mm thickness.

ACCESSORIES / OPTIONS

- Designer borders available.

Product contains anti-microbial treatment .

INSTALLATION

- All sheet vinyl specified shall be heat welded.
- Use an integral cove or hygienic coved wall base when possible, using the same joint sealing application technique of grooved, melted, or welded vinyl for an impervious waterproof seal.
- Can be used in conjunction with resilient wall base (RB).
- Heat weld seams to provide barrier against penetration of dirt and moisture.
- When using this product under heavy hospital beds, it is recommended that an epoxy adhesive is used. Refer to manufacturer’s recommendation product and installation methods for this type of condition.

COMPARABLE PRODUCTS

- Teknoflor
- Armstrong
- Mannington

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

WOOD LOOK

SVF-1
Teknoflor
Forestscapes HPD
#88074 Sunrise

SVF-2
Teknoflor
Forestscapes HPD
#88059 Natural

SVF-3
Teknoflor
Forestscapes HPD
#88067 Sepia

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Heterogeneous (layered) vinyl product, Class III, Type A and/or B. Features urethane top surface with aluminum oxide for no-wax flooring. Micro-beveled edges. Vinyl product is slip-resistant and is easy to maintain. Use in areas not susceptible to scratching. Minimum 750 psi. Products range from 20, 30 and 40 mil wear layers as indicated. Minimum acceptable wear layer thickness is 20 mil.
- Flooring is to have Class 1 flammability rating when tested in accordance with ASTM E648; NFPA 253 (0.45 watts/sq. cm. or higher).

DIMENSIONS

- LVT-1 and LVT-3: 6” x 36”, 12” x 24”, 18” x 18”. 20 mil.
- LVT-2 and LVT-4: 4.5” x 36”, 18” x 18”, 18” x 36”. 40 mil.
- LVT-5, LVT-6, LVT-7: 3” x 36”, 4.5” x 36”, 6” x 36”, 9” x 36”. 40 mil.

Denotes that product is made in the U.S.A.

Product can contribute toward LEED.

INSTALLATION

- Pre-applied adhesive for faster installation.
- Use in conjunction with resilient wall base (RB).

SUSTAINABILITY

- Floor Score. 4% Rapidly renewable materials.

COMPARABLE PRODUCTS

- Mannington
- Tandus Centiva

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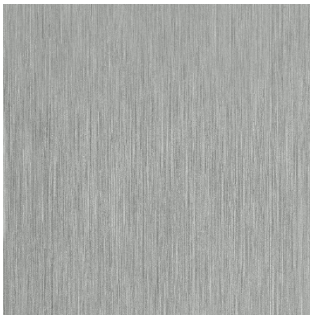
WARM NEUTRAL

LVT-1
Mannington – Color Anchor Collection
Stride – Cottontail #C138

LVT-2
Mannington – Amtico Anthology
City Grid – Core #ANT100

COOL NEUTRAL



LVT-3
Mannington – Color Anchor Collection
Stride – London Fog #C139

LVT-4
Mannington – Amtico Anthology
City Grid – Interaction #ANT104

Flooring

WOOD LOOK

LVT-5
Mannington – Amtico
Wood – American Cherry
#AR0W7450

LVT-6
Mannington – Amtico
Wood – Maple
#AR0W6840

LVT-7
Mannington – Amtico
Wood – Classic Walnut
#AR0W7610

2.4
Specialty Flooring

2019

SPECIFICATION GUIDELINES

USING TRANSITION STRIPS

- Transition strips must be used where floor surface types change. There are several types of materials to consider that can be used, among which include rubber, stainless steel and aluminum.
- Transition materials not only ease the transition from one surface to another, but they provide a barrier against penetration of dirt and moisture and reduce wear caused by wheeled traffic.
- Minimize and manage location of transition strips throughout the facility.
- Transition strips are to be installed in accordance with ABA (Architectural Barriers Act) requirements.
- Rubber transitions strips are generally specified in same color as resilient wall base.

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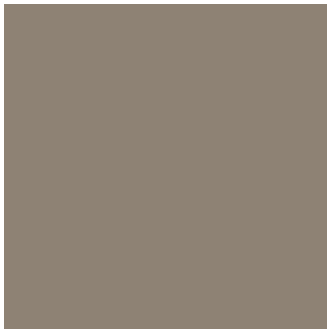
WARM NEUTRAL



TS-1
Johnsonite Moldings & Transition
#80 Fawn

Johnsonite
Transition Reducer Strip

COOL NEUTRAL

TS-2
Johnsonite Moldings & Transition
#32 Pebble

TS-3
Schluter Systems
Tile to Resilient Sloped Transition
Reno-U
Aluminum, Stainless steel options

TS-4
Schluter Systems
Tile to Carpet Transition
Schiene
Aluminum, Stainless steel options

TS-5
Schluter Systems
Tile to Tile Cove
- Dilex-Ahk
  Aluminum
- Dilex-Ehk
  Stainless Steel

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Exclusive thermoplastic rubber formulation minimizes unsightly scuffing, scratching, fading and cracking. “TightLock” Wall Base has a notched design that allows it to be installed with both carpet and resilient flooring. It can remain in place through changing out the flooring, saving time and money. “TightLock” provides a cove base look with a subtle radius. It accommodates any commercial flooring and delivers a tight, clean, finished appearance. “Millwork” base gives the appearance of a milled wood base with the durability of thermoplastic rubber.

DIMENSIONS

- Rubber Base: 4”H recommended, (also available in 6”H) x 100”L or 120”L; 1/8” thickness.
- Millwork Base: 5.25”H.

INSTALLATION

- Resilient Wall and Contact Base Adhesive.
- Pre-formed outside corners match wall base in color and size.
- Resilient Wall base adhesive will be used to install base to porous wall surfaces.
- Contact Base Adhesive will be used to install base to non-porous surface.

COMPARABLE PRODUCTS

- Roppe
- Armstrong
- Nora Rubber

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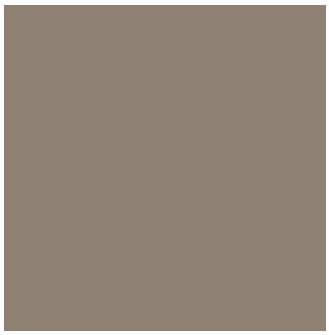
Resilient Base
Tightlock – 4” or 6”

Resilient Base
Millwork, Inflection – 5.25”

WARM NEUTRAL



RB-1
Johnsonite Tightlock
Wall base
#80 Fawn

RB-2
Johnsonite Inflection
Millwork base
#80 Fawn

COOL NEUTRAL

RB-3
Johnsonite Tightlock
Wall base
#32 Pebble

RB-4
Johnsonite Inflection
Millwork base
#32 Pebble

SPECIFICATION GUIDELINES

WALK-OFF MATS

- All-weather carpets and modules are manufactured in a variety of fibers, constructed to quickly trap mud, salt, dust and other debris from shoes and wheels. Walk-off mats, used in entry-ways, reduce water build-up on flooring that would otherwise cause a “slipping hazard”.
- A variety of materials are available. 100% solution-dyed nylon, Mono-filament and multi-filament nylons; Type 6,6 and Type 6; Rubber, Aluminum and Stainless Steel. Dark neutral colors are recommended.
- Walk-off mats can be recessed (drain application available and recommended for northern locations) or surface mounted.
- Walk-off mats are available in:
    - Rail system (walk-off mats can be rolled up for cleaning), available in recessed or surface mounted. Materials can be aluminum, stainless steel, nylon, abrasive grit and rubber. Maximum 12’ width.
    - Interconnecting Tile system, available in recessed or surface mounted. Three Zone system with Zone 1 – open and closed cell UV resistant PVC that provides scraper action. Zone 2 – open and closed cell UV resistant PVC along with Type 6,6, mono-filament nylon that provides scraper and absorption. Zone 3 – Type 6,6 mono and multi-filament nylon for absorption. Tile sizes: 8”W x 8”L. Pattern options are available.
- Walk-off mat materials, sizes and locations to comply with UFC 1-200-02, High Performance and Sustainable Building Requirements and ASHRAE 189.1, Section 8.3.1 Indoor Air Quality and Section 8.3.1.5 Building Entrances. Also see LEED 8.2 Indoor Contaminant Control.
- Flooring is to have Class 1 flammability rating when tested in accordance with ASTM E648; NFPA 253 (0.45 watts/sq. cm. or higher).

DIMENSIONS

- Sizes vary depending on system. See individual products.

COMPARABLE PRODUCTS

- Construction Specialties
- Milliken
- Lees

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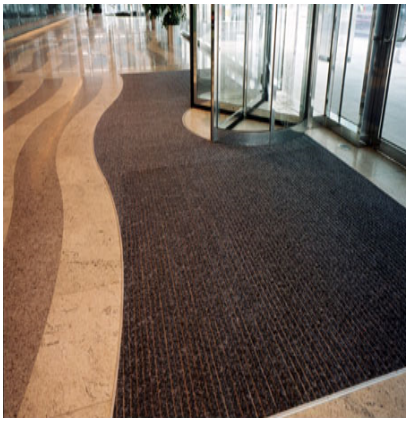
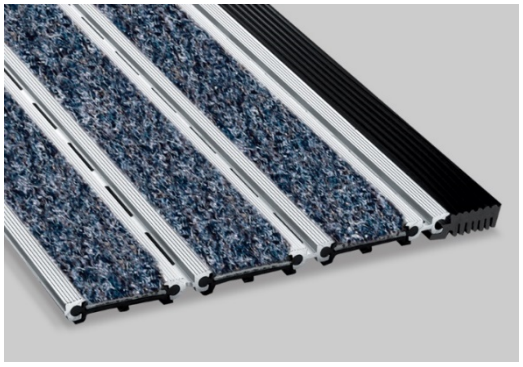
COMBINATION NEUTRAL

WM-3
Rubber Insert
Black Rubber,
Anodized Black Rail



WARM NEUTRAL

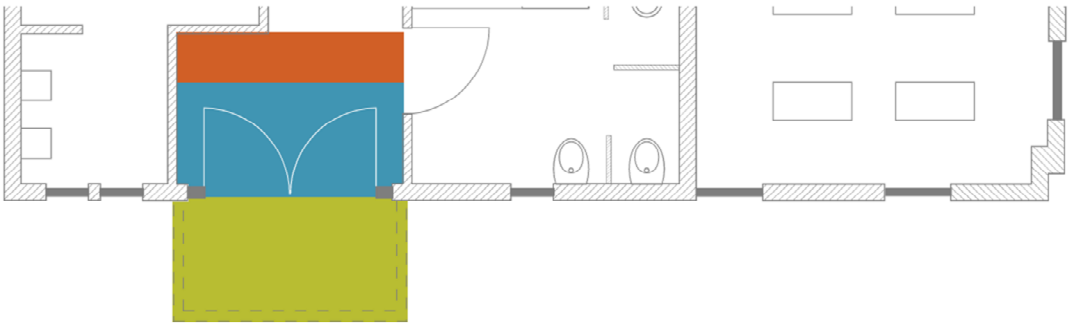
WM-1
Monotuft HD Nylon Insert
#9327 Dry Brown,
Anodized Black Rail



C-S Group, Pedimat M1, Entry Mat
Recessed or Surface Mounted

COOL NEUTRAL

WM-2
Monotuft HD Nylon Insert
#9322 Slate,
Anodized Black Rail



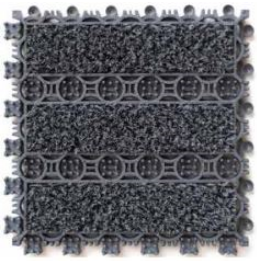
ZONE 1 **OUTDOORS:** The area before the building access – ideal for placing a product With scraping action to remove grit and heavy dirt particles such as sand and snow.

ZONE 2 **INDOORS:** The primary area just inside the building where a product with dual action-scraping and absorbing-should be installed to defend against dirt and moisture. This area often features a recessed well.

ZONE 3 **INDOORS:** Secondary area inside the building after Zone 2. A textile product for Moisture absorption is the preferred choice. Also applicable to circulation areas other than entrances.

Milliken Arx Collection – Prior, Tergo, Forma 2.0
Walk off Entry System
Recessed or Surface Mounted

Zone 1, Exterior:
Prior - Graphite
Scraper Tile



Zone 2, Indoors:
Tergo – Dark Grey
Scraper/
Type 6,6
Monofilament
Carpet Insert Tile

Zone 3, Indoors:
Forma 2.0 – WM-4,
Mono and Multi-
filament Carpet
Insert Tile

COMBINATION NEUTRAL

WM-4
Forma 2.0 Carpet Color
#FOR144-27 Boundary

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

Requirements:

- Cushioned step
- High impact
- Resilience and recovery from indentation
- Seamless, heat welded
- Chemical Resistant
- Flooring is to have Class 1 flammability rating when tested in accordance with ASTM E648; NFPA 253 (0.45 watts/sq. cm. or higher).

FLOORING TYPES / DIMENSIONS

Vinyl Floor:

- Vinyl wear layer over recycled rubber anti-fatigue layer, Ecore Forest RX, 6'wide, 30' roll, 7mm overall, 5 mm rubber backing, 2 mm vinyl wear layer, 250 psi, 5 year warranty.

Rubber Floor:

- Rubber wear layer over recycled rubber anti-fatigue layer, Ecore Galaxy RX, 6' wide, 30' roll, 7mm overall thickness, 5 mm rubber backing, 2 mm rubber wear layer, 400 psi, 5 year warranty.

Poured Floor:

- Seamless troweled application, Connor Sports, Elastiplus, 4-14 mm anti-fatigue base layer, 2 mm wear layer, topcoat and sealant, 225 psi, 1 year warranty.

OPTIONS

- Wear layer options range from solid color, patterned, color fleck, to wood grain.

INSTALLATION

- Refer to manufacturers standard installation methods.
- Welding rods and heat welded process shall be provided in accordance with manufacturer's recommendations.

COMPARABLE PRODUCTS

- Vinyl Floor: Vinyl top/Rubber back: Ecore, Forest RX
- Rubber Floor: Rubber top/Rubber back: Ecore, Galaxy RX
- Poured Floor: Poured floor/Rubber back: Connor Sports, Elastiplus

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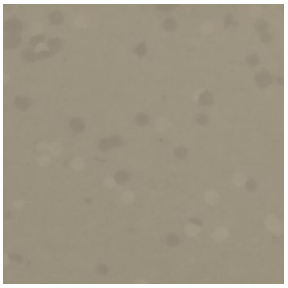
WARM NEUTRAL

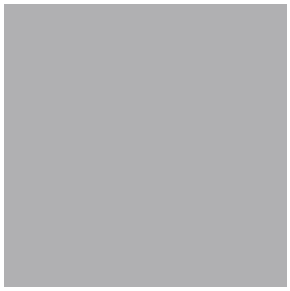
SF-1
Connor Sports
ElastiPlus
#1019 Arid Bronze
Overall Thickness: 6-11 mm



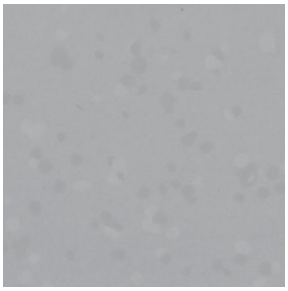
SF-2
Ecore
Galaxy RX
#2702 Beam Me Up Beige
6'w x 30'roll, 7 mm thick

SF-3
Ecore
Galaxy RX
#2703 Princess Greya
6'w x 30'roll, 7 mm thick

COOL NEUTRAL



SF-4
Connor Sports
ElastiPlus
#7001 Silver Mine
Overall Thickness: 6-11 mm



SF-5
Ecore
Galaxy RX
#2706 Rastro Grey
6'w x 30'roll, 7 mm thick

SF-6
Ecore
Galaxy RX
#2708 Dark Vadar
6'w x 30'roll, 7 mm thick

WOOD LOOK

SF-7
Ecore
Forest RX
#3360 Mahogany
6'w x 30'roll, 7 mm thick

SF-8
Ecore
Forest RX
#3290 Warm Beech
6'w x 30'roll, 7 mm thick

SF-9
Ecore
Forest RX
#9824 Aged Oak
6'w x 30'roll, 7 mm thick

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

Requirements:

- High Impact
- Thermal resistance
- Seamless
- Chemical Resistant
- Slip Resistant
- Compliance with USDA, FDA, OSHA and ABA (Architectural Barriers Act) requirements.
- Flooring is to have Class 1 flammability rating when tested in accordance with ASTM E648; NFPA 253 (0.45 watts/sq. cm. or higher).

FLOORING / DIMENSIONS

- Four component, self-leveling, solid colored, lightly textured polyurethane mortar system. Stonhard, Stonclad UT, Notch trowel applied, 1/4 inch (6 mm) thickness.
- Seamless flooring provides a sanitary flooring system that is easily maintained. All applications are to meet the DCOF (Dynamic Coefficient of Friction) of 0.42 for level interior spaces expected to be walked upon when wet.

ACCESSORIES / OPTIONS

- Integral Cove Base is available.
- Textured finish of the resinous flooring to be a Level 2, so that cleaning tools (i.e., mops and sweepers) are not damaged during cleaning.

INSTALLATION

- Refer to manufacturers standard installation methods.
- Resinous flooring shall be installed in accordance with the locations shown in the UFC 4-510-01 Appendix B.

COMPARABLE PRODUCTS

- Resin: Stonhard or Sika

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WARM NEUTRAL

SF-10
Stonhard
Stonclad UT
Color: Beechwood
6 mm system

COOL NEUTRAL

SF-11
Stonhard
Stonclad UT
Color: Pewter
6mm system

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

Requirements:

- Acoustical properties
- Cushioned step
- High impact
- Seamless / heat welded
- Chemical Resistant
- Flooring is to have Class 1 flammability rating when tested in accordance with ASTM E648; NFPA 253 (0.45 watts/sq. cm. or higher).
- Seamless flooring provides a sanitary flooring system that is easily maintained. All applications are to meet the DCOF (Dynamic Coefficient of Friction) of 0.42 for level interior spaces expected to be walked upon when wet.

FLOORING TYPES / DIMENSIONS

Poured Floor:

- Resilient urethane flooring system consisting of a three-component resilient mortar, a 2-component urethane grout coat and a waterbased polyurethane sealer. Stonhard, Stonres RTZ, screed raked and spike rolled applied, 3/16 inch (5 mm) thickness.

Rubber Floor:

- Rubber wear layer over recycled rubber anti-fatigue layer, Ecore Galaxy RX, 6’ wide, 30’ roll, 7mm overall thickness, 5 mm rubber backing, 2 mm wear layer, 400 psi, 5 year warranty.

ACCESSORIES / OPTIONS

- Integral Cove Base is available.

INSTALLATION

- Refer to manufacturers standard installation methods.
- Resinous flooring shall be installed in accordance with the locations shown in the UFC 4-510-01 Appendix B.
- Textured finish of the resinous flooring to be a Level 2, so that cleaning tools (i.e., mops and sweepers) are not damaged during cleaning.
- Welding rods and heat welded process shall be provided in accordance with manufacturer’s recommendations.

COMPARABLE PRODUCTS

- Poured Floor: Stonhard, Stonres RTZ
- Rubber Floor: Rubber top/Rubber back: Ecore, Galaxy RX

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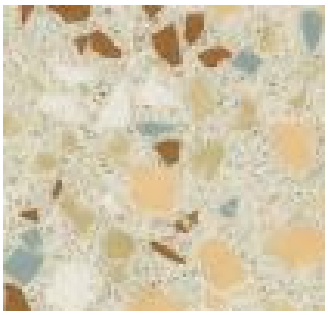
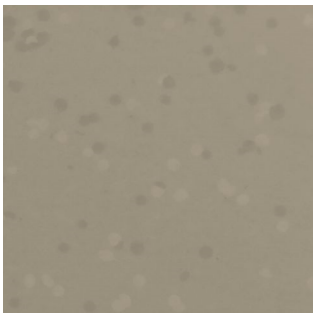
WARM NEUTRAL



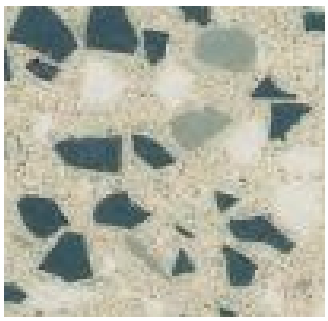
SF-12
Stonhard
Stonres - RTZ
Color: Santa Fe
5 mm system



SF-2
Ecore
Galaxy RX
#2702 Beam Me Up Beige
6'w x 30'roll, 7 mm thick

SF-3
Ecore
Galaxy RX
#2703 Princess Greya
6'w x 30'roll, 7 mm thick

COOL NEUTRAL



SF-13
Stonhard
Stonres - RTZ
Color: Canvas
5 mm system

SF-5
Ecore
Galaxy RX
#2706 Rastro Grey
6'w x 30'roll, 7 mm thick

SF-6
Ecore
Galaxy RX
#2708 Dark Vadar
6'w x 30'roll, 7 mm thick

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

Requirements:

- Cushioned step
- High impact
- Resilience and recovery from indentation
- Seamless / heat welded
- Chemical Resistant
- Antimicrobial
- Flooring is to have Class 1 flammability rating when tested in accordance with ASTM E648; NFPA 253 (0.45 watts/sq. cm. or higher).

FLOORING TYPES / DIMENSIONS

Vinyl Floor:

- Vinyl wear layer over recycled rubber anti-fatigue layer, Ecore Forest RX, 6'wide, 30' roll, 7mm overall, 5 mm rubber backing, 2 mm vinyl wear layer, 250 psi, 5 year warranty.

Rubber Floor:

- Rubber wear layer over recycled rubber anti-fatigue layer, Ecore Galaxy RX, 6' wide, 30' roll, 7mm overall thickness, 5 mm rubber backing, 2 mm wear layer, 400 psi, 5 year warranty.

Poured Floor:

- Seamless fluid applied urethane floor system, Sika, Decorative Comfortflor Pro, consisting of recycled rubber pad, self leveling urethane wear layer and a water based urethane topcoat, Decorative flake option available, 320 mil thickness, 1 year warranty.

OPTIONS

- Wear layer options range from solid color, patterned color fleck to wood grain.

INSTALLATION

- Refer to manufacturers standard installation methods.
- Welding rods and heat welded process shall be provided in accordance with manufacturer's recommendations.

COMPARABLE PRODUCTS

- Vinyl Floor: Vinyl top/Rubber back: Ecore, Forest RX
- Rubber Floor: Rubber top/Rubber back: Ecore, Galaxy RX
- Poured Floor: Poured floor/Rubber back: Sika, Decorative Comfortflor Pro

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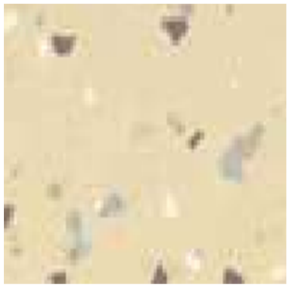
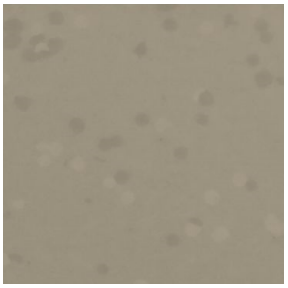
WARM NEUTRAL



SF-14
SikaFloor
ComfortFloor Decorative Pro
#248 Beige
320 mil seamless system

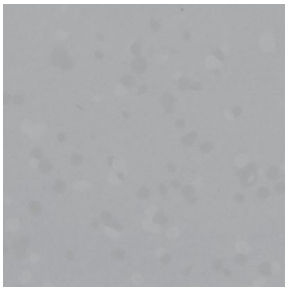


SF-2
Ecore
Galaxy RX
#2702 Beam Me Up Beige
6'w x 30'roll, 7 mm thick

SF-3
Ecore
Galaxy RX
#2703 Princess Greya
6'w x 30'roll, 7 mm thick

COOL NEUTRAL

SF-15
SikaFloor
ComfortFloor Decorative Pro
Gray
320 mil seamless system



SF-5
Ecore
Galaxy RX
#2706 Rastro Grey
6'w x 30'roll, 7 mm thick

SF-6
Ecore
Galaxy RX
#2708 Dark Vadar
6'w x 30'roll, 7 mm thick

WOOD LOOK

SF-7
Ecore
Forest RX
#3360 Mahogany
6'w x 30'roll, 7 mm thick

SF-8
Ecore
Forest RX
#3290 Warm Beech
6'w x 30'roll, 7 mm thick

SF-9
Ecore
Forest RX
#9824 Aged Oak
6'w x 30'roll, 7 mm thick

3.
Walls

3.1 Surface Finishes

3.1.1 Paint

3.1.2 Porcelain Tile

3.1.3 Tile Grout

3.1.4 Tile Trim

3.2 Wall Protection

3.2.1 Crash Rail

3.2.2 Chair Rail

3.2.3 Hand Rail

3.2.4 Corner Guard

3.2.5 Sheet Wall Protection

3.3 Specialty Walls

3.3.1 Wall Panel

3.3.2 Resin Panel

2019

3.1
Surface Finishes

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Specially formulated paints provide easy application, good coverage and a durable uniform finish. May be used over properly prepared drywall, plaster masonry, metal and wood.
- Anti-bacterial, EPA registered microbiocidal paints kill greater than 99.9% of Staph, MRSA, E. Coli, VRE and Enterobacter Aerogenes within 2 hours of exposure to painted surface and repeatedly kills on contaminated surfaces for up to 4 years.

ACCESSORIES / OPTIONS

- Variety of finishes and colors available.

INSTALLATION

- Eggshell or satin finish on walls; semi-gloss finish for areas requiring frequent scrubbing and cleaning.
- Semi-gloss finish on door frames.
- Water-based epoxy paints are acceptable on surfaces requiring Liquid Glaze Coat (LG) finish.
- Primers to be used.
- One (1) coat of primer and two (2) coats top coat paint.
- Provide crash and corner guards to protect painted corridors (See 3.2 Guidelines for Wall Protection).

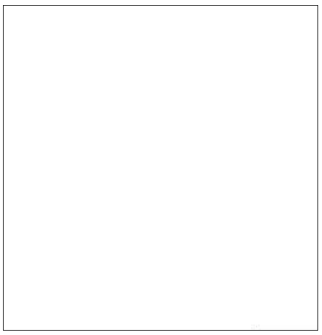
COMPARABLE PRODUCTS

- Sherwin Williams
- ICI
- Benjamin Moore

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

Walls

COMBINATION NEUTRAL



PT-1
Sherwin Williams
#SW7005 Pure White

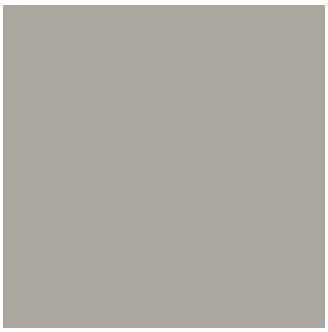
WARM NEUTRAL

PT-2
Sherwin Williams
#SW7011 Natural Choice

PT-3
Sherwin Williams
#SW7036 Accessible Beige

COOL NEUTRAL

PT-4
Sherwin Williams
#SW7015 Repose Gray



PT-5
Sherwin Williams
#SW7017 Dorian Gray

ACCENTS

Walls

YELLOW

PT-6
Sherwin Williams
#SW7686 Hinoki

PT-7
Sherwin Williams
#SW7687 August Moon

PT-8
Sherwin Williams
#SW7695 Mesa Tan

ORANGE

PT-9
Sherwin Williams
#SW6644 Champagne

PT-10
Sherwin Williams
#SW6348 Reynard

PT-11
Sherwin Williams
#SW6349 Pennywise

ACCENTS

Walls

BLUE

PT-12
Sherwin Williams
#SW9149 Inkie Blue

PT-13
Sherwin Williams
#SW9147 Favorite Jeans

PT-14
Sherwin Williams
#SW9144 Moonmist

GREEN

PT-15
Sherwin Williams
#SW6179 Artichoke

PT-16
Sherwin Williams
#SW6178 Clary Sage

PT-17
Sherwin Williams
#SW6176 Liveable Green

PURPLE

PT-18
Sherwin Williams
#SW6285 Grape Harvest

PT-19
Sherwin Williams
#SW6283 Thistle

PT-20
Sherwin Williams
#SW6281 Wallfower

ACCENTS

LIME GREEN

PT-21
Sherwin Williams
#SW6415 Hearts of Palm

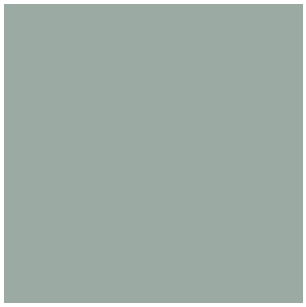
PT-22
Sherwin Williams
#SW9029 Cool Avocado

PT-23
Sherwin Williams
#SW6416 Sassy Green

FOREST GREEN

PT-24
Sherwin Williams
#SW6211 Rainwashed

PT-25
Sherwin Williams
#SW6212 Quietude



PT-26
Sherwin Williams
#SW6213 Halcyon Green

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Made of through body porcelain glazed and unglazed with matte finish. Color is consistent throughout and is suitable for a wide range of applications. Products suggested are available in neutral colors, stone, wood and fabric pattern options.
- Some products utilize “Hydrotect” technology. A unique self-cleaning protective coating for building materials such as ceramic tiles. When used on surfaces and exposed to ultraviolet light, from an artificial source, “Hydotect’s” active surface generates a reaction that cleans the material surface by decomposing organic and by oxidizing NOx (nitric dioxide) into less harmful substance. This process, in effect, purifies the surrounding air and self-cleans.
- Porcelain tile products contain recycled material content.
- Porcelain tiles are scratch, stain and frost-resistant.
- Porcelain tiles are non-flammable and do not produce smoke in a fire.

DIMENSIONS

- Dimensions: Tiles are available in rectified and non-rectified. See each pattern for edge type and tile size.

Denotes that product contains recycled content

Denotes that product is made in the U.S.A.

ACCESSORIES / OPTIONS

- Cove Base, Bullnose and other trims may be available. Accent wall mosaics available. See Solid Surface Systems for shower options.
- Corner and edge transition trim pieces are required.

INSTALLATION

- Install porcelain wall tiles with epoxy grout at locations where bacterial contamination and stain concerns are present. Epoxy grout eliminates the need to seal the grout. Use medium to dark neutral color grout for floors.
- Installation of porcelain wall tiles will be in accordance with TCNA (Tile Council of North America) Handbook installation guidelines and manufacturer’s recommendations.

SUSTAINABILITY

- Green Squared certification, Pre-consumer recycled content, Green Choice.

COMPARABLE PRODUCTS

- Crossville
- Iris
- Dal Tile

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

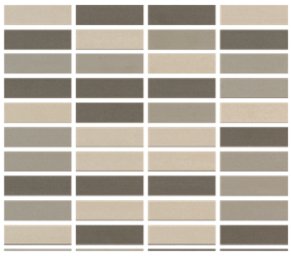
Crossville – Shades
Porcelain Tile
Rectified – 6” x 24”,
12” x 24”, 24” x 24”

Crossville – Shades Mosaic
Porcelain Tile
1” x 3” – 11 7/8” x 11 7/8” Sheet

COMBINATION NEUTRAL

PWT-1
Shades – Vapor
AV242

WARM NEUTRAL



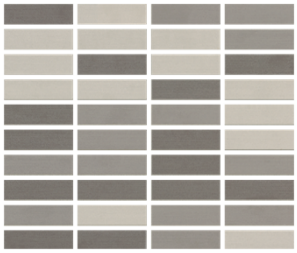
PWT-8
Warm Grays –
SBC1/.10103HMOS
(AV243,AV245,AV247)

PWT-2
Shades – Fog
AV243

PWT-3
Shades – Haze
AV247

PWT-4
Shades – Clay
AV245

COOL NEUTRAL



PWT-9
Cool Grays –
SBC2/.10103HMOS
(AV244,AV246,AV248)

PWT-5
Shades – Ash
AV246

PWT-6
Shades – Mist
AV244

PWT-7
Shades – Thunder
AV248

Walls

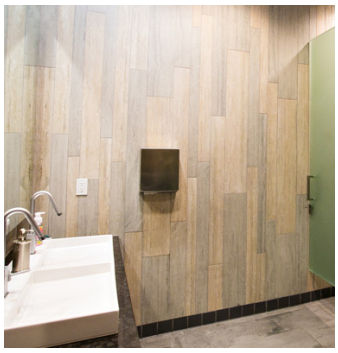
Crossville – Argent
Porcelain Tile
Rectified – 6” x 6”, 6” x 24”, 24” x 24”
Non-rectified – 12” x 12”

WARM NEUTRAL

PWT-10
Argent – Winter Garden
A1401

COOL NEUTRAL

PWT-11
Argent - Clean Slate
A1417



Iris US – Travertini Al Contro
Porcelain Tile
Rectified: 24” x 48”, 8” x 48”, 12” x 24”, 6” x 24”

Crossville – Nest
Porcelain Tile
Rectified: 3” x 15”, 6” x 36”, 8” x 36”

Mediterranea USA – Touch
Porcelain Tile
Rectified: 3” x 6”, 3” x 12”, 4” x 18”, 12” x 12”, 12” x 24”, 18” x 36”

WARM NEUTRAL

STONE LOOK

PWT-12
Travertini Al Contro,
Argento

WOOD PLANK

PWT-13
Nest, Joyous Olive – AV362

PWT-14
Nest, Blissful Olive – AV363

FABRIC LOOK

PWT-15
Touch,
Sun Glow

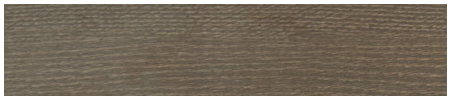
COOL NEUTRAL

STONE LOOK

PWT-16
Travertini Al Contro,
Grigio

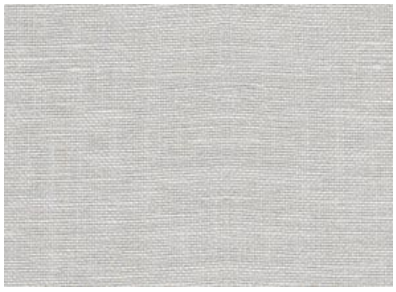
WOOD PLANK

PWT-17
Nest, Mindful Olive – AV364



PWT-18
Nest, Slumber Olive – AV366

FABRIC LOOK



PWT-19
Touch,
Pearl Essence

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Water-cleanable, 100% solids, high strength epoxy, non-sagging efflorescence-free grout with no shrinkage; provides color uniformity, stain resistance (no sealer required), easy to maintain.
- Product may contribute to LEED credit.
- Coverage varies.
- Wall grout to be lighter neutral in color.
- Floor grout to be the darker neutral for cleaning purposes.
- This product is impervious to water (non-porous) and does not support bacteria/fungus; anti-microbial additives are not required with this product.

INSTALLATION

- Mortar/grouts are to be installed per the manufacturer's recommendation and in accordance with the TCNA (Tile Council of North America) Handbook installation guidelines.

COMPARABLE PRODUCTS

- Laticrete
- Bonsal
- Mapei

Product contains anti-microbial treatment .

Product can contribute toward LEED.

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the "benchmark for quality" regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

WARM NEUTRAL

Mapei “Kerapoxy” Epoxy grout
#39 Ivory

Mapei “Kerapoxy” Epoxy grout
#09 Gray

COMBINATION NEUTRAL

Mapei, “Kerapoxy” Epoxy grout
#14 Biscuit

COOL NEUTRAL

Mapei, “Kerapoxy” Epoxy grout
#19 Pearl Gray

Mapei, “Kerapoxy” Epoxy grout
#27 Silver

SPECIFICATION GUIDELINES

USING TRANSITION STRIPS

- Corner and edge transition trim pieces will be used in porcelain tile installations where wall surfaces change or as a finishing end. The aluminum material comes in a wide variety of colors. There are several types, profiles and sizes available.
- Transition materials not only ease the transition from one surface to another, but they provide a barrier against penetration of dirt and moisture.

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TR-1
Schluter Systems
Finishing Edge Trim
Jolly

TR-2
Schluter Systems
Square Edge Trim
Quadec

TR-3
Schluter Systems
Rounded Edge Trim
Rondec

TS-5
Schluter Systems
Cove
- Dilex-Ahk
  Aluminum
- Dilex-Ehk
  Stainless Steel

3.2
Wall Protection

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Wall protection materials are extremely tough, environmentally-friendly goods which protect walls, doors and outside corners. The color is integral, minor scratches are inconspicuous. Wall Protection includes semi-rigid sheets, corner guards, handrails, chair rails and crash rails which resist high-impact scuffs and gouges. Wall protection will be neutral in color.
- Crash rails are surface mounted assemblies consisting of aluminum clips with snap-on covers and integral shock absorbing cushions. End caps are mechanically fastened with concealed fasteners.
- Removable parts for ease of replacement.

DIMENSIONS

- 8”H x 1.25”D (aluminum clips 16” on center)

ACCESSORIES / OPTIONS

- PVC/PBT/PBA free; are completely recyclable and can contribute toward LEED credit.
- Color matched caulks and adhesives.

Product can contribute toward LEED.

INSTALLATION

- Materials need to be climatized before being installed.
- Install protective wall materials in accordance with manufacturer’s written instructions.
- Attachment hardware appropriate for wall type construction.
- Install 6 inches above finished floor or wainscot height, between 30″ and 40″ above finished floor or per facilities standard installation height.

COMPARABLE PRODUCTS

- Construction Specialties
- IPC
- Korogard

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

Acrovyn Crash Rail
#SCR-64N

WARM NEUTRAL

CR-1
Acrovyn 4000
PVC/PBT/BPA-free product,
#858 Pumice
Suede Texture

COOL NEUTRAL

CR-2
Acrovyn 4000
PVC/PBT/BPA-free product,
#314 Ozark,
Suede Texture

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Wall protection materials are extremely tough, environmentally-friendly goods which protect walls, doors and outside corners. The color is integral, minor scratches are inconspicuous. Wall Protection includes semi-rigid sheets, corner guards, handrails, chair rails and crash rails which resist high-impact scuffs and gouges. Wall protection will be neutral in color.
- Chair rail is a surface mounted assembly consisting of a PETG sheet formed over a shaped MDF board.

DIMENSIONS

- 2-1/2”H x 9’-6” lengths.
- Installs with adhesive and field mitered ends. Supplied in 9' 6" (2.9m) lengths.

ACCESSORIES / OPTIONS

- Certain wall protection materials are PVC/PBT free; are completely recyclable and can contribute toward LEED credit.
- Color matched caulks and adhesives.

Product can contribute toward LEED.

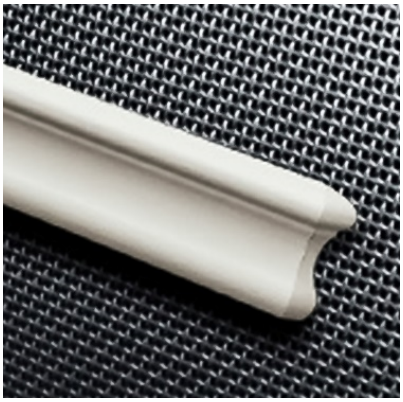
INSTALLATION

- Materials need to be climatized before being installed.
- Install protective wall materials in accordance with manufacturer’s written instructions.
- Install at 32 inches above finished floor or per facilities standard installation height. Coordinate installation height with chairs specified for that location.

COMPARABLE PRODUCTS

- Construction Specialties
- IPC
- Korogard

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.



Acrovyn Chair Rail
#FR-251N

WARM NEUTRAL

CHR-1
Acrovyn 4000
PVC/PBT/BPA-free product,
#858 Pumice
Suede Texture

COOL NEUTRAL

CHR-2
Acrovyn 4000
PVC/PBT/BPA-free product,
#314 Ozark,
Suede Texture

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Wall protection materials are extremely tough, environmentally-friendly goods which protect walls, doors and outside corners. The color is integral, minor scratches are inconspicuous. Wall Protection includes semi-rigid sheets, corner guards, handrails, chair rails and crash rails which resist high-impact scuffs and gouges. Wall protection will be neutral in color.
- Some handrails have continuous aluminum retainers and full length vinyl bumpers for medium- to high- impact areas. Others are designed for low- to medium-impact areas and are comprised of materials such as faux wood with integrated flexible bumpers and round-grip rails with continuous aluminum retainers. End and corner caps are available in patented foam cushion or rigid plastic. Connector plates are available for certain models.

DIMENSIONS

- 5.5”H or 6.25”H x 1.5”D

ACCESSORIES / OPTIONS

- Certain wall protection materials are PVC/PBT free; are completely recyclable and can contribute toward LEED credit.
- Color matched caulks and adhesives.
- Stainless steel products are also available.

Product can contribute toward LEED.

INSTALLATION

- Handrail should be installed accurately in location, alignment and elevation on walls. Install handrail system in accordance with the manufacturer’s written instructions.
- Materials need to be climatized before being installed.
- Install protective wall materials in accordance with manufacturer’s written instructions.
- Install handrails to comply with ABA (Architectural Barriers Act) requirements.

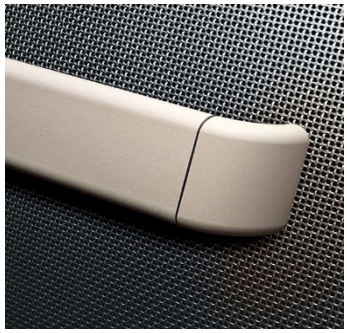
COMPARABLE PRODUCTS

- Construction Specialties
- IPC
- Korogard

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

Acrovyn Hand Rail
#HR-6CN

Acrovyn Hand Rail
Stainless Steel
#HRS-6C



Acrovyn Hand Rail
#HRB-4CN

Acrovyn Hand Rail
#HRB-10CN
Wood Trim – Use
Chameleon Simulated
Wood Product

WARM NEUTRAL

HR-1
Acrovyn 4000
PVC/PBT/BPA-free product,
#858 Pumice
Suede Texture

COOL NEUTRAL

HR-2
Acrovyn 4000
PVC/PBT/BPA-free product,
#314 Ozark,
Suede Texture

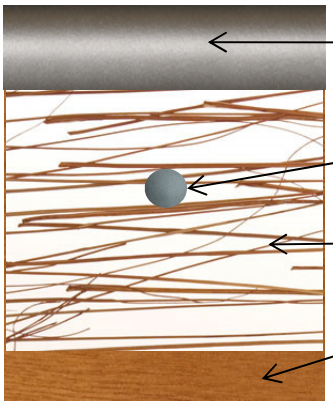
WOOD LOOK

HR-3
Acrovyn
Simulated wood product,
Chameleon
#373 Amber Cherry,
PVC free

HR-4
Acrovyn
Simulated wood product,
Chameleon
#372 Classic Maple,
PVC free

HR-5
Acrovyn
Simulated wood product,
Chameleon
#1352 Fossil Teak,
PVC free

UPGRADED HANDRAILS



DHR Korogard
"BellaLucent"
Decorative Handrail

Korogard Aluminum
Rounded Hand Grip
HRA1-02

Decorative Lucent
Pattern: 3I- Ting Ting
Texture: Sandstone
Refer to 3.3.2 Resin Panel section for more options

DHR-1
Korowood Bottom U-Channel
Stain to Match PL-5

DHR-2
Korowood Bottom U-Channel
Stain to Match PL-6

DHR-3
Korowood Bottom U-Channel
Stain to Match PL-7

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Wall protection materials are extremely tough, environmentally-friendly goods which protect walls, doors and outside corners. The color is integral, minor scratches are inconspicuous. Wall Protection includes semi-rigid sheets, corner guards, handrails, chair rails and crash rails which resist high-impact scuffs and gouges. Wall protection will be neutral in color.
- Corner guards consist of a continuous retainer with a snap-on cover. End caps are color matched and can be provided for full or partial height applications.

DIMENSIONS

- Corner Guard: 3”W, 90 degree angle with flush mounted retainer.

ACCESSORIES / OPTIONS

- Certain wall protection materials are PVC/PBT free; are completely recyclable and can contribute toward LEED credit.
- Color matched caulks and adhesives.
- Stainless steel products are also available.
- Flush or surface mounted options available. Flush mount option is preferable. Surface mounted options are available in partial or full height.
- Stainless steel corner guards are available.

INSTALLATION

- Corner Guard should be installed accurately in location, alignment and elevation on walls. Install corner guard system in accordance with the manufacturer’s written instructions.
- Attachment hardware to be appropriate for wall construction type.
- Materials need to be climatized before being installed.
- The preferred installation for Corner Guards is flush mounted.

COMPARABLE PRODUCTS

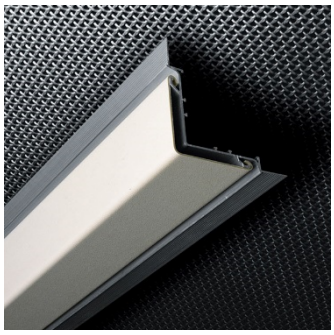
- Construction Specialties
- IPC
- Korogard

Product can contribute toward LEED.

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

Acrovyn Corner Guard
Stainless Steel
#CO-8

Acrovyn Corner Guard
Surface Mounted
#SM-20N



Acrovyn Corner Guard
Flush
#FS-20N

COMBINATION NEUTRAL

CG-1
Acrovyn
Stainless Steel
Finish: #407 Silver

WARM NEUTRAL

CG-2
Acrovyn 4000
PVC/PBT/BPA-free product,
#858 Pumice
Suede Texture

COOL NEUTRAL

CG-3
Acrovyn 4000
PVC/PBT/BPA-free product,
#314 Ozark,
Suede Texture

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Wall protection materials are extremely tough, environmentally-friendly goods which protect walls, doors and outside corners. The color is integral, minor scratches are inconspicuous. Wall Protection includes semi-rigid sheets, corner guards, handrails, chair rails and crash rails which resist high-impact scuffs and gouges. Wall protection will be neutral in color.
- Wall Protection mural is rigid sheet in standard sizes and texture with a high definition graphic file, reverse printed on a clear sheet and sealed with a protective backer.
- Diamond Plate Stainless Steel Sheets are to be used in service areas (i.e., heavy cart traffic). Sheets are mechanically fastened with wall screws.

DIMENSIONS

- Wall Protection Sheets: 4'W x 8'H, 4'W x 10'H sheets available in .040" (1.02mm), .060" (1.52mm) and .075" (1.91mm) thicknesses
- Wall Protection Mural: 4'W x 8'H, 4'W x 10'H sheets available in 0.40" thickness.
- Diamond Plate: 4'W x 8'H, 4'W x 10'H sheets available in 0.0625" (1.59 mm) thickness.

Product can contribute toward LEED.

ACCESSORIES / OPTIONS

- Certain wall protection materials are PVC/PBT free; are completely recyclable and can contribute toward LEED credit.
- The recommended profile of Wall Protection sheets is to be in the standard Suede Texture (other textures are available).
- Solid color and faux wood options are available.
- Color matched caulks and adhesives.
- Trim profile options are available.
- Stainless steel products are also available.

INSTALLATION

- Sheets may be installed below chair/handrails and can be used at head walls in Patient Rooms. Sheets may be installed in equipment and storage rooms up to 54" above finished floor.
- Materials need to be climatized before being installed.
- Install protective wall materials in accordance with manufacturer's written instructions. Installation to include all trim and hardware for a complete installation.
- Diamond Plate Stainless Steel Sheets to comply with NAAMM for application and finish designations.

COMPARABLE PRODUCTS

- Construction Specialties
- IPC
- Korogard

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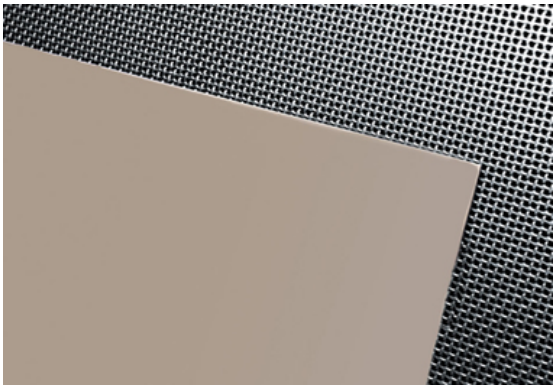


Acrovyn High Impact Wall Covering
Acrovyn 4000
PVC/PBT/BPA-free product

WARM NEUTRAL

VWP-1
Acrovyn 4000
PVC/PBT/BPA-free product,
#858 Pumice
Suede Texture

COOL NEUTRAL

VWP-2
Acrovyn 4000
PVC/PBT/BPA-free product,
#314 Ozark,
Suede Texture

DIAMOND PLATE

SWP-1
Acrovyn
Stainless Steel – Type 304
Diamond Plate Texture

WOOD LOOK

VWP-3
Acrovyn
Simulated wood product, Chameleon
#373 Amber Cherry,
PVC free

VWP-4
Acrovyn
Simulated wood product, Chameleon
#372 Classic Maple,
PVC free

VWP-5
Acrovyn
Simulated wood product, Chameleon
#1352 Fossil Teak,
PVC free

VWP-6
Acrovyn by Design
Acrovyn High Impact Wall Covering
.040N Sheet
PVC/PBT/BPA-free product

3.3
Specialty Walls

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- May be used in Lobby or Command Suites.
- Available in Metal: “Ceramicsteel” surface with HDF (High Density Fiberboard) core and aluminum backer. Sheet size is 4’ x 8’ x 1/4”. Variety of trim pieces, scratch and graffiti resistant, durable and easy to clean, Class A. Standard metals and colors along with Custom Graphics available.
- Available in FRP (Fiberglass Reinforced Plastic): Thermally bonded melamine to an FRP (fiberglass reinforced plastic) core. Impact and moisture resistant. Resists stains, bacteria, mold and mildew. Class A. Sheet size is 4’ x 8’. Thickness available in 3/32”.
- Available in Laminate: Laminate finished face with MDF (Medium Density Fiber) or HDF (High Density Fiberboard) backer. Recommend FRL (fiber reinforced laminate) for areas where impact resistance is required. Resists stains, bacteria, mold and mildew. Sheet size is 4’ x 10’. Thicknesses available in 1/4”, 3/8” and 3/4”. Class A.

DIMENSIONS

- Module sizes vary. Customization available.

Denotes that product is GreenGuard certified.

ACCESSORIES / OPTIONS

- Available in a full range of solid colors, wood grains, graphics and patterns.
- Laminates for chalkboard and markerboard surfaces also available.

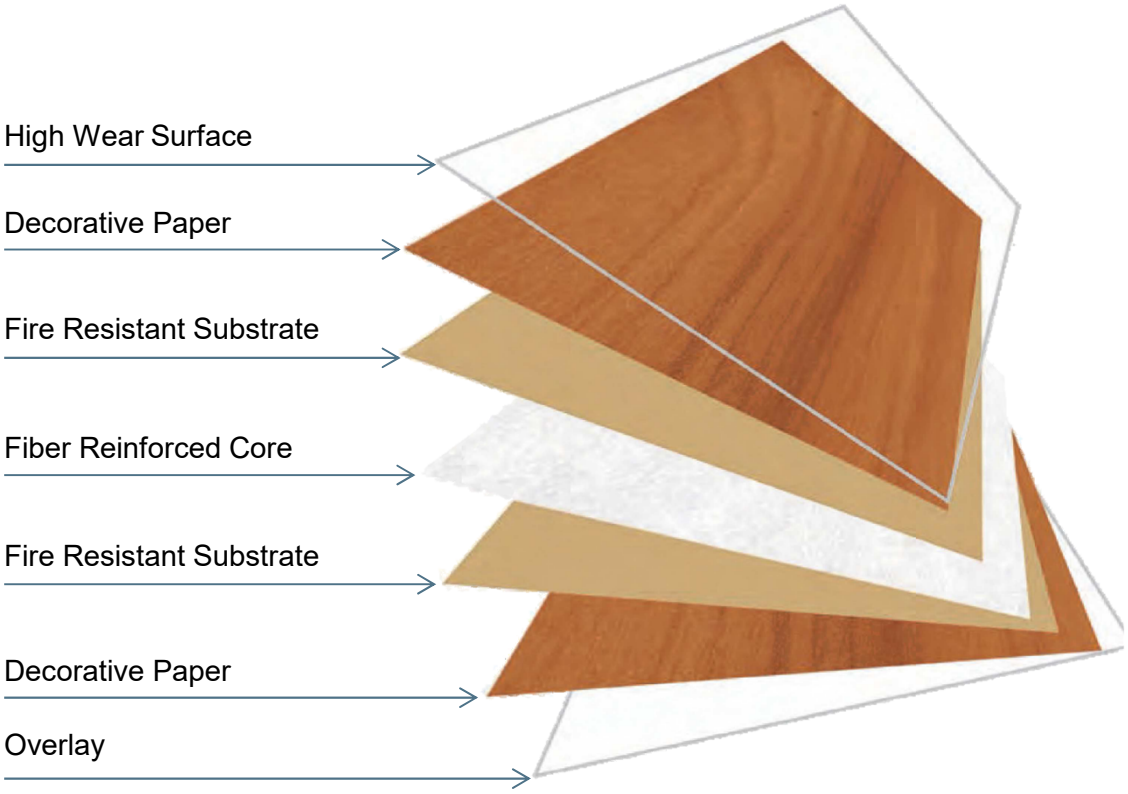
INSTALLATION

- Installation methods include Z-clip, rail system or adhesive.

COMPARABLE PRODUCTS

- Marlite

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.



WOOD LOOK

WP-1
Pionite FRL
#FW624 Oiled Cherry

WP-2
Pionite FRL
#FW327 Hardrock Maple

WP-3
Pionite FRL
#FW176 Pralines and Cream

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Co-polyester resin (PETG) is a lightweight and less expensive alternative to glass for use in accent areas. Resin also offers excellent chemical resistance. Class A.
- Variety of patterns are available with multitude of materials for inner layer.
- Greenguard Certified.

DIMENSIONS

- Thicknesses range from 0.45” to 0.472” thick. Sheet sizes are 4’ x 8’.

ACCESSORIES / OPTIONS

- Surface finishes are available to protect against surface scratches.
- Markerboard finishes are available.
- This product could be coordinated and integrated with the Decorative Bellaguard Handrails.

INSTALLATION

- Installation methods are dependent on use. This product could be incorporated into millwork as an accent, free-standing partition wall / dividers or ceiling accent elements.

COMPARABLE PRODUCTS

- Lumicor
- 3Form

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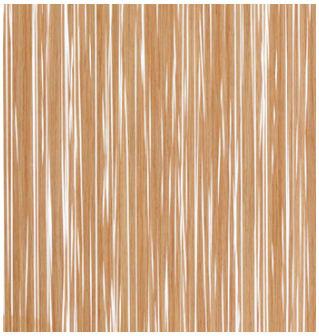
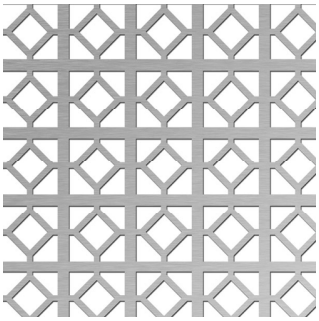
WOOD LOOK



SRP-1
3form – Varia Ecoresin, Highres Imagery
Stroll

METALLIC



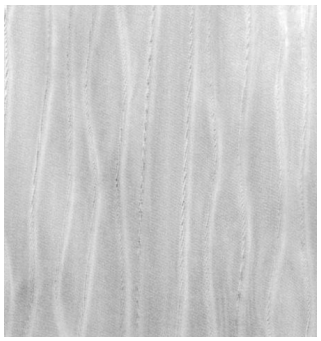
SRP-2
Lumicor – Metallic
Intersect

FABRIC / PATTERN

SRP-3
3form – Varia Ecoresin, Artisan
Connection Square Pure

SRP-4
Lumicor – Textiles
Kauri

WATER



SRP-5
3form – Varia Ecoresin
Textures
Wave

SRP-6
3form – Varia Ecoresin
Textures
Crinkle

LEAF / GRASS

SRP-7
3form – Varia Ecoresin,
Naturals
Thatch

SRP-8
Lumicor – Natural
Mojave

4.
Ceiling

4.1 Acoustical Ceiling Tile

4.2 Specialty and Upgraded Ceiling

4.3 Healing Ceilings

2019

4.1
Acoustical Ceiling Tile

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Acoustical tile or lay-in tile are sound controlling tile units consisting of wet-formed mineral fiber with painted face. Tiles are mechanically mounted on a suspended ceiling system.
- Edge Detail: Tegular Edge for General Use, square edge for scrubbable and vinyl face options.
- Finish: Factory-applied standard white.
- Suspension System: L-Standard, fire-resistive, exposed grid or concealed grid. Exposed surfaces shall be aluminum or steel with factory applied white baked enamel finish.
- Tiles contain recycled content and can contribute toward LEED credit.
- Class A rating in accordance with ASTM E-84.

DIMENSIONS

- Nominal tile size:
  - (ACT-1) 24”W x 24”L x 3/4” thickness
  - (ACT-2 & ACT-3) 24”W x 24”L x 5/8” thickness
  - (ACT-4) 24”W x 24”L x 1-3/4” thickness
- Standard Grid Size is 15/16”.

ACCESSORIES / OPTIONS

- Noise reduction/acoustics options.
- Anti-microbial treatments.
- Recycled Content.
- Soil, Scratch and Impact-resistance.

INSTALLATION

- Suspension systems and tiles to be installed in accordance with manufacturer’s recommendations and local regulations.
- All ceiling tiles shall be installed in accordance with locations shown in the UFC-4-510-01 Appendix B.
- 24” x 24” acoustical tile size is recommended to reduce/eliminate potential for sagging.
- Ten Year Warranty.

COMPARABLE PRODUCTS

- USG
- Armstrong

Product can contribute toward LEED.

Denotes that product contains recycled content

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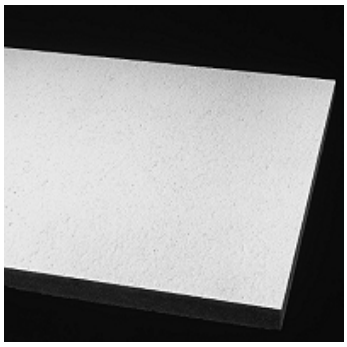
STANDARD APPLICATION

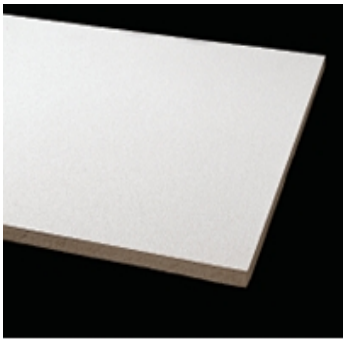
ACT-1
Armstrong, Ultima, Tegular Edge
#1911 NRC: 0.75, CAC: 35
(Health Zone Ultima #1937 also available. NRC: 0.70, CAC: 38)

SCRUBBABLE



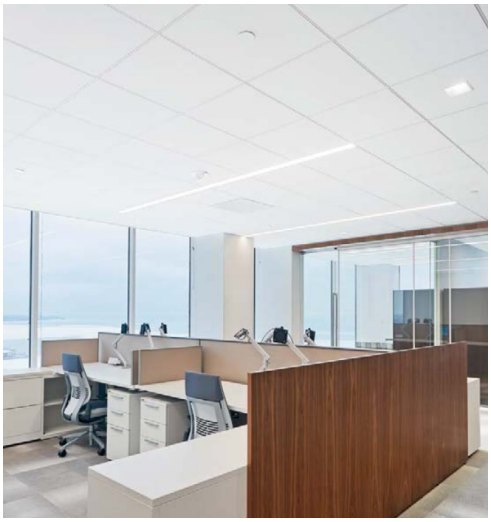
ACT-2
Armstrong, Fine Fissured, Square Edge
Ceramaguard, Non-Perforated
#607
NRC: 0.55, CAC: 38

VINYL FACE



ACT-3
Armstrong, Clean Room VL
Square Edge, #868
NRC: N/A, CAC: 40

NOISE REDUCTION APPLICATION



ACT-4
Armstrong, Lyra, with Plant-based
Binder High CAC. Tegular Edge
#8730PB. NRC:0.95, CAC: 42

4.2
Specialty & Upgrade Ceiling

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Gypsum Board is an economical product for the walls and the ceiling, easily installed and accommodates a variety of decorative treatments. It is appropriate for areas such as Main Building Entries and Main Lobbies, as well as certain clinical areas as identified in the UFC 4-510-01 Appendix B. Finish: Standard white finish. Dimensions: Available in 6' to 16'L x 4'W sheets.
- Wood Veneer Planks, 100% Biobased, FSC Certified wood veneers, Acoustical fleece backing. Plank dimensions: 4-1/2"W x 6'L with 3/4" reveals.
- Wood Tile, Biobased product, FSC Certified wood veneers. Available perforated and unperforated. Perforations are available in variety of patterns. Tile dimensions: 24"W x 24"L x 3/4" thick with 1/4" reveals.
- Metal Tile, Tegular Flush or Square edge, Available in metal or faux wood, perforated and unperforated. Tile dimension: 24"W x 24"L.
- Cloud Ceilings come in a variety of shapes and are available with integrated lighting. Open accent grid with a standard ceiling tile can be incorporated. Metal and wood tiles can also be used. Variety of trim edges in varying heights and shapes.
- Class A, 15/16" grid.

ACCESSORIES / OPTIONS

- Noise reduction/acoustic options.
- Water resistant treatments.

INSTALLATION

- Reference local codes and regulations before using metal and wood in healthcare facilities; may not be appropriate for all applications and can be costly.
- Suspension systems and tiles to be installed in accordance with manufacturer's recommendations and local regulations.
- All ceiling tiles shall be installed in accordance with locations shown in the UFC-4-510-01 Appendix B.
- Installation and finishing of gypsum board shall be in accordance with recommendations and industry standards as published by the Gypsum Association.
- Gypsum Board finishing to be Level 5.

COMPARABLE PRODUCTS

- USG
- Armstrong

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WOOD

WCT
Armstrong – Woodworks Vector Panels

WCP
Armstrong – Woodworks Linear Veneer Planks

WCT-1 / WCP-1
Woodworks,
Natural Variations
Dark Cherry (NDC)

WCT-2 / WCP-2
Woodworks,
Natural Variations
Natural Beech (NBE)

WCT-3 / WCP-3
Woodworks,
Natural Variations
Walnut (NWN)

GYP
Gypsum Board Ceiling

MCT
Metal Ceiling Tile
Armstrong – Metalworks Tegular Panels

ACC
Acoustical Ceiling Cloud
Armstrong – Formations Cloud Systems

4.3
Healing Ceilings

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Luminous ceiling images that fit into standard ceiling suspension grids. Calibrated LED lighting that offers depth perception and creates a biophilic illusion. Back illumination is distributed uniformly over the visible surface image without hot spots or shadows. Images installed and removable without an access door.
- LED to be 6500K and dimmable.
- UL and CE labeled.
- 10 year warranty.

ACCESSORIES / OPTIONS

- Multitude of image selections available.
- Lens options.

INSTALLATION

- Reference local codes and regulations before using in healthcare facilities; may not be appropriate for all applications and can be costly.
- Suspension systems and tiles to be installed in accordance with manufacturer's recommendations and local regulations.
- Ensure adequate room from ceiling grid to structure or obstruction above.
- Install per manufacturers recommendations.

COMPARABLE PRODUCTS

- Sky Factory

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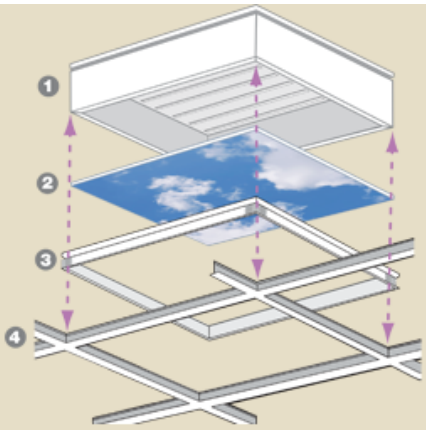
Sky Factory
Luminous SkyCeiling

- Rectilinear
- Circular
- Elliptical
- Revelation
- Personal Revelation

How Rectilinear Luminous SkyCeilings Work



1. Lighting Systems
Standard EcoPlus LED lighting system or low profile EcoSlim LED lighting systems provide daylight quality light. EcoPlus requires 7.25" (18.5cm) of vertical clearance, and EcoSlim requires 5.13" (13cm).

Lighting Options

2. Image Tiles
Sky Factory Luminous SkyTiles™ are acrylic, high-resolution, photographic reproductions on acrylic panels that convey the color, scale and perspective of actual sky.

Image Library

3. Architectural Elevators
Patented Sky Factory Classic SkyTile Elevators™ recess SkyTiles above the grid, creating a robust structural appearance, like a real skylight.

4. Ceiling Grid
Client-provided standard or custom ceiling grid.

5. Miscellaneous Finishes

5.1 Millwork

5.1.1 Plastic Laminate

5.1.2 Solid Surface

5.1.3 Quartz Agglomerate

5.2 Solid Surface Systems

5.3 Window Treatments

5.4 Interior Doors

5.4.1 Interior Stain

5.4.2 Door Protection

5.5 Toilet Partitions

2019

5.1
Millwork

2019

5.1 MILLWORK

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- All millwork shall follow the AWI's (American Wood Institute) published standards (AWS), latest edition, for grades of architectural woodwork indicated for construction, finishes, installation, and other requirements.
- All millwork and casework design shall follow current ABA (Architectural Barriers Act) standards. Millwork is typically used for custom reception desks at the main entry or lobby. Nurse stations or secondary reception desks should utilize IMMSS contract items as a preferred source.
- Casework is a pre-fabricated unit in standard sizes and configurations for use in more utilitarian spaces. Casework to follow the Military Health System (MHS) templates for type and placement.
- High Pressure Laminate is manufactured by pressing melamine resin impregnated pattern paper over layers of phenolic resin impregnated kraft paper. The back is then sanded to maintain a uniform thickness and to facilitate bonding. This material is the main material used for the facades of both casework and millwork.
- FRL (fiber reinforced laminate) laminates can be utilized on the facades of millwork where impact resistance is required. Metal trim or other durable materials should be used at corners and edges where impact may occur.
- Hardware: Healthcare grade, stainless steel and meets AWS guidelines.
- Support: Metal support placement to meet weight limitations and follow AWS guidelines.
- Integrated LED task lighting.
- Storage components in a variety of configurations, adjustable shelving. Overhead storage should be covered by a soffit or include a sloped top.
- Products available in a full range of materials, colors and patterns.
- The use of High Gloss finish laminate is strongly discouraged.
- Solid color or wood laminates to be used for base and vertical surfaces; solid surface or quartz agglomerate material to be used for all countertops and horizontal surfaces.
- Laminate should be bonded to core material per AWS using adhesives and techniques as recommended.

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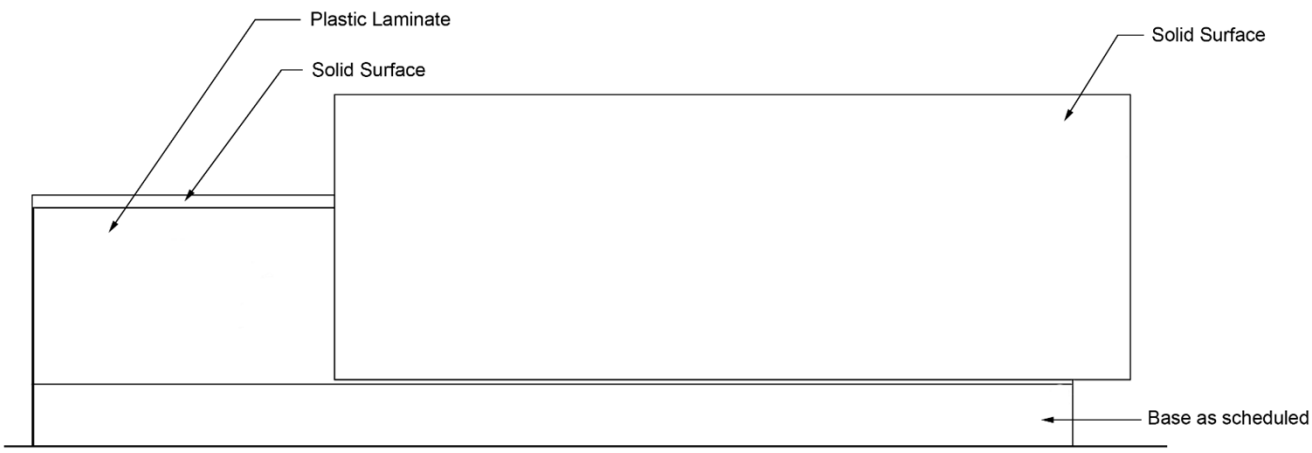
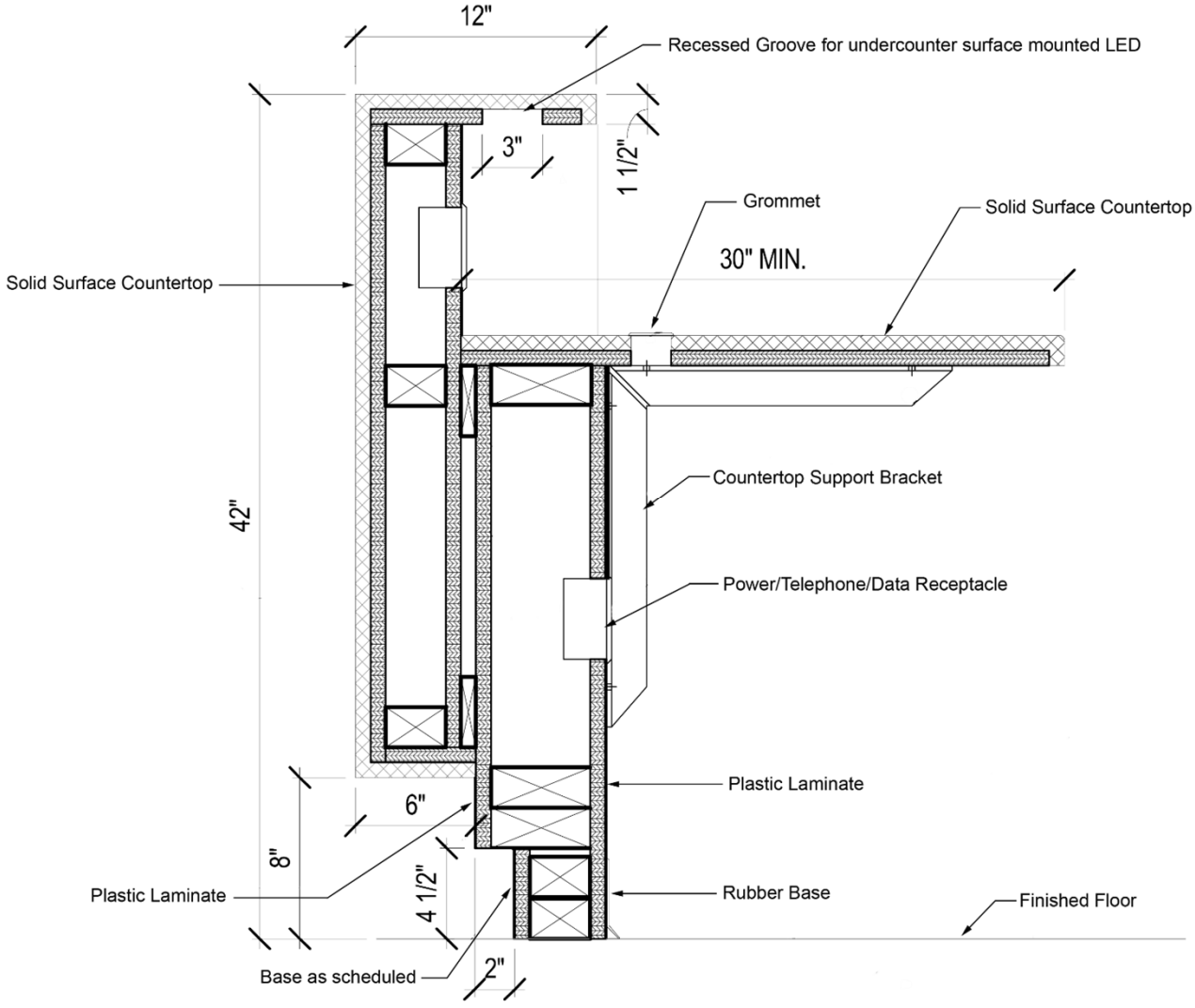
MILLWORK ELEVATION



MILLWORK SECTION



SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- High Pressure Laminate is manufactured by pressing melamine resin impregnated pattern paper over layers of phenolic resin impregnated kraft paper. The back is then sanded to maintain a uniform thickness and to facilitate bonding.
- Laminate is suitable for use on casework and millwork, and for architectural application on columns, wainscoting, valances, cornices, interior doors and divider systems.
- Laminates shown are available in fire-rated, High-Wear and Chem-surf performance surfaces.

DIMENSIONS

- Sheet sizes: 36”W, 48”W, 60”W and 96”L, 120”L and 144”L; thickness is 0.030”- 0.050” nominal.

ACCESSORIES / OPTIONS

- Available in a full range of solid colors and patterns.
- High gloss, textured gloss, static dissipative and chemically resistant finishes.
- Laminate s for chalkboard and markerboard surfaces also available.

GREENGUARD Indoor Air Quality Certified

Denotes that product is GreenGuard certified.

INSTALLATION

- The use of High Gloss finish laminate is strongly discouraged.
- Solid color laminates to be used for base and vertical surfaces and some horizontal applications.
- Laminate should be bonded to core material such as plywood, particleboard, flake board or metal using adhesives and techniques as recommended by reliable adhesive manufacturers.
- Fire rated laminates cannot be post-formed.

COMPARABLE PRODUCTS

- Formica
- Nevamar

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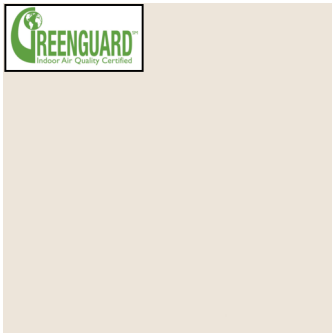
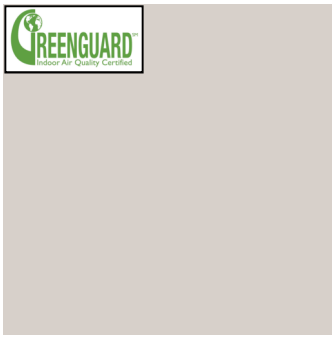
WARM NEUTRAL



PL-1
Wilsonart, #D439-60
Wallaby
Bases and vertical surfaces

PL-2
Wilsonart, #4990-60
Flax Linen
Bases and vertical surfaces

COOL NEUTRAL



PL-3
Wilsonart, #1500-60
Grey
Bases and vertical surfaces

PL-4
Wilsonart, #4943-60
Classic Linen
Bases and vertical surfaces

WOOD LOOK

PL-5
Wilsonart, #7054-60
Wild Cherry
Bases and vertical surfaces

PL-6
Wilsonart, #10776-60
Kensington Maple
Bases and vertical surfaces

PL-7
Wilsonart, #7960-60
Studio Teak
Bases and vertical surfaces

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Solid surfaces are 100% acrylic, homogeneous, neither coated nor laminated and can be used to form a smooth, inconspicuous seam.
- Solid surface material can be easily repaired, and can be buffed smooth to remove burns and scratches. Solid surface resists chipping.
- Solid surface material is fungal/bacterial resistant and is nonporous (inhibiting the growth of dangerous bacteria and pathogens), and is hygienic.
- Solid surface material can be aggressively cleaned allowing the facility to maintain sterile operating rooms and healthy patient care facilities.
- Many solid surface materials are “eco-friendly”, and contain recycled content which supports sustainable design efforts and can contribute to LEED credit.
- Class A rating in accordance with ASTM E-84.

DIMENSIONS

- Thicknesses range from ½” – ¾” (recommended for horizontal surfaces) and ¼” thickness for vertical surfaces, such as backsplashes and wall cladding for surgical suites and shower enclosures.

ACCESSORIES / OPTIONS

- EPA approved copper infused products are also available and help in infection prevention.
- Some manufacturers offer 60” wide sheets to minimize seaming and reduce labor costs.
- Includes under mount or integral sink bowls and shower/bath accessories.

INSTALLATION

- Solid surface material is to be used as a horizontal surface at all countertop locations. Other horizontal surfaces include window sills.
- Vertical surfaces include wall panels (to include surgical suites and shower enclosures), toilet partitions, headboards, and wall protection.

COMPARABLE PRODUCTS

- Corian
- Avonite
- Formica
- LG
- Wilsonart

Product can contribute toward LEED.

Denotes that product contains recycled content

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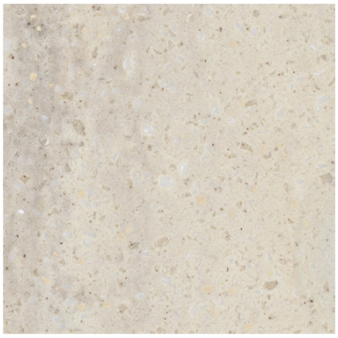
Miscellaneous Finishes

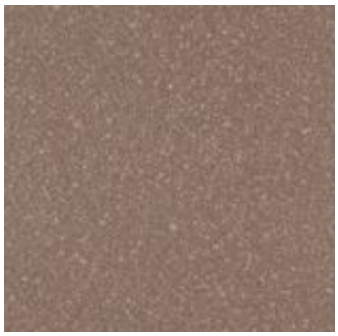
WARM NEUTRAL

SS-1
Avonite
“Recycled Content Collection”
100% Acrylic
#4330 Honey Crunch



SS-2
Corian
100% Acrylic
Clam Shell

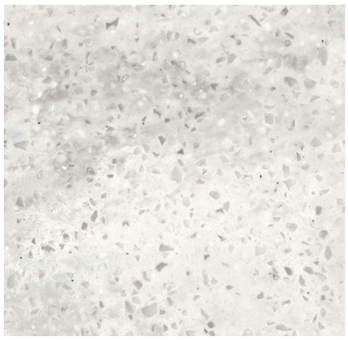
SS-3
Corian
100% Acrylic
Linen



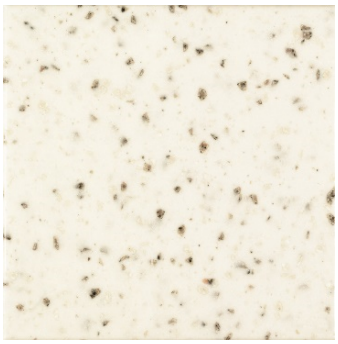
SS-4
Wilsonart – EOS
Copper Infused Solid Surface
Beige

COOL NEUTRAL

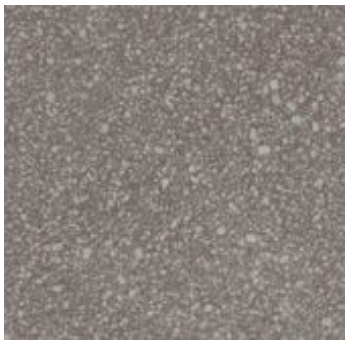
SS-5
Avonite
100% Acrylic
#7710 Gulf Coast



SS-6
Corian
100% Acrylic
Arrowroot



SS-7
Avonite
100% Acrylic
#7713 Algodon



SS-8
Wilsonart – EOS
Copper Infused Solid Surface
Grey

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Quartz with polymers, resin and pigment are extremely durable and costly. Their application should be limited to the main lobby / reception area of a facility.
- Class A in accordance with ASTM E-84.
- Quartz agglomerate resists chipping.
- Quartz agglomerate material is fungal/bacterial resistant and is nonporous (inhibiting the growth of dangerous bacteria and pathogens), and is hygienic.
- Quartz Agglomerate materials are “eco-friendly”, NSF 51 certified, Greenguard Gold.

DIMENSIONS

- Thicknesses range from 1/4” to 1”(3/4” is recommended for horizontal surfaces).

ACCESSORIES / OPTIONS

- Variety of edge profiles are available.
- Use with solid surface under mount or integral sink bowls.

COMPARABLE PRODUCTS

- Corian
- Cambria
- Wilsonart

Denotes that product is GreenGuard certified.

Product can contribute toward LEED.

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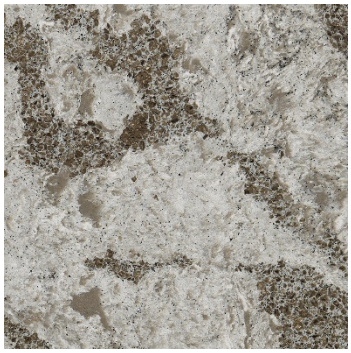
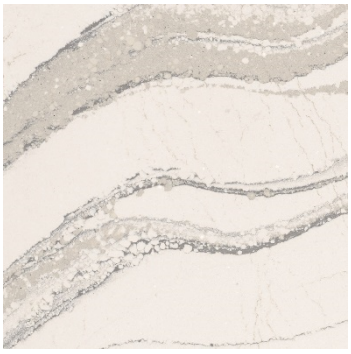
WARM NEUTRAL

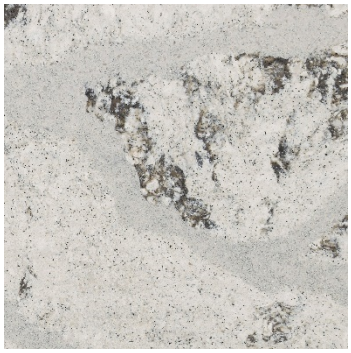


QZP-1
Cambria –
#0355 Galloway

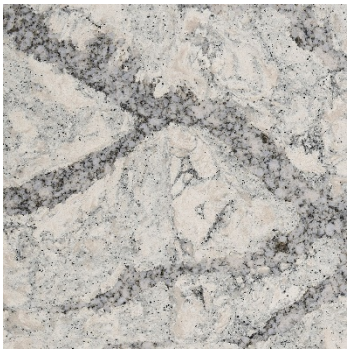


QZP-2
Cambria –
#0126 Brittanicca

COOL NEUTRAL



QZP-3
Cambria –
#0356 Summerhill



QZP-4
Cambria –
#0381 Seagrove

5.2
Solid Surface Systems

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Solid surfaces are 100% Acrylic, homogeneous, neither coated nor laminated and can be used to form a smooth, inconspicuous seam. Solid surface material can be easily repaired, and can be buffed smooth to remove burns and scratches. Solid surface resists chipping. Solid surface material is fungal/bacterial resistant and is nonporous (inhibiting the growth of dangerous bacteria and pathogens), and is hygienic. Solid surface material can be aggressively cleaned allowing the facility to maintain sterile operating rooms and healthy patient care facilities.
- Many solid surface materials are “eco-friendly”, and contain recycled content which supports sustainable design efforts and can contribute to LEED credit.
- Class A rating in accordance with ASTM E-84.

OPTIONS

- Products:
  - Pre-fabricated vanities with integral sinks in predetermined sizes.
  - Pre-fabricated shower walls and basins in custom and predetermined sizes. Integrated drain (French), non-slip. Accessories available.
  - Wall cladding, 1/4” thick material, seamless for use in OR’s. Wall sheet sizes are 36”, 48”, 60” and 96” H.

COMPARABLE PRODUCTS

- Corian
- Avonite
- Formica
- Wilsonart

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

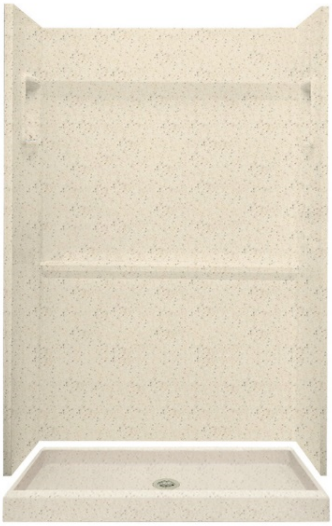
COMBINATION NEUTRAL

SSM-1
Corian – 100% Acrylic
Cameo White
To be used as integral sinks.

Corian:
Integral sinks in predetermined sizes. Off-set drain location preferred.

WARM NEUTRAL

SSM-2
Corian – 100% Acrylic
Linen – Class A
To be used as shower pan/walls



Corian:
Pre-fabricated Shower Walls and Basins with integrated drain.

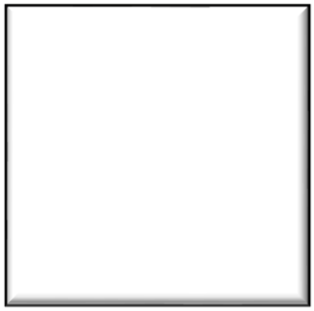
COOL NEUTRAL

SSM-3
Corian – 100% Acrylic
Everest – Class B
To be used as shower pan/walls.

Avonite:
Integral sinks in predetermined sizes. Off-set drain location preferred.

Avonite:
Pre-fabricated Shower Walls and Basins with integrated drain.

COMBINATION NEUTRAL



SSM-4
Avonite
#8016 White
To be used as integral sinks.

WARM NEUTRAL

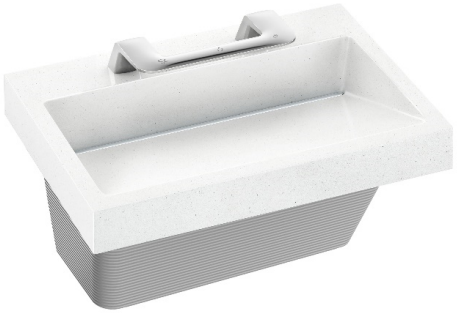
SSM-5
Avonite
#9036 Sandstorm
To be used as shower pan/walls

COOL NEUTRAL

SSM-6
Avonite
#7810 Malt
To be used as shower pan/walls.

COMBINATION NEUTRAL

SSM-7
Bradley – Evero Natural Quartz
Antarctica



Bradley – Verge Wash Basins
Pre-fabricated vanity system

5.3
Window Treatments

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- The Ecoveil shade cloth is a technologically advanced woven shade cloth in non-directional basket weave patterns. The weave provides a uniform scrim effect at the window wall with an appropriate level of sun control. Shades are to be the same (neutral) color as the window trim.
- The shade cloth is 100% recyclable, Fire Retardant, PVC–free and is fully reclaimable, recyclable, and designed for a closed–loop system.

DIMENSIONS

- Shades are special ordered according to window size.

ACCESSORIES / OPTIONS

- Available in several different styles, patterns, and densities including a 2 x 2 basket weave; available in a 3% and 5% openness, a 1 x 1 dense weave in a 1% openness, and a dense jacquard weave in a 1-2% openness.
- Room darkening shades and privacy shades available.
- Chain driven manually operated system for interior shading.
- Electro Shade electronically operated.
- Darker mesh color aids in better inside to outside viewing.

PVC FREE Denotes that product is PVC free.

Denotes that product contains recycled content.

INSTALLATION

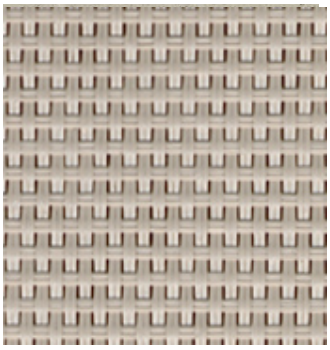
- Includes mounting spline with “snap” locking design for easy shade band removal and reattachment and fascia to conceal the hardware system.
- Valances should be installed at the top of the shade to hide headrail when space permits.
- Shades can be used in Patient Rooms, Dining areas, administrative areas, Command Suites, Clinic spaces and most other spaces in the facility.

COMPARABLE PRODUCTS

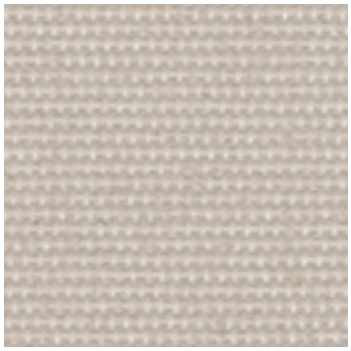
- Not applicable.

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

WARM NEUTRAL

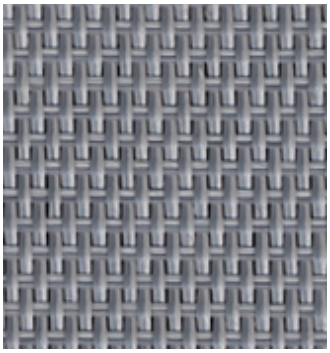


WT-1
Mechosystems,
Mechoshade – Ecoveil
1350 Series - 5% open
#1352 Beige

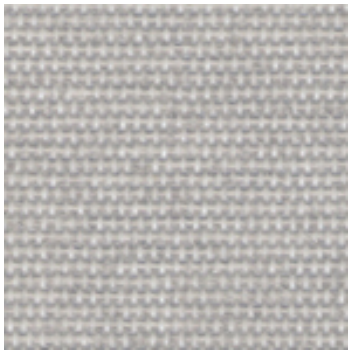


WT-2
Mechosystems,
Mechoshade – 0100
Equinox Blackout
#0104 Sandstone

COOL NEUTRAL



WT-3
Mechosystems,
Mechoshade – Ecoveil
1350 Series - 5% open
#1363 Grey



WT-4
Mechosystems,
Mechoshade – 0100
Equinox Blackout
#0105 Silver

5.4
Interior Doors

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Solid Core Wood Doors. Reference ANSI/WDMA I.S.1A-13, 6A-13 for wood door standards. Two grades available, Grade AA premium or Grade A custom.
- FSC Certified.
- Variety of wood materials, cuts and matching available. Rift cut is preferred in Red or White Oak. Use book match or center balance match for Premium AA and book match or running match for Custom A.
- PETG covered doors: Extruded high impact material. Reference WDMA I.S.1A, Extra Heavy Duty Door. Chemical and stain resistant. Abrasion resistant. Resistant to fungi and bacterial. Integrated plastic or stainless steel edge guard. Flush panel. Variety of solid and wood grain finishes.
- Easily replaceable parts in the field.
- Cradle to Cradle Certified.

ACCESSORIES / OPTIONS

- Specialty cores are available.

INSTALLATION

- Follow manufacturer's directions for surface preparation and stain application on solid wood doors.
- Follow manufacturer's installation instructions for PETG covered doors.

COMPARABLE PRODUCTS

- VT Industries, Eggers, Marshfield-Algoma – Solid Core Wood Doors.
- Construction Specialties – PETG covered Doors.

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the "benchmark for quality" regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

CS Group
Acrovyn Doors
Finish Options: Solid Wood, Simulated wood, Solid Acrovyn

WOOD LOOK

VWP-3
Acrovyn Simulated wood product,
#373 Amber Cherry, Chameleon
PVC product

VWP-4
Acrovyn Simulated wood product,
#372 Classic Maple, Chameleon
PVC product

VWP-5
Acrovyn Simulated wood product,
#1352 Fossil Teak, Chameleon
PVC product

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Interior oil wood finish stain that contains no lead and is comprised of linseed oil resin and transparent dyes; for use on bare wood surfaces.

DIMENSIONS

- Not applicable.

ACCESSORIES / OPTIONS

- Variety of colors available; tinting available to match job.
- Follow manufacturer's directions for surface preparation and application.

INSTALLATION

- Appropriate application for doors, door trim and window trim in high-end locations such as Command Suites and Main Lobbies.

COMPARABLE PRODUCTS

- ICI
- Sherwin Williams
- Benjamin Moore

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the "benchmark for quality" regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

WS-1
Sherwin Williams
#SW3109-B
Bright Cherry Stain

WS-2
Sherwin Williams
#SW3121-B
Pearwood Stain

WS-3
Sherwin Williams
#SW3134-B
Weathered Teak Stain

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Door Frame Protection. PETG extruded high impact material.
- Variety of heights, 32” to 114”. 0.040” thick.
- Flush frame or wall return configuration.
- One piece (custom to frame) or two piece option (formed for 80% of metal door frames).
- Cradle to Cradle Certified.

ACCESSORIES / OPTIONS

- Kick / Push Plates.
- PETG Extruded high impact material option. 0.040” to 0.060” thick. Chemical and stain resistant. Available in solid or wood grain finishes. Cradle to Cradle Certified.
- Stainless Steel. 16 gauge type 304 alloy, #4 Satin Finish. Inherently chemical and stain resistant. Abrasion and impact resistant.

Product can contribute toward LEED.

INSTALLATION

- Adhesive or mechanical fasteners dependent on application and size. Install per manufacturer’s recommendations.

COMPARABLE PRODUCTS

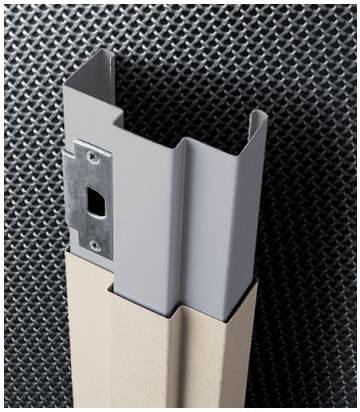
- Construction Specialties
- IPC
- Pawling

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the “benchmark for quality” regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

Miscellaneous Finishes

CS Group
Acrovyn Door Edge Protection

CS Group
Acrovyn Door Kick Plate



CS Group
Acrovyn Door Frame Protection

WARM NEUTRAL

VWP-1
Acrovyn 4000
PVC/PBT/BPA-free product,
#858 Pumice
Suede Texture

COOL NEUTRAL

VWP-2
Acrovyn 4000
PVC/PBT/BPA-free product,
#314 Ozark,
Suede Texture

COMBINATION NEUTRAL

DP-1
Acrovyn - Stainless Steel

WOOD LOOK

VWP-3
Acrovyn Simulated wood product,
#373 Amber Cherry, Chameleon
PVC product

VWP-4
Acrovyn Simulated wood product,
#372 Classic Maple, Chameleon
PVC product

VWP-5
Acrovyn Simulated wood product,
#1352 Fossil Teak, Chameleon
PVC product

5.5
Toilet Partitions

2019

SPECIFICATION GUIDELINES

DESCRIPTION / TYPE CONSTRUCTION

- Ceiling mounted toilet partitions offer complete floor access for ease in maintenance and infection prevention. Overhead mount does require pre-installed structural support and is not recommended for ceilings over 8' high. There are a variety of materials available depending on cost. Two recommended options are:
- HDPE Ceiling Hung Toilet Partitions. High density polyethylene (HDPE) resin with pigments. This material is impermeable to moisture, does not support the growth of mildew or mold, never rusts or delaminates and is easy to maintain. This product is also abrasion and graffiti resistant. Some manufacturers offer shiplap edge design for additional privacy. Many colors and textures are available. The product is 100% post consumer recycled and is Greenguard Gold Certified. This product typically offers a minimum 20 year warranty.
- Textured Stainless Steel Ceiling Hung Toilet Partitions. Two sheet metal faces insulated with a moisture resistant honeycomb core. Manufactured from 300 Series stainless steel with #4 satin brushed finish. Panels are 1" thick, 22 gauge stainless steel with welded corners. Surface textures are available. While costly, Stainless steel offers graffiti resistant material along with ease of maintenance and is mold, mildew and fungal free. Greenguard Certified. Warranty for this product is typically 15 years.
- Textures and colors options.
- ABA (Architectural Barriers Act) compliant.
- Class A in accordance with ASTM E-84.

INSTALLATION

- Install per manufacturer's recommendations.

COMPARABLE PRODUCTS

- Bradley
- Scranton

Printed representations of material /finish colors may vary from actual samples. Order samples prior to selection and installation. Products shown are representational of the "benchmark for quality" regarding product performance, product testing, product characteristics and color/pattern/texture of product required on MEDCOM projects.

Bradley –
Stainless Steel Finish

Scranton – Hiny Hiders
HDPE Ceiling Hung Partitions

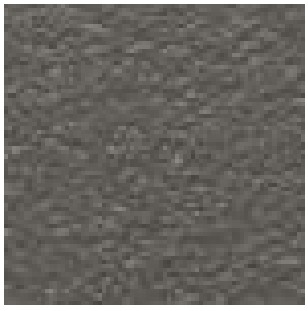
COMBINATION NEUTRAL

TP-1
Bradley –
Series 600 Ceiling-Hung Restroom Partitions
Color: Stainless Steel

WARM NEUTRAL

TP-2
Scranton – Hiny Hiders
HDPE Partition
Color: Sandcastle, Orange Peel

COOL NEUTRAL



TP-3
Scranton – Hiny Hiders
HDPE Partition
Color: Shale, Orange Peel

6.
Lighting

2019

Lighting

Proper lighting creates a comfortable, nurturing and low-stress treatment and rehabilitation space, contributing to a patient's positive mental attitude in an atmosphere conducive to convalescence. Improvements in lighting and lighting levels also improves worker productivity. Establishing the proper levels of lighting in a facility is to be in accordance with the UFC-4-510-01.

Three important quality issues to consider are:

Glare:

Perhaps one of the most important factors when choosing lighting is glare. Glare is the sensation caused by lighting that is too bright, causing visual discomfort and reducing productivity in the space by making wayfinding difficult.

Uniformity:

The uniformity of light fixtures is a quality issue that addresses how evenly the light spreads over a task area. Although a room's average illuminance may be appropriate, two factors may interfere with the uniformity; 1) spacing criteria, and 2) unbalanced light distribution.

Color Rendition:

The ability to see colors properly is another aspect of lighting quality. Light sources vary in their ability to accurately reflect true colors and establish contrast. Consistency in light color from room to room is critical. Color Rendering (CRI) is the ability of a light source to represent colors in objects and is a relative measurement which rates light sources on a scale of 0-100. The higher the CRI, the more true colors appear. Good CRI – 70-80, Excellent CRI – 80+.

Tunable White Light in Healthcare –

- Tunable White light is a system of cool and warm white light emitting diodes (LED's) controlled to allow light color and intensity change from one range to another.

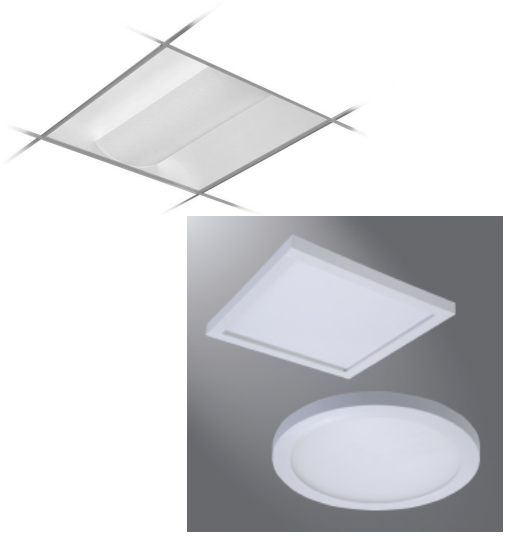
- The circadian rhythm follows a 24 hour period from light to dark. Blue wavelengths occur in the morning, red wavelengths in the afternoon. Blue light at night has been linked to health risks. A Feb 2015 study by Lighting Research Center shows the result of red light on nighttime shift workers. The study showed that red light did not suppress melatonin and interrupt the circadian rhythm but caused increased alertness and performance.

- White Tunable light has a color range of 6500 Kelvin (K) (cool/blue) to 2200 K (warm/amber). Most control systems today are complex and not specific to the 24 hour clock. Currently unknown is what dosage of daylight is required to make a significant contribution to the positive effects on circadian rhythm.

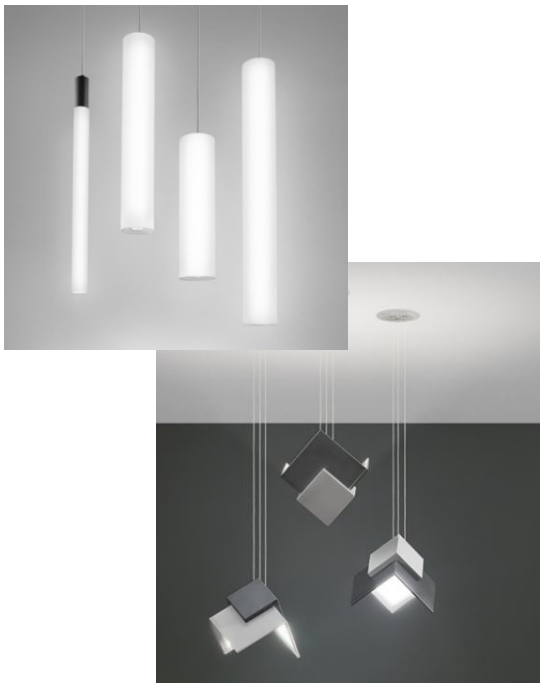
- Currently electric light vs daylight is not equal in terms of foot candles. If designers specify color temperatures to match daylight it is unknown whether the exposure to electric light is the same as to natural daylight. In addition there are only a few manufacturers that produce both LED luminaires and controls as a set, with limited selection and those that are not geared to the healthcare market.

- Until further research is taken, lighting layers in designing a patient space are the best steps. Provide as much controllable day light and general lighting and separately controlled focus lighting in addition to photocell activated night lights both outside and inside the patient bathroom. Light overflow during sleep hours should be controlled to minimize exposure that would alter the circadian rhythm. Lights used for night time monitoring may include red-amber light sources that appear to positively affect melatonin production.

Recessed and Decorative



Recessed Lighting: Indirect / Direct LED and Fluorescent Lighting. Available in 2x2 and 2x4. Downlights are available in squares and traditional circles. Recommended to use indirect lighting along patient transport paths.



Decorative Pendant Lighting: Produces light that is soft, warm and diffused in a variety of styles, sizes and shapes. These decorative fixtures are available with LED or Fluorescent lamp. Use at focus points at reception counters, nurse stations and entry ways.

Patient Centric

Patient Bed LED Lighting: Architectural in style: provides balanced brightness. Sizes and Shapes vary along with accent decorative panels. Available in 2x2 and 2x4. Can include: reading / ambient, ambient/exam, and reading/ambient /exam options.

Decorative LED Wall Sconce: Produces light that is soft, warm and diffused in a variety of styles. These decorative fixtures are also available in a Compact Fluorescent light. May be used throughout the healthcare facility to provide accent. ABA (Architectural Barriers Act) compliant.

LED Night Light: Produces light that is soft, warm and diffused in a variety of styles. Operable by photocell or touch switch. Amber filters available for patient rooms and blue filters for patient restrooms. ABA (Architectural Barriers Act) compliant.

7.
Acoustics

2019

Noise has consistently been the worst rated factor on HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems) scores since its inception in 2007. The questions concerning noise primarily focus on the noise levels in the patient room at night. Noise does have a significant role in patient sleep disruption. Noise reduces quantity and quality of sleep which in turn can weaken the immune system. Noise can also heighten anxiety during daylight hours causing a spike in pain medications, elevated blood pressure and quickened heart rate.

Noise is also a factor with speech privacy. In 1996 the Health Insurance Portability and Accountability Act (HIPAA) set regulation that requires health facilities to take “reasonable safeguards” to ensure speech privacy with patients and between employees.

Noise control is achieved through the ABC’s: Absorbing, Blocking and Covering. In a healthcare facility the need for materials to be cleanable also factors into what can be used and where.

Absorption: Acoustical ceiling panels used throughout the facility are rated by NRC (Noise Reduction Coefficient) which has a 0-1 rating and measures the ceiling absorption of sound. AC (Articulation Class) measures how ceiling tiles absorb the noise reflected off the ceiling into neighboring spaces. CAC (Ceiling Articulation Class) is also a measurement that applies a value to airborne sound transmission between closed offices. See recommended ceiling tiles under Ceiling Product Section.

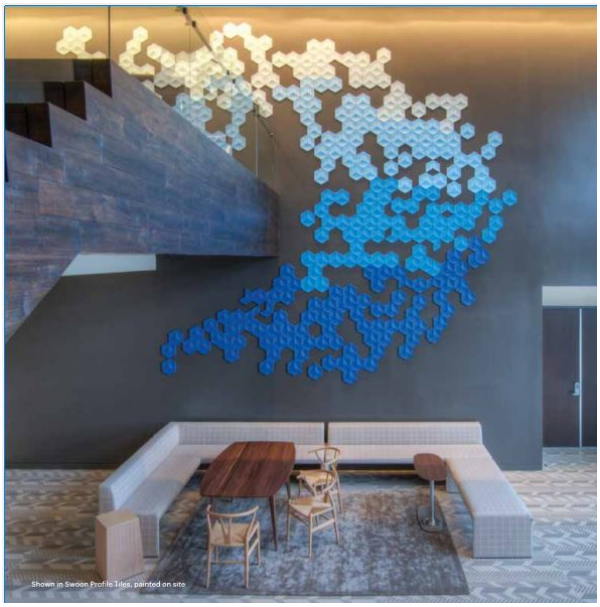
Wall Panels can also be used to absorb and reflect sound. They are most effective when applied to large vertical surfaces and reflective locations.

Flooring also plays a role but is limited to material type and location for maintenance and infection prevention.

Blocking: This factor primarily deals with the layout / function of the space. The goal is to keep noise producing equipment separated from the patient room area. Also Deck to Deck walls can help to ensure that all penetrations are properly treated to alleviate sound travel.

Covering: The use of sound masking utilizing a series of loudspeakers to distribute a comfortable sound that aids in speech privacy. Used in masking zones and areas of the facility where speech privacy is an issue can be extremely effective.

Wall Panels



- Wall Panels / Acoustical shapes can add accent to areas that require sound control. Shapes, sizes, and materials vary.
- 48” x 96” Panels
- Available in felt, ready to paint and unfinished wood. Use material appropriate to the space.
- Variety of patterns and shapes.
- Class A

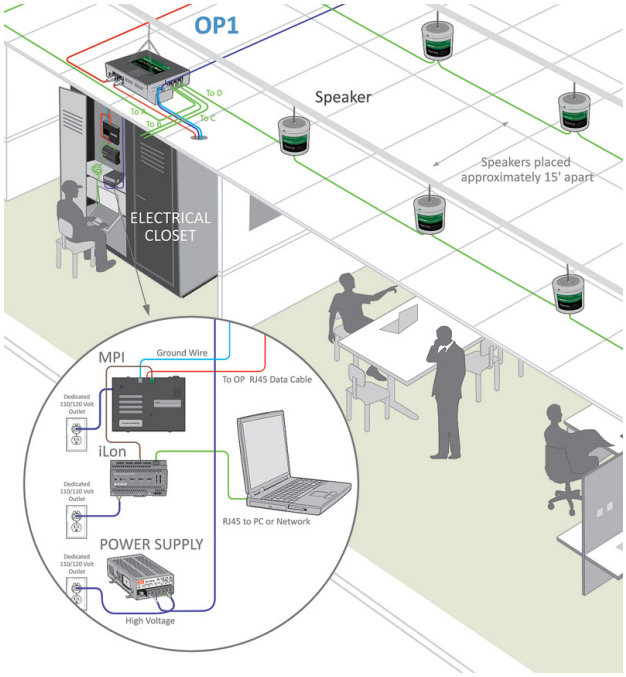
Ceiling Panels

- Ceiling Panels, fit into existing grid structure. 24” x 24”.
- Variety of colors.
- Variety of shapes.
- Class A felt.

Acoustical Artwork

- Image printed on Type A fire rated polyester jersey fabric.
- Core is 1" "ReCore", 6.0 lbs./ft, NRC 0.75. "ReCore" is impact resistant and tackable 100% polyester insulation with 60% post consumer recycled content, VOC free, anti-microbial and non-hygroscopic.
- Security mount.
- Sizes may vary.

Sound Masking



- The purpose of sound masking is to achieve both Speech Privacy and Comfort. Sound Masking introduces a spectrum of noise which gently raises the ambient background sound in order to cover, or mask, speech. Speech Privacy is achieved by raising the noise level to a point that makes conversations unintelligible. Comfort is achieved through the quality and range of the sound produced.
- Networked solutions range from 20,000 sq. ft to multiple facilities and single unit or non-networked range from single, desktop units to a couple hundred square feet.

8.

Interior Signage and Wayfinding

8.1 Information

8.2 Design Philosophy

8.3 Sign Types

8.3.1 Room Identification

8.3.2 Restroom / Stairs

8.3.3 Wall-mounted Flag-Style

8.3.4 Overhead Departmental

8.3.5 Miscellaneous Signage

8.4 Specialty Sign Types

8.4.1 Patient Information

8.4.2 Digital Directories

8.4.3 Dimensional Lettering

8.5 Wayfinding

8.5.1 Main Directory

8.5.2 Wall Directional

8.5.3 Overhead Directional

8.5.4 Freestanding Pylons

8.6 Recognition

2019

8.

Interior Signage and Wayfinding

8.7 Installation

8.8 Interior Signage Drawings

2019

8.1 Information

2019

Section 8 gives guiding principles and provides examples for the level of quality desired for signage and wayfinding in a healthcare facility.

The design objectives of this Section are:

- To provide guidance and recommendations consistent with the requirements of the most current ABA (Architectural Barriers Act).
- To establish guidelines for simple and cohesive signage and wayfinding systems throughout the facility.
- To create a comprehensive and consistent signage system using recommended sign types and finishes.
- To ensure flexibility for signage modifications, e.g. personnel or department name changes to ensure longevity of sign systems in the facility.
- To incorporate artwork into the signage package to create a comprehensive, aesthetically pleasing wayfinding system.
- To introduce evidence-based design principles with respect to signage and wayfinding.
- Ensure signage and wayfinding adhere to the World Class Check List strategies.

The standards discussed in this Section, as well as the philosophy, recommendations, and selections are a result of research and the implementation of existing criteria. All recommendations support a consistent and coordinated design approach as developed in Volumes 1 and 3.

8.2
Design Philosophy

2019

The design philosophy is to establish standardization of signage and wayfinding systems, which support evidence-based design principles and promote the facility's brand and public image. When entering a facility for the first time, the visitor is dependent on signage and wayfinding to acquire a sense of direction and sense of place. A well-designed signage and wayfinding system not only enhances the healthcare environment and experience for patients, visitors and staff but it improves employee morale and reduces patient anxiety.

Components of Wayfinding

Wayfinding involves multiple methods that combined, aid in navigation of a space. These methods need to be used in collaboration with the structural interior design to create a wayfinding system that provides building orientation, navigational cues and destination boundaries. It should be organized in a Macro to Micro format that begins with unique identifiers within architectural elements and carries into the signage system.

Some of the architectural elements used in wayfinding include, but are not limited to, identification through graphics, color, patterns and textures. The goal is to give visitors the confidence to navigate their way around the facility without having to ask for directions.

The image below shows an example of a macro to micro wayfinding process. The first identifier to a user is the color map which directly links each color to an area of the building. This color is paired with a graphic image to give each area it's own identity. Finally, the signage displays the same color as the color in that specific building and incorporates a graphic icon that ties back to the photo image. These tools, used together, create a visual language for wayfinding. With this simple process, a user just has to find the designated image either on a map or a directory and once he/she arrives in that area, the signage will continue to guide them to their final destination.

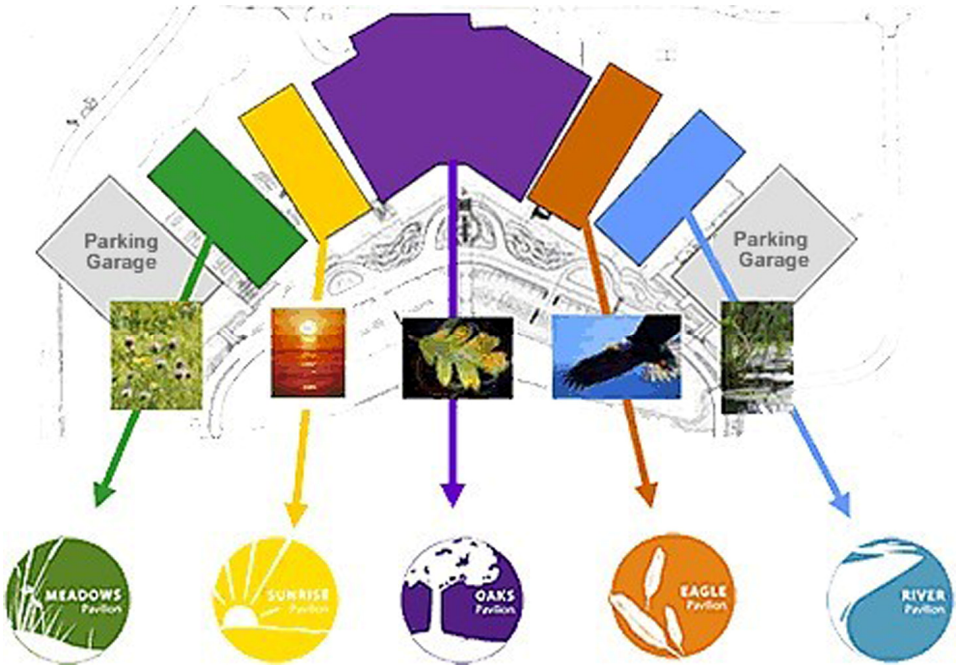


Image: Ft Belvoir Community Hospital, Ft. Belvoir, VA (HDR)

The Role of Signage in Wayfinding

A wayfinding solution should include a collection of sign types that support the inherent wayfinding ques incorporated into the architecture. It can carry the color, shape and format of the overall wayfinding theme and apply it in a smaller scale. The signage sign system needs to inherit the macro to micro characteristics of the Wayfinding philosophy. Macro signs include Directories (both static and digital), Directional and Departmental Identification sign types. Micro Sign types include Room Identification, Exam Room Identification and Facility Door Number Tags. Incorporating these signs into the wayfinding solution can help accomplish the following:

- Reduce stress by creating an ease of navigation.
- Serves as landmarks.
- Reinforces paths.
- Provides directional information at nodes.
- Defines district edges.
- Orient the users to their location.
- Allow a connection between the users and the facility.
- Compliments the design and the facility image.

The objective of creating a wayfinding and signage standard is to create a simple and cohesive design with a consistent approach to the physical characteristics of the sign and its integration within the facility.

Image: Ft Belvoir Community Hospital, Ft. Belvoir, VA (HDR)

Common Problems in Wayfinding

Lack of uniformity in signage, along with non-compliance to ABA (Architectural Barriers Act), seems to be the consistent problem plaguing U.S. Army facilities. Common problems in wayfinding include:

- Insufficient indication of the main entry into the compound.
- Inadequacy of orientation information at the entry to the compound.
- No identification of the hospital building's main entrance(s).
- Lack of orientation information at entry to the building(s).
- Limited directional information.
- Too much information on a sign.
- Too many signs which cause confusion.
- Limited reinforcement of directional information.
- Providing the incorrect sign for task.
- Lack of consistency in application.
- Inconsistent appearance.
- Inconsistent placement.
- Non-conformance with regulations and requirements.
- Inability to update signs with new information.

A lack of an effective wayfinding system can cost the facility in lost time and money. According to the 290 Sign System website (www.290signs.com) " Investing in a wayfinding program is vital; simply put, when people are lost, money is lost", Paul Arthur and Romedi Passini also state in their 1992 book, Wayfinding: People, Signs and Architecture, "*In a hospital facility of some 800 beds, no less than 8,000 hours of professional time are lost in redirecting patients and visitors to their destination, ."*

Common Solutions for Wayfinding

Applying common solutions to the problems addressed will not only ease wayfinding within the individual hospitals, but will also standardize elements that will ultimately help users who visit multiple hospitals.

Solutions that will ease the wayfinding problems:

- *The main entry of the building must be clearly identified.* The preferred solution to marking the exterior entry is architectural.
- *Orientation & directional information needs to be provided immediately inside each main entry.* This will be the first in a series of branching directional indicators. Kiosks and other freestanding informational displays are generally the most effective.
- *Clear identification of pathways and intersections needs to be present.* Directional signage is required - at a minimum - at all major intersections along a path. Other visual cues include highlighted landmarks and the use of material finishes to define districts.
- *Destinations must be clearly and consistently marked.* This solution incorporates standardized signage placed throughout the facility. Standardization is driven by regulation and utility, such as the ABA (Architectural Barriers Act).
- *An integrated system should include coordinated elements such as*:
    - Visible and easy-to-understand signs and numbers.
    - Clear and consistent verbal directions and information (Information kiosks, Information desks, You-are-Here Maps, and Directories).
    - Reassurance signs for long paths.
    - Color and patterning on the flooring to indicate directional and department changes.
    - Accent colors on walls or ceilings to distinguish the different departments of the facility.
    - Artwork at key intersections along main paths of travel to aid in the orientation of the visitor.
    - Lighting (down lighting or decorative lighting) at key decision points.
- *Signs that can be easily updated:*
    - Use of modular signs with updatable inserts.
    - Digital signage that can easily be updated and has the ability to connect digitally to user smart phones.

Signage selected needs to address life safety, ABA (Architectural Barriers Act) and local code requirements and must meet the following criteria listed below:

Compliance

- Reference the UFC 3-120-01 Design: Sign Standards. Signage package is to be compliant with this document.
- Signage package is to be coordinated with Installation Design Guides, as necessary.

Durability

- Interior Signage is to be extremely durable, fabricated of fracture-resistant materials (molded plastic, acrylic, resin panel, aluminum or a combination of these materials) with integral color and matte finish.
- Signage materials are simple, high quality, vandal resistant and readily available.

Cost

- Products recommended are to be purchased in accordance with existing federal contracts and GSA Schedules.

Aesthetics

- Finishes and style remain consistent throughout the department and/or the facility.

Function

- Signage location needs to be cohesive to the facility to aid in wayfinding.
- Standardized font type and size through the facility for legibility.
- Signage messages need to limit use of abbreviations and contain consistent nomenclature.

Life Safety

- Signage meets the most current ABA (Architectural Barriers Act) requirements or the Uniform Federal Accessibility Standards (UFAS) -whichever is more restrictive - and complies with the current Unified Facilities Criteria UFC 4-510-01 Design: Military Medical Construction document.
- To avoid confusion, artwork is not grouped with signage unless it is part of the wayfinding system.
- All materials used in wayfinding/signage systems are to comply with the Life Safety Code fire code.

8.2 DESIGN PHILOSOPHY

Flexibility

- Modifications and changes to signage are easily accomplished on site.
- Removable vinyl or paper inserts used to help with upgrades and renovations.

Evidence-Based Design

Evidence-Based Design is the practice of implementing design elements into the healthcare environment, which are supported by research and evaluations; these evidence-based design decisions favorably impact patient outcomes and enhance the healing process.

Select signage, wayfinding systems that enhance the healing environment by:

- Reducing spatial disorientation through wayfinding and visual cues.
- Providing positive distraction to alleviate stress and optimize well-being.
- Using sign shape, color, pattern and images to compliment the built environment.

Sustainable Design

"Sustainable Design (Green Building) is the design, construction, operation, and reuse/removal of the built environment (infrastructure as well as buildings) in an environmentally and energy efficient manner. Sustainable Design is meeting the needs of today without compromising the ability of future generations to meet their needs. Sustainable Design includes not only efficient use of natural resources, but it can also translate into better performance, desirability, and affordability." (Sustainable Design for Military Facilities Engineering Technical Letter 1110-3-491 dated 7 May 01).

- Select signage that is environmentally sensitive and that supports sustainable design.
- Signage can be updated easily without the need to be replaced with a new sign.

8.3
Sign Types

2019

Interior Signage

Interior signage systems planned for healthcare facilities are used to assist patients, visitors and staff in navigating complex spaces. Signage offers information at critical decision points throughout the facility, and helps direct people to their desired destinations. Interior signage is to be flexible, durable, changeable and functional.

ROOM IDENTIFICATION

Description:

A – Tactile Lettering and Grade II Braille insert.
B – Can also be paper insert with clear lens
(Can also be surface applied vinyl letters or subsurface insert).

Usage:

Room ID Sign with permanent room number and changeable room function/description.

Basics:

Left Justification for text and numbers.
Upper and lower case characters.
Sign size to be minimum 8” x 8”.
Sign to be flexible and easily changeable.
Permanent personal names on signs are discouraged, these should be incorporated as paper inserts so they are easy to change. Sign plaques can now be augmented with decorative resin panels to give sign a more customized look.

System 290 Signs
Essentials + Slide Modular Series

APCO Signs
Elements, Elements 2 + Accord 15 Series

ASI Signage Innovations
Horizon Series

RESTROOM / STAIRS

Description:

A – Insert with surface applied graphics vinyl letters or subsurface insert.
B – Tactile characters with Grade II Braille.

Usage:

Signage used to control movement of pedestrian traffic.

Basics:

Usually incorporates pictograms for universal understanding.
Considered permanent signs with permanent Information.

System 290 Signs
Arc System

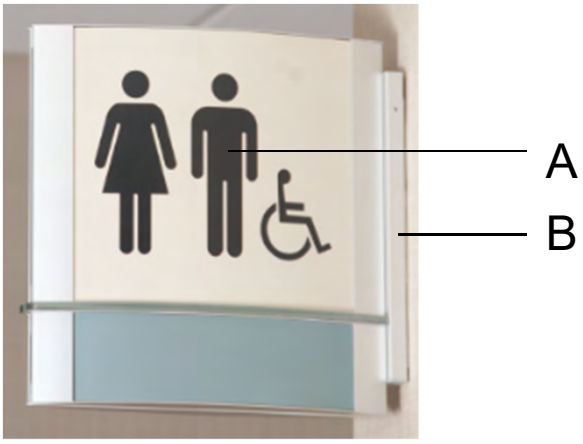
APCO Signs
Accord 15 Series

ASI Signage Innovations
Infinity series

WALL-MOUNTED FLAG STYLE

Description:

A – Surface applied vinyl letters or subsurface insert.
B – Extruded bracket for wall attachment.



Usage:

Flag style signage to denote locations of restrooms, lobbies, ATM machines, etc.

Basics:

Double sided, non-illuminated module.
Wall mount location is at least 80”A.F.F.
Upper and lower case characters used.
Signs should not visually block “Exit” sign.
Flag-style plaques can now be augmented with decorative resin panels to give sign a more customized look.

System 290 Signs
Arc System

APCO Signs
Arcadia Series

ASI Signage Innovations
Pacific Series

OVERHEAD DEPARTMENTAL

Description:

A – Solid expanded plastic sheet with double sided tape or mechanical fasteners.
B – Surface applied vinyl letters or subsurface insert.

Usage:

Departmental sign designating major departments.

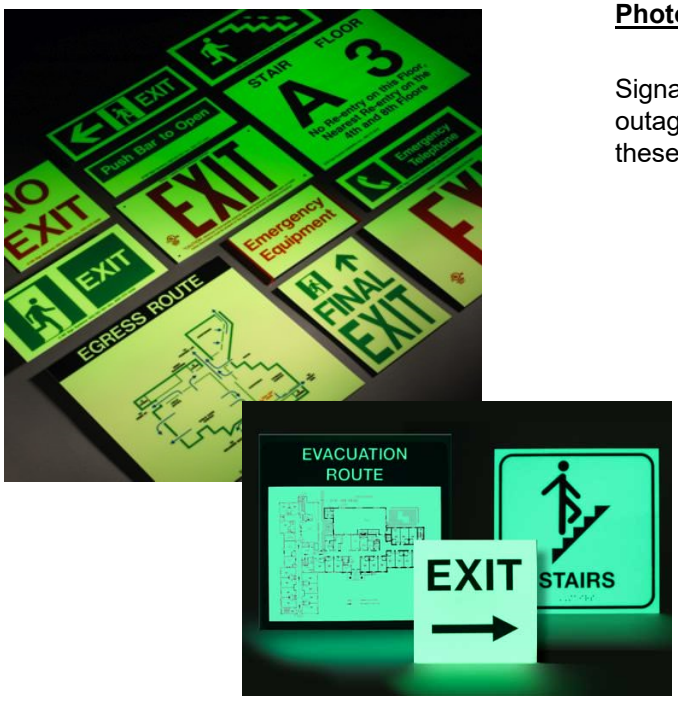
Basics:

Non-illuminated module.
Fits on to wall or dropped soffit.
Upper and lower case characters used.
Sign to be flexible and easily changed.
Signs should not visually block “Exit” signs.

MISCELLANEOUS SIGNAGE

Fire Evacuation

Fire evacuation plans can have changeable insert, with stylish decorative resin plaque behind the evacuation plan (see Takeform sign at right).



Photoluminescent Safety Signage

Signage glows in the dark when there is a power outage. APCO Signs and System 290 Signs offer these sign types.

8.4

Specialty Sign Types

2019

PATIENT INFORMATION SIGN

Description:

A – Tactile Lettering and Grade 2 Braille insert.
B – Customizable tabs.

Usage:

Use as room identification sign in patient rooms to communicate alerts such as allergies, fall risks, medical precautions and visitor restrictions.

Basics:

Includes customizable tabs.

System 290 Signs
Vital Sign

APCO Signs
InfoLock

IsoSign
IsoComplete

DIGITAL DIRECTORIES

Description:

A – Enclosure.
B – Touch or Non touch display.

Usage:

Use as room identification sign in patient rooms to communicate alerts such as allergies, fall risks, medical precautions and visitor restrictions.

Basics:

Electronic wayfinding system from Touchsource can be both touch screen and non-touch display. Available in portrait or landscape orientations. Enclosures can be surface mounted, recessed or free standing. ABA (Architectural Barriers Act) compliant available in stainless steel or a wide variety of powder coat paint finishes.

System 290 Signs
Digital Signage

APCO Signs
AlivePromo

Touchsource
Mirada

DIMENSIONAL LETTERING

Description:

A – Metal Stud Mounted.
B – Metal Surface Mounted.
C – Painted Acrylic Surface Mounted.

Usage:

Use to identify departments, buildings, recognition walls or branding. Mount to walls or soffits.

Basics:

Dimensional Lettering can be aluminum, brass, stainless steel or painted acrylic depending on the use. Acrylic letters are less expensive and have a comparable look and feel to aluminum.

Metal letters are more durable and more costly.

Mounting can be done with clear silicone adhesive or studs. Metal letters can also include integrated LED lighting.

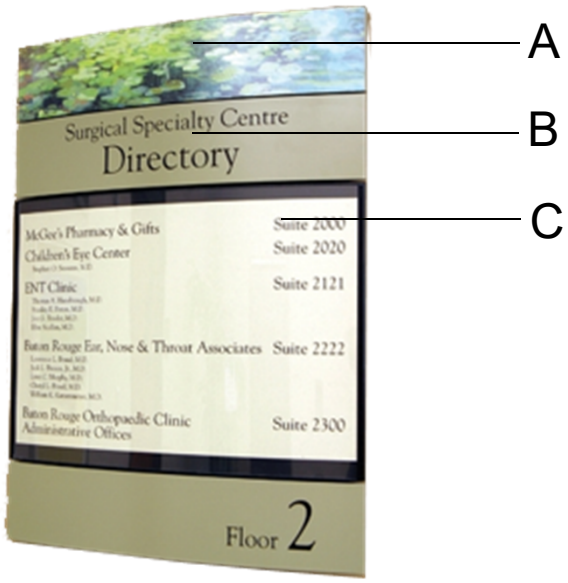
8.5
Wayfinding

2019

MAIN DIRECTORY

Description:

A – Digital artwork or logo direct print on acrylic used for identification.
B – Integrally colored injection molded plastic with surface applied vinyl letters.
C – Insert with either subsurface text or color coded graphics.

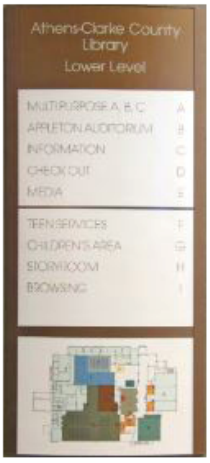


Usage:

Directory provides orientation of facility and department locations.

Basics:

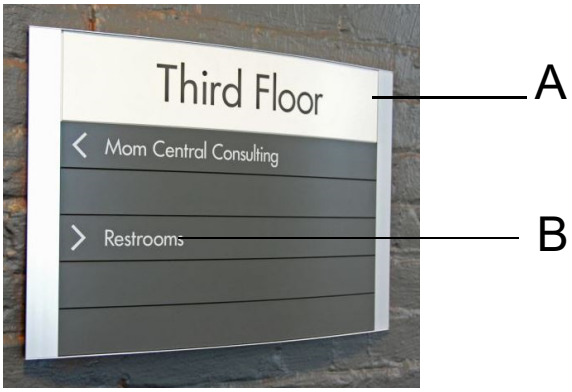
Can be an illuminated or non-illuminated module.
Major departments and/or locations are listed.
Color coded maps may be used for orientation.
3-D graphics are effective in providing orientation.
Sign to be flexible and easily changeable.
Generally located in main lobbies and major entrances.
Directories can now be augmented with decorative resin panels to give sign a more customized look.



APCO Signs
Arcadia Series

ASI Signage Innovations
Horizon Series

System 290 Signs
Modular Series



WALL DIRECTIONAL

Description:

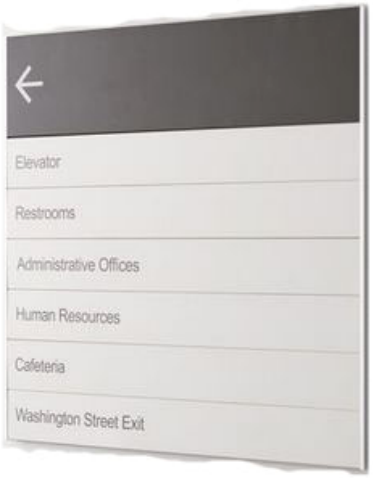
A – Integrally colored injection molded plastic with surface applied vinyl letters.
B – Surface applied vinyl letters or subsurface insert (Can also be paper insert with clear lens).

Usage:

Directional wall sign designating locations of major departments.

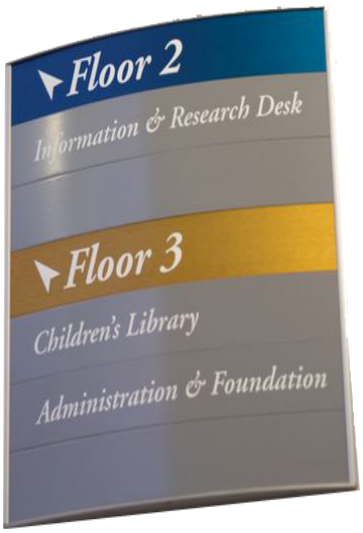
Basics:

Non-illuminated module.
Arrow can be shown on a separate panel.
Upper and lower case characters.
Sign to be flexible and easily changeable.
Sign width and height shall vary – based on number of departments listed on directional.
Directional can now be augmented with decorative resin panels to give sign a more customized look.



System 290 Signs
Slide Modular

APCO Signs
Elements, Elements 2 + Arcadia



ASI Signage Innovations
Horizon Series

OVERHEAD DIRECTIONAL

Description:

A – Solid expanded plastic sheet with extruded attachment tract.
B – Surface applied vinyl letters or subsurface insert.

Usage:

Directional sign designating major departments.

Basics:

Non-illuminated module.
Fits neatly into ceiling grid. Bottom of sign is at least 80” A.F.F. Upper and lower case characters used. Sign to be flexible and easily changed.
Signs should not visually block “Exit” signs.

System 290 Signs
Essentials + Arc Series

APCO Signs
Modular

ASI Signage Innovations
Horizon Series

FREE STANDING PYLONS

Description:

A – Customized freestanding module to match interior finishes.
B – "Touch Screen" interactive wayfinding system for patients and visitors.

Usage:

Freestanding informational units that assist in wayfinding.

Basics:

Used at major entrances or other decision points.
Directions to departments & other literature can be stored in pamphlet holders affixed to pylon.
Pylons come in various sizes and can offer "high tech" interaction surfaces or static information.

APCO Signs
Arcadia Series 3000 Totem
iFind Touchscreen directory

Touchsource
Alta

ASI Signage Innovations
Horizon Series

8.6 Recognition

2019

Usage:

Used at entry lobbies or key areas to represent local command, facility history or recognition. The command leadership is intended to be used with official military photos with a professional appearance.

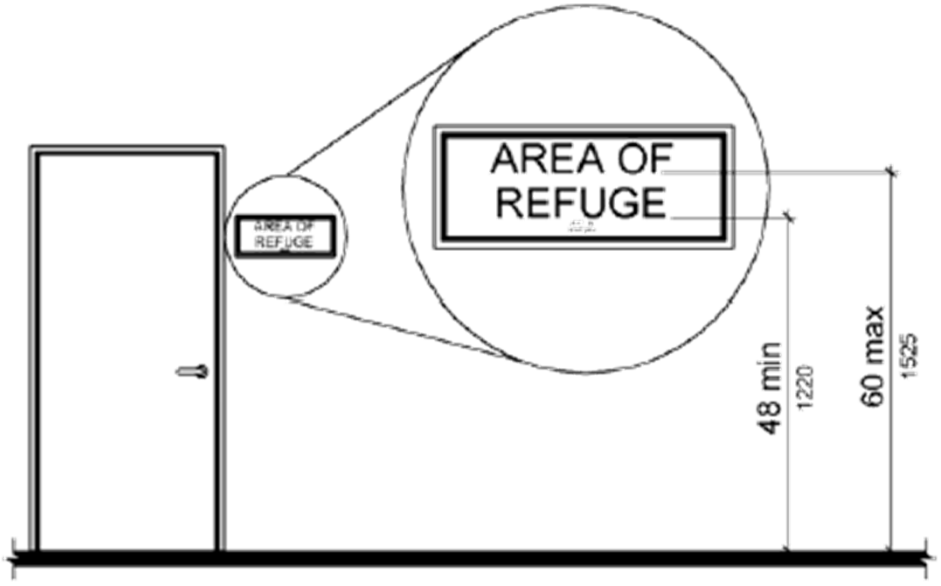
Basics:

Logos can be clear acrylic with surface printed graphics. Letters can be brushed aluminum. If holding a photograph, it needs to be protected by clear acrylic and can be supported by stainless steel cables.

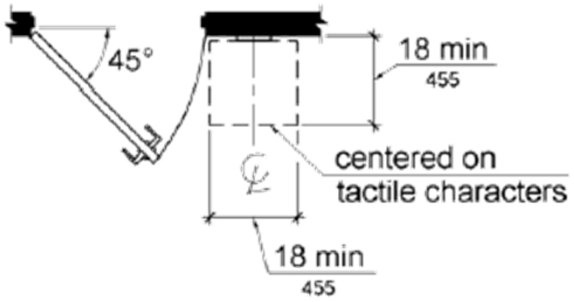
Top to Bottom: Martin Army Community Hospital, Ft. Benning, GA (JV: RLF/Ellerbe Becket); Irwin Army Community Hospital, Ft. Riley, KS (JV:RLF/LAD); Martin Army Community Hospital, Ft. Benning, GA (JV: RLF/Ellerbe Becket). All photos curtesy of Skyline Art Services.

8.7 Installation

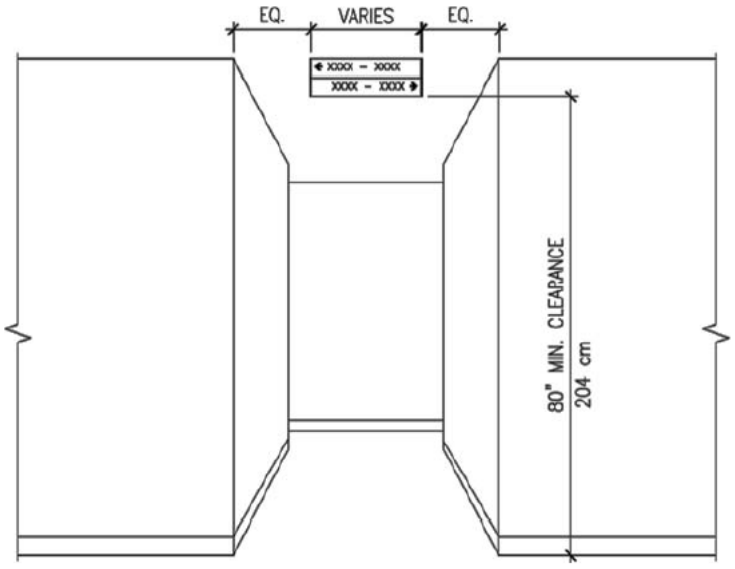
2019



Height of Tactile Characters
Above Finish Floor or Ground



Location of Tactile Signs at Doors

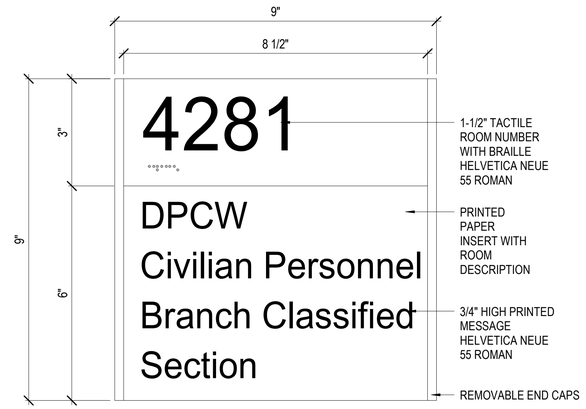


Overhead Signage – Placement of signs must not obscure or interfere with sightlines to Exit or Emergency signage.

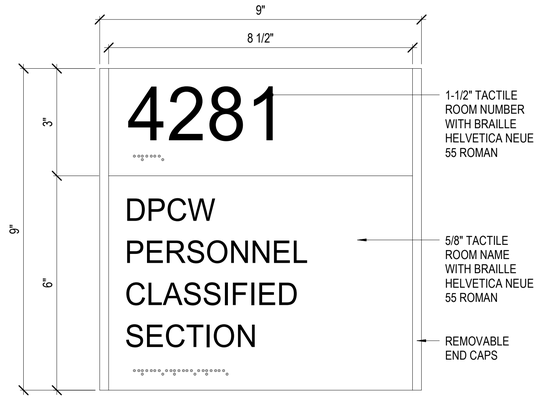
Room Identification Signage

8.8
Interior Signage Drawings

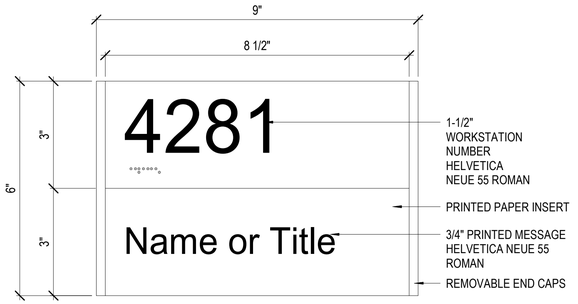
2019



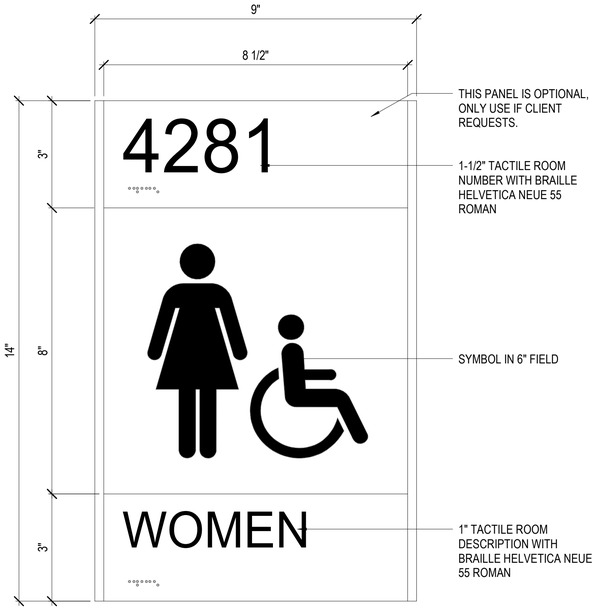
1 A1- ROOM IDENTIFICATION WITH PAPER INSERT
6" = 1'-0"



2 A2- PERMANENT ROOM IDENTIFICATION
6" = 1'-0"

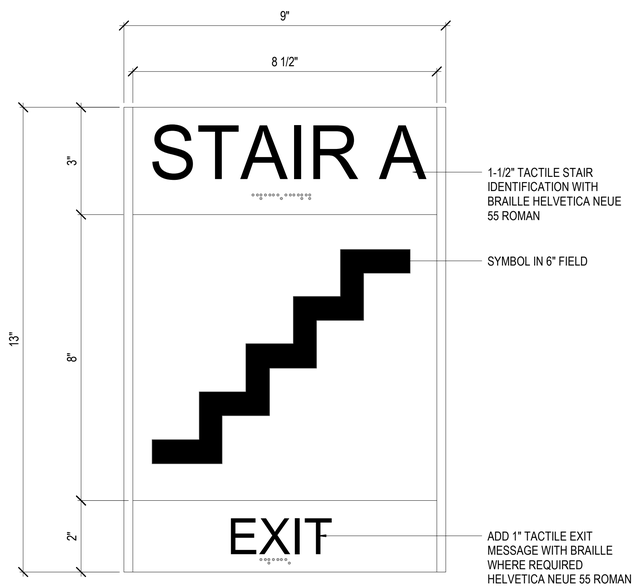


3 A3-WORKSTATION IDENTIFICATION
6" = 1'-0"



4 A4-ACCESSIBLE RESTROOM IDENTIFICATION
6" = 1'-0"

5 A5-NON-ACCESSIBLE RESTROOM IDENTIFICATION
6" = 1'-0"



6 A6-STAIR IDENTIFICATION
6" = 1'-0"

NOTES:

SHEET NOTES:

A SIGN FABRICATOR TO FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION.

B CHARACTERS, LETTERS, AND NUMBERS TO BE TACTILE RAISED, 1/32" OF CONTRASTING COLOR AND ACCOMPANIED BY GRADE 2 BRAILLE, UNLESS NOTED OTHERWISE.

C ALL FASTENERS TO BE CONCEALED AND VANDAL RESISTANT.

D ALL EDGES TO BE FINISHED AND PAINTED.

E SIGN FABRICATOR TO PROVIDE BASE FACILIITIES DEPARTMENT WITH COMPLETE TEMPLATE LAYOUT FOR EACH SIGN TYPE, TO BE USED FOR FUTURE INSERT UPDATES.

F ALL CHARACTERS, LETTERS, AND NUMBERS WILL BE HELVETICA NEUE

G TEXT ON SIGN ELEVATIONS IS FOR EXAMPLE ONLY.

0 1" 2" 4" 6" 8"
6" = 1'-0" GRAPHIC SCALE

NOTE:
IF THIS DRAWING IS LESS THAN 36" X 24"
IT IS A REDUCED SIZE DRAWING

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US Army Corps of Engineers.

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SATISFACTORY TO DATE

DES Designer DRW MMG CHK Checker

PM/DM

BRANCH MANAGER

CHIEF ENGR/CH

FP ENGINEER

DEPARTMENT OF THE ARMY
4820 UNIVERSITY SQUARE
FALLS CHURCH
US ARMY ENGINEERING & SUPPORT CENTER
US ARMY ENGINEERING & SUPPORT CENTER
HUNTSVILLE, AL 35816
VIRGINIA

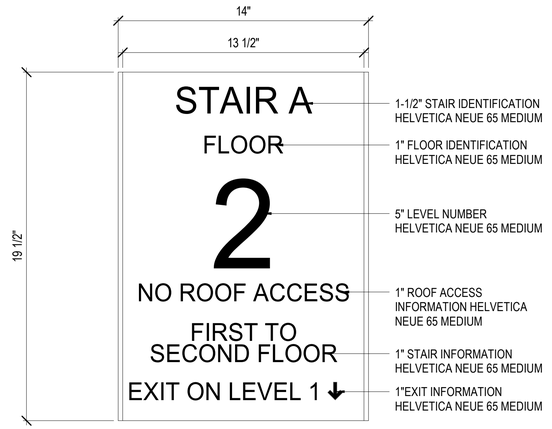
INTERIOR DESIGN MASTER PLAN FOR MEDCOM FACILITIES- CONUS & OCONUS HEALTH FACILITY PLANNING AGENCY/G9

INTERIOR SIGN STANDARDS

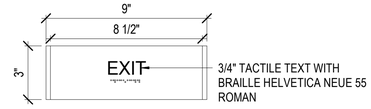
SCALE: 6" = 1'-0"
EPROJECT NO.: 17110
CONSTR. CONTR. NO. W912DY-15-D-0094
NAVFAC DRAWING NO.
SHEET AG501 OF

AG501

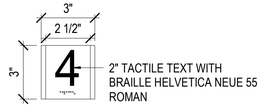
DRAWFORM REVISION: 10 MARCH 2009



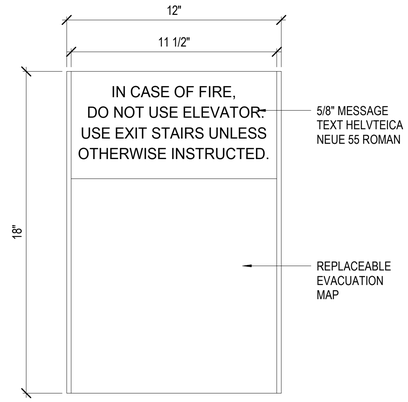
1 B1-STAIRWAY LIFE SAFETY INFORMATION
3" = 1'-0"



2 B2-TACTILE EXIT
3" = 1'-0"



3 B3-TACTILE STAIRWAY LEVEL INDICATOR
3" = 1'-0"

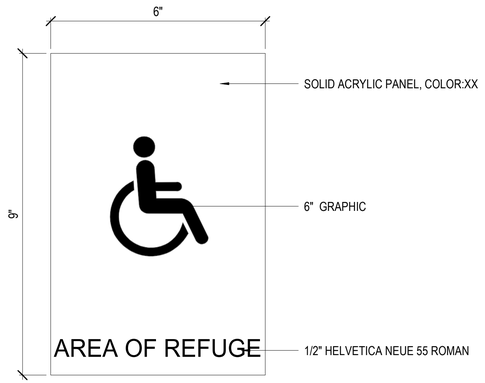


4 B4-ELEVATOR EGRESS
3" = 1'-0"

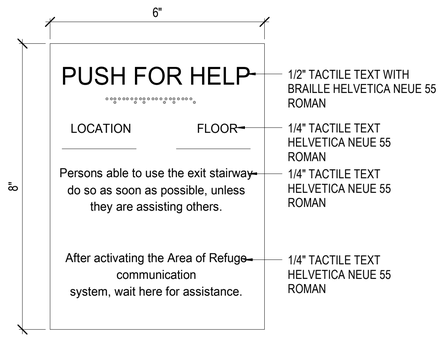
NOTES:

SHEET NOTES:

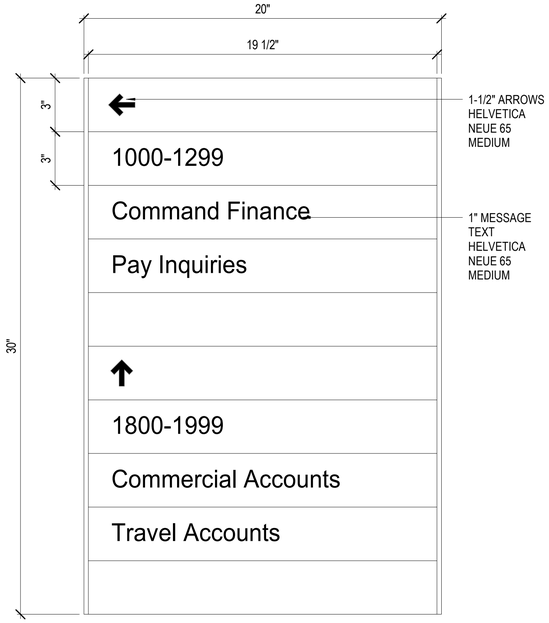
A SIGN FABRICATOR TO FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION.
B CHARACTERS, LETTERS, AND NUMBERS TO BE TACTILE RAISED, 1/32" OF CONTRASTING COLOR AND ACCOMPANIED BY GRADE 2 BRAILLE, UNLESS NOTED OTHERWISE.
C ALL FASTENERS TO BE CONCEALED AND VANDAL RESISTANT.
D ALL EDGES TO BE FINISHED AND PAINTED.
E SIGN FABRICATOR TO PROVIDE BASE FACILIITIES DEPARTMENT WITH COMPLETE TEMPLATE LAYOUT FOR EACH SIGN TYPE, TO BE USED FOR FUTURE INSERT UPDATES.
F ALL CHARACTERS, LETTERS, AND NUMBERS WILL BE HELVETICA NEUE
G TEXT ON SIGN ELEVATIONS IS FOR EXAMPLE ONLY.



5 B5-AREA OF REFUGE
6" = 1'-0"



6 B6-TWO-WAY COMMUNICATION
6" = 1'-0"



7 D1-LARGE WALL MOUNTED DIRECTIONAL
3" = 1'-0"

1" 0 2" 5" 10" 15"
3"=1'-0" GRAPHIC SCALE
0 1" 2" 4" 6" 8"
6" = 1'-0" GRAPHIC SCALE

NOTE:
IF THIS DRAWING IS LESS THAN 36" X 24"
IT IS A REDUCED SIZE DRAWING

FOR OFFICIAL USE ONLY

NUM	DESCRIPTION	DATE	APPR

US Army Corps of Engineers.

FOR INFORMATION ONLY

SEAL

rlf
Rogers, Lovelock + Fritz, Inc.
architecture + engineering + interiors
4750 New Broad St | Orlando, FL 32814
phone: 407.730.8600 | web: rlfinc.com
aa000564 | CA Lic No: 629 AE INFO

APPROVED

FOR COMMANDER
NAVFAC
ACTIVITY

SATISFACTORY TO DATE

DES Designer DRW MMG CHK Checker

PM/DM
BRANCH MANAGER
CHIEF ENG/ARCH
FP ENGINEER

DEPARTMENT OF THE ARMY
4820 UNIVERSITY SQUARE
FALLS CHURCH
US ARMY ENGINEERING & SUPPORT CENTER
US ARMY ENGINEERING & SUPPORT CENTER
HUNTSVILLE, AL 35816
VIRGINIA

INTERIOR DESIGN MASTER PLAN FOR MEDCOM FACILITIES- CONUS & OCONUS HEALTH FACILITY PLANNING AGENCY/G9

INTERIOR SIGN STANDARDS

SCALE: As indicated
EPROJECT NO.: 17110
CONSTR. CONTR. NO. W912DY-15-D-0094
NAVFAC DRAWING NO.
SHEET OF

AG502

DRAWFORM REVISION: 10 MARCH 2008

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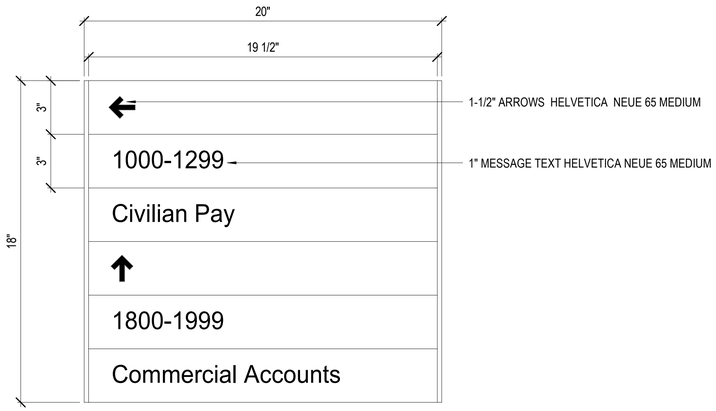
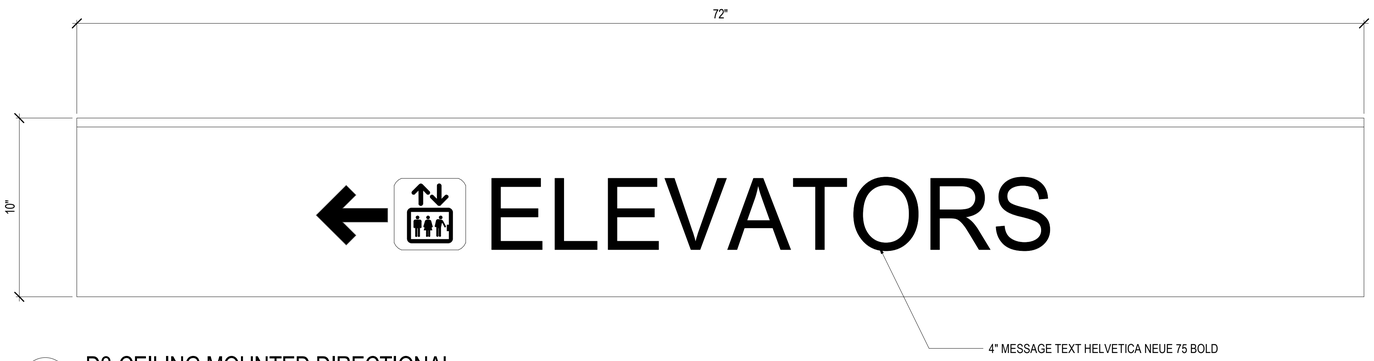


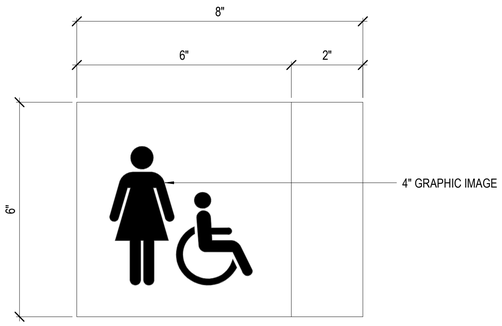
1 D2-MEDIUM WALL MOUNTED DIRECTIONAL

3" = 1'-0"



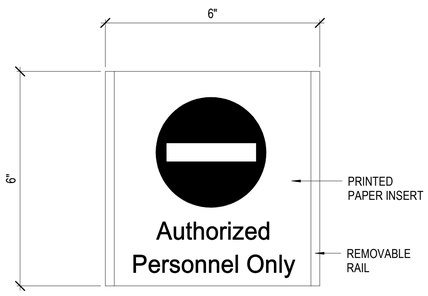
2 D3-CEILING MOUNTED DIRECTIONAL

3" = 1'-0"



3 D4-FLAG MOUNTED

6" = 1'-0"



4 F1-MANDATORY AND PROHIBITORY

6" = 1'-0"

NOTES:

SHEET NOTES:

A SIGN FABRICATOR TO FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION.

B CHARACTERS, LETTERS, AND NUMBERS TO BE TACTILE RAISED, 1/32" OF CONTRASTING COLOR AND ACCOMPANIED BY GRADE 2 BRAILLE, UNLESS NOTED OTHERWISE.

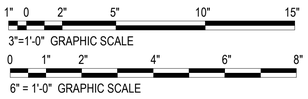
C ALL FASTENERS TO BE CONCEALED AND VANDAL RESISTANT.

D ALL EDGES TO BE FINISHED AND PAINTED.

E SIGN FABRICATOR TO PROVIDE BASE FACILIITIES DEPARTMENT WITH COMPLETE TEMPLATE LAYOUT FOR EACH SIGN TYPE, TO BE USED FOR FUTURE INSERT UPDATES.

F ALL CHARACTERS, LETTERS, AND NUMBERS WILL BE HELVETICA NEUE

G TEXT ON SIGN ELEVATIONS IS FOR EXAMPLE ONLY.



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APPR | DATE | NUM | DESCRIPTION

US Army Corps of Engineers.

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SATISFACTORY TO DATE

DES Designer DRW MMG CHK Checker

PM/DM

BRANCH MANAGER

CHIEF ENG/ARCH

FP ENGINEER

DEPARTMENT OF THE ARMY
4820 UNIVERSITY SQUARE
FALLS CHURCH
US ARMY ENGINEERING & SUPPORT CENTER
US ARMY ENGINEERING & SUPPORT CENTER
HUNTSVILLE, AL 35816
VIRGINIA

INTERIOR DESIGN MASTER PLAN FOR MEDCOM FACILITIES- CONUS & OCONUS HEALTH FACILITY PLANNING AGENCY/G9

INTERIOR SIGN STANDARDS

SCALE: As indicated
EPROJECT NO.: 17110
CONSTR. CONTR. NO. W912DY-15-D-0094
NAVFAC DRAWING NO.
SHEET OF

AG503

DrawnOnNAVSEA 10 MAR 09 2009

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9. Manufacturer's Source List

2019

FLOORING

CARPET

Bentley
Contact: Customer Service
p. 800.423.4709
http://www.bentleymills.com/

Mannington
Contact: Customer Service
p. 800.241.2262
http://www.mannington.com

Masland
Contact: Customer Service
716 Bill Myles Dr.
Saraland, AL 36571
p. 888.633.4770
http://www.maslandcontract.com/mc

PORCELAIN TILE

Crossville
Contact: Customer Service
349 Sweeney Drive
Crossville, TN 38555
p. 931.484.2110
http://www.crossvilleinc.com

Iris Us
Contact: Corporate
1360 S. Vernon Street
Anaheim, CA 92805
p. 800.323.9906 f. 866.398.4747
http://www.irisus.com/

Meditterannia USA
Contact: Customer Service
3501 NW 115° Ave
Doral, FL 33178
http://www.mediterranea-usa.com/

RESIN

Stonhard
Contact: Customer Service
p. 800.257.7953
https://www.stonhard.com/

RUBBER

Nora Rubber Corporation
Contact: Customer Service USA
9 Northeastern Blvd.
Salem, NH 03079
p. 603.894.1021 f. 603.894.6615
http://www.nora.com/us

TERRAZZO

Terrazzo & Marble Supply Companies
Contact: Customer Service
p. 877.86.SLABS
https://www.tmsupply.com/

SHEET VINYL

Teknoflor / Shannon Specialty Floors
Contact : Corporate Headquarters
1005 South 60th St.
Milwaukee, WI 53214
p. 800522.9166 f. 414.944.0550
https://www.shannonspecialtyfloors.com/

FLOORING

LUXURY VINYL TILE

Mannington
Contact: Customer Service
p. 800.241.2262
http://www.mannington.com

RUBBER BASE / TRANSITION STRIPS

Johnsonite
Contact: Customer Service
p. 800.899.8916
http://www.johnsonite.com

WALK-OFF MAT

Pedisystems/C-S Group
Contact: Headquarters
p. 800.972.7214
Contact: Customer Service
p. 800.233.8493
http://www.c-sgroup.com

Milliken
Contact: Corporate Headquarters
PO Box 1926
Spartanburg, SC 29304
Contact: Customer Service
p. 864.503.2020
http://www.milliken.com/

SPECIALTY FLOORING

PHYSICAL THERAPY AND PHARMACY

Connor Sports
Contact: Customer Service
1830 Howard Street, Suite F
Elk Grove Village, IL 60007
p. 800.283.9522
http://www.connorsports.com/

Ecore - Commercial
Contact: Customer Service
715 Fountain Ave
Lancaster, PA 17601
p. 877.258.0843
http://www.ecorecommercial.com/

NUTRITION CARE

Stonhard
Contact: Customer Service
p. 800.257.7953
https://www.stonhard.com/

OPERATING ROOM

Ecore - Commercial
Contact: Customer Service
715 Fountain Ave
Lancaster, PA 17601
p. 877.258.0843
http://www.ecorecommercial.com/

Stonhard
Contact: Customer Service
p. 800.257.7953
https://www.stonhard.com/

WALLS

PAINT

Sherwin Williams Paint
Contact: Customer Service
p. 800.474.3794
http://www.sherwinwilliams.com

PORCELAIN WALL TILE

Crossville
Contact: Customer Service
349 Sweeney Drive
Crossville, TN 38555
p. 931.484.2110
http://www.crossvilleinc.com

Iris Us
Contact: Corporate
1360 S. Vernon Street
Anaheim, CA 92805
p. 800.323.9906 f. 866.398.4747
http://www.irisus.com/

Meditterannia USA
Contact: Customer Service
3501 NW 115° Ave
Doral, FL 33178
http://www.mediterranea-usa.com/

WALL PROTECTION

Acrovyn / CS Group
Contact: Headquarters
p. 800.972.7214
Contact: Customer Service
p. 800.233.8493
http://www.c-sgroup.com

Koroguard
Contact: Customer Service
3875 Embassy Parkway
Fairlawn, Ohio 44333
p. 855.753.5474
http://www.korogard.com

WALL PANEL

Pionite
Contact: Customer Service
1 Corporate Drive, Suite 725
Shelton, CT 06484
p. 877.726.6526
http://www.pionite.com/

RESIN PANEL

3form
Contact: Customer Service
p. 800.726.0126
http://www.3-form.com/

Lumicor
Contact: Customer Service
p. 888.586.4267 f. 1.425.277.1872
http://www.lumicor.com/

CEILING

ACOUSTICAL CEILING TILE, SPECIALTY & UPGRADE CEILINGS

Armstrong World Industries
Contact: Headquarters
PO Box 3001
Lancaster PA 17604
p. 717.397.0611
Contact: Customer Service
p. 1.877.ARMSTRONG
http://www.armstrong.com

HEALING CEILING

Skyfactory
Contact: Customer Service
P.O. Box 1177
Fairfield, IA 52556
p. 866.759.3228 f. 641.472.1014
http://www.skyfactory.com

MISCELLANEOUS FINISHES

PLASTIC LAMINATE

Wilsonart International
Contact: Customer Service
PO Box 6110
2501 Wilsonart Drive
Temple, TX 76503-6110
p. 800.433.3222
https://www.wilsonart.com/

SOLID SURFACE

Avonite Surfaces
Contact: Headquarters
e: info@aristechsurfaces.com
7350 Empire Drive
Florence, KY 41042
p. 800.428.6648
http://www.avonite.com/

Corian DuPont
http://www.corian.com/

Wilsonart International
Contact: Customer Service
PO Box 6110
2501 Wilsonart Drive
Temple, TX 76503-6110
p. 800.433.3222
https://www.wilsonart.com/

QUARTZ

Cambria
Contact: Customer Service
p. 1.866.CAMBRIA
https://www.cambriausa.com/

GROUT

Mapei Grouts
Contact: Customer Service
p. 800.426.2734
http://www.mapei.com/US-EN

INTERIOR STAIN

Sherwin Williams Paint
Contact: Customer Service
p. 800.474.3794
http://www.sherwinwilliams.com

INTERIOR DOOR / DOOR PROTECTION

Acrovyn / CS Group
Contact: Headquarters
p. 800.972.7214
Contact: Customer Service
p. 800.233.8493
http://www.c-sgroup.com

MISCELLANEOUS FINISHES

SOLID SURFACE SYSTEMS

Avonite Surfaces
Contact: Headquarters
e: info@aristechsurfaces.com
7350 Empire Drive
Florence, KY 41042
p. 800.428.6648
http://www.avonite.com/

Bradley
Contact: Customer Service
p. 800.272.3539
https://www.bradleycorp.com/

Corian DuPont
http://www.corian.com/

TOILET PARTITIONS

Bradley
Contact: Customer Service
p. 800.272.3539
https://www.bradleycorp.com/

Scranton Products – Hiny Hiders
Contact: Customer Service
p. 800.445.5148
https://www.scrantonproducts.com

TRANSITION STRIPS / TILE TRIM

Schluter
Contact: Customer Service
p. 888.472.4588
https://www.schluter.com

WINDOW TREATMENTS

MechoShade - MechoSystems
Contact: Customer Service
42-03 35th Street
Long Island City, NY 11101
p. 718.729.2020 f. 718.729.2941
http://www.mechoshade.com/

SIGNAGE

APCO
Contact: Headquarters
e: sales@apcosigns.com
388 Grant Street, SE
Atlanta, GA 30312
p. 404.688.9000 f. 404.577.3847
http://www.apcosigns.com

Systems 2/90
Contact: Customer Service
5350 Corporate Grove Blvd SE
Grand Rapids, MI 49512
p. 800.777.4310 f. 616.656.4300
www.290signs.com

ASI Signage Innovations
Contact: Customer Service
8181 Jetstar Drive, Suite 100
Irving, TX 75063
p. 800.274.7732
http://asisignage.com/

Touchsource
Contact: Customer Service
p. 866.476.1872
https://www.touchsource.com/

ISO Sign
Contact: Customer Service
p. 502.582.2000 ext. 107
http://theisosign.com/

10.
Cut Sheets

2019

Carpet

2019

MANNINGTON COMMERCIAL

Product Specifications
SUMMIT -- INFINITY MODULAR

PHYSICAL CONSTRUCTION:

CONSTRUCTION:	Pattern Loop (Non-Ortho Phthalate Construction)
FACE FIBER:	Invista Antron Lumena Type 6,6 Four Hole, Hollow Filament Nylon, with Permanent Stain and Bleach Protection, Static Control, and Duratech Soil Resistant Treatment, and a Fiber Modification Ratio of <1.5
DYE METHOD:	Solution Dyed
GAUGE:	1/10
STITCHES PER INCH:	14.16
PILE THICKNESS:	.127 Inches
TUFTED YARN WEIGHT:	22 Ounces Per Square Yard
DENSITY:	Average Density = 6,236; Weight Density = 137,196
PRIMARY BACKING:	100% Synthetic
SECONDARY BACKING:	Infinity Modular Reinforced Composite Closed Cell Polymer
STANDARD SIZE:	12 x 48
INSTALLATION METHOD:	3-Step Vertical Ashlar

ENVIRONMENTAL:

RECYCLED CONTENT:	Contains Pre-Consumer Recycled Content*
MANUFACTURE LOCATION:	Calhoun, Georgia 30701 USA
NSF / ANSI-140 CERTIFICATION:	Gold
CRI GREEN LABEL PLUS ID:	GLP7616
3rd Party Certified Product Specific Type III EPD	

WARRANTIES:

WARRANTY:	Lifetime Limited Warranty, Including Face Wear, Moisture Barrier, Delamination, Tuft Bind, Unraveling, and Static Protection
BLEACH RESISTANT WARRANTY:	ColorSafe with 15 Year Limited Warranty Against Color Loss from Bleach Spills
STAIN RESISTANT WARRANTY:	XGUARD with 15 Year Limited Warranty Against Staining

PRODUCT TESTING:

RADIANT PANEL (ASTM E-648):	Class I (Direct Glue)
SMOKE CHAMBER (ASTM E-662):	Less than 450 (Flaming Mode)
METHENAMINE PILL TEST (ASTM D-2859):	Passes
DIMENSIONAL STABILTY AACHEN TEST:	Passes
ELECTROSTATIC PROPENSITY (AATCC 134):	Less than 3.0 KV

RECOMMENDED ADHESIVE:

RELEASEABLE ADHESIVE:	Mannington Infinity Pressure Sensitive Adhesive
CRI GREEN LABEL PLUS ID:	GLP70522
VOC LIMITS:	Meets SCAQMD Rule #1168
BOND WARRANTY:	Lifetime Limited Warranty When Used With Mannington Carpet

Specifications are subject to normal manufacturing variances. Specifications are subject to change without notice when technological advancements provide improved product performance.
* Please contact Mannington Technical Services at 1-800-241-2262 for updated, specific recycled content percentages for each product.

BENTLEY

Roadside Attractions (8RD30)

Product Code	8RD300220T	
Product Construction	Tufted Tip-Sheared	
Fiber	Antron® Lumena™ Type 6,6 Nylon	
Dye Method	Solution Dyed	
Soil/Stain Protection	XTERA™	
Backing & Size	NexStep® Cushion-Tile-24 in x 24 in (60.96 cm x 60.96 cm)	
Yarn Weight	30 oz/yd^2	1,017.2 g/m^2
Machine Gauge	5/64 in	50.4 ends/10 cm
Pile Height		
High	0.197 in	5.0 mm
Medium	0.149 in	3.8 mm
Low	0.060 in	1.5 mm
Stitches	12.7 /in	50.0 ends/10 cm
Pile Density	7,800 oz/yd^3	
Total Weight	103 oz/yd^2	3,492.3 g/m^2
Total Thickness	0.380 in	9.7 mm
Size	24 in x 24 in	60.96 cm x 60.96 cm
Radiant Panel	Passes Class 1, ≥ 0.45 W/cm^2 (ASTM-E648)	
Smoke Density	< 450 Dm corr (ASTM-E662), Flaming	
Static	≤ 3.5 kV (AATCC-134), Step	
Flammability	Passes Methenamine Pill Test (CPSC-FF1-70)	

Bentley's High PerformancePC, NexStep® Cushion Tile, and AFIRMA™ Hardback Tile products are Cradle to Cradle Certified™ Silver. Bentley products are also certified under the NSF/ ANSI Standard 140 – Sustainable Carpet Assessment (NSF 140). Six of Bentley's standard backing products are NSF 140 certified at the Gold level or above. Bentley's carpet products are manufactured in our California mill, a LEED for Existing Buildings: Operations and Maintenance (LEED®-EBOM) Gold certified facility.

Patterned carpet may require special attention by the installer to assure a suitable match, and must be addressed in the original labor quotation. Products that go through the shearing process may result in a small loss of yarn weight. Slight variations in color among different production lots are normal and should be considered in the overall installation plan. Carpet specifications and components are subject to normal manufacturing tolerances and may change without notice. Technical performance characteristics are subject to adjustment based on results of post-manufacture testing. Product warranted in accordance with the terms and conditions of Bentley's standard printed warranty in effect at time product is sold. All other warranties, including without limitation any implied warranties of merchantability or fitness for a particular purpose, are hereby disclaimed. Made in USA. Warning: unauthorized reproduction of this carpet design constitutes copyright infringement. ©2012 Bentley Mills, Inc.

Masland contract

Lava #T512

Construction specifications

Product	Lava
Style Number	T512
Fiber Content	100% Universal Fibers® Type 6,6 bulked continuous filament nylon with Permanent Stain Resist
Fiber Weight (tufted)	22 oz./Sq.Yd. (746 g/m^2)
Construction	Tip Sheared Loop Pattern
Gauge	1/12
Carpet Tile Size	24″W x 24″L (60.96 cm x 60.96 cm)
Dye Method	100% solution dyed nylon
Pile Height	.313″/.188″/.125″ (7.95 mm/4.78 mm/3.18 mm)
Total Thickness	.237″ (6.02 mm)
Total Weight	130.37 oz./ Sq. Yd. (4420 g/m^2)
Primary Backing	Synthetic
Secondary Backing	EarthWise (non-phthalate, contains recycled content*)
GLP Certification	GLP1922

*For detailed percentage of recycled content, contact your Masland Contract representative.

Specifications may vary slightly over the life of a product. For current specifications, please visit www.maslandcontract.com.

Performance specifications

Warranty	Lifetime Commercial Limited Warranty
Flammability Rating	Flooring Radiant Panel ASTM E-648 and/or NFPA 253 Greater than 0.45 watts/CM² Class 1 (EU) BFL S 1 Surface Flammability of Carpets and Rugs (16 CFR Chapter II Subchapter D, Part 1630 CPSC FF 1-70) also referenced as ASTM D-2859
Smoke Density	Passes NBS Smoke Chamber Test ASTM E-662 (flaming mode)
Colorfastness to Light	4.0 or better
Static Rating	Less than 3.5 kV. Antistat warranted for the life of the carpet

Tufted fiber weight denotes specs prior to tip shearing. Tip Shearing removes a small amount of fiber, which will vary slightly by product and production run.

Lava meets the standards for the Carpet & Rug Institute's Indoor Air Quality Green Label Plus Carpet Testing Program.

Lava is 3rd party certified by the NSF 140 Sustainable Carpet Standard.

Slight variations between sample swatches and production goods are to be expected and are considered normal. Likewise, such variations will occur between production goods of different dye lots. Masland laboratory matches are obtained under cool white fluorescent lighting. Chair pads are recommended to enhance the aesthetic value and longevity of the product.

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BENTLEY

Outlier (8OU23)

Product Code	8OU230AA0K	
Product Construction	Tufted Textured Loop	
Fiber	Antron® Lumena™ Type 6,6 Nylon	
Dye Method	Solution Dyed	
Soil/Stain Protection	XTERA™	
Backing & Size	AFIRMA™ Hardback-Tile-18 in x 36 in (45.72 cm x 91.44 cm)	
Yarn Weight	23 oz/yd^2	779.8 g/m^2
Machine Gauge	1/10 in	39.4 ends/10 cm
Pile Height		
High	0.187 in	4.7 mm
Medium	0.146 in	3.7 mm
Low	0.090 in	2.3 mm
Stitches	11.0 /in	43.3 ends/10 cm
Pile Density	7,582 oz/yd^3	
Total Weight	81 oz/yd^2	2,746.4 g/m^2
Total Thickness	0.275 in	7.0 mm
Size	18 in x 36 in	45.72 cm x 91.44 cm
Radiant Panel	Passes Class 1, ≥ 0.45 W/cm^2 (ASTM-E648)	
Smoke Density	< 450 Dm corr (ASTM-E662), Flaming	
Static	≤ 3.5 kV (AATCC-134), Step	
Flammability	Passes Methenamine Pill Test (CPSC-FF1-70)	

Bentley's High PerformancePC, NexStep® Cushion Tile, and AFIRMA™ Hardback Tile products are Cradle to Cradle Certified™ Silver. Bentley products are also certified under the NSF/ ANSI Standard 140 – Sustainable Carpet Assessment (NSF 140). Six of Bentley's standard backing products are NSF 140 certified at the Gold level or above. Bentley's carpet products are manufactured in our California mill, a LEED for Existing Buildings: Operations and Maintenance (LEED®-EBOM) Gold certified facility.

Patterned carpet may require special attention by the installer to assure a suitable match, and must be addressed in the original labor quotation. Products that go through the shearing process may result in a small loss of yarn weight. Slight variations in color among different production lots are normal and should be considered in the overall installation plan. Carpet specifications and components are subject to normal manufacturing tolerances and may change without notice. Technical performance characteristics are subject to adjustment based on results of post-manufacture testing. Product warranted in accordance with the terms and conditions of Bentley's standard printed warranty in effect at time product is sold. All other warranties, including without limitation any implied warranties of merchantability or fitness for a particular purpose, are hereby disclaimed. Made in USA. Warning: unauthorized reproduction of this carpet design constitutes copyright infringement. ©2018 Bentley Mills, Inc.

BENTLEY

Repose (8RJ26)

Product Code	8RJ260AA0K	
Product Construction	Tufted Textured Loop	
Fiber	Antron® Lumena™ Type 6,6 Nylon	
Dye Method	Solution Dyed	
Soil/Stain Protection	XTERA™	
Backing & Size	AFIRMA™ Hardback-Tile-18 in x 36 in (45.72 cm x 91.44 cm)	
Yarn Weight	25 oz/yd^2	847.6 g/m^2
Machine Gauge	1/10 in	39.4 ends/10 cm
Pile Height		
High	0.186 in	4.7 mm
Medium	0.156 in	4.0 mm
Low	0.082 in	2.1 mm
Stitches	11.0 /in	43.3 ends/10 cm
Pile Density	9,204 oz/yd^3	
Total Weight	83 oz/yd^2	2,814.2 g/m^2
Total Thickness	0.260 in	6.6 mm
Size	18 in x 36 in	45.72 cm x 91.44 cm
Radiant Panel	Passes Class 1, ≥ 0.45 W/cm^2 (ASTM-E648)	
Smoke Density	< 450 Dm corr (ASTM-E662), Flaming	
Static	≤ 3.5 kV (AATCC-134), Step	
Flammability	Passes Methenamine Pill Test (CPSC-FF1-70)	

Bentley's High PerformancePC, NexStep® Cushion Tile, and AFIRMA™ Hardback Tile products are Cradle to Cradle Certified™ Silver. Bentley products are also certified under the NSF/ ANSI Standard 140 – Sustainable Carpet Assessment (NSF 140). Six of Bentley's standard backing products are NSF 140 certified at the Gold level or above. Bentley's carpet products are manufactured in our California mill, a LEED for Existing Buildings: Operations and Maintenance (LEED®-EBOM) Gold certified facility.

Patterned carpet may require special attention by the installer to assure a suitable match, and must be addressed in the original labor quotation. Products that go through the shearing process may result in a small loss of yarn weight. Slight variations in color among different production lots are normal and should be considered in the overall installation plan. Carpet specifications and components are subject to normal manufacturing tolerances and may change without notice. Technical performance characteristics are subject to adjustment based on results of post-manufacture testing. Product warranted in accordance with the terms and conditions of Bentley's standard printed warranty in effect at time product is sold. All other warranties, including without limitation any implied warranties of merchantability or fitness for a particular purpose, are hereby disclaimed. Made in USA. Warning: unauthorized reproduction of this carpet design constitutes copyright infringement. ©2017 Bentley Mills, Inc.

BENTLEY

Ritual (8RR26)

Product Code	8RR260AA0K	
Product Construction	Tufted Textured Loop	
Fiber	Antron® Lumena™ Type 6,6 Nylon	
Dye Method	Solution Dyed	
Soil/Stain Protection	XTERA™	
Backing & Size	AFIRMA™ Hardback-Tile-18 in x 36 in (45.72 cm x 91.44 cm)	
Yarn Weight	25 oz/yd^2	847.6 g/m^2
Machine Gauge	1/10 in	39.4 ends/10 cm
Pile Height		
High	0.186 in	4.7 mm
Medium	0.156 in	4.0 mm
Low	0.082 in	2.1 mm
Stitches	12.0 /in	47.2 ends/10 cm
Pile Density	7,719 oz/yd^3	
Total Weight	83 oz/yd^2	2,814.2 g/m^2
Total Thickness	0.260 in	6.6 mm
Size	18 in x 36 in	45.72 cm x 91.44 cm
Radiant Panel	Passes Class 1, ≥ 0.45 W/cm^2 (ASTM-E648)	
Smoke Density	< 450 Dm corr (ASTM-E662), Flaming	
Static	≤ 3.5 kV (AATCC-134), Step	
Flammability	Passes Methenamine Pill Test (CPSC-FF1-70)	

Bentley's High PerformancePC, NexStep® Cushion Tile, and AFIRMA™ Hardback Tile products are Cradle to Cradle Certified™ Silver. Bentley products are also certified under the NSF/ ANSI Standard 140 – Sustainable Carpet Assessment (NSF 140). Six of Bentley's standard backing products are NSF 140 certified at the Gold level or above. Bentley's carpet products are manufactured in our California mill, a LEED for Existing Buildings: Operations and Maintenance (LEED®-EBOM) Gold certified facility.

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Product Specifications
ARROYO -- INFINITY MODULAR

MANNINGTON COMMERCIAL

PHYSICAL CONSTRUCTION:

CONSTRUCTION:	Pattern Loop (Non-Ortho Phthalate Construction)
FACE FIBER:	Invista Antron Lumena Type 6,6 Four Hole, Hollow Filament Nylon, with Permanent Stain and Bleach Protection, Static Control, and Duratech Soil Resistant Treatment, and a Fiber Modification Ratio of <1.5
DYE METHOD:	Solution
GAUGE:	1/10
STITCHES PER INCH:	9.25
PILE THICKNESS:	.151 Inches
TUFTED YARN WEIGHT:	34 Ounces Per Square Yard
DENSITY:	Average Density = 8,105 Weight Density = 275,602
PRIMARY BACKING:	100% Synthetic
SECONDARY BACKING:	Infinity Modular Reinforced Composite Closed Cell Polymer
STANDARD SIZE:	12" X 48" Modular Tiles
INSTALLATION METHOD:	3 – Step Vertical Ashlar

ENVIRONMENTAL:

RECYCLED CONTENT:	Contains Pre-Consumer Recycled Content*
MANUFACTURE LOCATION:	Calhoun, Georgia 30701 USA
NSF / ANSI-140 CERTIFICATION:	Gold
CRI GREEN LABEL PLUS ID:	GLP7616

3rd Party Certified Product Specific Type III EPD

WARRANTIES:

WARRANTY:	Lifetime Limited Warranty, Including Face Wear, Moisture Barrier, Delamination, Tuft Bind, Unraveling, and Static Protection
BLEACH RESISTANT WARRANTY:	ColorSafe with 15 Year Limited Warranty Against Color Loss from Bleach Spills
STAIN RESISTANT WARRANTY:	XGUARD with 15 Year Limited Warranty Against Staining

PRODUCT TESTING:

RADIANT PANEL (ASTM E-648):	Class I (Direct Glue)
SMOKE CHAMBER (ASTM E-662):	Less than 450 (Flaming Mode)
METHENAMINE PILL TEST (ASTM D-2859):	Passes
DIMENSIONAL STABILTY AACHEN TEST:	Passes
ELECTROSTATIC PROPENSITY (AATCC 134):	Less than 3.0 KV

RECOMMENDED ADHESIVE:

RELEASEABLE ADHESIVE:	Mannington Infinity Pressure Sensitive Adhesive
CRI GREEN LABEL PLUS ID:	GLP70522
VOC LIMITS:	Meets SCAQMD Rule #1168
BOND WARRANTY:	Lifetime Limited Warranty When Used With Mannington Carpet

Specifications are subject to normal manufacturing variances. Specifications are subject to change without notice when technological advancements provide improved product performance.

* Most products contain a higher percentage of recycled content than the minimums listed above. Please contact Mannington Technical Services at 1-800-241-2262 for updated, specific recycled content percentages for each product.

Hard Surface Flooring

2019

PFT-1,2,3,4,5,6,7

Shades by Crossville®

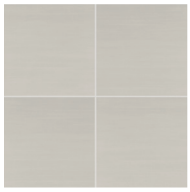
Porcelain Stone

Color Palette

AV241 ▸ Frost UPS

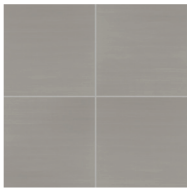
AV242 ▸ Vapor UPS

AV243 ▸ Fog UPS



AV244 ▸ Mist UPS

AV245 ▸ Clay UPS



AV246 ▸ Ash UPS

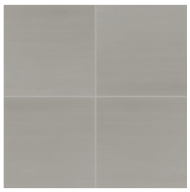
AV241 ▸ Frost HON

AV242 ▸ Vapor HON

AV243 ▸ Fog HON

AV244 ▸ Mist HON

AV245 ▸ Clay HON

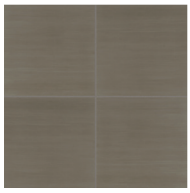


AV246 ▸ Ash HON

AV247 ▸ Haze UPS

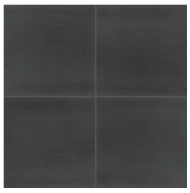
AV248 ▸ Thunder UPS

AV249 ▸ Ink UPS



AV247 ▸ Haze HON

AV248 ▸ Thunder HON



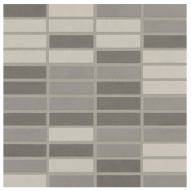
AV249 ▸ Ink HON

Features and Benefits

- Honed mosaics and metallic borders add design versatility and aesthetic appeal
- Cross-Sheen® finish for easy cleaning (available on UPS only)
- Comprised of nine contemporary colors
- Field tile is **rectified** and designed to be modular with a minimum 3mm grout joint
- Features subtle linear pattern. This pattern can run in the same direction or alternate to provide greater visual texture
- Contains a minimum of 4% pre-consumer recycled content and is manufactured by Crossville® using processes that is Green Squared℠ certified

Mosaic blends available**

SBC1/.10103HMOS ▸
Warm Grays
(AV243, AV245, AV247)



SBC2/.10103HMOS ▸
Cool Grays
(AV244, AV246, AV248)

SBC3/.10103HMOS ▸
Whites
(AV241, AV242)

1 x 3 Mosaic Border***

SBC1/.10212MT ▸ Luster

SBC2/.10212MT ▸ Shine

** Honed finish only.
*** Globally sourced.

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Shades by Crossville®

Porcelain Stone

Sizes & Finishes

Field Tile

Available in all colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
6 x 24	147 x 597	10.5	UPS/HON
12 x 24	297 x 597	10.5	UPS/HON
24 x 24	597 x 597	10.5	UPS/HON

Note: All field tile is **rectified** and modular with a minimum 3mm grout joint.
Actual measurements stated in inches indicate tile is calibrated (non-rectified).
Actual measurements stated in mm indicate tile is rectified.

Mosaic & Mosaic Border

Available in all colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
1 x 3 Mosaics*	297 x 297	10.5	HON
1 x 3 Mosaics Border**	47 x 334.5	10.5	Metallic

* 1 x 3 honed mosaics mesh mounted in 11-7/8 x 11-7/8 sheets.
** Mounted on a 2 x 13 sheet. Globally sourced.

Coordinating Trim

Available in all colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
4 x 24 Single Bullnose	96 x 597	10.5	UPS/HON
6 x 12 Cove Base	150 x 297	10	UPS

4 x 24 Bullnose
Honed (Honed finish) is semi-polished

6 x 12 Cove Base (universal, flat top)

Product Performance

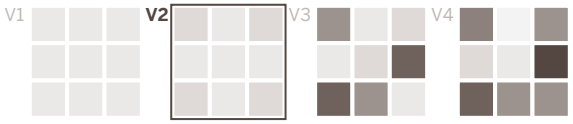
Breaking Strength	>500 lbf	ASTM C648
Bond Strength	>200 psi	ASTM C482
Chemical Resistance	Unaffected	ASTM C650
Frost Resistance	Resistant	ASTM C1026
Water Absorption	<0.20%	ASTM C373
Scratch Hardness	7	Mohs Scale

Wet Dynamic COF

UPS	0.50 – 0.60	DCOF AcuTest™
HON	0.42 – 0.52	DCOF AcuTest™

Shade & Texture Index

Shades by Crossville™ has a shade variation of V2.



V1 Uniform appearance
V2 Slight Variation
V3 Moderate Variation
V4 Substantial Variation

This porcelain tile product is produced with a V2 variation. Differences among pieces from the same production run are minimal. Inspect the product upon delivery and for best results, blend tile from several cartons during installation.

Sizes (Shown in AV248 Thunder UPS)

Get Planked!

Our Porcelain Stone® products are available in popular plank shapes with no minimum order and quick fulfillment. Depending on the product, there are up to 4 widths and 7 lengths, creating more than 2,796 combinations.

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Shades by Crossville®

Crossville, Inc.
PO Box 1168
Crossville, TN
38557

Phone 931.484.2110
Fax 931.456.2956
E-Mail Crossc@CrossvilleInc.com
Web CrossvilleInc.com

Recommended Use

Shades by Crossville® is recommended for interior floors, walls, countertops, and exterior walls in both residential and commercial applications. Shades by Crossville™ is not recommended for exterior horizontal surfaces or exterior paving. **The honed field tile is not recommended for wet areas where standing water may occur.** If offset pattern is required for tiles 18 inches or longer, Crossville® recommends an offset of not greater than 33%. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage.See CrossvilleInc.com for detailed installation instructions.

Wet Tile Use

Crossville® produces the Shades by Crossville® mosaics with the honed (HON) finish and the AcuTest℠ Wet Dynamic COF ≥ .42. Their small sizes ensure frequent grout joints which provides traction and drainage. Crossville cannot control situations involving incorrect installation, improper slope to the drain for elimination of standing water and poor surface cleaning.

This information is provided so that customers may make a realistic and informed decision when comparing Shades by Crossville to other tile products in wet area environments, such as residential/commercial bathrooms, showers, and interior pool decks.

Care and Maintenance

Regular cleaning is the best way to keep Shades by Crossville® tile looking good for years to come. Use clean, hot water (combined with a household cleaner for more aggressive cleaning). Rinse thoroughly and dry with a soft cloth. No waxes are needed. More information regarding the care and maintenance of Crossville® products is available at CrossvilleInc.com.

EcoCycle Tile Process™

Shades by Crossville® contains a minimum of 4 percent pre-consumer recycled content and is manufactured by Crossville® using processes that recycle nearly 12 million pounds of previously discarded filtrate and fired tile waste. In addition to its own fired waste recycling, Crossville also accepts and recycles reclaimed, previously installed tile through its Tile Take-Back™ Program. For more information, visit CrossvilleInc.com/green.

Green Squared℠ Certified

Crossville® has earned Green Squared℠ certification from the Tile Council of North America (TCNA) for its entire U.S.-manufactured porcelain product line-up, as well as its manufacturing processes. The company is among the first ever recipients of this certification standard for the tile industry. TCNA developed the Green Squared certification under American National Standards Institute (ANSI) process. The multi-attribute program (ANSI A138.1) scores products in five categories of performance: product characteristics, manufacturing, corporate governance, innovation and end-of-life. Crossville's certified products and processes received stringent evaluation from Scientific Certification Systems (SCS), the green building industry's longest standing third-party certifier.

Hydrotect

Our porcelain tiles are available with Hydrotect™. Crossville's revolutionary invisible coating harnesses the power of light, water, and oxygen to create the best defense against dirt and pollution. Whether indoors or out, floors and walls stay cleaner, providing a superior experience in any space. For complete details check our website at CrossvilleInc.com.

HYDROTECT™ by CROSSVILLE

National Accounts

For over 20 years we have been offering Porcelain tile to commercial customers at National Accounts pricing programs with special discounts. The National Accounts department provides materials forecasting, sales support and samples.

Exterior Cladding

Crossville's Porcelain Stone® Exterior Cladding Systems are suitable for virtually any conventional masonry application. When used in conjunction with our exterior cladding systems, Crossville's Porcelain Stone offers clear advantages: decreased construction costs, less site disturbance, low-to-zero maintenance after installation, accelerated construction schedules and greater strength than traditional masonry.

Our Warranty

Crossville Inc. guarantees that its products will meet or exceed the performance specifications outlined in ANSI A137.1-2012 and in the performance data section of the Crossville, Inc. general product catalog. For complete details check our website at CrossvilleInc.com.

Crossville® Sample Express

Sample fulfillment & Help Line
Samples@CrossvilleInc.com
1 800 221.9093

Loose Samples for
Architects & Designers

Loose Tile Samples
Sizes may vary depending on product series
Max. of 4 large field tile per order

Replacement Chips for PSS Rack
Max. of 5, 2 x 2 chips per color

Standard Shipping
UPS Ground

Information listed here is subject to change. Please refer to CrossvilleInc.com for the latest, most accurate information.

Trade Organizations

Environmentally Aware

FS-SHADES-8-17

Argent

Porcelain Stone®

Color Palette

A1401 ▸ Winter Garden I

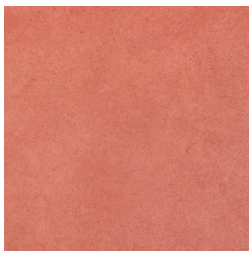
A1413 ▸ Under the Sea I

A1410 ▸ Orange Crush III

A1417 ▸ Clean Slate II

A1402 ▸ Sacred Sand I

A1405 ▸ Hollywood and Vine II



A1411 ▸ Sunset Boulevard III

A1414 ▸ Carnegie Cool III

A1409 ▸ Lemon Drop II

A1406 ▸ Emerald City II

A1412 ▸ Chicago Fire III

A1415 ▸ Memphis Blues III

A1403 ▸ No Reservations I

A1407 ▸ Water Vapors II

A1418 ▸ Concrete Jungle I

A1416 ▸ Grapes of Wrath III

A1404 ▸ Cowboy Up I

A1408 ▸ Glacier Lake II

A1419 ▸ Muddy Waters I

A1420 ▸ On the Rocks II

I = Price Group I, II = Price Group II, III = Price Group III

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Argent

Porcelain Stone®

Sizes & Finishes

Field Tile

Available in all colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
6 x 6*	147 x 147	9.5	UPS
6 x 24*	147 x 602.5	9.5	UPS
12 x 24	299 x 602.5	9.5	UPS/HON

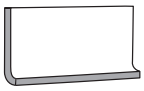
*HON finish available through special order
All field tiles except 12 x 12* are rectified and modular with a 4.5 mm grout joint. 12 x 12 is nonrectified, recommended grout joint 3/16 to 1/4 inch.

Nominal (in)	Actual (in)	Thickness (mm)	Finish
12 x 12*†	11-13/16 x 11-13/16	9.5	UPS

*HON finish available through special order
† Calibrated and measured in inches
Note: All field tile exc.ept 12 x 12† are rectified and modular with a 4.5mm grout joint.
12 x 12† is non-rectified, recommended grout joint of 3/16" to 1/4"

Coordinating Trim

Nominal (in)	Actual (in)	Thickness (in)	Finish
6 x 12 Cove Base	147 x 299	9.5	UPS
4 x 12 Single Bullnose	96 x 299	9.5	UPS



6 x 12 Cove Base (universal, flat top) (available only in A1401, A1402, A1403, A1404, A1417, A1418, A1419 and A1420)

4 x 12 Single Bullnose (available in all colors)

Product Performance

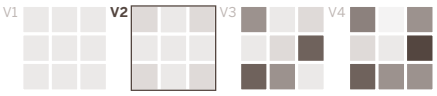
Breaking Strength	>500 lbf	ASTM C648
Bond Strength	>200 psi	ASTM C482
Chemical Resistance	Unaffected	ASTM C650
Frost Resistance	Resistant	ASTM C1026
Water Absorption	<0.20%	ASTM C373
Scratch Hardness	7	Mohs Scale

Wet Dynamic COF

UPS	.50 – .60	DCOF AcuTest™
HON	.42 – .52	DCOF AcuTest™

Shade & Texture Index

Argent has a shade variation of V2.

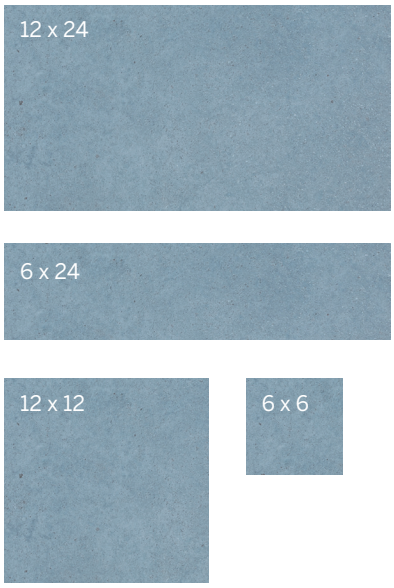


V1 Uniform appearance
V2 Slight Variation
V3 Moderate Variation
V4 Substantial Variation

This porcelain tile product is produced with a V2 variation. Differences among pieces from the same production run are minimal. Inspect the product upon delivery and for best results, blend tile from several cartons during installation.

Information listed here is subject to change. Please refer to CrossvilleInc.com for the latest, most accurate information.

Sizes (UPS and HON Finish)



Get Planked!

Our Porcelain Stone® products are available in popular plank shapes with no minimum order and quick fulfillment. Depending on the product, there are up to 4 widths and 7 lengths, creating more than 2,796 combinations.

A1405 ▸ Hollywood and Vine 12 x 24, 6 x 24 and 3 x 24
A1406 ▸ Emerald City 12 x 24, 6 x 24 and 3 x 24

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Argent

Crossville, Inc.
PO Box 1168
Crossville, TN
38557

Phone 931.484.2110
Fax 931.456.2956
E-Mail Crossc@CrossvilleInc.com
Web CrossvilleInc.com

Features and Benefits

- Broad coordinating color palette provides dramatic design versatility
- Rectangular sizes are enhanced with Get Planked® options
- Cross-Sheen® finish for easy cleaning (available on UPS only)
- Honed colors available in stock as 12 x 24

Recommended Use

Argent is recommended for interior floors, walls, countertops, and exterior walls in both residential and commercial applications. Argent is not recommended for exterior horizontal surfaces or exterior paving. The honed finish is not recommended for wet areas where standing water may occur. If offset pattern is required for tiles 18 inches or longer, Crossville® recommends an offset of not greater than 33%. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage. See CrossvilleInc.com for detailed installation instructions.

Care and Maintenance

Regular cleaning is the best way to keep Argent tile looking good for years to come. Use clean, hot water (combined with a household cleaner for more aggressive cleaning). Rinse thoroughly and dry with a soft cloth. No waxes are needed. More Information regarding the care and maintenance of Crossville® products is available at CrossvilleInc.com.

Photo Below:
A1409 ▸ Lemon Drop 6 x 24
A1402 ▸ Winter Garden 12 x 24

EcoCycle Tile Process™

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Green Squared℠ Certified

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Hydrotect

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Exterior Cladding

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Crossville® Sample Express

Sample fulfillment & Help Line
Samples@CrossvilleInc.com
1 800 221.9093

Loose Samples for
Architects & Designers

Loose Tile Samples
Sizes may vary depending on product series
Max. of 4 large field tile per order

Replacement Chips for PSS Rack
Max. of 5, 2 x 2 chips per color

Standard Shipping
UPS Ground

Our Warranty

Crossville Inc. guarantees that its products will meet or exceed the performance specifications outlined in ANSI A137.1-2012 and in the performance data section of the Crossville, Inc. general product catalog. For complete details check our website at CrossvilleInc.com.

Information listed here is subject to change. Please refer to CrossvilleInc.com for the latest, most accurate information.

Trade Organizations

Environmentally Aware

FS-ARGENT-8-17

MANUFACTURER

Iris U.S.
1360 S Vernon Street,
Anaheim, CA 92805
Telephone: **800.323.9906**
Fax: **866.398.4747**
Web: **www.irisus.com**

1. PRODUCT NAME

Travertini Al Contro Collection

Bianco Al Contro

Grigio Al Contro

Argento Al Contro

Note to Specifier: Click on color with Internet Connection to hyperlink directly to product color data at the Iris US website.

2. PRODUCT DESCRIPTION

(Green Choice includes pre-consumer recycled materials and post-consumer recycled materials)

Iris US proudly contains factory and products certifications:

Size/thickness:

24" x 48" x 5/16" nominal
8" x 48" x 5/16" nominal
12" x 24" x 5/16" nominal
6" x 24" x 5/16" nominal

Finishes:
Honed and Polished

Recommended Grout Joint: 3/32" or greater
All sizes modular with 3/16" grout joint (≈5 mm)

Grout joints of 1/8" inch or less, especially with larger format tiles or running bond patterns, may require floor flatness values in excess of the 1/4" in 10' (or 1/16" in 1.0') standard required by ANSI.

See ANSI A108.01 2.6.2.2

For patterns with running bond/brick joints patterns Iris US recommends a maximum of 33% offset.

See ANSI A108.02 section 4.3.8

3. TECHNICAL DATA

Physical Properties	ASTM Test	Industry Standards	Iris US Results
Water Absorption	C373	Impervious <0.5%	≤ 0.1%
Thickness Dimension	C499	Range ±0.04in Max.	≤ ±0.04 in
Facial Dimension	C499	±0.25%	≤ ±0.25%
Warpage Average	C485	± 0.40% on any edge	≤ ± 0.40%
Warpage Average	C485	± 0.40% on diagonal	≤ ± 0.40%
Wedging Average	C502	± 0.25%	≤ ± 0.25%
Bond Strength	C482	≥ 50 psi	≥ 200 psi
Breaking Strength	C648	≥ 250 lbf	≥ 400 lbf
Hardness (Mohs)	Scratch Test (No regulated)	Range 0 - 10	≥ 7
Visible Abrasion Resistance for Glaze Tile	C1027	No requirement Range 0 - 5	Class 4
Frost Resistance (Freeze/Thaw)	C1026	No sample must show alterations to surface	No evidence of damage
Chemical Resistance	C650	No Requirement Range E - A	Class A
Stain Resistance	C1378	No Requirement Range E - A	Class A*
Coefficient of Friction (Dynamic)	DCOF Acutest sm (wet)	≥ 0.42	≥ 0.50*
Aesthetic Classification	Visual Evaluation Shade & Texture	No Requirement Range V0 – V4	V2

* All values given are for matte or honed material. No values are given for polished material. Iris U.S. does not recommend polished surfaces in area subject to exposure from grease, oil or water.

For level interior spaces to be walked upon when wet (see ANSI A137.1 section 6.2.2.1.10 – Section 9.6 for test procedure).

4. INSTALLATION

All installation work using Iris US tiles will conform to the standards set forth in the latest version of ANSI A108/118 and/or the TCNA Handbook for Ceramic Tile installations.

Installation or setting materials:

Movement joints shall be provided throughout the tile and work will conform to ANSI Specification A108.01-3.7; A108.02 – 4.4. and TCNA Details EJ171.

Setting materials used will conform to the ANSI 118.4 standard or greater and be recommended by the selected manufacturer for the installation & setting materials for ceramic or porcelain tile based on the application requirements.

5. WARRANTY

Iris US guarantees that its products will be free of manufacturing defects and they will meet or exceed the performance specifications set forth in ANSI 137.1.

6. MAINTENANCE

Care and Maintenance Recommendations Guide

Please refer to **Iris US Care and Maintenance Recommendations Guide** for all technical information as to the care of this collection.

7. TECHNICAL SERVICES

Technical Assistance

Guide Specifications, literature, MSDS, tile samples, details and installation procedures are all available for your use or libraries.

Please contact your nearest Iris US representative for catalogues, physical samples, or architectural binders.

Nest™
Porcelain Stone®

Oak Colors

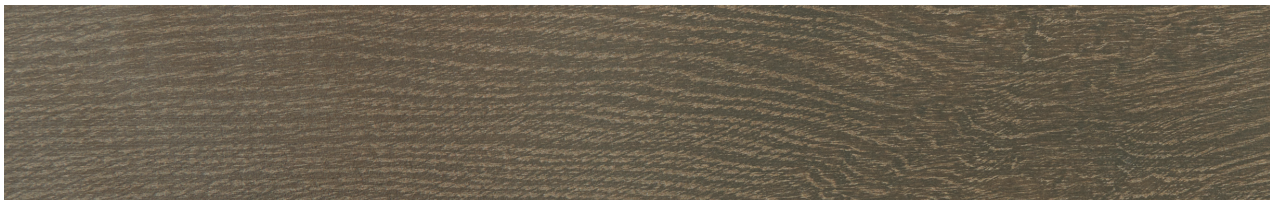
AV351 ▸ Levity Oak

AV352 ▸ Joyous Oak

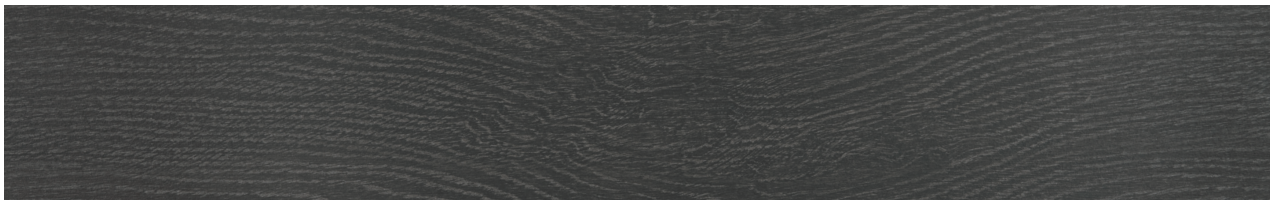
AV353 ▸ Blissful Oak

AV354 ▸ Mindful Oak

AV355 ▸ Peaceful Oak



AV356 ▸ Slumber Oak



AV357 ▸ Meditative Oak

CROSSVILLE®
ELEVATE YOUR SPACE

Crossville, Inc. • P.O. Box 1168, Crossville, TN 38557 • Phone: 931.484.2110 • Fax: 931.456.2956 • E-Mail: Crossc@CrossvilleInc.com • CrossvilleInc.com

Nest™

Porcelain Stone®

Olive Colors

AV361 ▸ Levity Olive

AV362 ▸ Joyous Olive

AV363 ▸ Blissful Olive

AV364 ▸ Mindful Olive

AV365 ▸ Peaceful Olive

AV366 ▸ Slumber Olive

AV367 ▸ Meditative Olive

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Nest™

Porcelain Stone®

Olive Colors

NBC01 ▸ Levity in Oak and Olive MIX
1 x 6 Mosaics

NBC02 ▸ Joyous in Oak and Olive Mix
1 x 6 Mosaics

NBC03 ▸ Blissful in Oak and Olive Mix
1 x 6 Mosaics

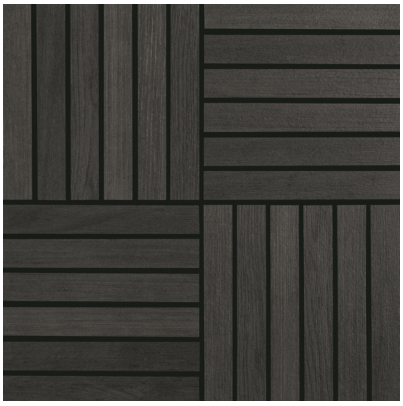
NBC04 ▸ Mindful in Oak and Olive Mix
1 x 6 Mosaics

NBC05 ▸ Peaceful in Oak and Olive Mix
1 x 6 Mosaics

NBC06 ▸ Slumber in Oak and Olive Mix
1 x 6 Mosaics

Features and Benefits

- Nest™ offers a soothing, neutral color palette, all with the sophisticated clean graining of premium wood .
- The two available grains replicate the allure of rough cut oak planks and the simplistic beauty of olive wood
- Both grains are offered in seven distinct colors that compliment the characteristics of each species
- Combine the 1 x 6 sheet mounted mosaics and 3 x 15 planks for a unique parquet look
- Coordinates with Notorious™ for additional design opportunities
- Modular sizes 6 x 36 and 8 x36 including a flexible 3 x 15 plank
- A trim package with both bullnose and cove base
- Contains a minimum 4 percent pre-consumer third-party recycled content and is Green Squared℠ Certified.
- Made in U.S.A.



NBC07 ▸ Meditative in Oak and Olive Mix
1 x 6 Mosaics

NBC08 ▸ Levity, Blissful, and Mindful in Olive Mix
1 x 6 Mosaics

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Nest™

Porcelain Stone®

Sizes UPS Finish, available in all colors

1 x 6 Mosaics
(shown in NBC02)
UPS Finish,
8 colors available
Mesh mounted on a
297mm x 297mm sheet

Sizes & Finishes

Field Tile

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
3 x 15	72 x 372	10.5	UPS
6 x 36	147 x 897	10.5	UPS
8 x 36	197 x 897	10.5	UPS

Note: All field tile is rectified and modular with a minimum 3mm grout joint.
Actual measurements stated in inches indicate tile is calibrated (non-rectified).
Actual measurements stated in mm indicated tile is rectified.

Mosaics

Available in 8 colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
1 x 6 Mosaics	297 x 297	10.5	UPS

Mesh mounted on a 297mm x 297mm sheet.

Coordinating Trim

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
6 x 18 Single Bullnose	147 x 447	10.5	UPS
6 x 12 Cove Base (Olive only)	150 x 297	10	UPS

6 x 18 Single Bullnose

6 x 12 Cove Base
(Olive only)

Product Performance

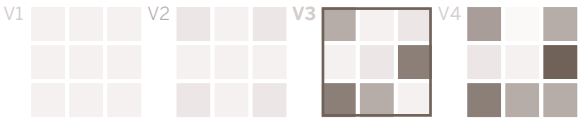
Breaking Strength	>450 lbf	ASTM C648
Bond Strength	>200 psi	ASTM C482
Chemical Resistance	Unaffected	ASTM C650
Frost Resistance	Resistant	ASTM C1026
Water Absorption	<0.10%	ASTM C373
Scratch Hardness	7	Mohs Scale

Wet Dynamic Coefficient of Friction

UPS	.42 – .52	AcuTest℠

Shade & Texture Index

Nest™ has a shade variation of V3.



V1 Uniform appearance
V2 Slight Variation
V3 Moderate Variation
V4 Substantial Variation

This porcelain tile product is produced with a V3 variation. Expect that the amount of color and texture on each piece may vary significantly. Inspect the product upon delivery and for best results, blend tile from several cartons during installation.

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Nest™

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PO Box 1168
Crossville, TN
38557

Phone 931.484.2110
Fax 931.456.2956
E-Mail Crossc@CrossvilleInc.com
Web CrossvilleInc.com

Recommended Use

Nest™ is recommended for interior floors, walls, counter tops and exterior walls in both residential and commercial applications. If offset pattern is required for tiles 18 inches or longer, Crossville® recommends an offset of not greater than 33%. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage. See CrossvilleInc.com for detailed installation instructions.

Care and Maintenance

Regular cleaning is the best way to keep Nest tile looking good for years to come. Use clean, hot water (combined with a household cleaner for more aggressive cleaning). Rinse thoroughly and dry with a soft cloth. No waxes are needed. More Information regarding the care and maintenance of Crossville® products is available at CrossvilleInc.com.

AV355 ▸ Peaceful Oak 6 x 36 on floor
NBC05 ▸ Peaceful in Oak and Olive Mix 1 x 6 Mosaics on shower floor
AV354 ▸ Mindful Oak 6 x 36 on wall

Hydrotect™

Our porcelain tiles are available with Hydrotect™. Crossville's revolutionary invisible coating harnesses the power of light, water, and oxygen to create the best defense against dirt and pollution. Whether indoors or out, floors and walls stay cleaner, providing a superior experience in any space. For complete details check our website at CrossvilleInc.com.

HYDROTECT™ by CROSSVILLE

EcoCycle Tile Process™

Nest™ contains a minimum of 4 percent pre-consumer recycled content and is manufactured by Crossville® using processes that recycle nearly 12 million pounds of previously discarded filtrate and fired tile waste. In addition to its own fired waste recycling, Crossville also accepts and recycles reclaimed, previously installed tile through its Tile Take-Back™ Program. For more information, visit CrossvilleInc.com/green.

Green Squared℠ Certified

Crossville® has earned Green Squared℠ certification from the Tile Council of North America (TCNA) for its entire U.S.-manufactured porcelain product line-up, as well as its manufacturing processes. The company is among the first ever recipients of this certification standard for the tile industry. TCNA developed the Green Squared certification under American National Standards Institute (ANSI) process. The multi-attribute program (ANSI A138.1) scores products in five categories of performance: product characteristics, manufacturing, corporate governance, innovation and end-of-life. Crossville's certified products and processes received stringent evaluation from Scientific Certification Systems (SCS), the green building industry's longest standing third-party certifier.

National Accounts

For over 20 years we have been offering Porcelain tile to commercial customers at National Accounts pricing programs with special discounts. The National Accounts department provides materials forecasting, sales support and samples.

Exterior Cladding

Crossville's Porcelain Stone® Exterior Cladding Systems are suitable for virtually any conventional masonry application. When used in conjunction with our exterior cladding systems, Crossville's Porcelain Stone offers clear advantages: decreased construction costs, less site disturbance, low-to-zero maintenance after installation, accelerated construction schedules and greater strength than traditional masonry.

Our Warranty

Crossville Inc. guarantees that its products will meet or exceed the performance specifications outlined in ANSI A137.1-2012 and in the performance data section of the Crossville, Inc. general product catalog. For complete details check our website at CrossvilleInc.com.

Crossville® Sample Express

Sample fulfillment & Help Line
Samples@CrossvilleInc.com
1 800 221.9093

Loose Samples for
Architects & Designers

Loose Tile Samples
Sizes may vary depending on product series
Max. of 4 large field tile per order

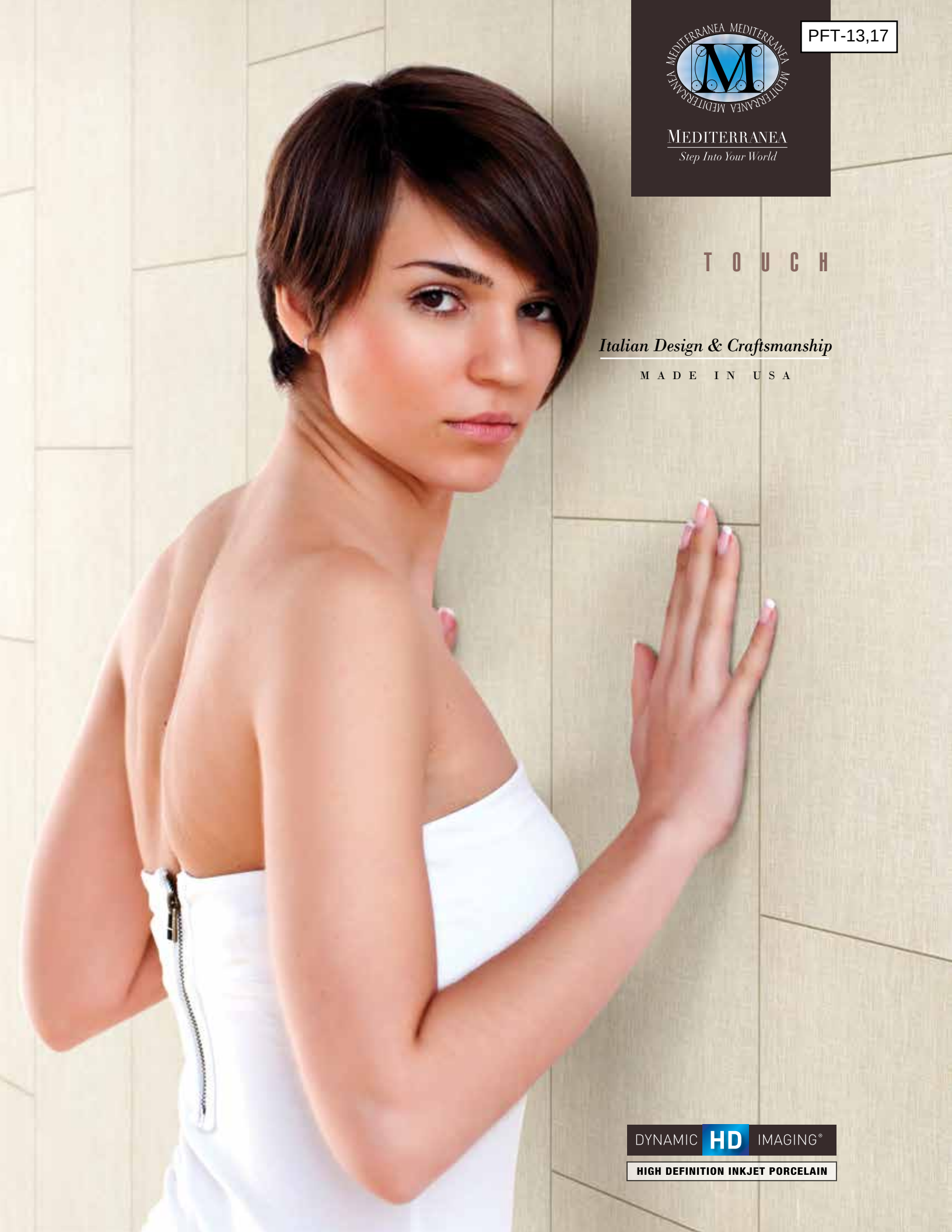
Replacement Chips for PSS Rack
Max. of 5, 2 x 2 chips per color

Standard Shipping
UPS Ground

Information listed here is subject to change. Please refer to CrossvilleInc.com for the latest, most accurate information.

Trade Organizations

Environmentally Aware



PFT-13,17

MEDITERRANEA

Step Into Your World

TOUCH

Italian Design & Craftsmanship

MADE IN USA

DYNAMIC HD IMAGING®

HIGH DEFINITION INKJET PORCELAIN

S U N G L O W

18” x 36”
RECTIFIED

12” x 24”
RECTIFIED

12” x 12”
RECTIFIED

3” x 6”

3” x 12” BULLNOSE

3” x 12”

4” x 36” BULLNOSE

4” x 18”

DYNAMIC HD IMAGING®

HIGH DEFINITION INKJET PORCELAIN

E V E N I N G S U N S E T

P E A R L E S S E N C E

SNOW CREST

18” x 36”
RECTIFIED

12” x 24”
RECTIFIED

12” x 12”
RECTIFIED

3” x 6”

3” x 12” BULLNOSE

3” x 12”

4” x 36” BULLNOSE

4” x 18”

DYNAMIC HD IMAGING®

HIGH DEFINITION INKJET PORCELAIN

TECHNICAL SPECIFICATION TABLE

PHYSICAL PROPERTIES		TEST	AVG.RESULTS
	Visible Abrasion Resistance	ASTM C1027	4
	Water Absorption	ASTM C373	0.05%
	Chemical Resistance	ASTM C650	Class A
	Dynamic C.O.F.	BOT 3000	0.58
	MOHS		7
	Breaking Strength	ASTM C648	502 lbf

See me ... Feel me ... Touch me.

It's been over 40 years since Roger Daltrey of The Who sang those immortal lyrics in the rock opera "Tommy". And today, a porcelain tile has been created that you truly do have to see, feel and touch to totally experience. Mediterranea proudly introduces the Touch series – a product unlike any other in the 25-year history of the world-renowned tile design and manufacturing company.

Now available in the 18" x 36" format, Touch features a unique and unmistakable linen texture not found in other manufactured products. Running your hands over the surface, you understand that your eyes are not deceiving you – the tile truly does have the "touch" of the world's nest textured linen. Created using Mediterranea's unique Dynamic HD Imaging® design process, Touch features classic colors and subtle design elements to make it ideal for use in any distinctive installation. Touch is available in five refined colors suited for the most elegant settings – Evening Sunset (olive), Summer Breeze (taupe), Snow Crest (white), Sun Glow (beige) and Pearl Essence (grey).

Touch is manufactured in 18" x 36", 12" x 24" and 12" x 12", with artistic medallions featuring unique 3" x 6", 3" x 12" and 4" x 18" formats designed to satisfy the latest design trends. Bullnose in a 3" x 12" size is also available to round out the collection. Touch is truly a series for all the senses – a tile that needs to be both seen – and touched - to be appreciated.

Version: Dec. 6, 2016

GRT-1,2,3,4

Kerapoxy®

Premium Epoxy Grout and Mortar

DESCRIPTION

Kerapoxy is a premium-grade, water-cleanable, 100%-solids, high-strength epoxy mortar and chemical-resistant nonsagging grout. Available in all MAPEI colors for grouting, *Kerapoxy* is excellent for countertops, high-traffic areas, and areas needing stain and chemical resistance.

FEATURES AND BENEFITS

- Stain-free†
- No sealer required
- Water-cleanable

† *With immediate cleaning and proper maintenance,* Kerapoxy *stain-free grout is resistant to staining when exposed to most common household goods and cleaning agents. Long-term exposure to any material can increase the potential for staining grout.*

INDUSTRY STANDARDS AND APPROVALS

- ANSI: Meets A118.3 requirements
- ISO 13007: Classification R2/RG

LEED v4 Points Contribution — LEED Points

Health Product Declaration (HPD)* ..... Up to 2 points

** Using this product may help contribute to LEED certification of projects in the category shown above. Points are awarded based on contributions of all project materials.*

Additional Green Certifications

- Living Building Challenge (LBC) Red List Free: This product has been verified per the most current Red List on the LBC website.

WHERE TO USE

For use as a grout

- For grouting most ceramic, porcelain and quarry tiles; acid-resistant floor brick; pavers; and natural-stone tile**
- For grouting interior residential and commercial floor/wall applications
- For grouting exterior residential and commercial floor applications (contact MAPEI's Technical Services Department)
- For industrial, commercial and institutional installations with high-strength, chemical-resistant and nonsagging grout requirements, see "Chemical Resistance" chart in this document. For extreme industrial or commercial applications such as dairies, breweries and high-volume food kitchens, *Kerapoxy IEG CQ* is recommended.
- For heavy traffic areas such as subway stations, shopping malls and airport terminal buildings
- For areas requiring stain-resistant grout such as countertops, vanities and laboratory tabletops.

For use as a mortar

- For setting interior floors and walls
- For exterior installations (contact MAPEI's Technical Services Department)
- For setting most ceramic, porcelain and quarry tiles, acid-resistant floor brick, pavers and natural-stone tile**
- For the installation of moisture-sensitive natural stone and their agglomerates. When setting light-colored marble, which can be stained by epoxy, use white *Granirapid*®, white *Ultraflex*™ *RS* or white *Ultracontact*™ *RS* or white *Ultraflex LFT*™ *Rapid*.**

- For residential wall, floor and countertop installations
- For installations in areas subject to high water use or submerged conditions (such as gang showers, pools, spas and fountains)
- For industrial, commercial and institutional installations with high mortar requirements, see "Chemical Resistance" chart in this document.

*** Marble, granite and slate are products of nature made from a vast combination of minerals and chemicals that may cause the material to behave or react in a manner beyond our control. Likewise, we do not have control over any of the materials or processes used in the manufacturing of agglomerates. Therefore, determine the suitability of all the materials before proceeding with the installation. To ensure desired results, a mockup installation is required before the actual installation.*

LIMITATIONS

For use as a grout

- Joint width should be between 1/16" and 3/8" (1,5 and 10 mm).
- Do not use for grouting white or translucent marble.
- Do not use in areas subject to excessive heat. Once cured, *Kerapoxy* will resist temperatures up to 212°F (100°C).
- When used as a grout on exterior installations, color variations may occur over time, especially with lighter shades due to ultraviolet rays or environmental contaminants.

Note: Some types of glazed ceramic tiles, marble and granite as well as marble agglomerates can be permanently stained, scratched, dulled or damaged when grouted with pigmented, sanded and epoxy grout formulas. Take all the necessary precautions to ensure that the marble, granite or tiles are compatible with colored grouts. To determine the suitability of the product with colored and/or sanded grouts, check the tile or marble manufacturer's literature and test grout on a separate sample area before grouting.

For use as a mortar

- Do not install over substrates containing asbestos.
- Do not exceed 1/4" (6 mm) in epoxy mortar thickness under the tile.
- Do not apply over particleboard, presswood, oriented strand board (OSB), Masonite, chipboard, Luaun, gypsum floor-patching compounds or similar dimensionally unstable substrates.
- Do not install over peel-and-stick crack-isolation membranes or cutback adhesive residue.

SUITABLE SUBSTRATES

For use as a mortar

- Fully cured concrete (at least 28 days old)
- Cement block and brick masonry
- Cement mortars and leveling coats
- Exterior-grade plywood (interior residential floor and countertop applications in dry areas only)
- Cement backer units (CBUs)
- Existing ceramic tile
- Cement and epoxy terrazzo

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

SURFACE PREPARATION

The temperature of the substrate or tilework must be between 60°F and 90°F (16°C and 32°C) while grouting for best results. For proper curing, maintain this temperature range for 24 to 72 hours after application.

For use as a grout

- The application of a grout release over certain types of porcelain or textured surface tiles or stone may be advantageous where a fine surface porosity might trap fine cement particles or color pigments. Seek the advice of the tile or stone manufacturer and site-test (mock up) on separate samples before grouting.
- Before grouting, make sure that the tiles or stones are firmly set and that the adhesive or mortar is completely dry.
- Remove all spacers, pegs, ropes and strings.
- Grout joints must be clean and free of standing water, dust, dirt and foreign matter. Remove excess adhesive or mortar from the joint area so that 2/3 of the tile depth is left available for grouting.
- Clean the tile or stone surface to remove dust, dirt, mortar, adhesive and other contaminants that may cause grout discoloration.

For use as a mortar

- All substrates should be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion.

See MAPEI's "Surface Preparation Requirements" document in the Reference & Installation Guides section of the Tile & Stone Installations Systems page on MAPEI's Website.

MIXING

Choose all appropriate safety equipment before use. Refer to the Safety Data Sheet for details.

1. Parts A and B are packaged to exact quantity ratios for proper curing.
2. Pour out all material from the Part B container into Part A. To improve flowability, allow enough time for the material to flow completely out of the container. Always mix complete units. Do not add other materials to this mixture.
3. Use a slow-speed mixer (at about 300 rpm), or manually mix smaller kits with a margin trowel.

4. Avoid prolonged mixing, which will trap air and shorten the pot life.
5. Mix thoroughly until a homogenous, consistent color is obtained.
6. Wash tools immediately with water before the epoxy hardens. *Kerapoxy* is extremely difficult to remove once cured.
7. Do not place the lid on the container after the material has been mixed.

PRODUCT APPLICATION

For use as a grout

1. Remove mixed product from the container and place it in small piles. (If grouting a wall, place on kraft paper laid on the floor.) *Kerapoxy* is a thermosetting product, so that it sets up faster in a container or in a large mass.
2. Use a hard-rubber float with a sharp edge to force the grout into the joints in a continuous manner, leaving it flush with the tile edge.
3. Be certain that all joints are well-compacted and free of voids/gaps. Fill the joints with the maximum amount of grout possible.
4. Thoroughly remove excess *Kerapoxy* from the face of the tile before it loses its plasticity or begins to set. This is most easily accomplished by holding the rubber float at a 90-degree angle to the tile surface and dragging the float across the tile surface diagonally to the grout lines, leaving as little epoxy grout on the tile surface as possible.
5. Clean tiles immediately after applying each unit of *Kerapoxy*. Grout and clean in small areas. Do not attempt to use more than one *Kerapoxy* unit before cleaning tiles. Do not allow *Kerapoxy* to harden on the tile surface. On large projects, working in teams of 2 to 3 people will simplify the installation.

6a. For horizontal surfaces:

- Apply a liberal amount of cold water to the freshly grouted area. Scrub the tile surface diagonally to the joint line using a nonwoven, nylon, white scouring pad (use a more aggressive pad if the tile has an abrasive surface). Apply enough pressure on the pad to loosen any film without removing grout from the joints. Rinse pads frequently while cleaning. Be careful not to get any water in the ungrouted joints.
- To remove the loosened epoxy residue and water, drag a clean sponge diagonally across the tile surface. Use one side of the sponge for each pass over the tile, rinsing the sponge following the second pass and regularly changing water in the buckets to avoid residue buildup.
- Do not allow excess water to remain on the tile surface, which would allow a film to form on the surface that would be difficult to remove once hardened.
- In certain applications, a short-nap terry-cloth towel may be substituted for the sponge, which may work more effectively for removing the loosened epoxy residue and water. Using the "towel drag" method, hold the towel by two corners and drag it diagonally across the grout joints. Rinse the towel often and keep changing water in the buckets to avoid residue buildup.
- Do not step on freshly cleaned tiles, as this could permanently damage the grout.

6b. For vertical surfaces:

- Mist the surface using a spray bottle in small workable areas. Use a non-abrasive nylon scrubpad and apply enough pressure on the pad to loosen any film without removing grout from the joints. Rinse pads frequently while cleaning. Be careful not to get any water into the ungrouted joints.
- To touch up grout joint imperfections during initial rinsing, the grout joint can be smoothed with a sharp-edged cellulosic sponge.

7. Perform a final wash within 15 to 20 minutes for best results. To aid in the cleaning process, 1 U.S. oz. (29,6 mL) of a clear dishwashing soap may be added (if needed) to a 3-gallon (11,4-L) pail of clean water. Use a clean, white scrubpad to loosen any remaining residue left on the tile from the first wash. Then follow the same cleaning process as referenced in the section above.
8. Check the installation the following day to make sure it is completely clean. If a tacky residue is found within 24 hours of installation, follow the above instructions for the cleaning removal process.
9. Use only fresh material to fill any voids discovered while cleaning.
10. Check the installation the same day before leaving the jobsite to make sure it is completely clean. If the tile surface has any shiny or tacky residue, remove it with the solution of liquid detergent and water mentioned in Step 7. For more severe cases of epoxy grout haze, use MAPEI's *UltraCare*™ Epoxy Grout Haze Remover.

For use as a mortar

1. Remove the mixed product from the container and place it in piles on the floor. *Kerapoxy* is a thermosetting product, so it sets faster in a container or a large mass.
2. Choose a notched trowel (see the "Approximate Coverage" chart) with sufficient depth to achieve more than 80% mortar contact to both the tile and substrate for interior applications, and more than 95% contact for exterior installations, commercial floor installations and wet applications. All edges of the tile or stone must be supported by the mortar. It may be necessary to back-

butter tiles in order to reach these requirements. (Refer to ANSI A108.5 specifications and TCNA guidelines.)

3. With pressure, apply a coat by using the trowel's flat side to key mortar into the substrate.
4. Apply additional mortar, combing it in a single direction with the trowel's notched side.
5. Spread only as much mortar as can be tiled before the product hardens and loses its ability to transfer to the tile. Open time can vary with jobsite conditions.
6. Place the tiles firmly into the wet mortar. Push the tiles back and forth in a direction perpendicular to trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between the mortar, tile and substrate by periodically lifting a few tiles to check for acceptable coverage (see TCNA adhesive placement guidelines).
7. Remove excess mortar from the joint areas so that at least 2/3 of the tile depth is available for grouting (see ANSI A108.10 guidelines).
8. Provide for expansion and control joints as specified per TCNA Detail EJ171 or TTMAC Specification Guide 09 30 00, Detail 301MJ.
9. Clean tools immediately with fresh water.
10. Check the installation the same day before leaving the jobsite to make sure it is completely clean. If the tile surface has any shiny or tacky residue, remove it with a solution of 1 U.S. oz. (29,6 mL) of a clear dishwashing soap added (if needed) to a 3-gallon (11,4-L) pail of clean water.

PROTECTION

- Protect grout installations for at least 7 days, and wait at least 3 days before checking hardness.
- The optimum curing temperature is 73°F (23°C). Cooler temperatures may require extended protection times.
- Do not disturb grout or walk over installed tiles for at least 24 hours after setting. Do not allow heavy traffic over installed tiles for at least 48 hours after setting.
- Because propane gas heaters will yellow epoxy, refrain from using such heaters or properly vent all exhaust.
- *Kerapoxy* should be cured for at least 10 to 14 days at 73°F (23°C) before water immersion or exposure to chemicals. Longer times will be needed for colder temperatures.
- Do not allow any activity in the area that will cause dirt or debris to become embedded in the grout joints as they are curing.

MAINTENANCE

- *Kerapoxy* should be cured for at least 3 days before routine cleaning.
- When cleaning *Kerapoxy* as grout, keep steam-cleaning wands 6" to 12" (15 to 30 cm) above the tile surface.
- MAPEI grout products are produced to the highest standards of quality. To maintain a clean tile surface, use a neutral-pH cleaner for maintaining the floor, followed by a clean-water rinse.
- Do not use harsh chemicals to maintain the tile surface. Before proceeding with cleaning, consult the cleaner's manufacturer for compatibility, use and application instructions. Remove or rinse fatty acid residue from the grout surface to avoid potential grout deterioration caused by prolonged exposure.

CHEMICAL RESISTANCE (tested according to ISO 13007)

Resistance to chemicals depends on the concentration, temperature and duration of exposure. For long-term durability and improved grout appearance, clean up spills immediately after they occur.

Laboratory tests reveal variable resistance to certain chemicals. The following table may be considered as a general guide for *Kerapoxy* applications at 73°F (23°C).

For recommendations regarding chemicals not listed or concentrations exceeding the levels stated, contact MAPEI's Technical Services Department.

Legend

++ Excellent resistance

\+ Good resistance; long exposure could cause some deterioration; clean surface rapidly with water

\- Poor or no resistance

Product Types	Concentration	Laboratory	Long Time	Short Time
ACIDS				
Vinegar	2.5%	++	++	++
	5%	++	+	++
	10%	-	-	-
Hydrochloric acid	10%	++	++	++
Chromic acid	20%	-	-	-
Citric acid	10%	++	++	++
Formic acid	2.5%	++	++	++
	10%	-	-	-
Lactic acid	2.5%	++	++	++
	5%	++	+	++
	10%	+	-	+
Nitric acid	10%	++	+	++
	50%	-	-	-
Phosphoric acid	50%	++	++	++
	75%	+	-	+
Sulfuric acid	1.5%	++	++	++
	10%	++	++	++
	96%	-	-	-
Tannic acid	10%	++	++	++
Oxalic acid	10%	++	++	++
Oleic acid		-	-	-
BASE AND SALT SOLUTIONS				
Ammonia solution	25%	++	++	++
Caustic soda	50%	++	++	++
Hypochlorite solution				
• Act. CL 6.4 g/L		++	+	++
• Act. CL 165 g/L		-	-	-
Sodium hyposulfite		++	++	++
Calcium chloride		++	++	++
Iron chloride		++	++	++
Sodium chloride		++	++	++
Sodium chromate		++	++	++
Sugar		++	++	++
Aluminum sulfate		++	++	++
Potassium permanganate				
	5%	++	+	++
	10%	+	-	+
Caustic potash	50%	++	++	++
Hydrogen peroxide	1%	++	++	++
	10%	++	++	++
	25%	++	++	++
Sodium bisulfite		++	++	++
OILS AND COMBUSTIBLE PRODUCTS				
Gasoline		++	++	++
Turpentine		++	++	++
Diesel fuel		++	++	++
Peanut oil		++	++	++
Tar		++	+	+
Olive oil		++	++	++
Heating oil		++	++	++
SOLVENTS				
Acetone		-	-	-
Ethylene glycol		++	++	++
Glycerol		++	++	++
Methylcellosolve		-	-	-
Perchloroethylene		-	-	+
Carbon tetrachloride		+	-	+
Chloroform		-	-	-
Methylene chloride		-	-	-
Toluene		-	-	+
Carbon disulfide		+	-	+
Mineral spirits		++	++	++
Benzene		-	-	+
Trichloroethane		-	-	-
Xylene		-	-	-

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ISO 13007 Classification

Classification Code	Test Characteristics	Classification Requirement
RG (reaction resin grout)	Abrasion resistance†	≤ 0.015 cu. in. (250 mm^3)
	Flexural strength†	Greater than 4,350 psi (30 MPa)
	Compressive strength†	Greater than 6,525 psi (45 MPa)
	Shrinkage†	Less than 0.06 in./3.28 ft. (1,5 mm/m)
	Water absorption†	Less than 0.0002 lb. (0,1 g)
R2 (reaction resin adhesive, improved)	Shear adhesion strength	≥ 2 N/mm^2
	Shear adhesion strength after water immersion	≥ 2 N/mm^2
	Open time: tensile adhesion strength	≥ 0,5 N/mm^2 after not less than 20 minutes
	Shear adhesion strength after thermal shock	≥ 2 N/mm^2

† *28-day cure*

ANSI Specification

Test Method	Specification Standard	Test Results
ANSI A118.3 (5.1) – water cleanability	80 minutes	Pass
ANSI A118.3 (5.2)		
Initial setting time	> 2 hours	Pass
Service setting time	< 7 days	Pass
ANSI A118.3 (5.3) – shrinkage	< 0.25%	Pass
ANSI A118.3 (5.4) – sag	No change	Pass
ANSI A118.3 (5.5) – quarry shear bond	> 1,000 psi (6,90 MPa)	Pass
ANSI A118.3 (5.6) – compressive strength	> 3,500 psi (24,1 MPa)	Pass
ANSI A118.3 (5.7) – tensile strength	> 1,000 psi (6,90 MPa)	Pass
ANSI A118.3 (5.8) – thermal shock	> 500 psi (3,45 MPa)	Pass

Shelf Life and Product Characteristics (before mixing)

Shelf life	2 years when stored in original, unopened packaging at 73°F (23°C)
Physical state	Resin (Part A) and hardener (Part B)
Colors	Available in MAPEI's palette of 40 colors, organized into 5 color collections. Refer to MAPEI's grout/caulk color chart. Sample color chips are available upon request.
VOCs (Rule #1168 of California's SCAQMD)	7 g per L

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

Application Properties at 73°F (23°C) and 50% relative humidity

Pot life††	45 to 60 minutes
Full cure††	14 days
Application temperature range	60°F to 90°F (16°C to 32°C)

†† *Pot life and curing time will vary depending on ambient temperature, substrate temperature and humidity.*

Packaging

Size
Kit: 1 U.S. qt. (946 mL)
Kit: 1 U.S. gal. (3,79 L)
Kit: 2 U.S. gals. (7,57 L)

Approximate Coverage*

• For use as a grout**

Coverage per 1 U.S. qt. (946 mL)				
Tile Size	Grout Joint Width			
	1/16" (1,5 mm)	1/8" (3 mm)	1/4" (6 mm)	3/8" (10 mm)
1" x 1" x 1/4" (25 x 25 x 6 mm)	14 sq. ft. (1,30 m²)	8 sq. ft. (0,74 m²)	4 sq. ft. (0,37 m²)	3 sq. ft. (0,28 m²)
2" x 2" x 1/4" (50 x 50 x 6 mm)	27 sq. ft. (2,51 m²)	14 sq. ft. (1,30 m²)	8 sq. ft. (0,74 m²)	6 sq. ft. (0,56 m²)
3" x 3" x 1/4" (75 x 75 x 6 mm)	40 sq. ft. (3,72 m²)	20 sq. ft. (1,86 m²)	11 sq. ft. (1,02 m²)	8 sq. ft. (0,74 m²)
4" x 4" x 3/8" (100 x 100 x 10 mm)	35 sq. ft. (3,25 m²)	18 sq. ft. (1,67 m²)	9 sq. ft. (0,84 m²)	7 sq. ft. (0,65 m²)
4" x 8" x 1/2" (100 x 200 x 12 mm)	35 sq. ft. (3,25 m²)	18 sq. ft. (1,67 m²)	9 sq. ft. (0,84 m²)	6 sq. ft. (0,56 m²)
4" x 8" x 3/4" (100 x 200 x 19 mm)	23 sq. ft. (2,14 m²)	12 sq. ft. (1,11 m²)	6 sq. ft. (0,56 m²)	4 sq. ft. (0,37 m²)
4" x 8" x 1-1/8" (100 x 200 x 29 mm)	15 sq. ft. (1,39 m²)	8 sq. ft. (0,74 m²)	4 sq. ft. (0,37 m²)	3 sq. ft. (0,28 m²)
4" x 8" x 1-3/8" (100 x 200 x 35 mm)	13 sq. ft. (1,21 m²)	6 sq. ft. (0,56 m²)	3 sq. ft. (0,28 m²)	2 sq. ft. (0,19 m²)
4-1/4" x 4-1/4" x 1/4" (108 x 108 x 6 mm)	56 sq. ft. (5,20 m²)	28 sq. ft. (2,60 m²)	15 sq. ft. (1,39 m²)	10 sq. ft. (0,93 m²)
6" x 6" x 1/4" (150 x 150 x 6 mm)	78 sq. ft. (7,25 m²)	40 sq. ft. (3,72 m²)	20 sq. ft. (1,86 m²)	14 sq. ft. (1,30 m²)
6" x 6" x 1/2" (150 x 150 x 12 mm)	39 sq. ft. (3,62 m²)	20 sq. ft. (1,86 m²)	10 sq. ft. (0,93 m²)	7 sq. ft. (0,65 m²)
8" x 8" x 3/8" (200 x 200 x 10 mm)	69 sq. ft. (6,41 m²)	35 sq. ft. (3,25 m²)	18 sq. ft. (1,67 m²)	12 sq. ft. (1,11 m²)
10" x 10" x 3/8" (250 x 250 x 10 mm)	86 sq. ft. (7,99 m²)	44 sq. ft. (4,09 m²)	22 sq. ft. (2,04 m²)	15 sq. ft. (1,39 m²)
12" x 12" x 1/2" (300 x 300 x 12 mm)	78 sq. ft. (7,25 m²)	39 sq. ft. (3,62 m²)	20 sq. ft. (1,86 m²)	13 sq. ft. (1,21 m²)
16" x 16" x 3/8" (406 x 406 x 10 mm)	138 sq. ft. (12,8 m²)	69 sq. ft. (6,41 m²)	35 sq. ft. (3,25 m²)	24 sq. ft. (2,23 m²)

Approximate Coverage*

• For use as a grout**

Coverage per 1 U.S. gal. (3,79 L)				
Tile Size	Grout Joint Width			
	1/16" (1,5 mm)	1/8" (3 mm)	1/4" (6 mm)	3/8" (10 mm)
1" x 1" x 1/4" (25 x 25 x 6 mm)	56 sq. ft. (5,20 m²)	31 sq. ft. (2,88 m²)	18 sq. ft. (1,67 m²)	14 sq. ft. (1,30 m²)
2" x 2" x 1/4" (50 x 50 x 6 mm)	108 sq. ft. (10,0 m²)	56 sq. ft. (5,20 m²)	31 sq. ft. (2,88 m²)	22 sq. ft. (2,04 m²)
3" x 3" x 1/4" (75 x 75 x 6 mm)	159 sq. ft. (14,8 m²)	82 sq. ft. (7,62 m²)	43 sq. ft. (3,99 m²)	31 sq. ft. (2,88 m²)
4" x 4" x 3/8" (100 x 100 x 10 mm)	140 sq. ft. (13,0 m²)	72 sq. ft. (6,69 m²)	37 sq. ft. (3,44 m²)	26 sq. ft. (2,42 m²)
4" x 8" x 1/2" (100 x 200 x 12 mm)	139 sq. ft. (12,9 m²)	71 sq. ft. (6,60 m²)	37 sq. ft. (3,44 m²)	25 sq. ft. (2,32 m²)
4" x 8" x 3/4" (100 x 200 x 19 mm)	93 sq. ft. (8,64 m²)	47 sq. ft. (4,37 m²)	24 sq. ft. (2,23 m²)	17 sq. ft. (1,58 m²)
4" x 8" x 1-1/8" (100 x 200 x 29 mm)	62 sq. ft. (5,76 m²)	32 sq. ft. (2,97 m²)	16 sq. ft. (1,49 m²)	11 sq. ft. (1,02 m²)
4" x 8" x 1-3/8" (100 x 200 x 35 mm)	51 sq. ft. (4,74 m²)	26 sq. ft. (2,42 m²)	13 sq. ft. (1,21 m²)	9 sq. ft. (0,84 m²)
4-1/4" x 4-1/4" x 1/4" (108 x 108 x 6 mm)	223 sq. ft. (20,7 m²)	114 sq. ft. (10,6 m²)	59 sq. ft. (5,48 m²)	41 sq. ft. (3,81 m²)
6" x 6" x 1/4" (150 x 150 x 6 mm)	313 sq. ft. (29,1 m²)	159 sq. ft. (14,8 m²)	82 sq. ft. (7,62 m²)	56 sq. ft. (5,20 m²)
6" x 6" x 1/2" (150 x 150 x 12 mm)	156 sq. ft. (14,5 m²)	79 sq. ft. (7,34 m²)	41 sq. ft. (3,81 m²)	28 sq. ft. (2,60 m²)
8" x 8" x 3/8" (200 x 200 x 10 mm)	277 sq. ft. (25,7 m²)	140 sq. ft. (13,0 m²)	72 sq. ft. (6,69 m²)	49 sq. ft. (4,55 m²)
10" x 10" x 3/8" (250 x 250 x 10 mm)	345 sq. ft. (32,1 m²)	174 sq. ft. (16,2 m²)	89 sq. ft. (8,27 m²)	60 sq. ft. (5,57 m²)
12" x 12" x 1/2" (300 x 300 x 12 mm)	310 sq. ft. (28,8 m²)	156 sq. ft. (14,5 m²)	79 sq. ft. (7,34 m²)	54 sq. ft. (5,02 m²)
16" x 16" x 3/8" (406 x 406 x 10 mm)	551 sq. ft. (51,2 m²)	277 sq. ft. (25,7 m²)	140 sq. ft. (13,0 m²)	94 sq. ft. (8,73 m²)

• For use as a mortar

Trowel Size	Coverage per 1 U.S. qt. (946 mL)	Coverage per 1 U.S. gal. (3,79 L)	Coverage per 2 U.S. gals. (7,57 L)
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm), square-notch	4.5 sq. ft. (0,42 m²)	18 sq. ft. (1,67 m²)	36 sq. ft. (3,34 m²)
5/32" x 5/32" (4 x 4 mm), V-notch	10 sq. ft. (0,93 m²)	40 sq. ft. (3,72 m²)	80 sq. ft. (7,43 m²)

** Trowel dimensions are width/depth/space. Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to actual tile size and thickness, exact joint width, job conditions and grouting methods.*

*** When grouting abrasive or slip-resistant floor tiles, anticipated coverage can be dramatically decreased. Alternatives to the traditional grouting technique, such as a grout bag or commercial sealant gun, may be of assistance. Consult MAPEI's Technical Services Department for approximate coverage not shown in the above table or use the grout calculator at www.mapei.com.*

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RELATED DOCUMENTS

Reference Guide: Surface Preparation Requirements for tile and stone installation systems	RGT0309*
Grout Troubleshooting Guide*	

** At www.mapei.com*

Refer to the SDS for specific data related to health and safety as well as product handling.

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com. **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

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Thin Set Epoxy Terrazzo - Section 096623

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and division 1 Specification Sections, apply to this section.

1.02 SUMMARY

A. Section Includes:

1. Thin-set epoxy terrazzo flooring including preparation of substrates.
2. Thin-set precast epoxy terrazzo tread or tread & riser units.
3. Thin-set precast epoxy terrazzo wall base units.
4. Related accessories.

B. Related Sections:

1. Section 03300, Cast In Place Concrete.
2. Section 04200, Unit Masonry.
3. Section 05510, Metal Stairs.
4. Section 07260, Under-slab Vapor Retarder/Barrier.
5. Section 07900, Joint Sealants.
6. Section 09900, Painting.
7. Section [_____] Furnishing and Setting Floor Drains.
8. Section [_____] Setting of Metal Base Beads and Wood Grounds.
9. Section [_____] Temporary Heat, Water and Electricity.
10. Section [_____] Other Adjacent Floor Finish Trades (for Transition Details).
11. Section [_____] For Confirmation of LEED Requirements.

1.03 SUBMITTALS

A. Manufacturer's product data for each type of terrazzo and accessory. System will be evaluated on the basis of standards. For tests not listed in published data, manufacturer shall supply missing data according to standard referenced.

1. Physical properties.
2. Performance properties.
3. Specified tests.
4. Material Safety Data Sheet.
5. Manufacturer's standard warranty.

B. LEED Submittals

1. Product Data for Credit MR 4.1: For [aggregates], indicating percentages by weight of recycled content.
   a. Include statement that indicates cost for each product having recycled content.
2. Product Data for Credit EQ 4.1: For adhesives, including printed statement of VOC content and chemical components. Compliance with CA 01350 requirements for testing of volatile organic Emissions from Various sources using small scale environmental chamber

C. Shop Drawings. Include terrazzo installation requirements. Include plans, elevations, sections, component details and attachments to other work. Show layout of the following:

1. Divider strips.
2. Control and expansion joint strips.
3. Base and border strips.
4. Abrasive strips.
5. Stair treads, risers and landings.
6. Pre-cast terrazzo jointing and edge configurations including anchorage details.
7. Terrazzo patterns.
8. <Insert requirements>

D. Samples for initial selection from Terrazzo & Marble Supply color plates showing the full range of colors and patterns available for each terrazzo type indicated.

E. Samples for Verification: Match architect's samples for each type, material, color and pattern of terrazzo and accessory required showing the full range of color, texture and pattern variations expected. Label each terrazzo sample to identify Terroxy Resin System's matrix color and aggregate types, sizes and proportions. Prepare samples of same thickness and from same material to be used for the work in size indicated below:

1. Epoxy terrazzo: minimum 6" x 6" (152.4 mm x 152.4 mm) sample of each color and type of terrazzo.
2. Precast epoxy terrazzo: minimum 6" x 6" (152.4 mm x 152.4 mm) sample of each color and type of terrazzo.
3. Accessories: 6" length (152.4 mm) of each kind of divider strip, stop strip and control joint strip required.
4. Stair Treads: 12" length (304.8 mm) wide sample combination tread/riser with cast-in nosing.

F. Manufacturer Experience:

1. Submit proof of associate membership to NTMA (TTMAC - Canada).
2. Furnish a list of at least five (5) epoxy terrazzo projects using material being submitted for this project installed during the last five (5) years of the same scope, complexity and at least 50 percent of the square footage.
3. Engage an epoxy manufacturer with at least ten (10) years experience.

G. Qualification Data: For qualified installer.

1. Submit proof of contractor membership in NTMA (TTMAC - Canada).
2. Furnish a list of at least five (5) epoxy terrazzo projects using material being submitted for this project installed during the last five (5) years of the same scope, complexity and at least 50 percent of the square footage.

H. Material Test Reports: For moisture and/or relative humidity of substrate.

I. Maintenance Data: Submit [___] copies of NTMA (TTMAC - Canada) maintenance recommendations and [_____] copies of manufacturer's instructions

1.04 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who is acceptable to architect and epoxy terrazzo manufacturer to install manufacturer's products.

1. Engage a terrazzo contractor with at least five (5) years of satisfactory experience in installation of epoxy terrazzo. Terrazzo contractor shall demonstrate experience during last five (5) years of at least five (5) projects of comparable scope and complexity of at least 50 percent of the total square footage of this project
2. Engage an installer who is a contractor member of NTMA (TTMAC - Canada).

B. Source Limitations:

1. Obtain primary Epoxy Terrazzo Flooring System materials including moisture treatment, membranes, primers, resins and hardening agents from a single manufacturer with proof of NTMA (TTMAC - Canada) associate membership.
2. Obtain aggregates, divider strips, sealers and cleaners from source recommended by primary materials manufacturer.
3. Engage an epoxy manufacturer with at least ten (10) years experience as a NTMA (TTMAC - Canada) associate member.

C. Pre-installation Conference: Conduct conference at project site to comply with requirements in Section 01200 – Project Meetings. Review methods and procedures related to terrazzo including, but not limited to, the following:

1. Inspect and discuss installation procedures, joint details, job site conditions, substrate specification, vapor barrier details and coordination with other trades.
2. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
3. Review special terrazzo designs and patterns.
4. Review plans for concrete curing and site drying to enable timely achievement of suitable slab moisture conditions.

D. NTMA (TTMAC - Canada) Standards: Comply with NTMA's (TTMAC - Canada) "Terrazzo Specifications and Design Guide" and with written recommendations for terrazzo type indicated unless more stringent requirements are specified.

E. Mock-ups: Build mock-ups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mock-ups for terrazzo including accessories.
   a. Size: Minimum 100ft^2 (9.3m^2) of typical poured-in-place flooring [and base] condition for each color and pattern [in locations directed by architect] <Insert location requirements>.
2. Approved mockups may become part of the completed work if undisturbed at time of substantial completion.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to project site in supplier's original wrappings and containers labeled with source's or manufacturer's name, material or product brand name and lot number if any.

B. Store materials in their original, undamaged packages and containers inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures and humidity.

1. Storage temperatures should be between 50ºF to 90ºF (10.0ºC to 32.2ºC).

1.06 PROJECT CONDITIONS

A. Prior to surface preparation, terrazzo contractor shall:

1. Evaluate slab condition, including slab moisture content and extent of repairs required, if any.
2. Maintain the ambient room and floor temperature at 60-90ºF (15.5-32.2ºC)or above for a period extending 72 hours before, during and after floor installation. Concrete to receive epoxy terrazzo shall have cured for at least 28 days and be free of all curing compounds. Test concrete substrate to determine acceptable moisture levels prior to installation. Testing should be conducted according to ASTM F2170 (determining relative humidity in concrete slabs using in situ probes). Proceed with installation only after substrates have a maximum relative humidity measurement reading less than 80%. If relative humidity measurement reading is greater than or equal to 80%, Terroxy Moisture Vapor Treatment or IC Moisture Guard is required. Apply to terrazzo substrates according to Terroxy Product Data Sheets. An effective in situ probe for relative humidity testing is the RH BluePeg available from T&M Supply.

B. Prior to and during each day of installation, the terrazzo contractor shall verify that the dew point is at least 5°F (-15°C) less than the slab and air temperature.

C. Acceptable Substrates:

1. Level tolerance: Concrete sub-floor shall be level with a maximum variation from level of 1/4" in 10 feet (6.4 mm in 3.1m). Any irregularity of the surface requiring patching and/or leveling shall be done using Terroxy Fill and selected aggregates as recommended by Terroxy Resin Systems.
2. Concrete floor shall be prepared mechanically by shot blasting in accordance with ICRI Guideline No. 03732. Specifically, surface preparation results should achieve a CSP3-CSP5 profile.
3. A light steel trowel is needed to provide an acceptable surface with minimum laitance.
4. Concrete shall be cured a minimum of 28 days. No curing agents are to be used in areas to receive terrazzo.
5. Concrete slab on grade shall have an efficient moisture vapor barrier (suggested minimum: 15 mils (.4 mm thickness)) directly under the concrete slab. Reference ASTM Methods E1745 Class A and installed in accordance with E1643. Moisture barrier shall NOT be punctured.
6. Saw cutting of control joints must be done between 12 and 24 hours after placement of the structural concrete and at a frequency compatible to ACI recommendations.

D. Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during terrazzo installation.

E. Provide protection from other trades prior to final acceptance by owner.

PART 2 – PRODUCTS

2.01 EPOXY TERRAZZO

A. Products: Systems Overview: The basis of design is Terroxy Resin Systems Epoxy Matrix by Terrazzo & Marble Supply Companies, Wheeling, IL (www.tmsupply.com).

B. Materials:

1. Primer: Terroxy Primer or Terroxy Moisture Vapor Treatment (for slabs on-grade, light weight concrete and green concrete).
   a. Physical properties of moisture mitigating primer shall have a maximum of 0.3 perms with 100% RH.
2. Flexible Reinforcing Membrane: Terroxy Iso-Crack Epoxy Membrane, for substrate crack preparation and reflective crack reduction.
   a. Reinforcement: Terroxy fiberglass scrim (optional).
3. Epoxy Matrix: Terroxy Epoxy Matrix and in color required for mix indicated.
   a. Physical properties without aggregates. All specimens cured for 7 days at 73-77°F (22.8-25°C) and 50 percent plus or minus 2 percent RH. This product shall meet the following requirements:

Property	Test Method	NTMA (TTMAC - Canada) Requirements	Terroxy Thin-set Epoxy Terrazzo Typical Results
Hardness	ASTM D-2240 using Shore-D Durometer	60-85	75-85
Tensile Strength	ASTM D-638	3,000 psi min. (20.7 MPa)	4,800 psi min. (33.1 MPa)
Compressive Strength	ASTM D-695 Specimen B cylinde	10,000 psi min. (68.9 MPa)	12,000 psi min. (82.7 MPa)
Flexural Strength	ASTM D-790	Not specified	4,500 psi min. (31.7 MPa)
Chemical Resistance	ASTM D-1308 seven days at room temperature by immersion method	No deleterious effects: • Distilled Water • Mineral Oil • Isopropanol • Ethanol • 0.025 Detergent Solution • 1% Soap Solution • 10% Sodium Hydroxide • 10% Hydrochloric Acid • 30% Sulfuric Acid • 5% Acetic Acid	No deleterious effects: • Distilled Water • Mineral Oil • Isopropanol • Ethanol • 0.025 Detergent Solution • 1% Soap Solution • 10% Sodium Hydroxide • 10% Hydrochloric Acid • 30% Sulfuric Acid • 5% Acetic Acid

b. Physical properties with aggregates. For Epoxy Matrix blended with three volumes of Valders marble blended 60% #1 chip and 40% #0 chip, ground and grouted with epoxy resin according to Installation Specifications, finishing to a nominal 3/8" (9.5 mm) thickness. All specimens cured for 7 days at 73-77°F (22.8-25°C) and 50 percent RH plus or minus 2 percent RH. This finished Epoxy Matrix shall meet the following requirements:

Property	Test Method	NTMA (TTMAC - Canada) Require-ments	Terroxy Thin-set Epoxy Terrazzo Typical Results
Flammability	ASTM D-635	Self extinguishing, extent of burning 0.25" (6.4 mm) max.	Self extinguishing, extent of burning 0.25" (6.4 mm) max
Thermal Coefficient of Linear Expansion	ASTM D-696	25x10-6 inches per inch per degrees to 140°F (11.4x10-7 cm per cm per °C to 60°C Max)	25x10-6 inches per inch per degrees to 140°F (11.4x10-7 cm per cm per °C to 60°C Max)
Bond Strength	ACI COMM 403, Bulletin 59-43 (pages 1139-1141)	300 psi (2.1 MPa) -100% concrete failure	300 psi (2.1 MPa) -100% concrete failure
Flammability	ASTM D-635		Self extinguishing, extent of burning 0.25" (6.4 mm) max
Fire Rating - Test for Surface Burning Characteristics of Flooring	CAN/ULC S102.2-10 Tunnel Test		Smoke Developed Classification (SDC) - 175 Flame Spread Rating (FSR) - 5

4. Aggregates [OPTION: Marble, Glass, Mother of Pearl, Porcelain, Concrete] complying with NTMA (TTMAC - Canada) gradation standards for mix indicated and containing no deleterious or foreign matter.
   - **a.** Abrasion and Impact Resistance: Less than 40 percent loss per ASTM C 131.
   - **b.** 24-Hour Absorption Rate: Less than 0.74 percent.
   - **c.** Dust Content: Less than 1.0 percent by weight.
   - **d.** Pre-Consumer or Post-Consumer Recycled Content: <Insert Value> percent.
5. Finishing Grout: Terroxy Epoxy Matrix or Terroxy Clear Resin with a broadcast of filler as recommended by Terroxy Resin Systems.

C. Mix: Comply with NTMA's (TTMAC - Canada)"Terrazzo Specifications and Design Guide" and manufacturer's written instructions for matrix and aggregate proportions and mixing.

1. Color and pattern schedule: Where the following designations are indicated, provide specified terrazzo matrices matching architect's samples:
   - **a.** TZ1: <Insert Terroxy Resin System's sample number>
   - **b.** TZ___: <Insert Terroxy Resin System's sample number>
   - **c.** TZ___: (Precast Tread/Riser) <Insert sample number>
   - **d.** TZ___: (Precast Base) <Insert sample number>

2.02 STRIP MATERIALS

A. Thin-set Divider Strips: L-type.
   - **1.** Material [White-zinc alloy] [Brass] selected from Domus Terrazzo full range.
   - **2.** Guide for commonly used L-type divider strips for Thin-set Epoxy Terrazzo Systems:

System Height	Strip Height	Strip Width
3/8" System	3/8"	16 gauge 1/8" 1/4"

System Height	Strip Height	Strip Width
9.5 mm System	9.5 mm	16 gauge 3.2 mm 6.4 mm

2.03 MISCELLANEOUS ACCESSORIES

A. Strip Adhesive: 100% solids epoxy resin adhesive recommended by Terroxy Resin Systems.

1. Use adhesive that has a VOC content of 50g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Construction joints, contraction joints (Saw Cuts), isolation joints and cracks shall be detailed in accordance with NTMA (TTMAC - Canada) technical bulletin T24

C. Patching and Fill Material: Terroxy Fill and selected aggregates as recommended by Terroxy Resin Systems.

D. Joint Compound: Terroxy Joint Filler Hardener to be used with Terroxy Resin Matrix Part A. Color to be selected by architect to match/compliment terrazzo flooring.

E. Cleaner: A neutral cleaner with pH factor between 7 & 10 specifically designed for terrazzo.

F. Surface Finish System: Level of polish to be specified by architect in accordance with desired appearance and level of reflectivity.

G. Sealer: Slip and stain-resistant sealer that is chemically neutral with a pH factor between 7 and 10, that meets a standard coefficient of friction of 0.5 or higher, as measured by the James Machine (ASTM D-2047 Test Method), does not affect physical properties of terrazzo and complies with NTMA's (TTMAC - Canada)" Terrazzo Specifications and Design Guide."

1. [Option 1: Terroxy WB Urethane]
2. [Option 2: T-Rx, high performance, high gloss, chemical-resistant urethane sealer.]

2.04 PRECAST TERRAZZO

A. Precast Terrazzo Units: Precast epoxy terrazzo [base] [stair tread] [threshold] [bench] [and] [planter] <Insert requirements> units.

1. All precast components to utilize Terroxy Resin products for fabrication to ensure color consistency with the poured in place flooring.
2. Manufacturers: Subject to compliance with requirements, provided products acceptable to architect.
   a. <Insert manufacturer's name>.

B. Precast Terrazzo Base Units: 1/4" (6.4 mm) thick, cast in maximum lengths possible, but not less than 36" (900 mm).

1. Type: [As indicated].
2. Height: [As indicated].
3. Outside Corner Units: With finished returned edges at outside corner.
4. Color and Pattern: [Match architect's sample] [Match adjacent poured-in-place terrazzo flooring].

C. Terrazzo Cove Base:

1. [Option 1: Terroxy Resin Systems Epoxy Matrix poured-in-place cover base with 3/4" (19mm) radius, [____]" high. (4" (101.2 mm), 6" (152.4 mm) or 8" (203.2 mm))]
2. [Option 2: Precast Epoxy Terrazzo Cove Base: Type _____, _____" high.]

D. Precast Terrazzo Stair Treads: Thickness indicated with cast-in nosing.

1. Tread/Riser: 1/2" (12.7 mm) thick epoxy, Type _____ with abrasive pattern _____.
2. Color and Pattern: [Match architect's approved Terroxy Resin Systems Sample]

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates and areas, with Terrazzo Contractor present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions, including level tolerances, have been corrected.

3.02 PREPARATION

A. Clean substrates of substances, including oil, grease and curing compounds, that might impair terrazzo bond. Provide clean, dry and neutral substrate for terrazzo application.

B. Concrete Slabs:

1. Provide sound concrete surface free of laitance, glaze, efflorescence, curing compounds, form- release agents, dust, dirt, grease, oil and other contaminants incompatible with terrazzo.
   - **a.** Prepare concrete mechanically by shot blasting. Surface preparation results should achieve a CSP3-CSP5 profile according to International Concrete Repair Institute Guideline No. 03732.
   - **b.** Repair or level damaged and deteriorated concrete according to Terroxy Resin Systems Technical Bulletin 008 Substrate Leveling Requirements for Terroxy Thin-set epoxy terrazzo.
   - **c.** Repair cracks and non-expansion joints greater than 1/16" (1.6mm) wide according to NTMA (TTMAC - Canada) Technical Bulletin T26 Crack Detailing and Joint Treatments for Terroxy Resin Thin-set epoxy terrazzo.
2. Verify that concrete substrates are visibly dry and free of moisture.
3. Moisture Testing:
   - **d.** Test for moisture according to ASTM F2170 (determining relative humidity in concrete slabs using in situ probes). An effective in situ probe for relative humidity testing is the Blue Peg available from Terrazzo & Marble Supply.
   - **e.** Proceed with installation only after substrates have a maximum relative humidity measurement reading less than 80%. If relative humidity measurement reading is greater than or equal to 80%, Terroxy Moisture Vapor Treatment is required. Apply to terrazzo substrates according to Terroxy Resin Systems Moisture Vapor Treatment Product Data Sheet.

C. Protect other work from dust generated by grinding operations. Control dust to prevent air pollution and comply with environmental protection regulations.

1. Erect and maintain temporary enclosures and other suitable methods to limit dust migration and to ensure adequate ambient temperatures and ventilation conditions during installation.

3.03 EPOXY TERRAZZO INSTALLATION

A. General:

1. Comply with NTMA's (TTMAC - Canada) written recommendations for terrazzo and accessory installation.
2. Place, rough grind, grout, cure grout, fine grind and finish terrazzo according to Terroxy Resin Systems Epoxy Matrix Product Data Sheet and NTMA's (TTMAC - Canada) "Terrazzo Specifications and Design Guide."
3. Ensure that matrix components and fluids from grinding operations do not stain terrazzo by reacting with divider and control-joint strips.
4. Delay fine grinding until heavy trade work is complete and construction traffic through area is restricted.

B. Thickness: [3/8" (9.5 mm)]

C. Flexible Reinforcing Membrane

1. [Option 1: Membrane application for isolated cracking. Route out all cracks and fill with 100% Terroxy Primer. Apply Terroxy Iso-Crack Epoxy Membrane (spread at 40 mils = 1.0 mm thickness) across the crack allowing 6" (152.4mm) on either side. Imbed fiberglass scrim at a minimum of 9" (22.8cm) into wet membrane and saturate with additional membrane.]
2. [Option 2: Membrane application for extensive cracking or crack prevention. Route out all cracks and fill with 100% Terroxy Primer. Apply Terroxy Iso-Crack Epoxy Membrane (spread at 40 mils = 1.0 mm thickness) over prepared substrate to produce full substrate coverage in areas to receive terrazzo. (fiberglass scrim optional)]

D. Primer: Apply to terrazzo substrates according to Terroxy Resin Systems Primer Product Data Sheet.

E. Strip Materials:

1. Divider and Accessory Strips:
   a. Install strips in adhesive setting bed without voids below strips.
   b. Construction joints, contraction joints (Saw Cuts), isolation joints and cracks shall be detailed in accordance with NTMA (TTMAC - Canada) technical bulletin T24.

F. Placing Terrazzo:

1. Mix epoxy matrix with chips and fillers in ratios directed by Terroxy Resin Systems.
2. Trowel apply terrazzo mixture over epoxy primer to provide a dense flat surface to top of divider strips. Allow to cure per Terroxy Resin Systems recommendations before rough grinding.

G. Rough Grinding: Grind with 24 grit silicon carbide or 24 grit turbo diamonds until all terrazzo strips and marble chips are uniformly exposed.

H. Grouting:

1. Cleanse floor with clean water and rinse.
2. Remove excess rinse water by wet vacuum, dry and fill voids with Terroxy Resin Systems Epoxy Matrix or Clear Resin with a broadcast of filler.
3. Allow grout to cure. Grout may be left on terrazzo until other trades work is completed.

I. Polishing: Polish with 120 grit T&M Resin Pads or equivalent stones until all grout is removed from surface. Produce surface with a minimum of 70 percent aggregate exposure. (Optional high finish polishes available. Please consult a terrazzo contractor for more information.)

3.04 PRECAST TERRAZZO INSTALLATION

A. Install precast units using method recommended by NTMA (TTMAC - Canada) and manufacturer unless otherwise indicated.

B. Seal joints between units with joint sealants.

3.05 CLEANING AND PROTECTION

A. Cleaning: Remove grinding dust from installation and wash all surfaces with a neutral cleaner with a pH factor between 7-10. .

B. Sealing: Apply TRx sealer that is chemically neutral with a pH factor between 7 and 10, that meets a standard coefficient of friction of 0.5 or higher, as measured by the James Machine (ASTM D-2047 Test Method), does not affect physical properties of terrazzo and complies with NTMA's (TTMAC - Canada)

C. Protection: Upon completion, the work shall be ready for final inspection and acceptance by the owner or his agent. Provide final protection and maintain conditions, in a manner acceptable to terrazzo contractor, that ensure terrazzo is without damage or deterioration.

END OF SECTION 096623

STONHARD

STONCLAD® UR

PRODUCT DATA

PRODUCT DESCRIPTION

Stonclad UR is a four-component, trowel applied, polyurethane mortar system. Stonclad UR consists of a urethane-urea binder, pigments, and graded quartz aggregates. Stonclad UR can be applied at thickness ranging from 1/8 in./3 mm to 1/4 in./6 mm depending on application requirements. Stonclad UR is a high impact resistant mortar which exhibits excellent abrasion, thermal shock, thermal cycling and chemical resistant characteristics making it ideal for the food and beverage industry as well as any other applications requiring these properties.

SYSTEM OPTIONS

Cove Base

To provide for an integral seal at the joint between the floor and the wall, cove bases in heights from 2 to 6 in./5 to 15 cm may be specified.

Waterproofing

Where the total system must be waterproofed, the use of Stonhard's Stonproof ME7 membrane system with Texture #3 broadcast to refusal is required with a strict adherence to application instructions.

Crack Treatment

When crack treatment is needed due to cracks in the substrate, the use of Stonhard's Stonproof CT5 or RH7 with Texture #3 broadcast to refusal is required with a strict adherence to application instructions.

Coatings

The system is designed as an uncoated mortar system. If coatings are desired, two coats of topcoat are required with a sanding step between the coatings.

PACKAGING

Stonclad UR is packaged in units for easy handling. Each unit consists of:

Mortar

2 cartons, each containing:
- 6 foil bags of Isocyanate
- 6 poly bags of Polyol

12 individual bags of Part C-1 aggregate

Pigment

1 carton containing:
- 12 bags of Part C-2 pigment packs powder

PHYSICAL CHARACTERISTICS

Compressive Strength (ASTM C-579)	5,000 psi after 7 days
Tensile Strength (ASTM C-307)	1,000 psi
Flexural Strength (ASTM C-580)	2,000 psi
Flexural Modulus of Elasticity (ASTM C-580)	1.1×10^6 psi
Hardness (ASTM D-2240, Shore D)	80 to 84
Impact Resistance (ASTM D-2794)	>160 in./lbs.
Flammability (ASTM E-648)	Class 1
Thermal Coefficient of Linear Expansion (ASTM C-531)	1.3×10^{-5} in./in.°F
Water Absorption (ASTM C-413)	< 1%
VOC Content (ASTM D-2369, Method E)	5 g/l
Cure Rate (@ 77°F/25°C)	8 hours for foot traffic 24 hours for normal operations

Note: The above physical properties were measured in accordance with the referenced standards. Samples of the actual floor system, including binder and filler, were used as test specimens. All sample preparation and testing is conducted in a laboratory environment, values obtained on field applied materials may vary and certain test methods can only be conducted on lab-made test coupons.

COVERAGE

Each unit of Stonclad UR will cover approximately 200 sq. ft./18.58 sq. m at a nominal thickness o 1/4 in./6 mm.

STORAGE CONDITIONS

Store all components of Stonclad UR between 60 to 85°F/16 to 30°C in a dry area. Avoid excessive heat and do not freeze. The shelf life of the liquids is one year while the C-1 has a 6 month shelf life in the original, unopened container.

SUBSTRATE

Stonclad UR, with the appropriate primer, is suitable for application over concrete, wood, brick, quarry tile, metal or Stonhard Stonset grouts. For questions regarding other possible substrates or an appropriate primer, contact your local Stonhard representative or Technical Service.

> **Note:** Stonclad UR is suitable for application over new/green concrete. The concrete must be in place for a minimum of 5 days, be dry and have sufficient strength to handle mechanical preparation.

SUBSTRATE PREPARATION

Proper preparation is critical to ensure an adequate bond and system performance. The substrate must be dry and properly prepared utilizing mechanical methods. Questions regarding substrate preparation should be directed to your local Stonhard representative or Technical Service.

PRIMING

The use of Urethane Primer is necessary for all applications of Stonclad UR. See the Urethane Primer Product Data sheet for details.

MIXING

- Proper mixing is critical for the product to exhibit the proper application properties, cure properties and ultimate physical properties.
- Mechanical mixing using a JB Blender (or equivalent 5 gal. pail mixer) or a larger mortar mixer (e.g., a Baugh 3 Batch Mixer) is required.
- See Stonclad UR Directions for further details.

APPLYING

- DO NOT attempt to install material if the temperature of Stonclad UR components and substrate are not within 60 to 85°F/16 to 30°C. The cure time and application properties of the material are severely affected at temperatures outside of this range.
- Material must be applied immediately after mixing.
- A suitable screed applicator is used to distribute the mixed Stonclad UR onto the floor.
- Steel finishing trowels are used to compact and smooth the surface of the material to the required thickness.
- Detailed application instructions can be found in the Stonclad UR Directions.

NOTES

- Procedures for maintenance of the flooring system during operations are described in the Stonkleen Floor Cleaning Procedures Brochure.
- Specific information regarding chemical resistance is available in the Stonclad Chemical Resistance Guide. If a coating is utilized to seal the Stonclad UR surface, please ensure that you consult the Product Data sheet for the coating for details regarding chemical resistance of the coating utilized.
- Safety Data Sheets for Stonclad UR are available online at www.stonhard.com under Tech Info or upon request.
- A staff of technical service engineers is available to answer questions related to Stonhard products specifically or flooring problems in general.
- Requests for literature can be made through local sales representatives and offices, or corporate offices located worldwide.
- The appearance of all floor, wall and lining systems will change over time due to normal wear, abrasion, traffic and cleaning. Generally, high gloss coatings are subject to a reduction in gloss, while matte finish coatings can increase in gloss level under normal operating conditions.
- Surface texture of resinous flooring surfaces can change over time as a result of wear and surface contaminants. Surfaces should be cleaned regularly and deep cleaned periodically to ensure no contaminant buildup occurs. Surfaces should be periodically inspected to ensure they are performing as expected and may require traction-enhancing maintenance to ensure they continue to meet expectations for the particular area and conditions of use.

IMPORTANT:
Stonhard believes the information contained here to be true and accurate as of the date of publication. Stonhard makes no warranty, expressed or implied, based on this literature and assumes no responsibility for consequential or incidental damages in the use of the systems described, including any warranty of merchantability or fitness. Information contained here is for evaluation only. We further reserve the right to modify and change products or literature at any time and without prior notice.

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FLOORS FOR EVERY ENVIRONMENT

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STONHARD

PRODUCT DATA

STONTEC® TRF

PRODUCT DESCRIPTION

Stontec TRF is a nominal 3/16 in./5 mm thick durable floor system with a decorative, stain resistant surface. Its troweled base provides superior impact-resistance and allows Stontec TRF to be applied over rough substrates. The color flake broadcast layer results in an attractive, seamless floor surface. It is comprised of:

Urethane Mortar
A four-component, troweled, high-solids urethane mortar system that is applied at an 1/8 in./3 mm.

TRF Undercoat
A two-component, high-solids, epoxy bonding coat. A colored coat that accepts the flakes.

Stontec Flakes
Brightly colored flakes

Stonseal CA7
A two-component, UV-resistant, aliphatic polyaspartic urethane sealer

SYSTEM OPTIONS

Cove Base
To provide for an integral seal at the joint between the floor and the wall, cove bases in heights from 2 to 6 in./5 to 15 cm may be specified.

Waterproofing
Where the total system must be waterproof, the use of Stonhard's Stonproof ME7 membrane system with Texture #3 broadcast to refusal is required with a strict adherence to application instructions.

Crack Treatment
When crack treatment is needed due to cracks in the substrate, the use of Stonhard's Stonproof CT5 or RH7 with Texture #3 broadcast to refusal is required with a strict adherence to application instructions.

PHYSICAL CHARACTERISTICS

Tensile Strength (ASTM D-638)	1,000 psi
Impact Resistance (ASTM D-4226)	>160 in./lbs.
Abrasion Resistance (ASTM D-4060, CS-17)	<.03 gm max
Cure Rate (@ 77˚F/25˚C)	4 hours for foot traffic 12 hours for normal operations
Flexural Strength (ASTM C-580)	2,000 psi
Flexural Modulus of Elasticity (ASTM D-790)	1.1×10^6 psi
Hardness (ASTM D-2240, Shore D)	80
Flammability (ASTM E-648)	Class 1
Linear Coefficient of Thermal Expansion (ASTM C-531)	12×10^{-6} in./in. ˚F
Compressive Strength (ASTM C-579)	5,000 psi after 7 days
VOC Content (ASTM D-2369, Method E)	Urethane Mortar - 11 g/l TRF Undercoat - 30 g/l Stonseal CA7 - 100 g/l

Note: The above physical properties were measured in accordance with the referenced standards. Samples of the actual floor system, including binder and filler, were used as test specimens. All sample preparation and testing is conducted in a laboratory environment, values obtained on field applied materials may vary and certain test methods can only be conducted on lab-made test coupons.

PACKAGING

Stontec TRF is packaged in units for easy handling.

Each unit consists of:

Urethane Mortar
1.5 cartons containing:
- 6 foil bags of Isocyanate
- 6 poly bags of Polyol

9 individual bags of Part C-1 aggregate

0.75 carton of Part C-2 pigment

TRF Undercoat
0.5 carton containing:
- 4 foil bags of Amine
- 4 poly bags of Resin

Stontec Flakes
0.67 individual boxes of small (1/16 in.) colored flakes
or
0.50 individual boxes of large (1/4 in.) colored flakes

Stonseal CA7
1 carton containing:
- 2 foil bags of Isocyanate
- (2) 1 gallon cans of a Amine

IMPORTANT: Appropriate Primer must be ordered separately depending on the substrate.

COVERAGE

Each unit of Stontec TRF will cover approximately 200 sq. ft./18.6 sq. m of surface at a nominal 3/16 in./5 mm thickness.

STORAGE CONDITIONS

Store all components of Stontec TRF between 60 to 85˚F/16 to 30˚C in a dry area. Avoid excessive heat and do not freeze. The shelf life is two years for urethane mortar, three years for TRF Undercoat and one year for Stonseal CA7.

COLOR

Stontec TRF is available in twelve standard colors in small (1/16 in.) or large (1/4 in.) sized flakes. Refer to the Stontec Color Sheet. Custom colors are available upon request.

Note: Micro (1/32 in.) flakes are available upon special request.

SUBSTRATE

Stontec TRF, with the appropriate primer, is suitable for application over properly prepared concrete, wood, brick, quarry tile, metal or Stonhard Stonset grouts. For questions regarding other possible substrates or an appropriate primer, contact your local Stonhard representative or Technical Service.

SUBSTRATE PREPARATION

Proper preparation is critical to ensure an adequate bond and system performance. The substrate must be dry and properly prepared utilizing mechanical methods. Questions regarding substrate preparation should be directed to your local Stonhard representative or Technical Service.

PRIMING

The use of Urethane Primer is necessary for all applications of Stontec TRF. The Urethane Primer must be tacky during the application of the Stontec TRF Mortar. If the primer becomes tack-free, the area must be re-primed prior to continuing the application.

MIXING

- Proper mixing is critical for the products to exhibit the proper application properties, cure properties and ultimate physical properties.
- Mechanical mixing is required for all components.
- See Stontec TRF Directions for further details.

APPLYING

- DO NOT attempt to install material if the temperatures of Stontec TRF components are not within 60 to 85˚F/16 to 30˚C. The cure time and application properties of the material are affected by temperature and severely affected by humidity levels.
- The primer is applied to the floor and the mortar is immediately troweled into the wet primer and allowed to cure.
- The undercoat is mixed, applied to the floor and broadcasted to refusal with Stontec Flakes. The undercoat is allowed to cure and excess flake is removed.
- The sealer is mixed, applied to the floor and allowed to cure. The sealer is lightly sanded and vacuumed.
- A second sealer is applied in the same manner as the first and allowed to cure.

Refer to the Stontec TRF Directions for further detail.

NOTES

- Procedures for maintenance of the flooring system during operations are described in the Stonkleen Floor Cleaning Procedures Brochure.
- Specific information regarding chemical resistance is available in the Stontec Chemical Resistance Guide.
- Safety Data Sheets for Stontec TRF are available online at www.stonhard.com under Products or upon request.
- A NIOSH-approved air purifying respirator (APR) equipped with organic vapor/acid gas cartridges is required during application of the Stonseal CA7.
- A staff of technical service engineers is available to assist with installation or to answer questions related to Stonhard flooring products.
- Requests for technical service or literature can be made through local sales representatives and offices, or corporate offices located worldwide.
- The appearance of all floor, wall and lining systems will change over time due to normal wear, abrasion, traffic and cleaning. Generally, high gloss coatings are subject to a reduction in gloss, while matte finish coatings can increase in gloss level under normal operating conditions.
- Surface texture of resinous flooring surfaces can change over time as a result of wear and surface contaminants. Surfaces should be cleaned regularly and deep-cleaned periodically to ensure no contaminant buildup occurs. Surfaces should be periodically inspected to ensure they are performing as expected and may require traction-enhancing maintenance to ensure they continue to meet expectations for the particular area and conditions of use.

Resilient Flooring

2019

RF-1,2,8,9,15,
16,17,18,19,20

noraplan environcare™ 2.0mm TILE

1 Product Name / Manufacturer

1.1 Product
noraplan environcare™ 2.0mm tile resilient floor covering, Article 2462

1.2 Manufacturer
nora systems, Inc.
9 Northeastern Blvd.
Salem, NH 03079
800-336-5096
603-894-1021
www.nora.com/us

1.3 Product Description
nora® vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury.

1.4 Physical Characteristics
Material Size: ~24" x 24" (~610m x 610m)

Thickness: ~0.08" (~2.0mm)

Dimensional Stability: Meets requirements

Composition: Homogeneous rubber compound with a random scattered design.

Color: 48 Standard colors

Surface: Smooth

2 Technical Data

2.1 Static Load Limit
ASTM F970, Residual compression of 0.003" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. is required.

2.2 Rolling Load Limit
≤ 450 lbs. /sq. inch, with no forklift traffic.

2.3 Slip Resistance
ASTM D2047 Static coefficient of friction, Neolite dry 0.93, Neolite wet 0.90 achieved, ≥ 0.5 is required (not recommended for ramps).

2.4 Flammability
ASTM E648; NFPA 253; NBSIR 75 950, .97 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required.

2.5 Smoke Density
ASTM E662; NFPA 258; NBS, 196 (flaming) and 207 (non-flaming) achieved, < 450 is required.

2.6 Bacteria Resistance
ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity.

2.7 VOC's
This flooring is GREENGUARD Gold Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant.

2.8 Sound Absorption
ASTM E2179 Δ IIC 11, ISO 140 Δ Lw 8 dB (compare only Δ values).

2.9 Hardness
ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required.

3 Installation

3.1 Site Conditions
The flooring, adhesives, and accessories must be acclimated in the correct conditions for at least 48 hours prior to use. Areas of the flooring subjected to direct sunlight, for example through doors or windows, must be covered using blinds, curtains, cardboard or similar materials for 24 hours before, throughout and for a period of 72 hours after the installation to allow nora "wet" adhesives to cure.

The area to receive flooring must be fully enclosed, weather tight and climate controlled at the normal service ambient temperature and humidity (except walk-in freezers or similar). If this is not possible then the ambient temperature must remain steady (± 10ºF) and be between 59ºF and 80ºF for at least 48 hours prior, during and 72 hours after installation (do not use gas

fueled blowers.) The ambient relative humidity is recommended to be 50% RH ± 10%. However, dew point must be avoided, or stop the installation and remove any applied adhesive. The substrate surface must be at least 5°F above dew point.

3.2 Substrates

All on and below-grade concrete subfloors require a confirmed permanently effective vapor retarder with a low permeance (≤ 0.1) having a minimum thickness of 10 mils, or meets the current requirements of *ASTM E1745 — Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*. It must also be placed directly underneath the concrete, above the granular fill or use an effective moisture mitigation system that conforms to *ASTM F3010 – Standard Practice for Two Component Resin Based Membrane Forming Moisture Mitigation Systems for use Under Resilient Floor Coverings.*

Moisture Testing: Test the slab with a testing apparatus that conforms to and follows the exact protocol of *ASTM F2170 — Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in situ Probes*. If for any reason you are unable to drill into the concrete, please contact the nora® Technical Department.

Adhesive limits when tested at the correct service temperature and ambient humidity, the maximum allowable internal slab relative humidity levels (with effective vapor retarder as required) are as follows:

- nora® 385, 485, 585, 685 and dryfix adhesives = 85% RH.
- nora® stepfix and profix tape adhesives = 75% RH.

If the moisture test results exceed the maximum allowed then the installation must not proceed until either the moisture content drops to an acceptable level or an effective moisture mitigation system is used that conforms to ASTM F3010 and installed following that manufacturer's written instructions.

All concrete subfloors must be absorptive (see water droplet test), permanently dry (see moisture testing), clean, smooth and structurally sound as per *ASTM F710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*. In addition, concrete subfloors must be free of dust, solvents, paint, wax, varnish, oil, grease, asphalt, old adhesives and other extraneous materials that may interfere with the bond. Use only mechanical means such as diamond grinding with a Diamabrush™ Concrete Prep Plus Tool (or similar), or shot blasting. Use a suitable vacuum cleaner or water-based sweeping compound as required. All local, state and federal regulations must be followed.

Water droplet test: When using nora 485 or 685 adhesives it is mandatory that the substrate be absorptive as detailed within ASTM F710. To confirm this, the installer must perform a water droplet test in a sufficient number of places throughout the project. To perform the test, simply place a dime sized droplet of clean potable water using a clean straw or similar onto clean concrete (without any floor patching or leveling compounds). The water must absorb into the concrete within five minutes to be considered absorptive, or the substrate is considered non-absorptive.

Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities must be filled or smoothed with latex modified patching or underlayment compound for filling or smoothing, or both. Patching or underlayment compound must be moisture-, mildew-, and alkali-resistant, and, for commercial installations, must provide a minimum of 3000 psi compressive strength when tested in accordance with *ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars - Using 2-in. or 50mm Cube Specimens* or *ASTM C472 Standard Test Method for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete*, whichever is appropriate. Warranties should be obtained by the manufacturers of the products used.

Begin by mechanically removing all laitance, dirt, debris and coatings from the fill area. Use a suitable dustless concrete saw with a diamond blade or similar to achieve this followed by vacuuming. Do not install over any moving cracks or joints. If the concrete moisture level is too high, do not fill these with any patching compound. Use only those products and method as directed by the moisture membrane manufacturer.

All expansion joints and moving joints must not be covered or overlaid with any nora® product. Use a suitable industry standard expansion joint assembly system. For moving cracks please contact the nora Technical Department for recommendations.

All wooden subfloors must be a total minimum thickness of 1-1/4 inch and overlaid with overlapping joints using APA (American Plywood Association) underlayment grade plywood, installed as per *ASTM F1482 - Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring*.

Wooden substrates must not be in direct contact with concrete subfloors, even if built on sleepers. All suspended wood floors must have adequate under floor ventilation and a permanently effective vapor retarder or membrane placed directly on the ground beneath the air space.

The plywood must be clean and free of any bond breaking contaminates, this may be achieved by sanding if required or replacing the plywood with new APA plywood. Any gaps at the seams must be filled and smoothed with suitable and flexible joint filler. Any ridges must be sanded smooth.

Other subfloors/substrates: Please contact the nora Technical Department 1-800-332-NORA for any other type of subfloor or substrate inquiries and recommendations. Do not install over any oriented strand board (OSB), particleboard, Masonite, lauan or any similar unstable or contaminated substrates.

Mat Bond tests are recommended as they can help to determine the compatibility of the flooring system to a variety of substrates and may provide an indication of the presence of moisture. It is the responsibility of the installing party to determine the suitability of the subfloor being covered and how many Mat Bond tests need to be performed.

The areas and products to be tested must be properly conditioned for 48 hours before and during the testing period. There are several factors that can influence the outcome of a bond test, therefore it is important to follow this protocol. The responsible party must ensure that the tests are conducted only at a time when subfloor and jobsite conditions comply with those requirements which are outlined in the nora® Installation Guide and ASTM F710.

The correct adhesive selection will be determined based upon the usage and type of nora flooring along with the type of existing substrate conditions. If required, contact your nora® representative for adhesive recommendations. Place tests randomly and at appropriate locations such as near walls or in light traffic areas. It is recommended that each test plot should be 2 by 2 sq. feet.

Install the bond tests using the appropriate adhesive, trowel notch, open times, and rolling etc., Do not uplift to check for adhesive transfer after flooring placement. Use Duct tape or similar to seal the edges of the flooring test sample to the substrate on all sides. Protect the flooring from foot traffic for 12 hours and rolling traffic for the duration of the test which must be a minimum 3 days (72 hours).

Refer to the nora Installation Guide for Mat Bond Test & evaluation of adhesives.

3.3 Adhesive

Use nora® 485 adhesive for porous substrates and/or nora dryfix for non-porous & porous substrates.

The nora 485 is water-based acrylic adhesive which are formulated for the installation of specific nora rubber floor coverings (2 mm – 4 mm) on absorptive subfloors.

Note: Not recommended for use in sterile areas (operating rooms etc.)

Apply the adhesive using a 1/16 inch x 1/16 inch x 1/16 inch V-notched trowel, evenly without the formation of puddles or any voids. Do not apply fresh adhesive over drying adhesive as this will result in telegraphing of adhesive lines. Coverage is approximately 160 –180 square feet per gallon for a CSP 1 (depending on the substrate). Replace worn trowels to ensure proper spread rate, do not re-notch.

The nora® dryfix tape must be installed prior to dry fitting the flooring materials. Carefully vacuum the installation area to remove all loose debris. If the substrate remains dusty after cleaning, use a water-based primer that is not film forming, diluted 1:1 with clean, cold potable water. Refer to installation instructions.

Note: If nora dryfix tape is used over existing flooring, nora systems, Inc. accepts no liability for any failure due to other manufacturers' flooring products or the possible breakdown of that flooring bond from the subfloor for any reason. Providing both the moisture test and Mat Bond test have acceptable results then the installation may continue.

3.4 Heat Welding
Not applicable

3.5 Cold Welding
Not applicable

3.6 Flash Coving
Not applicable

3.7 Installation Guidelines
Refer to the nora Installation Guide. For complete details go to www.nora.com/us.

4 Care and Cleaning
Refer to noraplan® product maintenance guides. For complete details go to www.nora.com/us.

5 Warranty
Limited 5-year warranty. See nora® Limited Warranty. For complete details go to www.nora.com/us.

Dated: September 2016

nora systems, Inc.
9 Northeastern Blvd.
Salem, NH 03079
Toll free: 800-332-NORA
Phone: (603) 894-1021
Fax: (603) 894-6615
E-mail: info-us@nora.com
www.nora.com/us

noraplan® sentica 2.0mm TILE

1 Product Name / Manufacturer

1.1 Product
noraplan® sentica 2.0mm tile resilient floor covering, Article 2700

1.2 Manufacturer
nora systems, Inc.
9 Northeastern Blvd.
Salem, NH 03079
800-336-5096
603-894-1021
www.nora.com/us

1.3 Product Description
nora® vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury.

1.4 Physical Characteristics
Material Size: ~24” x 24” (~610m x 610m)

Thickness: ~0.08“ (~2.0mm)

Dimensional Stability: Meets requirements

Composition: Homogeneous rubber compound with a random scattered design.

Color: 28 Standard colors

Surface: Smooth

2 Technical Data

2.1 Static Load Limit
ASTM F970, Residual compression of 0.003” with 800 lbs. achieved, ≤ 0.005” with 250 lbs. is required.

2.2 Rolling Load Limit
≤ 450 lbs. /sq. inch, with no forklift traffic.

2.3 Slip Resistance
ASTM D2047 Static coefficient of friction, Neolite dry 0.93, Neolite wet 0.90 achieved, ≥ 0.5 is required (not recommended for ramps).

2.4 Flammability
ASTM E648; NFPA 253; NBSIR 75 950, .97 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required.

2.5 Smoke Density
ASTM E662; NFPA 258; NBS, 196 (flaming) and 207 (non-flaming) achieved, < 450 is required.

2.6 Bacteria Resistance
ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity.

2.7 VOC’s
This flooring is GREENGUARD Gold Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant.

2.8 Sound Absorption
ASTM E2179 Δ IIC 11, ISO 140 Δ Lw 8 dB (compare only Δ values).

2.9 Hardness
ASTM D2240, Shore type “A”, 92 achieved, ≥ 85 is required.

3 Installation

3.1 Site Conditions
The flooring, adhesives, and accessories must be acclimated in the correct conditions for at least 48 hours prior to use. Areas of the flooring subjected to direct sunlight, for example through doors or windows, must be covered using blinds, curtains, cardboard or similar materials for 24 hours before, throughout and for a period of 72 hours after the installation to allow nora “wet” adhesives to cure.

The area to receive flooring must be fully enclosed, weather tight and climate controlled at the normal service ambient temperature and humidity (except walk-in freezers or similar). If this is not possible then the ambient temperature must remain steady (± 10ºF) and be between 59ºF and 80ºF for at least 48 hours prior, during and 72 hours after installation (do not use gas

fueled blowers.) The ambient relative humidity is recommended to be 50% RH ± 10%. However, dew point must be avoided, or stop the installation and remove any applied adhesive. The substrate surface must be at least 5°F above dew point.

3.2 Substrates

All on and below-grade concrete subfloors require a confirmed permanently effective vapor retarder with a low permeance (≤ 0.1) having a minimum thickness of 10 mils, or meets the current requirements of *ASTM E1745 — Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*. It must also be placed directly underneath the concrete, above the granular fill or use an effective moisture mitigation system that conforms to *ASTM F3010 – Standard Practice for Two Component Resin Based Membrane Forming Moisture Mitigation Systems for use Under Resilient Floor Coverings.*

Moisture Testing: Test the slab with a testing apparatus that conforms to and follows the exact protocol of *ASTM F2170 — Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in situ Probes*. If for any reason you are unable to drill into the concrete, please contact the nora® Technical Department.

Adhesive limits when tested at the correct service temperature and ambient humidity, the maximum allowable internal slab relative humidity levels (with effective vapor retarder as required) are as follows:

- nora® 385, 485, 585, 685 and dryfix adhesives = 85% RH.
- nora® stepfix and profix tape adhesives = 75% RH.

If the moisture test results exceed the maximum allowed then the installation must not proceed until either the moisture content drops to an acceptable level or an effective moisture mitigation system is used that conforms to ASTM F3010 and installed following that manufacturer's written instructions.

All concrete subfloors must be absorptive (see water droplet test), permanently dry (see moisture testing), clean, smooth and structurally sound as per *ASTM F710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*. In addition, concrete subfloors must be free of dust, solvents, paint, wax, varnish, oil, grease, asphalt, old adhesives and other extraneous materials that may interfere with the bond. Use only mechanical means such as diamond grinding with a Diamabrush™ Concrete Prep Plus Tool (or similar), or shot blasting. Use a suitable vacuum cleaner or water-based sweeping compound as required. All local, state and federal regulations must be followed.

Water droplet test: When using nora 485 or 685 adhesives it is mandatory that the substrate be absorptive as detailed within ASTM F710. To confirm this, the installer must perform a water droplet test in a sufficient number of places throughout the project. To perform the test, simply place a dime sized droplet of clean potable water using a clean straw or similar onto clean concrete (without any floor patching or leveling compounds). The water must absorb into the concrete within five minutes to be considered absorptive, or the substrate is considered non-absorptive.

Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities must be filled or smoothed with latex modified patching or underlayment compound for filling or smoothing, or both. Patching or underlayment compound must be moisture-, mildew-, and alkali-resistant, and, for commercial installations, must provide a minimum of 3000 psi compressive strength when tested in accordance with *ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars - Using 2-in. or 50mm Cube Specimens* or *ASTM C472 Standard Test Method for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete*, whichever is appropriate. Warranties should be obtained by the manufacturers of the products used.

Begin by mechanically removing all laitance, dirt, debris and coatings from the fill area. Use a suitable dustless concrete saw with a diamond blade or similar to achieve this followed by vacuuming. Do not install over any moving cracks or joints. If the concrete moisture level is too high, do not fill these with any patching compound. Use only those products and method as directed by the moisture membrane manufacturer.

All expansion joints and moving joints must not be covered or overlaid with any nora® product. Use a suitable industry standard expansion joint assembly system. For moving cracks please contact the nora Technical Department for recommendations.

All wooden subfloors must be a total minimum thickness of 1-1/4 inch and overlaid with overlapping joints using APA (American Plywood Association) underlayment grade plywood, installed as per *ASTM F1482 - Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring*.

Wooden substrates must not be in direct contact with concrete subfloors, even if built on sleepers. All suspended wood floors must have adequate under floor ventilation and a permanently effective vapor retarder or membrane placed directly on the ground beneath the air space.

The plywood must be clean and free of any bond breaking contaminates, this may be achieved by sanding if required or replacing the plywood with new APA plywood. Any gaps at the seams must be filled and smoothed with suitable and flexible joint filler. Any ridges must be sanded smooth.

Other subfloors/substrates: Please contact the nora Technical Department 1-800-332-NORA for any other type of subfloor or substrate inquiries and recommendations. Do not install over any oriented strand board (OSB), particleboard, Masonite, lauan or any similar unstable or contaminated substrates.

Mat Bond tests are recommended as they can help to determine the compatibility of the flooring system to a variety of substrates and may provide an indication of the presence of moisture. It is the responsibility of the installing party to determine the suitability of the subfloor being covered and how many Mat Bond tests need to be performed.

The areas and products to be tested must be properly conditioned for 48 hours before and during the testing period. There are several factors that can influence the outcome of a bond test, therefore it is important to follow this protocol. The responsible party must ensure that the tests are conducted only at a time when subfloor and jobsite conditions comply with those requirements which are outlined in the nora® Installation Guide and ASTM F710.

The correct adhesive selection will be determined based upon the usage and type of nora flooring along with the type of existing substrate conditions. If required, contact your nora® representative for adhesive recommendations. Place tests randomly and at appropriate locations such as near walls or in light traffic areas. It is recommended that each test plot should be 2 by 2 sq. feet.

Install the bond tests using the appropriate adhesive, trowel notch, open times, and rolling etc., Do not uplift to check for adhesive transfer after flooring placement. Use Duct tape or similar to seal the edges of the flooring test sample to the substrate on all sides. Protect the flooring from foot traffic for 12 hours and rolling traffic for the duration of the test which must be a minimum 3 days (72 hours).

Refer to the nora Installation Guide for Mat Bond Test & evaluation of adhesives.

3.3 Adhesive

Use nora® 485 adhesive for porous substrates and/or nora dryfix for non-porous & porous substrates.

The nora 485 is water-based acrylic adhesive which are formulated for the installation of specific nora rubber floor coverings (2 mm – 4 mm) on absorptive subfloors.

Note: Not recommended for use in sterile areas (operating rooms etc.)

Apply the adhesive using a 1/16 inch x 1/16 inch x 1/16 inch V-notched trowel, evenly without the formation of puddles or any voids. Do not apply fresh adhesive over drying adhesive as this will result in telegraphing of adhesive lines. Coverage is approximately 160 –180 square feet per gallon for a CSP 1 (depending on the substrate). Replace worn trowels to ensure proper spread rate, do not re-notch.

The nora® dryfix tape must be installed prior to dry fitting the flooring materials. Carefully vacuum the installation area to remove all loose debris. If the substrate remains dusty after cleaning, use a water-based primer that is not film forming, diluted 1:1 with clean, cold potable water. Refer to installation instructions.

Note: If nora dryfix tape is used over existing flooring, nora systems, Inc. accepts no liability for any failure due to other manufacturers' flooring products or the possible breakdown of that flooring bond from the subfloor for any reason. Providing both the moisture test and Mat Bond test have acceptable results then the installation may continue.

3.4 Heat Welding
Not applicable

3.5 Cold Welding
Not applicable

3.6 Flash Coving
Not applicable

3.7 Installation Guidelines
Refer to the nora Installation Guide. For complete details go to www.nora.com/us.

4 Care and Cleaning
Refer to noraplan® product maintenance guides. For complete details go to www.nora.com/us.

5 Warranty
Limited 5-year warranty. See nora® Limited Warranty. For complete details go to www.nora.com/us.

Dated: September 2016

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noraplan® valua 2.0mm SHEET

1 Product Name / Manufacturer

1.1 Product
noraplan® valua 2.0mm sheet goods resilient floor covering. Articles 172A and 174A.

1.2 Manufacturer
nora systems, Inc.
9 Northeastern Blvd.
Salem, NH 03079
800-336-5096
603-894-1021
www.nora.com/us

1.3 Product Description
nora® vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury.

1.4 Physical Characteristics
Material Size: ~49.2' x 48" (~15.0m x 1.22m)

Thickness: ~0.08" (~2.0mm)

Dimensional Stability: Meets requirements

Composition: Homogeneous rubber compound with a marbleized design.

Color: 8 Standard colors (Article 172A); 24 standard colors (Article 174A)

Surface: Linear structured

2 Technical Data

2.1 Static Load Limit
ASTM F970, Residual compression of 0.002" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. is required.

2.2 Rolling Load Limit
≤ 450 lbs. /sq. inch, with no forklift traffic.

2.3 Slip Resistance
ASTM D2047 Static coefficient of friction, Rubber dry 0.97, Rubber wet 0.85 achieved, ≥ 0.5 is required (not recommended for ramps).

2.4 Flammability
ASTM E648; NFPA 253; NBSIR 75 950, .98 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required.

2.5 Smoke Density
ASTM E662; NFPA 258; NBS, 134 (flaming) and 109 (non-flaming) achieved, < 450 is required.

2.6 Bacteria Resistance
ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity.

2.7 VOC's
This flooring is GREENGUARD Gold Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant.

2.8 Sound Absorption
ISO 140 ∆ Lw 8 dB (compare only ∆ values).

2.9 Hardness
ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required.

3 Installation

3.1 Site Conditions
The flooring, adhesives, and accessories must be acclimated in the correct conditions for at least 48 hours prior to use. Areas of the flooring subjected to direct sunlight, for example through doors or windows, must be covered using blinds, curtains, cardboard or similar materials for 24 hours before, throughout and for a period of 72 hours after the installation to allow nora "wet" adhesives to cure.

The area to receive flooring must be fully enclosed, weather tight and climate controlled at the normal service ambient temperature and humidity (except walk-in freezers or similar). If this is not possible then the ambient temperature must remain steady (± 10ºF) and be between 59ºF and 80ºF for at least 48 hours prior, during and 72 hours after installation (do not use gas fueled blowers.) The ambient relative humidity is recommended to be 50% RH ± 10%. However, dew point must be avoided, or stop the installation and remove any applied adhesive. The substrate surface must be at least 5°F above dew point.

3.2 Substrates

All on and below-grade concrete subfloors require a confirmed permanently effective vapor retarder with a low permeance (≤ 0.1) having a minimum thickness of 10 mils, or meets the current requirements of *ASTM E1745 — Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*. It must also be placed directly underneath the concrete, above the granular fill or use an effective moisture mitigation system that conforms to *ASTM F3010 – Standard Practice for Two Component Resin Based Membrane Forming Moisture Mitigation Systems for use Under Resilient Floor Coverings.*

Moisture Testing: Test the slab with a testing apparatus that conforms to and follows the exact protocol of *ASTM F2170 — Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in situ Probes*. If for any reason you are unable to drill into the concrete, please contact the nora® Technical Department.

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- nora® 385, 485, 585, 685 and dryfix adhesives = 85% RH.
- nora® stepfix and profix tape adhesives = 75% RH.

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All concrete subfloors must be absorptive (see water droplet test), permanently dry (see moisture testing), clean, smooth and structurally sound as per *ASTM F710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*. In addition, concrete subfloors must be free of dust, solvents, paint, wax, varnish, oil, grease, asphalt, old adhesives and other extraneous materials that may interfere with the bond. Use only mechanical means such as diamond grinding with a Diamabrush™ Concrete Prep Plus Tool (or similar), or shot blasting. Use a suitable vacuum cleaner or water-based sweeping compound as required. All local, state and federal regulations must be followed.

Water droplet test: When using nora 485 or 685 adhesives it is mandatory that the substrate be absorptive as detailed within ASTM F710. To confirm this, the installer must perform a water droplet test in a sufficient number of places throughout the project. To perform the test, simply place a dime sized droplet of clean potable water using a clean straw or similar onto clean concrete (without any floor patching or leveling compounds). The water must absorb into the concrete within five minutes to be considered absorptive, or the substrate is considered non-absorptive.

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Begin by mechanically removing all laitance, dirt, debris and coatings from the fill area. Use a suitable dustless concrete saw with a diamond blade or similar to achieve this followed by

vacuuming. Do not install over any moving cracks or joints. If the concrete moisture level is too high, do not fill these with any patching compound. Use only those products and method as directed by the moisture membrane manufacturer.

All expansion joints and moving joints must not be covered or overlaid with any nora® product. Use a suitable industry standard expansion joint assembly system. For moving cracks please contact the nora Technical Department for recommendations.

All wooden subfloors must be a total minimum thickness of 1-1/4 inch and overlaid with overlapping joints using APA (American Plywood Association) underlayment grade plywood, installed as per *ASTM F1482 - Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring*.

Wooden substrates must not be in direct contact with concrete subfloors, even if built on sleepers. All suspended wood floors must have adequate under floor ventilation and a permanently effective vapor retarder or membrane placed directly on the ground beneath the air space.

The plywood must be clean and free of any bond breaking contaminates, this may be achieved by sanding if required or replacing the plywood with new APA plywood. Any gaps at the seams must be filled and smoothed with suitable and flexible joint filler. Any ridges must be sanded smooth.

Other subfloors/substrates: Please contact the nora Technical Department 1-800-332-NORA for any other type of subfloor or substrate inquiries and recommendations. Do not install over any oriented strand board (OSB), particleboard, Masonite, lauan or any similar unstable or contaminated substrates.

Mat Bond tests are recommended as they can help to determine the compatibility of the flooring system to a variety of substrates and may provide an indication of the presence of moisture. It is the responsibility of the installing party to determine the suitability of the subfloor being covered and how many Mat Bond tests need to be performed.

The areas and products to be tested must be properly conditioned for 48 hours before and during the testing period. There are several factors that can influence the outcome of a bond test, therefore it is important to follow this protocol. The responsible party must ensure that the tests are conducted only at a time when subfloor and jobsite conditions comply with those requirements which are outlined in the nora® Installation Guide and ASTM F710.

The correct adhesive selection will be determined based upon the usage and type of nora flooring along with the type of existing substrate conditions. If required, contact your nora® representative for adhesive recommendations. Place tests randomly and at appropriate locations such as near walls or in light traffic areas. It is recommended that each test plot should be 2 by 2 sq. feet.

Install the bond tests using the appropriate adhesive, trowel notch, open times, and rolling etc., Do not uplift to check for adhesive transfer after flooring placement. Use Duct tape or similar to seal the edges of the flooring test sample to the substrate on all sides. Protect the flooring from foot traffic for 12 hours and rolling traffic for the duration of the test which must be a minimum 3 days (72 hours).

Refer to the nora Installation Guide for Mat Bond Test & evaluation of adhesives.

3.3 Adhesive

Use nora® 485 adhesive for porous substrates and/or nora dryfix for non-porous & porous substrates.

The nora 485 is water-based acrylic adhesive which are formulated for the installation of specific nora rubber floor coverings (2 mm – 4 mm) on absorptive subfloors.

Note: Not recommended for use in sterile areas (operating rooms etc.)

Apply the adhesive using a 1/16 inch x 1/16 inch x 1/16 inch V-notched trowel, evenly without the formation of puddles or any voids. Do not apply fresh adhesive over drying adhesive as this will result in telegraphing of adhesive lines. Coverage is approximately 160 –180 square feet per gallon for a CSP 1 (depending on the substrate). Replace worn trowels to ensure proper spread rate, do not re-notch.

The nora® dryfix tape must be installed prior to dry fitting the flooring materials. Carefully

vacuum the installation area to remove all loose debris. If the substrate remains dusty after cleaning, use a water-based primer that is not film forming, diluted 1:1 with clean, cold potable water. Refer to installation instructions.

Note: If nora dryfix tape is used over existing flooring, nora systems, Inc. accepts no liability for any failure due to other manufacturers' flooring products or the possible breakdown of that flooring bond from the subfloor for any reason. Providing both the moisture test and Mat Bond test have acceptable results then the installation may continue.

3.4 Heat Welding
Optional (if required) nora® heat welding rod. Refer to the nora Installation Guide

3.5 Cold Welding
Optional (if required) nora® cold weld. Refer to the nora® Installation Guide

3.6 Flash Coving
Optional (if required) – Refer to the nora Installation Guide

3.7 Installation Guidelines
Refer to the nora Installation Guide. For complete details go to www.nora.com/us.

4 Care and Cleaning
Refer to noraplan® product maintenance guides. For complete details go to www.nora.com/us.

5 Warranty
Limited 5-year warranty. See nora® Limited Warranty. For complete details go to www.nora.com/us.

Dated: September 2016

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www.nora.com/us

norament® arago TILE

1 Product Name / Manufacturer

1.1 Product
norament® arago tile resilient floor covering, Article 3118

1.2 Manufacturer
nora systems, Inc.
9 Northeastern Blvd.
Salem, NH 03079
800-336-5096
603-894-1021
www.nora.com/us

1.3 Product Description
nora® vulcanized rubber compound 926 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury.

1.4 Physical Characteristics
Material Size: ~39.53” x 19.76” (~1004mm x 502mm)

Thickness: ~0.14“ (~3.5mm)

Dimensional Stability: Meets requirements

Composition: Homogeneous rubber compound

Color: 12 Standard colors

Surface: Landscape

2 Technical Data

2.1 Static Load Limit
ASTM F970, Residual compression of 0.004” with 800 lbs. achieved, ≤ 0.005” with 250 lbs. is required.

2.2 Rolling Load Limit
≤ 850 lbs. /sq. inch, with no forklift traffic.

2.3 Slip Resistance
ASTM D2047 Static coefficient of friction, Neolite dry 0.81, Neolite wet 0.87 achieved, ≥ 0.5 is required.

2.4 Flammability
ASTM E648; NFPA 253; NBSIR 75 950, 0.92 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required.

2.5 Smoke Density
ASTM E662; NFPA 256; NBS, 256 (flaming) and 138 (non-flaming) achieved, < 450 is required.

2.6 Bacteria Resistance
ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity.

2.7 VOC’s
This flooring is GREENGUARD Gold Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant.

2.8 Sound Absorption
ASTM E2179 Δ IIC 15, ISO 140 Δ Lw 10 dB (compare only Δ values).

2.9 Hardness
ASTM D2240, Shore type “A”, 82 achieved, ≥ 70 is required.

3 Installation

3.1 Site Conditions
The flooring, adhesives, and accessories must be acclimated in the correct conditions for at least 48 hours prior to use. Areas of the flooring subjected to direct sunlight, for example through doors or windows, must be covered using blinds, curtains, cardboard or similar materials for 24 hours before, throughout and for a period of 72 hours after the installation to allow nora “wet” adhesives to cure.

The area to receive flooring must be fully enclosed, weather tight and climate controlled at the normal service ambient temperature and humidity (except walk-in freezers or similar). If this is not possible then the ambient temperature must remain steady (± 10ºF) and be between 59ºF and 80ºF for at least 48 hours prior, during and 72 hours after installation (do not use gas

fueled blowers.) The ambient relative humidity is recommended to be 50% RH ± 10%. However, dew point must be avoided, or stop the installation and remove any applied adhesive. The substrate surface must be at least 5°F above dew point.

3.2 Substrates

All on and below-grade concrete subfloors require a confirmed permanently effective vapor retarder with a low permeance (≤ 0.1) having a minimum thickness of 10 mils, or meets the current requirements of *ASTM E1745 — Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs*. It must also be placed directly underneath the concrete, above the granular fill or use an effective moisture mitigation system that conforms to *ASTM F3010 – Standard Practice for Two Component Resin Based Membrane Forming Moisture Mitigation Systems for use Under Resilient Floor Coverings.*

Moisture Testing: Test the slab with a testing apparatus that conforms to and follows the exact protocol of *ASTM F2170 — Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in situ Probes*. If for any reason you are unable to drill into the concrete, please contact the nora® Technical Department.

Adhesive limits when tested at the correct service temperature and ambient humidity, the maximum allowable internal slab relative humidity levels (with effective vapor retarder as required) are as follows:

- nora® 385, 485, 585, 685 and dryfix adhesives = 85% RH.
- nora® stepfix and profix tape adhesives = 75% RH.

If the moisture test results exceed the maximum allowed then the installation must not proceed until either the moisture content drops to an acceptable level or an effective moisture mitigation system is used that conforms to ASTM F3010 and installed following that manufacturer's written instructions.

All concrete subfloors must be absorptive (see water droplet test), permanently dry (see moisture testing), clean, smooth and structurally sound as per *ASTM F710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring*. In addition, concrete subfloors must be free of dust, solvents, paint, wax, varnish, oil, grease, asphalt, old adhesives and other extraneous materials that may interfere with the bond. Use only mechanical means such as diamond grinding with a Diamabrush™ Concrete Prep Plus Tool (or similar), or shot blasting. Use a suitable vacuum cleaner or water-based sweeping compound as required. All local, state and federal regulations must be followed.

Water droplet test: When using nora 485 or 685 adhesives it is mandatory that the substrate be absorptive as detailed within ASTM F710. To confirm this, the installer must perform a water droplet test in a sufficient number of places throughout the project. To perform the test, simply place a dime sized droplet of clean potable water using a clean straw or similar onto clean concrete (without any floor patching or leveling compounds). The water must absorb into the concrete within five minutes to be considered absorptive, or the substrate is considered non-absorptive.

Surface cracks, grooves, depressions, control joints or other non-moving joints, and other irregularities must be filled or smoothed with latex modified patching or underlayment compound for filling or smoothing, or both. Patching or underlayment compound must be moisture-, mildew-, and alkali-resistant, and, for commercial installations, must provide a minimum of 3000 psi compressive strength when tested in accordance with *ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars - Using 2-in. or 50mm Cube Specimens* or *ASTM C472 Standard Test Method for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete*, whichever is appropriate. Warranties should be obtained by the manufacturers of the products used.

Begin by mechanically removing all laitance, dirt, debris and coatings from the fill area. Use a suitable dustless concrete saw with a diamond blade or similar to achieve this followed by vacuuming. Do not install over any moving cracks or joints. If the concrete moisture level is too high, do not fill these with any patching compound. Use only those products and method as directed by the moisture membrane manufacturer.

All expansion joints and moving joints must not be covered or overlaid with any nora® product. Use a suitable industry standard expansion joint assembly system. For moving cracks please contact the nora Technical Department for recommendations.

All wooden subfloors must be a total minimum thickness of 1-1/4 inch and overlaid with overlapping joints using APA (American Plywood Association) underlayment grade plywood, installed as per *ASTM F1482 - Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring*.

Wooden substrates must not be in direct contact with concrete subfloors, even if built on sleepers. All suspended wood floors must have adequate under floor ventilation and a permanently effective vapor retarder or membrane placed directly on the ground beneath the air space.

The plywood must be clean and free of any bond breaking contaminates, this may be achieved by sanding if required or replacing the plywood with new APA plywood. Any gaps at the seams must be filled and smoothed with suitable and flexible joint filler. Any ridges must be sanded smooth.

Other subfloors/substrates: Please contact the nora Technical Department 1-800-332-NORA for any other type of subfloor or substrate inquiries and recommendations. Do not install over any oriented strand board (OSB), particleboard, Masonite, lauan or any similar unstable or contaminated substrates.

Mat Bond tests are recommended as they can help to determine the compatibility of the flooring system to a variety of substrates and may provide an indication of the presence of moisture. It is the responsibility of the installing party to determine the suitability of the subfloor being covered and how many Mat Bond tests need to be performed.

The areas and products to be tested must be properly conditioned for 48 hours before and during the testing period. There are several factors that can influence the outcome of a bond test, therefore it is important to follow this protocol. The responsible party must ensure that the tests are conducted only at a time when subfloor and jobsite conditions comply with those requirements which are outlined in the nora® Installation Guide and ASTM F710.

The correct adhesive selection will be determined based upon the usage and type of nora flooring along with the type of existing substrate conditions. If required, contact your nora® representative for adhesive recommendations. Place tests randomly and at appropriate locations such as near walls or in light traffic areas. It is recommended that each test plot should be 2 by 2 sq. feet.

Install the bond tests using the appropriate adhesive, trowel notch, open times, and rolling etc., Do not uplift to check for adhesive transfer after flooring placement. Use Duct tape or similar to seal the edges of the flooring test sample to the substrate on all sides. Protect the flooring from foot traffic for 12 hours and rolling traffic for the duration of the test which must be a minimum 3 days (72 hours).

Refer to the nora Installation Guide for Mat Bond Test & evaluation of adhesives.

3.3 Adhesive

Use nora® 485 adhesive for porous substrates and nora® 385 or nora® dryfix for non-porous & porous substrates.

The nora 485 is water-based acrylic adhesive which are formulated for the installation of specific nora rubber floor coverings (2 mm – 4 mm) on absorptive subfloors.

The nora 385 is a two component polyurethane adhesive that has been specifically formulated for the installation of specific norament flooring products on suitable substrates. When parts A & B are thoroughly mixed together and used as recommended, they form a reactive adhesive that cures to a tough, flexible film with a good resistance to surface moisture and many chemicals.

Note: Not recommended for use in sterile areas (operating rooms etc.)

Apply the nora 485 adhesive using a 1/16 inch x 1/16 inch x 1/16 inch V-notched trowel, evenly without the formation of puddles or any voids. Do not apply fresh adhesive over drying adhesive as this will result in telegraphing of adhesive lines. Coverage is approximately 160 – 180 square feet per gallon for a CSP 1 (depending on the substrate). Replace worn

trowels to ensure proper spread rate, do not re-notch.

Apply nora 385 adhesive evenly to the substrate immediately after mixing, using a 1/32 inch x 1/16 inch x 1/32 inch U-notched trowel, without the formation of puddles or voids. Replace worn trowels to ensure proper spread rate; do not re-notch. Coverage ~170-190 square feet per gallon for a CSP 1 (depending on substrate).

The nora® dryfix tape must be installed prior to dry fitting the flooring materials. Carefully vacuum the installation area to remove all loose debris. If the substrate remains dusty after cleaning, use a water-based primer that is not film forming, diluted 1:1 with clean, cold potable water. Refer to installation instructions.

Note: If nora dryfix tape is used over existing flooring, nora systems, Inc. accepts no liability for any failure due to other manufacturers' flooring products or the possible breakdown of that flooring bond from the subfloor for any reason. Providing both the moisture test and Mat Bond test have acceptable results then the installation may continue.

3.1 Heat Welding
Not applicable

3.2 Cold Welding
Optional or if required. Refer to the nora Installation Guide.

3.3 Flash Coving
Refer to the nora Installation Guide

3.4 Installation Guidelines
Refer to the nora Installation Guide. For complete details go to www.nora.com/us.

4 Care and Cleaning
Refer to norament® product maintenance guides. For complete details go to www.nora.com/us.

5 Warranty
Limited 10-year warranty. See nora® Limited Warranty. For complete details go to www.nora.com/us.

Dated: February 2017

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Salem, NH 03079
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www.nora.com/us

SVF-1,2,3

SHANNON SPECIALTY FLOORS™

YOUR TRUSTED PARTNER SINCE 1921

TEKNOFLOR™

FORESTSCAPES HPD™

COMMERCIAL RESILIENT SHEET • HIGH PERFORMANCE DESIGN

TRADITIONAL LOOK. MODERN COMPOSITION.

TEKNOFLOR™ Forestscapes HPD™ Collection of Commercial Resilient Sheet was designed to offer your favorite traditional wood looks from our most tenured Teknoflor™ collection in a modern composition made of 100% virgin vinyl and free of phthalates. Our hardest working floor is now even tougher and more thoughtfully made to meet your standards and exceed your expectations for a beautiful, clean wood look to last for years to come. For more information, contact your Shannon Specialty Floors representative.

DURABLE AND LOW MAINTENANCE

- **No Wax, No Buff**, No sealers or finishes needed; easily cleaned by damp mopping or auto-scrubbing
- Thicker 2.3mm gauge for enhanced performance in heavy traffic areas
- Maintenance savings results in investment payback in approximately two years

ENVIRONMENTALLY FRIENDLY

- TekDefend™ incorporated into the wear layer which effectively inhibits bacterial growth on the flooring surface
- No buff floors means no bacteria, dust or wax particles are thrown into the air during cleaning
- No odors from floor finish or strippers; no wax flushed into sewer system
- Complies with REACH requirements for Substances of Very High Concern
- Made with 100% Virgin Vinyl
- Floorscore Certified

SAFE

- ADA Compliant
- Approved for emergency egress areas - NFPA 101 and NFPA 99

OVERALL THICKNESS

- 2.3mm (0.091")

WARRANTY

- 12-year commercial warranty

APPLICATIONS

- Ideal for Healthcare, Senior Living, Retail, Corporate/Office, Academic and Hospitality Environments

88055 Soot

88056 Cinnamon

88057 Buck

88058 Brandy

88059 Natural

88060 Light Fawn

88061 Tanned

88062 Mulch

88063 Dawn

88064 Dusk

88065 Russet

88066 Eagle

88067 Sepia

88068 Fog

88069 Steel

88070 Firewood

88071 Tawny

88072 Charcoal

88073 Raven

88074 Sunrise

88075 Flame

88076 Amber

FORESTSCAPES HPD™

COMMERCIAL RESILIENT SHEET • HIGH PERFORMANCE DESIGN

TEKNOFLOR

PRODUCT DATA	
STANDARD SPECIFICATION	ASTM F1303 - Meets or exceeds requirements
CLASSIFICATION	Type I, Grade 1
BACKING CLASS	Class A
COMPOSITION	Virgin PVC, No outside recycled content and Phthalate Free
TOP COAT	HP Urethane Coating with Ceramic Bead
ANTIMICROBIAL	TekDefend™
WEAR LAYER THICKNESS	0.50 mm (20 mils or 0.020 in)
OVERALL THICKNESS	2.3mm (0.091")

PACKAGING	
DIMENSIONS	6' Wide (1.82m) x 75' Long (22.86m)
ROLL SIZE	50 SY (450 Sq. Ft.)
WEIGHT	295 lbs.

PERFORMANCE SPECIFICATIONS	TEST METHOD	STANDARD REQUIREMENT	RESULT
CHEMICAL RESISTANCE	ASTM F925	0- No change or 1 - Slight Change	0 - No Change
HEAT STABILITY COLOR CHANGE	ASTM F1514	ΔE < 8.0 avg. @ 7 days	Passes
LIGHT STABILITY COLOR CHANGE	ASTM F1515	ΔE < 8.0 avg. @ 300 hrs.	Passes
SHORT TERM INDENTATION	ASTM F1914	avg. < 8.0 avg. @ 50 lbs	avg. 3.6% 0.003"
STATIC LOAD LIMIT	ASTM F970	250 psi ≤ 0.005" Residual Indentation	Exceeds Requirements 1,000 psi at maximum limit
FLOORSCORE	Certified		
HEAVY METALS	ASTM F963		No concern with heavy metal content
ABRASION RESISTANCE	ASTM D4060	H18 Wheel & 1 kg mass applied	32,000 cycles to see effect on design layer
PHILLIPS CASTOR CHAIR TEST	Phillips Castor Chair Test	150 lbs. Load / Rating Scale 1-5 / 5-No Change / 1 - Severe Change	20,000 Cycles-5-Excellent No Change
REACH –Substances of Very High Concern (SVHC)	Test for EU REACH Chemicals of Concern	SVHC's tested must be less than 0.1% by product weight	Passes

SAFETY PERFORMANCE	TEST METHOD	STANDARD REQUIREMENT	RESULT
STATIC COEFFICIENT OF FRICTION (SCOF)	D2047	≥ 0.5 SCOF Dry	≥ 0.6 SCOF Dry
DYNAMIC COEFFICIENT OF FRICTION (DCOF)	ANSI B101.3	Low/Acceptable/High Traction - Wet DCOF	High Traction - Wet DCOF
CRITICAL RADIANT FLUX	E648	Class I: ≥ 0.45 w/cm2 Class II: ≥ 0.22 w/cm2	Class I
SMOKE GENERATION	E662	<450 Flaming	<450 Flaming & Non-Flaming
MICROBIAL RESISTANCE	ISO 22196 JISZ2801		>99.99% Reduction
APPROVED FOR EMERGENCY EGRESS AREAS - NFPA 101 AND NFPA 99			

GSA Schedule GS-27F-0504H • GS-27F-0036V GS-27F-0015V

ISO 9001 QUALITY SYSTEM 14001 ENVIRONMENTAL MANAGEMENT

floor score CERTIFIED BY SCS Global Services

SHANNON SPECIALTY FLOORS

hq: 1005 South 60th Street Milwaukee, WI 53214 | tel: 800.522.9166 | fax: 414.944.0550 | web: shannonspecialtyfloors.com

SPECIFICATIONS - COLOR ANCHOR COLLECTION

CONSTRUCTION	LVT with micro-beveled edges
AVAILABLE SIZES	6" x 36" (152 mm x 915 mm), 12" x 24" (305 mm x 610 mm), 18" x 18" (457 mm x 457 mm)
WEAR LAYER THICKNESS	20 mil (0.51 mm)
OVERALL THICKNESS	.098" (2.5 mm)
PIECES PER CARTON	19 pieces – 6" x 36"; 18 pieces – 12" x 24"; 12 pieces – 18" x 18"
COVERAGE PER CARTON	28.5 sq. ft. - 6" x 36"; 36 sq. ft. - 12" x 24"; 27 sq. ft. - 18" x 18"
QUANTUM GUARD® HP	The highest performance commercial urethane finish in the industry. The patented aluminum oxide proprietary wear layer eliminates the need for polish, while enhancing durability, cleanability, appearance retention and slip resistance when compared to standard LVT – resulting in 70% annual savings in maintenance costs.
QUICKSTIX®	LVT with pre-applied adhesive, reducing time and labor required to install the flooring. QuickStix floors can be used immediately after installation, even in extreme moisture areas.
WARRANTY	This product is backed by our Limited 10 Year Commercial Warranty and Limited 10 Year Quantum Guard® HP Wear Warranty.
RAPIDLY RENEWABLE CONTENT	Contains 3% rapidly renewable resource content.
3RD PARTY CERTIFICATIONS	FloorScore, Industry wide 3rd party Type III EPD (Environmental Product Declaration)
LEED	Mannington Commercial products may contribute to multiple LEED credits.
US MANUFACTURING	Mannington is a fourth generation, family-owned company deeply committed to U.S. manufacturing. We make flooring in seven communities across the U.S., allowing us to provide the highest levels of service and quality in the industry, while supporting local economies and crafting quality, American-made products.
STATIC LOAD LIMIT	750 PSI
SPECIFICATIONS (ASTM F1700)	Class III, Type B
HEAT STABILITY (ASTM F1514)	Passes
STAIN & CHEMICAL RESISTANCE (ASTM F925)	Passes
HUD/FHA REQUIREMENTS	Exceeds
AMERICANS WITH DISABILITIES ACT GUIDELINES (ADAG)	Meets or exceeds ADA Guidelines
COEFFICIENT OF FRICTION (COF)	≥ 0.5 Leather; 0.6 Rubber
FLOORING RADIANT PANEL (ASTM E648)	≥ 0.45 watts/cm^2, Passes (Class 1)
N.B.S. SMOKE CHAMBER (ASTM E662)	< 450-Passes
INSTALLATION ADHESIVE	Porous Substrate: V-82 Full Spread / RH 75%, MVER 3. Non-Porous Substrate: V-95 Full Spread, 2 Part Epoxy / RH 75%, MVER 3. Porous & Non-Porous Substrate: M-Guard V-88 Full Spread, Transitional Pressure Sensitive / RH 90%, MVER 8; XpressStep for LVT Spray Adhesive / RH 90%, MVER 8, pH 11; XpressStep Premium Spray Adhesive / RH 93%, MVER 10, pH 12; QuickStix® pre-applied adhesive / 99% RH, MVER 18, pH 12. Note: Must use V-95 or XpressStep for LVT or Premium Spray adhesive under hospital beds and heavy rolling loads or where high performance is needed.

For complete specifications, visit our website, manningtoncommercial.com.

MANNINGTON COMMERCIAL

SPECIFICATIONS | ANTHOLOGY ABSTRACT

CONSTRUCTION	LVT with micro-beveled edges
STANDARD AVAILABLE SIZES (STYLE DEPENDENT)	4.5" x 36" (114 mm x 915 mm), 18" x 18" (457 mm x 457 mm), 18" x 36" (457 mm x 915 mm) Other sizes available - refer to brochure matrix for specific product sizes.
OVERALL THICKNESS	0.098" (2.5 mm)
WEAR LAYER THICKNESS	40 mil (1 mm)
PIECES PER CARTON	40 pcs. of 4.5" x 36"; 20 pcs. of 18" x 18"; 10 pcs. of 18" x 36"
COVERAGE PER CARTON	45 sq. ft. Depends on the product and product size
WARRANTY	This product is backed by our Limited 20 Year Commercial Warranty and Limited 20 Year Quantum Guard® HP Wear Warranty.
QUANTUM GUARD® HP	The highest performance commercial urethane finish in the industry. The patented aluminum oxide proprietary wear layer eliminates the need for polish, while enhancing durability, cleanability, appearance retention and slip retardance when compared to standard LVT floors – resulting in 70% annual savings in maintenance costs.
QUICKSTIX™	LVT with pre-applied adhesive, reducing time and labor required to install the flooring. QuickStix™ floors can be used immediately after installation, even in extreme moisture areas.
3RD PARTY CERTIFICATIONS	FloorScore, Industry wide 3rd party Type III EPD (Environmental Product Declaration)
LEED	Mannington Commercial products may contribute to multiple LEED credits.
US MANUFACTURING	Mannington is a fourth generation, family-owned company deeply committed to U.S. manufacturing. We make flooring in seven communities across the U.S., allowing us to provide the highest levels of service and quality in the industry, while supporting local economies and crafting quality, American-made products.
RAPIDLY RENEWABLE CONTENT	Contains 4% rapidly renewable resource content.
STATIC LOAD LIMIT	750 PSI
SPECIFICATION (ASTM F1700)	Class III Type A & B
HEAT STABILITY (ASTM F1514)	Passes
STAIN & CHEMICAL RESISTANCE (ASTM F925)	Passes
HUD/FHA REQUIREMENTS	Exceeds
AMERICANS WITH DISABILITIES ACT GUIDELINES (ADAG)	Meets or exceeds ADA Guidelines
COEFFICIENT OF FRICTION (COF)	≥ 0.5 Leather; 0.6 Rubber
FLOORING RADIANT PANEL (ASTM E648)	≥ 0.45 watts/cm2, Passes (Class 1)
N.B.S. SMOKE CHAMBER TEST (ASTM E662)	< 450-Passes
INSTALLATION ADHESIVE	Porous & Non-Porous Substrates: Amtico High Pressure Sensitive, Full Spread / RH 90%, MVER 8, pH5-9; Amtico 373, Full Spread / RH 80%, MVER 5, pH 7-10; XpressStep for LVT Spray Adhesive / RH 90%, MVER 8, pH11; XpressStep Premium Spray Adhesive / RH 93%, MVER 10, pH12. Non-Porous Substrates or where higher performance is required: Amtico Universal, Full Spread, 2 Part Urethane / RH 80%, MVER 5, pH 7-10. Under Hospital Beds and Heavy Rolling Loads: Amtico Universal, Full Spread, 2 PartUrethane / RH 80%, MVER 5, pH 7-10; XpressStep for LVT Spray Adhesive / RH 90%, MVER 8, pH11; XpressStep Premium Spray Adhesive / RH 93%, MVER 10, pH12 / QuickStix™ pre-applied adhesive / 99% RH, MVER 18, ph12.

CONSTRUCTION	LVT with micro-beveled edges
STANDARD AVAILABLE SIZES	3" x 36" (76 x 915mm), 4.5" x 36" (114 x 915mm), 6" x 36" (152 x 915mm), 9" x 36" (229 x 915mm). Other sizes available - refer to brochure matrix for specific product sizes.
OVERALL THICKNESS	0.098" (2.5 mm)
WEAR LAYER THICKNESS	40 mil (1 mm)
PIECES PER CARTON	60 pcs of 3" x 36", 40 pcs of 4.5" x 36", 30 pcs of 6" x 36", 20 pcs of 9" x 36"
COVERAGE PER CARTON	45 sq. ft. Depends on the product and product size
3RD PARTY CERTIFICATIONS	FloorScore, Industry wide 3rd party Type III EPD (Environmental Product Declaration)
WARRANTY	This product is backed by our Limited 20 Year Commercial Warranty and Limited 20 Year Quantum Guard® HP Wear Warranty.
QUANTUM GUARD® HP	The highest performance commercial urethane finish in the industry. The patented aluminum oxide proprietary wear layer eliminates the need for polish, while enhancing durability, cleanability, appearance retention and slip retardance when compared to standard LVT floors – resulting in 70% annual savings in maintenance costs.
QUICKSTIX	LVT with pre-applied adhesive, reducing time and labor required to install the flooring. QuickStix floors can be used immediately after installation, even in extreme moisture areas.
LEED	Mannington Commercial products may contribute to multiple LEED credits.
XPRESS	When you really need it now. Our innovative delivery program ensures that you get the carpet and hard surface products you need quickly and reliably. With product available to ship within 5 business days, Mannington's new Xpress program leads the industry in service.
US MANUFACTURING	Mannington is a fourth generation, family-owned company deeply committed to U.S. manufacturing. We make flooring in seven communities across the U.S., allowing us to provide the highest levels of service and quality in the industry, while supporting local economies and crafting quality, American-made products.
RAPIDLY RENEWABLE CONTENT	Contains 4% rapidly renewable resource content.
STATIC LOAD LIMIT	(Armstrong Modified @1000 PSI): Pass
SPECIFICATION (ASTM F1700)	Class III Type A & B
HEAT STABILITY (ASTM F1514)	Passes
STAIN & CHEMICAL RESISTANCE (ASTM F925)	Passes
HUD/FHA REQUIREMENTS	Exceeds
AMERICANS WITH DISABILITIES ACT GUIDELINES (ADAG)	Meets or exceeds ADA Guidelines
COEFFICIENT OF FRICTION (COF)	≥ 0.5 Leather; 0.6 Rubber
FLOORING RADIANT PANEL (ASTM E648)	≥ .45 watts/cm², Passes (Class I)
N.B.S. SMOKE CHAMBER (ASTM E662)	< 450 (non-flaming mode)
INSTALLATION ADHESIVE	Porous & Non-Porous Substrates: Amtico High Pressure Sensitive, Full Spread / RH 90%, MVER 8, pH5-9; Amtico 373, Full Spread / RH 80%, MVER 5, pH 7-10; XpressStep for LVT Spray Adhesive / RH 90%, MVER 8, pH11; XpressStep Premium Spray Adhesive / RH 93%, MVER 10, pH12. Non-Porous Substrates or where higher performance is required: Amtico Universal, Full Spread, 2 Part Urethane / RH 80%, MVER 5, pH 7-10. Under Hospital Beds and Heavy Rolling Loads: Amtico Universal, Full Spread, 2 PartUrethane / RH 80%, MVER 5, pH 7-10; XpressStep for LVT Spray Adhesive / RH 90%, MVER 8, pH11; XpressStep Premium SprayAdhesive / RH 93%, MVER 10, pH12. QuickStix pre-applied adhesive / 99% RH, MVER 18, ph12

Specialty Flooring

2019

Slim Line Transitions and Stair Nosings

We make accessories that hold everything together

The Slim Line offering of resilient nosings and transitions offer functionality with aesthetic benefits.

Our Slim Line Nosings offer enough physical flexibility to conform to any staircase installation, even long, curved staircases. They also create a seamless installation for most applications. With three nosing thicknesses to choose from, the system will work with almost any carpet style or gauge.

The possibilities for the Slim Line Transitions are nearly endless. Available in both straight and curved configurations, Slim Line Transitions allow designers to create a custom design to suit any aesthetic.

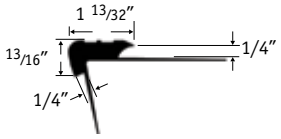
With 49 standard colorways, including the luxurious look of metal, Slim Line Transitions can provide a subtle visual transition, a sharp contrast, or, with ColorMatch® colorways, they can blend right into the flooring, creating a seamless effect. Whatever the heart desires.

Design flexibility to create the right aesthetic without sacrificing performance. **That's Balanced Choice.**

Slim Line Nosings

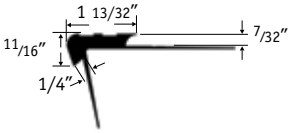
SLN-XX-A

1/4" material on step and riser.



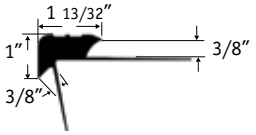
SLN-XX-B

7/32" material on step and 1/4" material on riser.



SLN-XX-C

3/8" material on step and riser.

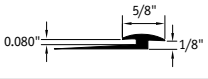


Slim Line Nosings and Transitions profile images are for demonstration purposes only and are not to scale.

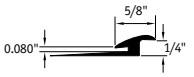
Slim Line Transitions

SLT-XX-A
SLTC-XX-A*
1/4" to 1/8" material.

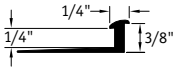
SLT-XX-B
SLTC-XX-B*
.080" to 1/8" material.



SLT-XX-C
SLTC-XX-C*
.080" to 1/4" material.

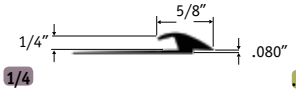


SLT-XX-F
SLTC-XX-F*
1/4" to 3/8" material.



SLT-XX-G
SLTC-XX-G*
1/4" to 1/2" material.

SLT-XX-H
SLTC-XX-H*
1/4" to .080" material.



*Slim Line Transitions available for materials with a contour edge.

Available in Palette A and D (Metallics) plus these 7 additional colors: **14** Tropical Storm, **15** Cabernet, **60** Taupe, **129** Silk **WB**, **132** Espresso, **150** Wetlands, **169** Fudge

For more information, please visit www.johnsonite.com

We've identified Color Foundations™ neutrals in the following way: **WB** (warm beige), **CB** (cool beige), **WG** (warm grey), **CG** (cool grey), **B** (black), **W** (white).

Johnsonite®
A Tarkett Company
16910 Munn Road
Chagrin Falls, OH 44023
800-899-8916 or 440-543-8916
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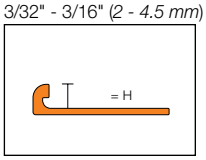
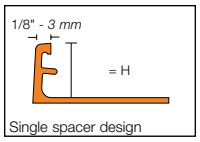
Aluminum, Brass
3/32" - 3/16" (*2 - 4.5 mm*)

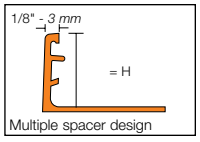


1/4" - 1/2" (*6 - 12.5 mm*)



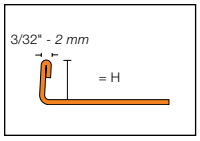
Single spacer design

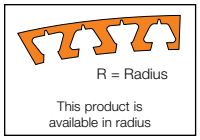
17/32" - 1-3/16" (*14 - 30 mm*)



Multiple spacer design

Stainless steel





This product is available in radius

1.1 Schluter®-SCHIENE

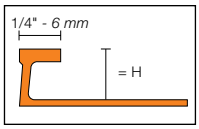
H = mm - *in.*	Item No.					
	Stainless steel 316L (1.4404 = V4A) (E/V4A)	Stainless steel 304 (1.4301 = V2A) (E)	Brushed stainless steel 304 (1.4301 = V2A) (EB)	Solid brass (M)	Aluminum (A)	Satin anodized aluminum (AE)
2 - *3/32*	-	E 20	-	-	A 20	AE 20
3 - *1/8*	-	E 30	-	M 30	A 30	AE 30
4.5 - *3/16*	E 45/V4A	E 45	-	M 45	A 45	AE 45
6 - *1/4*	E 60/V4A	E 60	E 60 EB	M 60	A 60	AE 60
7 - *9/32*	-	E 70	-	-	A 70	AE 70
8 - *5/16*	E 80/V4A	E 80	E 80 EB	M 80	A 80	AE 80
9 - *11/32*	-	E 90	-	M 90	A 90	AE 90
10 - *3/8*	E 100/V4A	E 100	E 100 EB	M 100	A 100	AE 100
11 - *7/16*	-	E 110	E 110 EB	M 110	A 110	AE 110
12.5 - *1/2*	E 125/V4A	E 125	E 125 EB	M 125	A 125	AE 125
14 - *17/32*	-	E 140	-	-	A 140	AE 140
15 - *9/16*	E 150/V4A	E 150	-	M 150	A 150	AE 150
16 - *5/8*	-	E 160	-	M 160	A 160	AE 160
17.5 - *11/16*	E 175/V4A	E 175	-	M 175	A 175	AE 175
20 - *3/4*	E 200/V4A	E 200	-	M 200	A 200	AE 200
21 - *13/16*	-	-	-	-	A 210	AE 210
22.5 - *7/8*	E 225/V4A	E 225	-	M 225	A 225	AE 225
25 - *1*	E 250/V4A	E 250	-	M 250	A 250	AE 250
27.5 - *1-1/16*	-	-	-	-	A 275	AE 275
30 - *1-3/16*	E 300/V4A	E 300	-	M 300	A 300	AE 300

Length supplied: 8' 2-1/2" — *2.5 m*

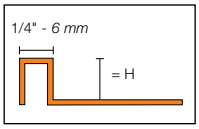
Note: Additional finishes are available for this product. The design configuration of Schluter®-SCHIENE is identical to that of Schluter®-JOLLY (see Wall and Countertop Profiles). However, their materials and finishes do vary. SCHIENE, in all materials and finishes, is suitable for floor applications, as well as wall and countertop applications. JOLLY is suited primarily for walls and countertops. However, JOLLY in AM, AMGB, AK, AKGB, AT, ATGB, ABGB and ACGB is also suitable for floors, and may be used in such applications to increase design options.

1.6 Schluter®-DECO

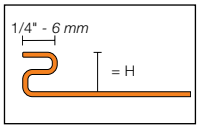
Aluminum & MC 80 D



Brass



Stainless steel



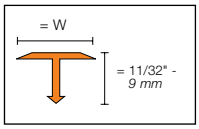
H = mm - *in.*	Item No.			
	Stainless steel 304 (1.4301 = V2A) (E)	Solid brass (M)	Chrome-plated solid brass (MC)	Satin anodized aluminum (AE)
8 - *5/16*	E 80 D	-	MC 80 D	AE 80 D
9 - *11/32*	E 90 D	M 90 D	MC 90 D	-
10 - *3/8*	E 100 D	-	-	AE 100 D
11 - *7/16*	E 110 D	M 110 D	MC 110 D	-
12.5 - *1/2*	E 125 D	M 125 D	MC 125 D	AE 125 D
14 - *17/32*	E 140 D	-	-	-
16 - *5/8*	E 160 D	-	-	-
18.5 - *23/32*	E 185 D	-	-	-
21 - *13/16*	E 210 D	-	-	-
25 - *1*	E 250 D	-	-	-
30 - 1-*3/16*	E 300 D	-	-	-

Length supplied: 8' 2-1/2" — *2.5 m*

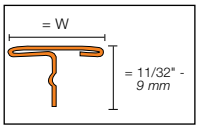
R = Radius **Note:** Only the brass and aluminum DECO are available in radius.

1.3 Schluter®-RENO-T

Aluminum, Brass



Stainless steel

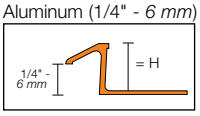


W = mm - *in.*	Item No.						
	Stainless steel 304 (1.4301 = V2A) (E)	Brushed stainless steel 304 (1.4301 = V2A) (EB)	Solid brass (M)	Satin anodized aluminum (AE)	Satin nickel anodized aluminum (AT)	Satin copper anodized aluminum (AK)	Satin brass anodized aluminum (AM)
14 - *17/32*	T 9/14 E	T 9/14 EB	T 9/14 M	T 9/14 AE	T 9/14 AT	T 9/14 AK	T 9/14 AM
25 - *1*	T 9/25 E	T 9/25 EB	T 9/25 M	T 9/25 AE	T 9/25 AT	T 9/25 AK	T 9/25 AM

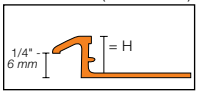
Length supplied: 8' 2-1/2" — *2.5 m*

1.4 Schluter®-RENO-TK

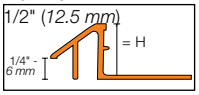
Aluminum (1/4" - *6 mm*)



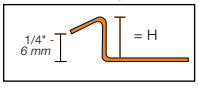
Aluminum 5/16" - 3/8" (*8 - 10 mm*)



Aluminum 1/2" (*12.5 mm*)



Stainless steel, Brass



H = mm - *in.*	Item No.						
	Stainless steel 304 (1.4301 = V2A) (E)	Brushed stainless steel 304 (1.4301 = V2A) (EB)	Solid brass (M)	Satin anodized aluminum (AE)	Bright chrome anodized aluminum (ACB)	Satin nickel anodized aluminum (AT)	Brushed nickel anodized aluminum (ATGB)
6 - *1/4*	-	-	-	AETK 60	ATK 60 ACB	ATK 60 AT	-
8 - *5/16*	ETK 80	EBTK 80	MTK 80	AETK 80	ATK 80 ACB	ATK 80 AT	ATK 80 ATGB
10 - *3/8*	ETK 100	EBTK 100	MTK 100	AETK 100	ATK 100 ACB	ATK 100 AT	ATK 100 ATGB
11 - *7/16*	ETK 110	EBTK 110	-	-	-	-	-
12.5 - *1/2*	ETK 125	EBTK 125	MTK 125	AETK 125	ATK 125 ACB	ATK 125 AT	ATK 125 ATGB

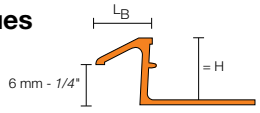
H = mm - *in.*	Item No.			
	Satin copper anodized aluminum (AK)	Brushed copper anodized aluminum (AKGB)	Brushed antique bronze anodized aluminum (ABGB)	Bright brass anodized aluminum (AMB)
6 - *1/4*	ATK 60 AK	-	-	ATK 60 AMB
8 - *5/16*	ATK 80 AK	ATK 80 AKGB	ATK 80 ABGB	ATK 80 AMB
10 - *3/8*	ATK 100 AK	ATK 100 AKGB	ATK 100 ABGB	ATK 100 AMB
12.5 - *1/2*	ATK 125 AK	ATK 125 AKGB	ATK 125 ABGB	ATK 125 AMB

Length supplied: 8' 2-1/2" — *2.5 m*

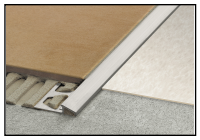
ADA-Compliant

R = Radius **Note:** Only the brass and aluminum RENO-TK are available in radius (sizes 60 - 100).

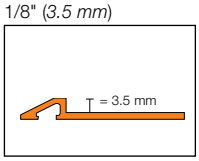
Diagram Values



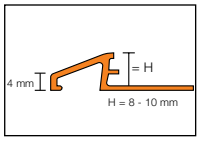
H = mm - *in.*	L_B = mm - in.	
	Aluminum	Stainless steel/ Brass
6 - *1/4*	7.5 - *19/64*	-
8 - *5/16*	8.5 - *21/64*	7 - *9/32*
10 - *3/8*	8.5 - *21/64*	11 - *7/16*
11 - *7/16*	-	13.5 - *17/32*
12.5 - *1/2*	15.5 - *39/64*	16.5 - *21/32*



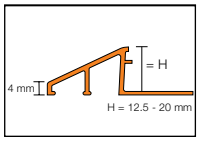
Aluminum
1/8" (*3.5 mm*)



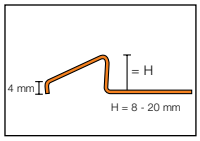
5/16" - 3/8" (*8 - 10 mm*)



1/2" - 3/4" (*12.5 - 20 mm*)



Stainless steel, Brass



1.2 Schluter®-RENO-U

H = mm - *in.*	Item No.						
	Stainless steel 304 (1.4301 = V2A) (E)	Brushed stainless steel 304 (1.4301 = V2A) (EB)	Solid brass (M)	Satin anodized aluminum (AE)	Bright chrome anodized aluminum (ACB)	Satin nickel anodized aluminum (AT)	Brushed nickel anodized aluminum (ATGB)
3.5 - *1/8*	-	-	-	AEU 35	-	-	-
8 - *5/16*	EU 80	EBU 80	MU 80	AEU 80	AU 80 ACB	AU 80 AT	AU 80 ATGB
10 - *3/8*	EU 100	EBU 100	MU 100	AEU 100	AU 100 ACB	AU 100 AT	AU 100 ATGB
11 - *7/16*	EU 110	EBU 110	-	-	-	-	-
12.5 - *1/2*	EU 125	EBU 125	MU 125	AEU 125	AU 125 ACB	AU 125 AT	AU 125 ATGB
15 - *9/16*	EU 150	EBU 150	MU 150	AEU 150	-	-	-
17.5 - *11/16*	EU 175	EBU 175	-	AEU 175	-	-	-
20 - *3/4*	EU 200	EBU 200	-	-	-	-	-

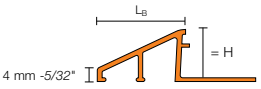
H = mm - *in.*	Item No.				
	Satin copper anodized aluminum (AK)	Brushed copper anodized aluminum (AKGB)	Brushed antique bronze anodized aluminum (ABGB)	Satin brass anodized aluminum (AM)	Bright brass anodized aluminum (AMB)
8 - *5/16*	AU 80 AK	AU 80 AKGB	AU 80 ABGB	AU 80 AM	AU 80 AMB
10 - *3/8*	AU 100 AK	AU 100 AKGB	AU 100 ABGB	AU 100 AM	AU 100 AMB
12.5 - *1/2*	AU 125 AK	AU 125 AKGB	AU 125 ABGB	AU 125 AM	AU 125 AMB

Length supplied: 8' 2-1/2" — *2.5 m*

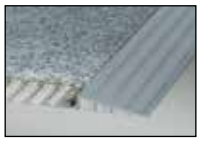
ADA-Compliant

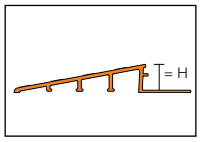
Note: When leading edge abuts lower surface covering, sizes 3/4" *(20 mm)* and 11/16" *(17.5 mm)* are not ADA-compliant. When leading edge rests on top of lower surface covering, sizes 3/4" *(20 mm)*, 9/16" *(15 mm)*, and 11/16" *(12.5 mm)* are not ADA-compliant.

Diagram Values



H = mm - *in.*	L_B = mm - *in.*	
	Aluminum	Stainless steel/Brass
3.5 - *1/8*	9 - 23/64	-
8 - *5/16*	12.5 - 31/64	13 - *33/64*
10 - *3/8*	16.5 - 21/32	17.5 - *11/16*
11 - *7/16*	-	19.5 - *49/64*
12.5 - *1/2*	22 - 55/64	23 - *29/32*
15 - *9/16*	27.5 - 1-5/64	28 - *1-7/64*
17.5 - *11/16*	27 - 1-1/16	33.5 - *1-5/16*
20 - *3/4*	*31.5 - 1-15/64*	40 - *1-37/64*





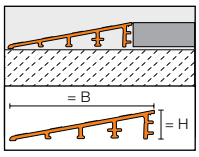
1.8 Schluter®-RENO-RAMP

H = mm - *in.*	Item No.
	Satin anodized aluminum (AE)
B = 50 mm - *2"*	
6 - *1/4*	AERP 60 B50
B = 64 mm - *2-1/2"*	
10 - *3/8*	AERP 100 B65
12.5 - *1/2*	AERP 125 B65
B = 89 mm - *3-1/2"*	
12.5 - *1/2*	AERP 125 B90
15 - *9/16*	AERP 150 B90
20 - *3/4*	AERP 200 B90

Length supplied: 8' 2-1/2" — *2.5 m*

ADA-Compliant

Note: RENO-RAMP sizes 3/4" - *20 mm* and 9/16" - *15 mm* are not ADA-compliant.



B = 64 mm - *2-1/2"*

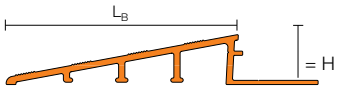
1.8 Schluter®-RENO-RAMP-K

H = mm - *in.*	Item No.
	Satin anodized aluminum (AE)
B = 64 mm - *2-1/2"*	
12.5 - *1/2*	AERPK 125 B65

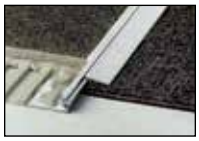
Length supplied: 8' 2-1/2" — *2.5 m*

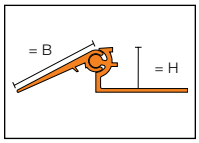
Diagram Values

Length supplied: 8' 2-1/2" — *2.5 m*



H = mm - *in.*	L_B = mm - *in.*
6 - *1/4*	50 - *2*
10 - *3/8*	64 - *2-1/2*
12.5 - *1/2*	*64* - *2-1/2*
12.5 - *1/2*	89 - *3-1/2*
15 - *9/16*	89 - *3-1/2*
20 - *3/4*	89 - *3-1/2*

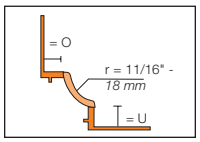




1.7 Schluter®-RENO-V

H = mm - *in.*	Item No. Satin anodized aluminum (AE)	Satin brass anodized aluminum (AM)
B = 20 mm - *3/4*"		
8 - *5/16*	AEVT 80 B20	AVT 80 B20 AM
10 - *3/8*	AEVT 100 B20	AVT 100 B20 AM
12.5 - *1/2*	AEVT 125 B20	AVT 125 B20 AM
15 - *9/16*	AEVT 150 B20	AVT 150 B20 AM
17.5 - *11/16*	AEVT 175 B20	AVT 175 B20 AM
20 - *3/4*	AEVT 200 B20	AVT 200 B20 AM
B = 30 mm - *1-3/16*"		
8 - *5/16*	AEVT 80 B30	AVT 80 B30 AM
10 - *3/8*	AEVT 100 B30	AVT 100 B30 AM
12.5 - *1/2*	AEVT 125 B30	AVT 125 B30 AM
15 - *9/16*	AEVT 150 B30	AVT 150 B30 AM
17.5 - *11/16*	AEVT 175 B30	AVT 175 B30 AM
20 - *3/4*	AEVT 200 B30	AVT 200 B30 AM
B = 40 mm - *1-9/16*"		
8 - *5/16*	AEVT 80 B40	AVT 80 B40 AM
10 - *3/8*	AEVT 100 B40	AVT 100 B40 AM
12.5 - *1/2*	AEVT 125 B40	AVT 125 B40 AM
15 - *9/16*	AEVT 150 B40	AVT 150 B40 AM
17.5 - *11/16*	AEVT 175 B40	AVT 175 B40 AM
20 - *3/4*	AEVT 200 B40	AVT 200 B40 AM

Length supplied: 8' 2-1/2" — *2.5 m*



4.12 Schluter®-DILEX-HKW

Item No.
HKW U 7 / O 7 ***color****
HKW U 9 / O 9 ***color****
HKW U 11 / O 11 ***color****

Length supplied: 8' 2-1/2" — *2.5 m*

U:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*
O:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*

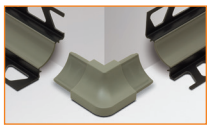
Accessories	Item No.
Outside corner	A / HKW / ***color****
Inside corner (2-way)	I / HKW 2 R18 ***color****
Inside corner (3-way)	I / HKW 3 R18 ***color****
End cap	E / HKW / G ***(grey only)***

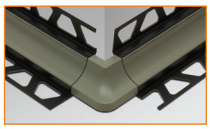
*Color Codes

BW Bright white · **HB** Light beige · **PG** Classic grey · **G** Grey

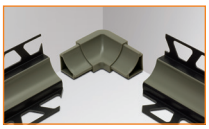
To complete the item number, add the ***color*** code (e.g., HKW U 9 / O 9 **HB**).

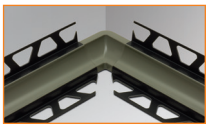
Outside Corner



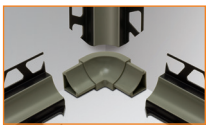


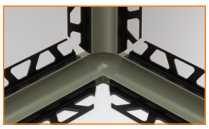
Inside Corner (2-way)



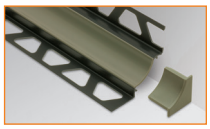


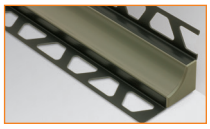
Inside Corner (3-way)

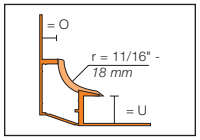




End Cap







4.11 Schluter®-DILEX-HK

Item No.
HK U 12 / O 9 ***color****

Length supplied: 8' 2-1/2" — *2.5 m*

U:	1/2" = *12 mm*
O:	11/32" = *9 mm*

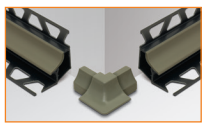
Accessories	Item No.
Outside corner	A / HK / ***color****
Inside corner (2-way)	I / HK 2 R18 ***color****
Inside corner (3-way)	I / HK 3 R18 ***color****
Connector	V / HK
End cap (left)	EL / HK / G ***(grey only)***
End cap (right)	ER / HK / G ***(grey only)***

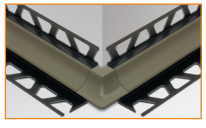
*Color Codes

BW Bright white · **HB** Light beige · **G** Grey

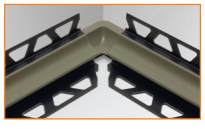
To complete the item number, add the ***color*** code (e.g., HK U 12 / O 9 **BW**).

Outside Corner

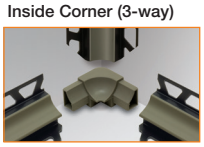


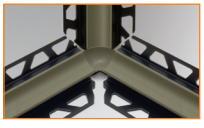


Inside Corner (2-way)

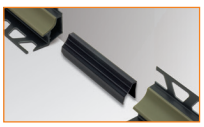


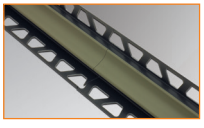
Inside Corner (3-way)



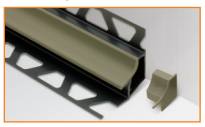


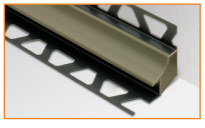
Connector

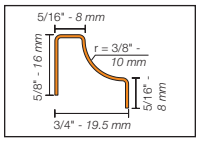




End Cap



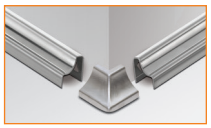




4.22 Schluter®-DILEX-HKU (10 mm - *3/8*" radius)

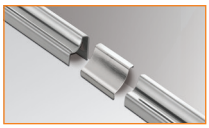
H = mm - *in.*	Item No.		
	Stainless steel 304 (1.4301 = V2A) (E)	Brushed stainless steel 304 (1.4301 = V2A) (EB)	Stainless steel 316L (1.4404 = V4A) (EV4A)
10 - *3/8*	HKUR 10 E	HKUR 10 EB	HKUR 10 E / V4A

Outside Corner



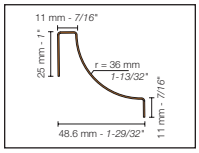
Inside Corner (2- or 3-way)

Connector



Accessories	Item No.
Outside corner 90°	EQ / HKUR 10 ***finish****
Outside corner 135°	E135 / HKUR 10 ***finish****
Inside corner 90°	I / HKU 3 R 10 ***finish****
Inside corner 135°	I135 / HKUR 10 ***finish****
Connector	V / HKUR 10 ***finish****

* To complete the item number, add the ***finish*** code (e.g., EQ / HKUR 10 **E**).



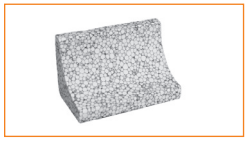
4.22 Schluter®-DILEX-HKU (36 mm - *1-13/32*" radius)

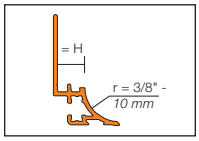
H = mm - *in.*	Item No.
	Stainless steel 304 (1.4301 = V2A) (E)
36 - *1-13/32*	HKUR 36 E

Length supplied: 8' 2-1/2" — *2.5 m*

Accessories	Item No.
Outside corner 90°	E / HKUR 36 E
Inside corner 90°	I / HKU 3 R 36 10 E
Connector	V / HKUR 36 E
Internal connector	VI / HKUR 36
End Cap	EK / HKUR 36 E

Internal connector (EPS foam)





4.22 Schluter®-DILEX-AHKA

H = mm - *in.*	Item No.			
	Satin anodized aluminum (AE)	Brushed chrome anodized aluminum (ACGB)	Satin nickel anodized aluminum (AT)	Brushed nickel anodized aluminum (ATGB)
8 - *5/16*	AHKA 80 AE	AHKA 80 ACGB	AHKA 80 AT	AHKA 80 ATGB
10 - *3/8*	AHKA 100 AE	AHKA 100 ACGB	AHKA 100 AT	AHKA 100 ATGB
12.5 - *1/2*	AHKA 125 AE	AHKA 125 ACGB	AHKA 125 AT	AHKA 125 ATGB
15 - *9/16*	AHKA 150 AE	AHKA 150 ACGB	AHKA 150 AT	AHKA 150 ATGB

H = mm - *in.*	Item No.
	Textured color-coated aluminum (TS)
8 - *5/16*	AHKA 80 ***color****
10 - *3/8*	AHKA 100 ***color****
12.5 - *1/2*	AHKA 125 ***color****
15 - *9/16*	AHKA 150 ***color****

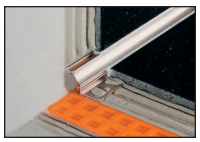
*Color Codes

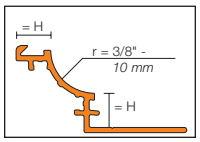
TSR Rustic brown · **TSDA** Dark anthracite · **TSLA** Light anthracite · **TSSG** Stone grey · **TSC** Cream · **TSBG** Greige · **TSI** Ivory · **TSB** Beige · **TSOB** Bronze · **TSG** Pewter

* To complete the item number, add the **color** code (e.g., AHKA 80 **TSB**).

Accessories	Item No.
Outside corner, 90°	E 90 / AHKA / ***finish****
Outside corner, 135°	E 135 / AHKA / ***finish****
Inside corner, 90°	I 90 / AHKA / ***finish****
Inside corner, 135°	I 135 / AHKA / ***finish****
End cap (Left)	EL / AHKA / ***finish****
End cap (Right)	ER / AHKA / ***finish****

* To complete the item number, add the ***finish*** or ***color*** code (e.g., E 90 / AHKA / **AE**).





4.21 Schluter®-DILEX-AHK

H = mm - *in.*	Item No.				
	Satin anodized aluminum (AE)	Polished chrome anodized aluminum (ACG)	Brushed chrome anodized aluminum (ACGB)	Satin nickel anodized aluminum (AT)	Polished nickel anodized aluminum (ATG)
8 - *5/16*	AHK 1S 80 AE	AHK 1S 80 ACG	AHK 1S 80 ACGB	AHK 1S 80 AT	AHK 1S 80 ATG
10 - *3/8*	AHK 1S 100 AE	AHK 1S 100 ACG	AHK 1S 100 ACGB	AHK 1S 100 AT	AHK 1S 100 ATG
12.5 - *1/2*	AHK 1S 125 AE	AHK 1S 125 ACG	AHK 1S 125 ACGB	AHK 1S 125 AT	AHK 1S 125 ATG
15 - *9/16*	-	-	-	AHK 1S 150 AT	-

H = mm - *in.*	Item No.				
	Brushed nickel anodized aluminum (ATGB)	Satin copper/bronze anodized aluminum (AK)	Polished copper/bronze anodized aluminum (AKG)	Brushed copper/bronze anodized aluminum (AKGB)	Satin brass anodized aluminum (AM)
8 - *5/16*	AHK 1S 80 ATGB	AHK 1S 80 AK	AHK 1S 80 AKG	AHK 1S 80 AKGB	AHK 1S 80 AM
10 - *3/8*	AHK 1S 100 ATGB	AHK 1S 100 AK	AHK 1S 100 AKG	AHK 1S 100 AKGB	AHK 1S 100 AM
12.5 - *1/2*	AHK 1S 125 ATGB	AHK 1S 125 AK	AHK 1S 125 AKG	AHK 1S 125 AKGB	AHK 1S 125 AM

H = mm - *in.*	Item No.		
	Polished brass anodized aluminum (AMG)	Brushed brass anodized aluminum (AMGB)	Brushed graphite anodized aluminum (AGRB)
8 - *5/16*	AHK 1S 80 AMG	AHK 1S 80 AMGB	AHK 1S 80 AGRB
10 - *3/8*	AHK 1S 100 AMG	AHK 1S 100 AMGB	AHK 1S 100 AGRB
12.5 - *1/2*	AHK 1S 125 AMG	AHK 1S 125 AMGB	AHK 1S 125 AGRB
15 - *9/16*	-	-	AHK 1S 150 AGRB

H = mm - *in.*	Item No.
	Textured color-coated aluminum (TS)
8 - *5/16*	AHK 1S 80 ***color****
10 - *3/8*	AHK 1S 100 ***color****
12.5 - *1/2*	AHK 1S 125 ***color****
15 - *9/16*	AHK 1S 150 ***color****

*Color Codes

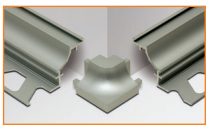
TSR Rustic brown · **TSDA** Dark anthracite · **TSLA** Light anthracite · **TSSG** Stone grey · **TSC** Cream · **TSBG** Greige · **TSI** Ivory · **TSB** Beige · **TSOB** Bronze · **TSG** Pewter

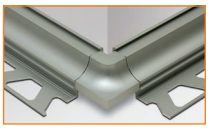
* To complete the item number, add the **color** code (e.g., AHK 1S 80 **TSB**).

Accessories	Item No.
Outside corner, 90°	E 90 / AHK 1S / ***finish****
Outside corner, 90° (to match Schluter®-QUADEC profile)	E 90 Q / AHK 1S / ***finish****
Outside corner, 135°	E 135 / AHK 1S / ***finish****
Inside corner, 90°	I 90 / AHK 1S / ***finish****
Inside corner, 135°	I 135 / AHK 1S / ***finish****
Connector	V / AHK
End cap	E / AHK 1S / ***finish****

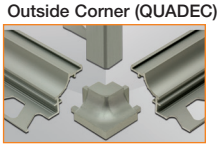
* To complete the item number, add the ***finish*** or ***color*** code (e.g., E 90 / AHK 1S / **AE**). **Note: E 90 Q** (outside corner piece to match QUADEC) is only available in AE, ACG, AT, and TS finishes.

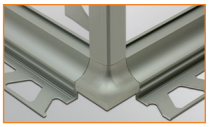
Outside Corner



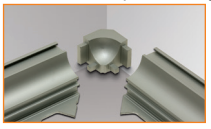


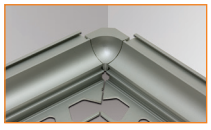
Outside Corner (QUADEC)



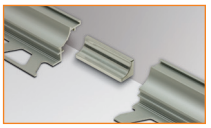


Inside Corner (2- or 3-way)

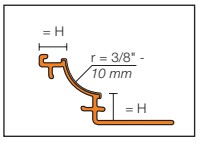




Connector



End cap



4.21 Schluter®-DILEX-PHK

H = mm - *in.*	Item No.
8 - *5/16*	PHK 1S 80 + ***color****
10 - *3/8*	PHK 1S 100 + ***color****
12.5 - *1/2*	PHK 1S 125 + ***color****

Length supplied: 8' 2-1/2" — *2.5 m*

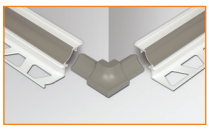
*Color Codes

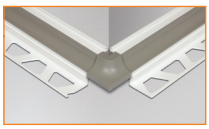
BW Bright white · **W** White · **SP** Sand pebble · **BH** Bahama
HB Light beige · **PG** Classic grey · **G** Grey

* To complete the item number, add the **color** code (e.g., PHK 1S 80 **BW**).

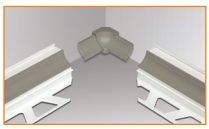
Accessories	Item No.
Outside corner, 90°	E 90 / PHK 1S + ***color****
Outside corner, 135°	E 135 / PHK 1S + ***color****
Inside corner, 90°	I 90 / PHK 1S + ***color****
Inside corner, 135°	I 135 / PHK 1S + ***color****
Connector	V / PHK
End cap	E / PHK 1S + ***color****

Outside corner

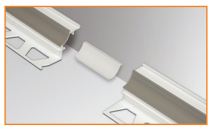




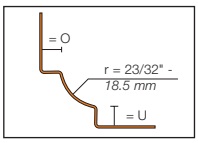
Inside Corner



Connector



End cap



4.15 Schluter®-DILEX-EHK

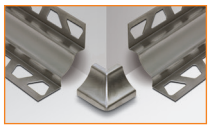
Item No.		
Stainless steel 304 (1.4301 - V2A)	**Stainless steel 316 L (1.4404 - V4A)**	**Brushed stainless steel 304 (1.4301 = V2A)**
(E)	**(EV4A)**	**(EB)**
EHK U 7 / O 7	EHK U 7 / O 7 / V4A	EBHK U 7 / O 7
EHK U 9 / O 9	EHK U 9 / O 9 / V4A	EBHK U 9 / O 9
EHK U 11 / O 11	EHK U 11 / O 11 / V4A	EBHK U 11 / O 11
-	EHK U 16 / O 16 / V4A	-

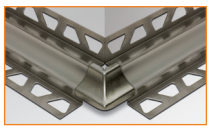
Length supplied: 8' 2-1/2" — *2.5 m*

U:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*	5/8" = *16 mm*
O:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*	5/8" = *16 mm*

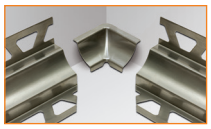
Accessories	Item No.	
	Stainless steel 304 (1.4301 - V2A) **(E)**	**Brushed stainless steel 304 (1.4301 = V2A)** **(EB)**
Outside corner	A / EHK 2 R18	A / EBHK 2 R18
Outside corner, 135°	E 135 / EHK 2 R18	E 135 / EB HK 2 R18
Inside corner (2-way)	I / EHK 2 R18	I / EBHK 2 R18
Inside corner (3-way)	I / EHK 3 R18	I / EBHK 3 R18
Inside corner, 135°	I 135 / EHK 2 R18	I 135 / EB HK 2 R18
Connector	V / EHK	V / EBHK
End cap	E / HKW / G *	E / HKW / G *
	***Available in grey PVC only**	

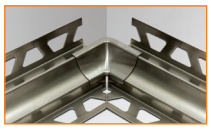
Outside Corner



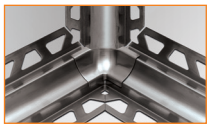


Inside Corner (2-way)

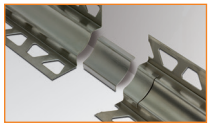


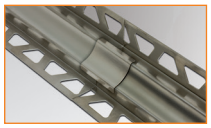


Inside Corner (3-way)

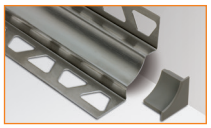


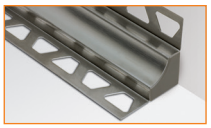
Connector

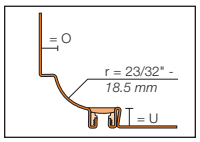




End Cap







4.15 Schluter®-DILEX-HKS

Item No.
Stainless steel 304 (1.4301 - V2A) (E)
U = floor or wall, O = wall
HKS V2A U 8 / O 7 + ***color****
HKS V2A U 10 / O 7 + ***color****
HKS V2A U 12 / O 7 + ***color****
HKS V2A U 14 / O 7 + ***color****
HKS V2A U 16 / O 7 + ***color****
HKS V2A U 18 / O 7 + ***color****
HKS V2A U 21 / O 7 + ***color****
HKS V2A U 25 / O 7 + ***color****
HKS V2A U 30 / O 7 + ***color****
HKS V2A U 8 / O 9 + ***color****
HKS V2A U 10 / O 9 + ***color****
HKS V2A U 12 / O 9 + ***color****
HKS V2A U 14 / O 9 + ***color****
HKS V2A U 16 / O 9 + ***color****
HKS V2A U 18 / O 9 + ***color****
HKS V2A U 21 / O 9 + ***color****
HKS V2A U 25 / O 9 + ***color****
HKS V2A U 30 / O 9 + ***color****
HKS V2A U 8 / O 11 + ***color****
HKS V2A U 10 / O 11 + ***color****
HKS V2A U 12 / O 11 + ***color****
HKS V2A U 14 / O 11 + ***color****
HKS V2A U 16 / O 11 + ***color****
HKS V2A U 18 / O 11 + ***color****
HKS V2A U 21 / O 11 + ***color****
HKS V2A U 25 / O 11 + ***color****
HKS V2A U 30 / O 11 + ***color****

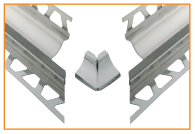
Length supplied: 8' 2-1/2" — *2.5 m*

Accessories	Item No.
Outside corner 90°	A / EHK 2 R18
Inside corner 90° (2 directions)	I / EHK 2 R18
Inside corner 90° (3 directions)	I / EHK 3 R18
Outside corner 135°	E135 / EHK 2 R18
Inside corner 135°	I135 / EHK 2 R18
Connector	V / EHK
End cap	E / HKW / G (Grey only)

Accessories	Item No.
Stainless steel 304 (1.4301 - V2A) (E)	
90° outside corner with pre-cut profile sections	E90 V2A U ... / O ... + ***color****
Stainless steel 316L (1.4404 = V4A) (E)	
90° outside corner with pre-cut profile sections	E90 V4A U ... / O ... + ***color****

** To complete the item number, add the "**U**" and "**O**" values, and the **color code** (e.g., E90 V2A U **12** / O **9 G**).
Available for U = 8, 10, 12, 14 and 16 mm only.

Outside corner with pre-cut profile sections



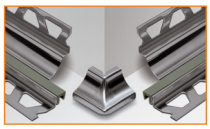
*Color Codes

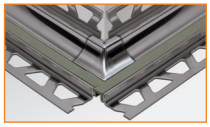
HB Light beige
PG Classic grey
G Grey
GS Black

To complete the item number, add the ***color*** code (e.g., HKS V2A U 18 / O 7 **G**).

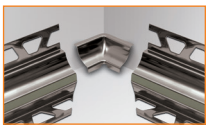
U:	5/16" = *8 mm*	3/8" = *10 mm*	15/32" = *12 mm*	17/32" = *14 mm*	5/8" = *16 mm*
	23/32" = *18 mm*	13/16" = *21 mm*	1" = *25 mm*	1-3/16" = *30 mm*	
O:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*		

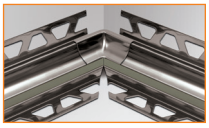
Outside Corner



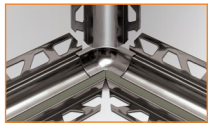


Inside Corner (2-way)

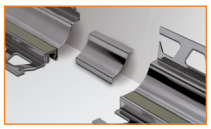


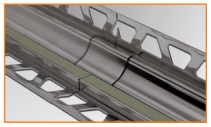


Inside Corner (3-way)

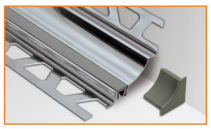


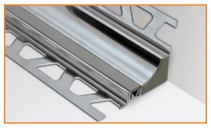
Connector





End Cap





Note: 3-way corners are to be used with DILEX-EHK on the vertical.

Note: DILEX-HKS is also available in stainless steel 316 L (1.4404 = V4A).

RB-1,3

JOHNSONITE RESILIENT WALL BASE

Traditional Wall Base

Product Specification

1. PROPRIETARY PRODUCT/MANUFACTURER

1.1. Proprietary Product: Thermoplastic Wall Base

1.2. Manufacturer:

Tarkett
30000 Aurora Rd.
Solon, Ohio 44139
Web: www.tarkettna.com
E-mail: info@johnsonite.com

Phone: (800) 899-8916
(440) 543-8916
Tech: Ext 9297
Samples: Ext 9299

1.3. Proprietary Product Description:

1.3.1. Construction: Johnsonite Traditional Wall Base is manufactured from a proprietary rubber and vinyl formulation designed specifically to meet the performance and dimensional requirements of ASTM F-1861, Type TV (Thermoplastic Vinyl) and TP (Thermoplastic Rubber), Group 1 (solid), Style A and B, Standard Specification for Resilient Wall Base.

1.3.2. Styles/Physical Characteristics:

Rubber Wall Base

- Traditional: DC-XX with toe (coved) or DCT-XX for toeless (straight), 0.125" (3.17 mm) thickness, 2-1/2" (6.35 cm), 4" (10.16 cm), 4 1/2" (11.4 cm) or 6" (15.24 cm) height

  Available in 4' (1.22 m) straight lengths and 120' (36.58 m) coiled lengths. The 6" (15.24 cm) high profile available in 4' (1.22 m) straight lengths and 100' (30.48 m) coiled lengths

- Wall Art: WA-XX w/toe (coved), 0.125" (3.17 mm) thickness, 4" (10.16 cm) height

  Available in 4' (1.22 m) straight lengths only

- Inside and Outside Corners available with 4" (10.16 cm) returns packaged 25 per carton, add LIC (Inside corners) or LOC (Outside corners)

Vinyl Wall Base

- Traditional: CB-XX with toe (coved) or CBT-XX toeless (straight), 0.125" (3.17 mm) or 0.080" thickness, 2-1/2" (6.35 cm), 4" (10.16 cm), or 6" (15.24 cm) height

  Cartons size: Available in 4' (1.22 m) straight lengths and 120' (36.58 m) coiled lengths. The 6" (15.24 cm) high profile available in 4' (1.22 m) straight lengths and 100' (30.48 m) coiled lengths

- Inside and Outside Corners available with 4" (10.16 cm) returns packaged 25 per carton, add LIC (Inside corners) or LOC (Outside corners)

2. PRODUCT PERFORMANCE AND TECHNICAL DATA

2.1. Meets or exceeds the performance requirements for resistance to heat/light aging, chemicals, and dimensional stability when tested to the methods, as described, in ASTM F-1861.

2.2. Flexibility: Will not crack, break, or show any signs of fatigue when bent around a 1/4" (6.4 mm) diameter cylinder.

2.3. Chemical resistance (ASTM F 925): Passes – 5% acetic acid, 70% isopropyl alcohol, mineral oil, 5% sodium hydroxide solution, 5% hydrochloric acid solution, 5% sulfuric acid solution, 5% household ammonia solution, and 5.25% household bleach solution

2.4. Resistance to light (ASTM F 1515): ΔE< 8

2.5. Fire Resistance:

Vinyl Wall Base

ASTM E 648 (NFPA 253): Critical Radiant Flux – Class I

ASTM E 84/NFPA 255 (Flame/Smoke) – Class B, < 450

Rubber Wall Base

ASTM E 648 (NFPA 253): Critical Radiant Flux – Class I

ASTM E 84/NFPA 255 (Flame/Smoke) – Class C, < 450

3. INSTALLATION

3.1. See Johnsonite wall base installation instructions for complete details.

3.2. Adhesives:

- Tarkett 960 Cove Base Adhesive (Porous surfaces):
  Application: 1/8" x 1/8" x 1/8" square notched trowel
  Approximate coverage:
  2 ½" high – 300 to 350 linear feet/gallon
  4" high – 200 to 250 linear feet/gallon
  6" high – 100 to 150 linear feet/gallon

- Tarkett 946 Premium Contact Adhesive (Non-porous surfaces)
  Application: Brush or roller
  Approximate coverage:
  1 kg Unit (0.95 Qt) – 24 to 36 sq. ft.
  6 kg Unit (1.44 Gal.) – 144 to 215 sq. ft.

4. AVAILABILITY AND COST

Available through authorized Tarkett distributors nationwide.

5. WARRANTY

Limited 2 year warranty. For complete details, contact Tarkett or an authorized Tarkett distributor.

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6. MAINTENANCE

72 hours after installation is completed, initial maintenance procedures must be implemented in accordance with manufacturer's requirements. Refer to Johnsonite Resilient Wall Base Installation & Maintenance Instructions for complete maintenance details.

7. TECHNICAL SERVICES

Samples: Submittal samples for verification and approval available upon request from Tarkett. Samples shall be submitted in compliance with the requirements of the contract documents. Accepted and approved samples shall constitute the standard materials which represent materials installed on the project.

For current Installation and Maintenance Instructions, Product Specifications, and other technical data, visit us on the web at www.tarkettna.com or contact Tarkett at 1-800-899-8916.

Technical Services Department
30000 Aurora Road, Solon, Ohio 44139
(800) 899-8916 ext 9297
Fax (440) 632-5643
email: info@johnsonite.com
www.tarkettna.com

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JOHNSONITE RESILIENT WALL BASE

Millwork Wall Base

Product Specification

1. **PROPRIETARY PRODUCT/MANUFACTURER**

1.1. **Proprietary Product**: Millwork Resilient Wall Base profiles replicate the look of finely milled wood.

1.1. **Manufacturer:**

Tarkett
30000 Aurora Rd.
Solon, Ohio 44139
Web: www.tarkettna.com
E-mail: info@johnsonite.com

Phone: (800) 899-8916
(440) 543-8916
Tech: Ext 9297
Samples: Ext 9299

1.2. **Proprietary Product Description:**

1.1.1. **Construction**: Johnsonite Millwork Resilient Wall Base is manufactured from a proprietary thermoplastic rubber formulation designed specifically to meet the following performance requirements of ASTM F1861 Standard Specification for Resilient Wall Base, Type TP, and Group 1.

1.1.2. **Physical Characteristics:**

Diplomat™ (MW-XX-A): 3/8″ (.375", 9.52mm) thick by 4 -1/2" (11.43cm) height, 6 per carton, 8 ft lengths, 48 ft (14.6m) per carton, 44 lbs (20.0 kg) per carton, U.S. Design Patent Number #D474,548

Outline™ (MW-XX-D)**:** 5/16″ (.313", 7.92mm) thick by 3-1/2″ (8.89cm) height, 10 per carton, 8 ft lengths, 80 ft (24.4m) per carton, 47 lbs (21.3kg) per carton

Attaché™ (MW-XX-E)**:** 1/4″ (.25", 6.35mm) thick, by 6″ (15.24cm) height, 8 per carton, 8 ft lengths, 64 ft (19.5m) per carton, 57 lbs (26.0kg) per carton

Reveal™ **4-1/4"** (MW-XX-F)**:** 1/4" (.25", 6.35mm) thick by 4-1/4" (10.8cm) height with a 45° angular top and a 7/32" (5.5mm) wide surface reveal, 8 per carton, 8 ft lengths, 64 ft (19.5m) per carton, 50 lbs (22.7kg) per carton

Reveal™ **6"** (MW-XX-F6)**:** 1/4" (.25", 6.35mm) thick by 6" (15.24cm) height with a 45° angular top and a 7/32" (5.5mm) wide surface reveal, 8 per carton, 8 ft lengths, 64 ft (19.5m) per carton, 58 lbs (26.3kg) per carton

Inflection™ (MW-XX-G)**:** 3/8″ (.375", 9.52mm) thick by 5-1/4″ (13.34cm) height, 6 per carton, 8 ft lengths, 48 ft (14.6m) per carton, 65 lbs (29.5kg) per carton

Mandalay™ **2-1/2" (**MW-XX-H25): 3/8" (.375", 9.52mm) thick by 2-1/2" (6.35cm) height, a rectangular shaped profile with a 45° chamfer top, 5 per carton, 8 ft lengths, 40 ft (12.2m) per carton, 40 lbs (18.14kg) per carton

Mandalay™ **3" (**MW-XX-H3): 3/8" (.375", 9.52mm) thick by 3" (7.62cm) height, a rectangular shaped profile with a 45° chamfer top, 7 per carton, 8 ft lengths, 56 ft (17.1m) per carton, 48 lbs (21.8kg) per carton

Mandalay™ **4-1/2"** (MW-XX-H)**:** 3/8" (.375", 9.52mm) thick by 4-1/2" (11.43cm) height, a rectangular shaped profile with a 45° chamfer top, 5 per carton, 8 ft lengths, 40 ft (12.2m) per carton, 52 lbs (23.6kg) per carton

Mandalay™ **6"** (MW-XX-H6)**:** 3/8" (.375", 9.52mm) thick by 6" (15.24cm) height, a rectangular shaped profile with a 45° chamfer top, 4 per carton, 8 ft lengths, 32 ft (9.75m) per carton, 54 lbs (24.5kg) per carton

Monument™ **2-1/2"** (MW-XX-S25)**:** 1/4" (.250", 6.35mm) thick by 2 1/2" (6.35cm) height, a rectangular shaped profile, 8 per carton, 8 ft lengths, 64 ft (19.5m) per carton, 33 lbs (18.14kg) per carton

Monument™ **4"** (MW-XX-S4)**:** 1/4" (.250", 6.35mm) thick by 4" (10.16cm) height, a rectangular shaped profile, 8 per carton, 8 ft lengths, 64 ft (19.5m) per carton, 50 lbs (21.8kg) per carton

Silhouette™ (MW-XX-J)**:** 1/2″ (.50", 12.7mm) thick and 4″ (10.16cm) height, 6 per carton, 8 ft lengths, 48 ft (14.63m) per carton, 42 lbs (19.1kg) per carton

Ambassador™ (MW-XX-K)**:** 3/8″ (.375", 9.52mm) thick by 4″ (10.16cm) height, 6 per carton, 8 ft lengths, 48 ft (14.6m) per carton, 42 lbs (19.1kg) per carton

Envoy™ (MW-XX-L)**:** 3/4″ (.75", 19.05mm) thick by 5-1/2″ (13.97cm) height, 4 per carton, 8 ft lengths, 32 ft (9.75m) per carton, 66 lbs (29.9kg) per carton

Monarch™ (MW-XX-M)**:** 3/16″ (.19", 4.76mm) thick by 6.0″ (15.24cm) height, 6 per carton, 8 ft lengths, 48 ft (14.6m) per carton, 46 lbs (20.9kg) per carton

Oblique™ (MW-XX-N)**:** 3/8″ (.375", 9.53mm) thick by 3″ (7.62cm) height with a 45° angular top, 7 per carton, 8 ft lengths, 56 ft (17.0m) per carton, 42 lbs (19.1kg) per carton

Emissary™ (MW-XX-P)**:** 37/64" (.531″, 13.49mm) thick by 4-1/2″ (20.32cm) height, 6 per carton, 8 ft lengths, 48 ft (12.9m) per carton, 60 lbs (22.7kg) per carton

Equinox™ (MW-XX-R)**:** 3/8″ (.375", 9.53mm) thick by 4-1/2″ (11.43cm) height, 5 per carton, 8 ft lengths, 40 ft (10.16m) per carton, 50 lbs (22.7kg) per carton

Delineate™ (MW-XX-T)**:** 0.400″ (10.2 mm) thick by 4-1/4″ (10.8 cm) height, and 8 ft lengths

2. **PRODUCT PERFORMANCE AND TECHNICAL DATA**

2.1. Products meets the following performance criteria for resistance to light, chemicals, and staining of adjacent materials when tested to the methods as described in ASTM F1861.

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2.2. **Chemical resistance** (ASTM F 925): Passes – 5% acetic acid, 70% isopropyl alcohol, mineral oil, 5% sodium hydroxide solution, 5% hydrochloric acid solution, 5% sulfuric acid solution, 5% household ammonia solution, and 5.25% household bleach solution

2.3. **Resistance to light** (ASTM F 1515)**:** ΔE< 8

2.4. **Fire Resistance:**

ASTM E 648 (NFPA 253): Critical Radiant Flux – Class I

ASTM E 84/NFPA 255 (Flame/Smoke) – Class B, ≤ 450

3. INSTALLATION

3.1. See Johnsonite Millwork wall base installation instructions for complete details.

3.2. **Adhesives:**

960 Cove Base Adhesive (Porous surfaces)

Profiles	Total ft/gallon
MW-XX-A (Diplomat)	= 175 - 225 lf
MW-XX C (Overlook)	= 95 - 145 lf
MW-XX D (Outline)	= 230 - 280 lf
MW-XX E (Attaché)	= 125 - 175 lf
MW-XX F (Reveal)	= 185 - 235 lf
MW-XX F6 (Reveal)	= 125 - 175 lf
MW-XX F8 (Reveal)	= 85 - 135 lf
MW-XX G (Inflection)	= 145 - 195 lf
MW-XX-H25 (Mandalay)	= 335 - 385 lf
MW-XX-H3 (Mandalay)	= 275 - 325 lf
MW-XX-H (Mandalay)	= 175 - 225 lf
MW-XX H6 (Mandalay)	= 125 - 175 lf
MW-XX J (Silhouette)	= 200 - 250 lf
MW-XX K (Ambassador)	= 200 - 250 lf
MW-XX L (Envoy)	= 140 - 190 lf
MW-XX M (Monarch)	= 125 - 175 lf
MW-XX M8 (Monarch)	= 85 - 135 lf
MW-XX N (Oblique)	= 275 - 325 lf
MW-XX P (Emissary)	= 175 - 225 lf
MW-XX-R (Equinox)	= 175 - 225 lf
MW-XX-S25 (Monument)	= 335 - 385 lf
MW-XX-S4 (Monument)	= 185 - 235 lf
MW-XX T (Delineate)	= 185 - 235 lf

Tarkett 946 Premium Contact Adhesive (Non-porous surfaces)

Application: Brush or roller

Approximate coverage:

1 kg Unit (0.95 Qt.) – 24 to 36 sq. ft.

6 kg Unit (1.44 Gal.) – 144 to 215 sq. ft.

4. AVAILABILITY AND COST

Available through authorized Tarkett distributors nationwide.

5. WARRANTY

Limited 2 year warranty. For complete details, contact Tarkett or an authorized Tarkett distributor.

6. MAINTENANCE

72 hours after installation is completed, initial maintenance procedures must be implemented in accordance with manufacturer's requirements. Refer to Johnsonite Millwork Resilient Wall Base Installation & Maintenance Instructions for complete maintenance details.

7. TECHNICAL SERVICES

Samples: Submittal samples for verification and approval available upon request from Tarkett. Samples shall be submitted in compliance with the requirements of the contract documents. Accepted and approved samples shall constitute the standard materials which represent materials installed on the project.

For current Installation and Maintenance Instructions, Product Specifications, and other technical data, visit us on the web at www.tarkettna.com or contact Tarkett at 1-800-899-8916.

Technical Services Department
30000 Aurora Road, Solon, Ohio 44139
(800) 899-8916 ext 9297
Fax (440) 632-5643
email: info@johnsonite.com
www.tarkettna.com

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Note: After downloading this spec, the Specifier must choose the correct Finish, Insert and Frame options and delete all other options to produce an accurate specification.

PEDIMAT® (M1)

SUGGESTED SPECIFICATION
SECTION 124813
ENTRANCE FLOOR MATS AND FRAMES

Part 1 General

1.01 Summary

A. This section includes the following types of entrance flooring systems:
1. Floor Mats & Frame Assemblies

B. Related Sections: The following sections contain requirements related to this section:
1. Grouting frames into recess; refer to sections 03300 "Cast-In-Place Concrete" and section 03600 "Grout"
2. Special requirements of various flooring types; refer to section 09400 "Terrazzo"

1.02 References

A. American Society for Testing and Materials (ASTM)

B. The Aluminum Association

C. The Carpet and Rug Institute (CRI)

D. The National Floor Safety Institute (NFSI)

E. International Organization for Standardization (ISO)

1.03 Submittals

A. General: Submit the following in accordance with conditions of contract and Division 1 specification section 01300.

B. Product data for each type of floor mat and frame specified including manufacturer's specifications and installation instructions.

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C. Shop drawings in sufficient detail showing layout of mat and frame specified including details indicating construction relative to materials, direction of traffic, spline locations, profiles, anchors and accessories.

D. Samples for verification purposes: Submit an assembled section of floor mat and frame members with selected tread insert showing each type of color for exposed floor mat, frame and accessories required.

E. Maintenance data in the form of manufacturer's printed instructions for cleaning and maintaining floor mats.

1.04 Quality Assurance *[Specifier note: To maximize the life cycle of the entrance flooring and its appearance, the following items are critical: i) Most C/S mats are designed for traffic crossing perpendicular to the rail. ii) When designing an entranceway it is preferable to minimize the need for turning on the mat. iii) We recommend that splices in wider units (above 12') not be positioned in the middle of a door opening wherever possible.]*

A. Flammability in accordance with ASTM E648, Class 1, Critical Radiant Flux, minimum 0.45 watts/m^2.

B. Slip resistance in accordance with ASTM D-2047-96, Coefficient of Friction, minimum 0.60 for accessible routes. *[Specifier note: Slip and fall accidents are a major concern in commercial entranceways. We recommend that approved systems be certified by the manufacturer as meeting a minimum coefficient of friction of 0.60, when tested in wet conditions.]*

C. Standard rolling load performance is 350 lb./wheel with larger loading requirements as specified (load applied to a solid 5" x 2" wide polyurethane wheel, 1000 passes without damage). *[Specifier note: For entranceways in businesses such as retail outlets, airports, banks, and casinos, rolling load performance is a critical factor. We recommend that units with the highest practical loading capability be specified for such entrances.]*

D. Single Source Responsibility: Obtain floor mats and frames from one source of a single manufacturer.

E. Utilize superior structural aluminum alloy 6063-T6 for rail connectors.

F. Utilize a manufacturer that is ISO 9001 & 14001 certified.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site ready for use and fabricated in as large sections and assemblies as practical, in unopened original factory packaging clearly labeled to identify

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manufacturer.

1.06 Project Conditions

A. Field measurements: Check actual openings for mats by accurate field measurements before fabrication. Record actual measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

B. Recessed Conditions: IMPORTANT: Coordination with Division 03 00 00 Concrete specifications is required. For proper installation, the concrete recess must be flat and smooth throughout. If the recess is formed by a concrete contractor, the pour dimensions may require leveling grout to achieve the proper depth and a smooth finish. The final recess depth will match the specified product and must be field verified. For proper frame installation, the side walls of the concrete recess must also be straight and smooth. Inconsistencies with the recess and side walls must be remediated prior to product installation.

Part 2 Products

2.01 Manufacturers

A. Drawings and specifications are based on manufacturer's literature from Construction Specialties, Inc. unless otherwise indicated. Other manufacturers must comply with the minimum levels of material and detailing indicated on the drawings and specified herein.

2.02 Materials

A. Aluminum - ASTM B 221, alloys 6063-T5, 6063-T6 for extrusions.

B. Architectural Bronze - ASTM B 455, copper/zinc alloy C38500 for extrusions.

C. Regrind PETG/Polyurethane extrusion.

D. Flexible EPDM extrusions.

E. Tread insert options - refer to section 2.05.

2.03 Floor Mats

A. **Model and Description - M1 Pedimat** Exposed hinge rail connectors shall be extruded 6063-T6 aluminum. (Optional C380 architectural bronze available) complete with perforations for drainage. Tread rails shall be manufactured from high-impact Regrind PET-G complete with co-extruded soft-durometer cushions. Overall depth without frame is 7/16" (11.1 mm). Supplied in mill (standard) or one of 9 optional colors as offered by

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manufacturer. (Call factory for custom colors.) Choose from anodized of heavy-duty powder coat finish.

2.04 Mat Frames *(Specifier to select one below and delete others) [Specifier note: Although most entrance flooring systems can accommodate some variation in the flatness of mat well bases, it is recommended that the surface beneath the mat be finished with a leveling screed to ensure optimum performance of the system.]*

A. SM - Tapered EPDM Frame shall be 1 1/2"(38.1mm) wide, with tapered lead-in edge for surface mounted applications. Frame color shall be black as offered by manufacturer.

B. LB – Level Base Frame shall be a 3/4"(19.1mm) deep recessed frame in 6063-T5 aluminum alloy (optional architectural bronze) with 1/4"(6.4mm) wide exposed surface. Black EPDM trim fillers shall be furnished as required when standard 2" (50.8mm) tread spacing cannot be maintained. Frame color shall be supplied in mill (standard) or one of 9 optional colors as offered by manufacturer. (Custom colors are available.) Choose from anodized or heavy-duty powder coat finish. **Note:** Installer shall use recommended latex screed to ensure level base.

C. TNG - Tapered Angle Frame *(Specifier note: the tapered angle frame is for use when additional screed for level base is not necessary.)* shall be a 1/2"(12.7mm) deep recessed frame in 6063-T5 aluminum alloy. Frame color shall be supplied in standard mill or one of 9 optional colors as offered by manufacturer. (Custom colors are available.) Choose from anodized or heavy-duty powder coat finish.

D. TA – Surface Mounted Aluminum Frame shall be a 1 5/8"(38.1mm) wide 6105-T5 aluminum alloy and permanently positions mat for surface mounted applications. Frame color shall be supplied in mill (standard) or one of 9 optional colors as offered by manufacturer. (Custom colors are available.) Choose from anodized or heavy-duty powder coat finish.

E. THFR- Threshold Frame shall be supplied in 6063-T6 aluminum alloy. For surface/recess installations to provide a flush transition from the entryway door threshold to the mat surface. The frame does not require a leveling screed. Choose from anodized or heavy-duty powder coat finish.

F. PS - Pipe-Stem Frame as supplied in 6063-T5-aluminum alloy creates a receiver for surrounding commercial carpet. Frame color shall be supplied in standard mill or one of 9 optional colors as offered by manufacturer. (Custom colors are available.) Choose from anodized or heavy-duty powder coat finish.

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2.05 Tread Insert Options *(Specifier to select one below and delete others.)*

A. HD – MonoTuft HD™ Carpet shall meet CRI standard for good indoor air quality. Fibers shall include a minimum of 100, 12 mil monofilament fibers per square inch. Available in one of 21 standard colors as offered by manufacturer. Each carpet fiber and monofilament shall be fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous splice-free lengths. Anti-static carpet fibers shall contain antimicrobial additive and be treated with Scotchgard® to reduce soiling. Carpet weight shall be 33-oz./yd^2.

B. EC - Exterior Carpet shall be solution dyed polypropylene fibers with 50/50 blend of 600/12-denier multi filament and 595/D1 monofilament, available in one of 4 standard colors as offered by manufacturer. The texturized fibers have ultraviolet blockers and color as an integral part of the filament. Each carpet fiber and monofilament shall be fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous splice-free lengths. (Waterproof fibers do not get soggy, rot, fade or stain.) Carpet weight shall be 32-oz./yd^2.

C. R - Rubber shall include a flexible EPDM tread insert in color Black

D. L - Logo Option (Designstep carpet inserts only) Each entrance mat specifically detailed shall include a logo or trademark.

Part 3 Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.
1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Manufacturer shall offer assistance and guidance to provide a template of irregular shaped mat assemblies to ensure a proper installation.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations.

B. Set mat at height recommended by manufacturer for most effective cleaning action.

C. Coordinate top of mat surface with bottom of doors that swing across to provide ample

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clearance between door and mat.

3.04 Cleaning

A. It is important to the life cycle of the entrance mat that a maintenance schedule be developed which includes regular vacuuming and extraction that correctly matches the amount of traffic the mat incurs.

3.05 Protection

A. After completing required frame installation and concrete work, provide temporary filler of plywood or fiberboard in recess, and cover frames with plywood protective flooring. Maintain protection until construction traffic has ended and project is near time of substantial completion.

B. Defer installation of floor mats until time of substantial completion of project.

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WM-4

OBEX®
ENTRY SYSTEMS

ARX

Prior™ / Tergo™ / Forma™ 2.0

Prior™

Tergo™

Forma™ 2.0

PRICE

Milliken™

150
years of Milliken

Get more at millikencarpetsamplestudio.com

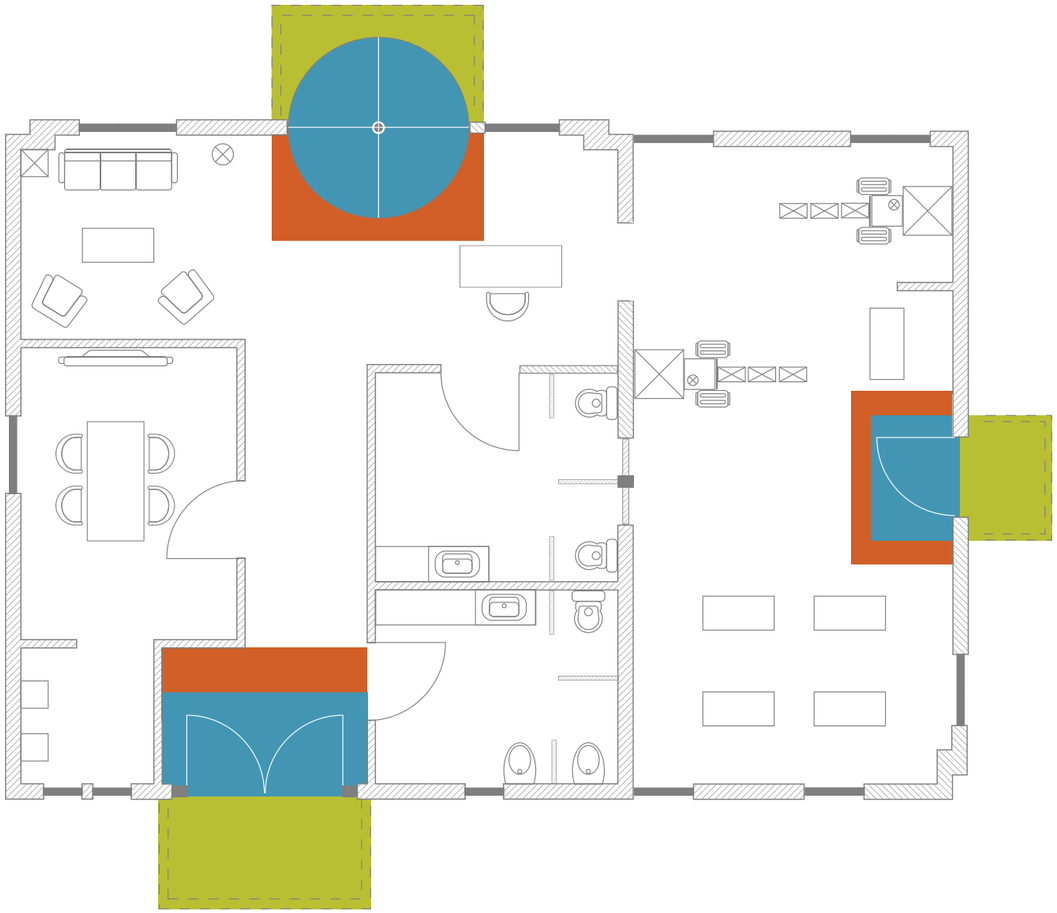
OBEX®

The OBEX® brand of products offers highly effective, comprehensive modular entry solutions designed as a three zone barrier system to prevent dirt and moisture from entering the building.

Available in coordinated colors and patterns, OBEX® entry products are engineered to increase the functionality of a building's entrance without forsaking elements of design or aesthetic. Simple and easy to work with, OBEX® offers entry systems that can be recessed or surface-mounted as well as exterior and interior applications.

Outdoors: Tergo™ edged with Prior™
Indoors: Forma™ 2.0 edged with Prior™

OBEX® ZONE ENTRY SYSTEM



ZONE 1

OUTDOORS: The area just before the building access—ideal for placing a product with scraping action to remove grit and heavy dirt particles such as sand and snow.

Milliken Product Solutions: Prior™ and Tergo™

ZONE 2

INDOORS: The primary area just inside the building where a product with dual action—scraping and absorbing—should be installed to defend against dirt and moisture. This area often features a recessed matwell.

Milliken Product Solutions: Tergo™, Forma™ 2.0, and Quadrus Brush

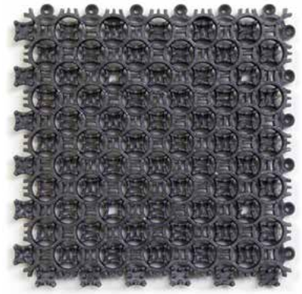
ZONE 3

INDOORS: Secondary area inside the building after Zone 2. A textile product for moisture absorption is the preferred choice. Also applicable to circulation areas other than entrances.

Milliken Product Solutions: Quadrus and Quadrus Brush

Arx Collection

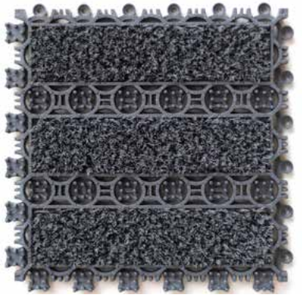
Arx is our ultra-durable interlocking tile system designed especially for high-traffic areas. Featuring Prior™, Tergo™, and Forma™ 2.0, Arx efficiently stops dust, dirt and moisture brought into a building within the first 10 to 30 feet. Prior™ & Tergo™ offer tough Zone 1 protection and are available in a graphite grey color, while Forma™ 2.0 offers Zone 2 protection in 8 contemporary colors fully coordinated with Quadrus modular tiles.



Prior™

Prior™ is a flexible multi-purpose modular flooring product with a structure that incorporates resilient scrapers to remove particulate dirt. For outdoor applications, the open construction of Prior™ 16 is recommended for drainage of water and dry dirt.

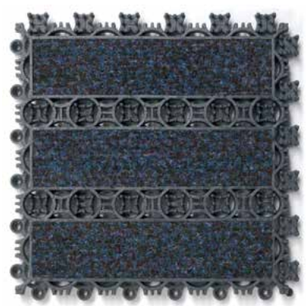
Prior™ can also be installed together with Tergo™ or Forma™ 2.0 in recessed mat wells, or surface mounted with edging finish.



Tergo™

Tergo™ modular tiles are manufactured with heavy duty textile inserts made of 100% nylon monofilament for a superior brushing action.

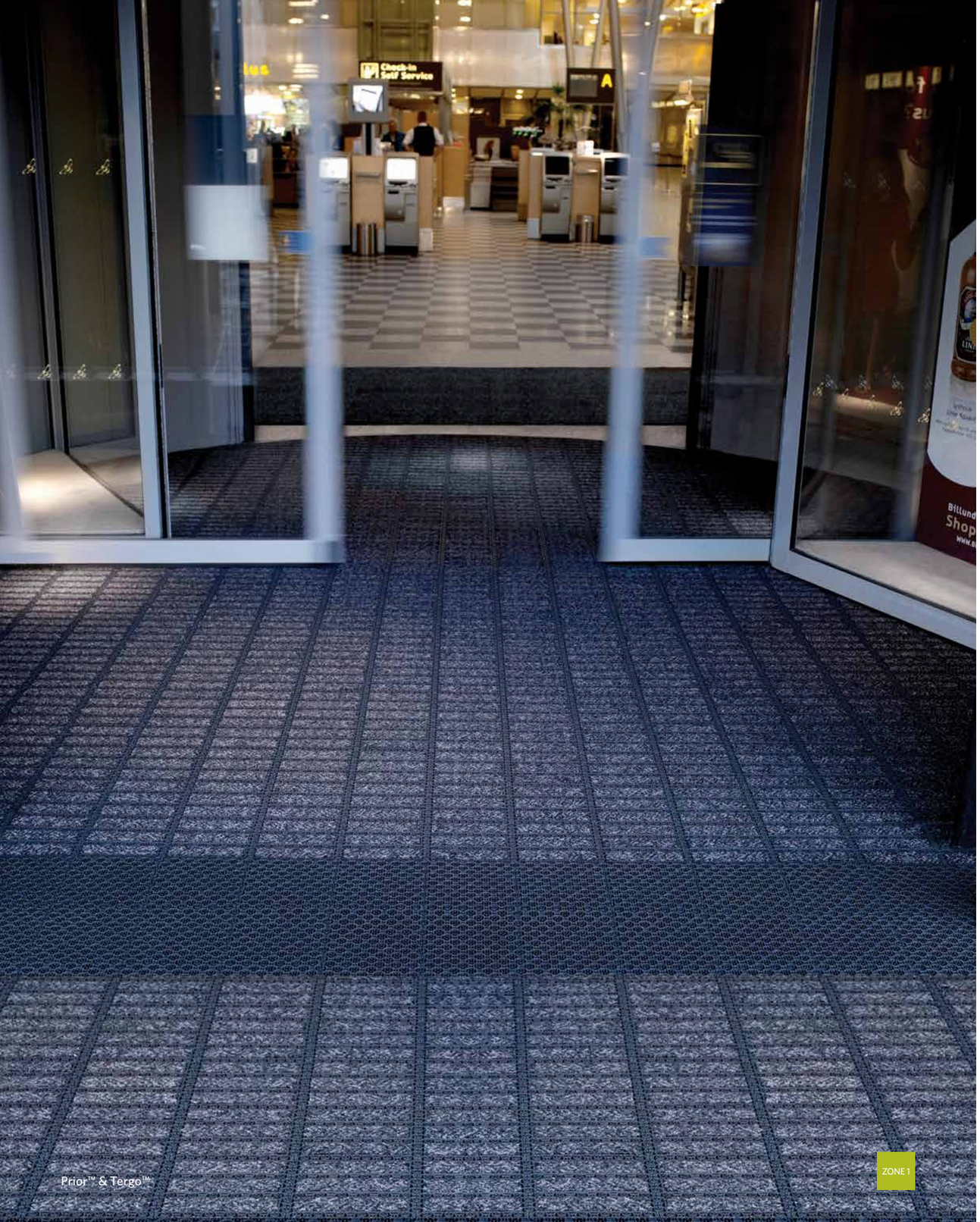
Tergo™ works as a first line of defence and can be combined with Forma™ 2.0 tiles for a complete entrance matting solution.



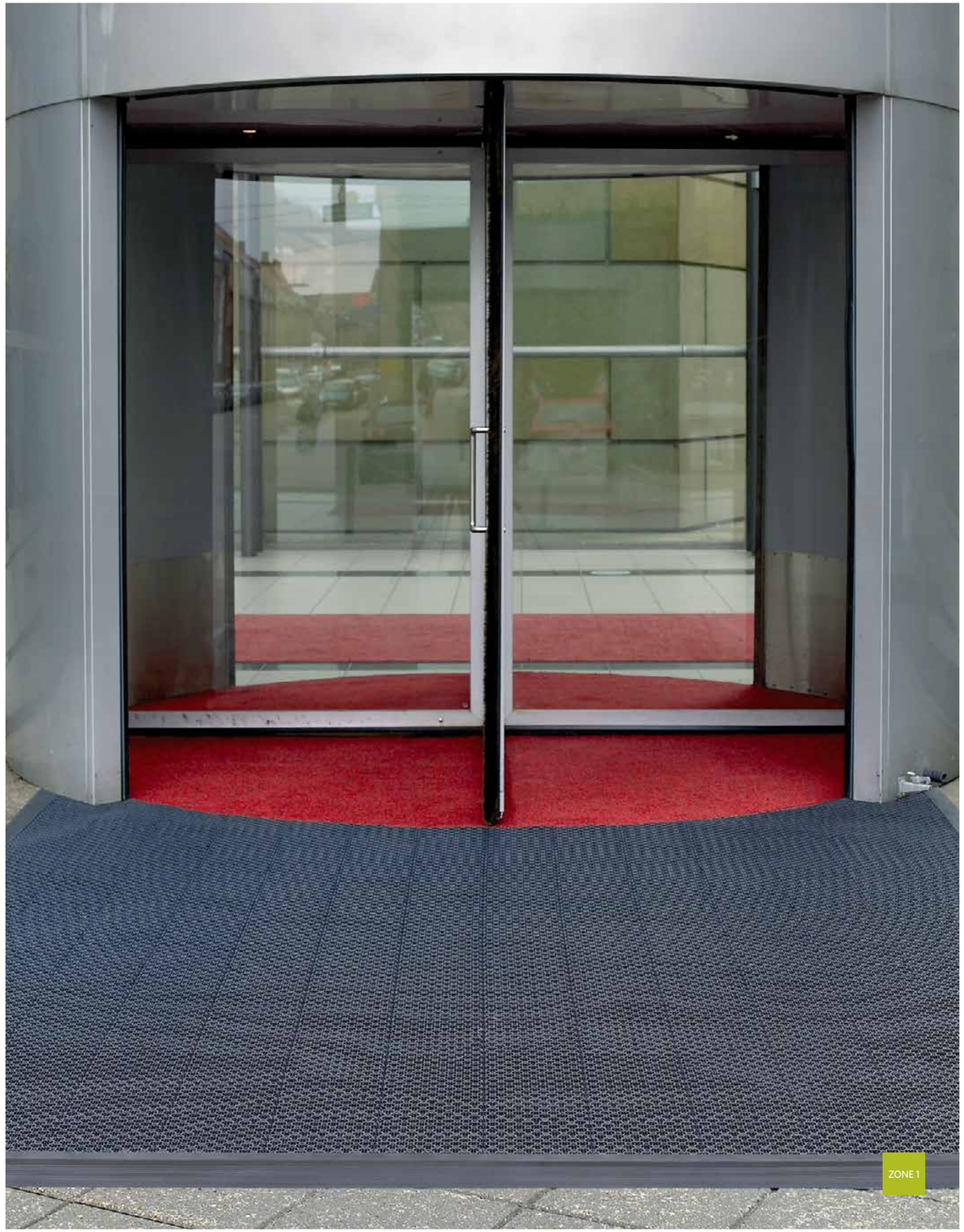
Forma™ 2.0

The combination of the patented Milliken duo scraper textile with the Obex® interlocking modular tile carrier produces a revolutionary matting system which is unequalled in performance and unique in aesthetics : Forma™ 2.0.

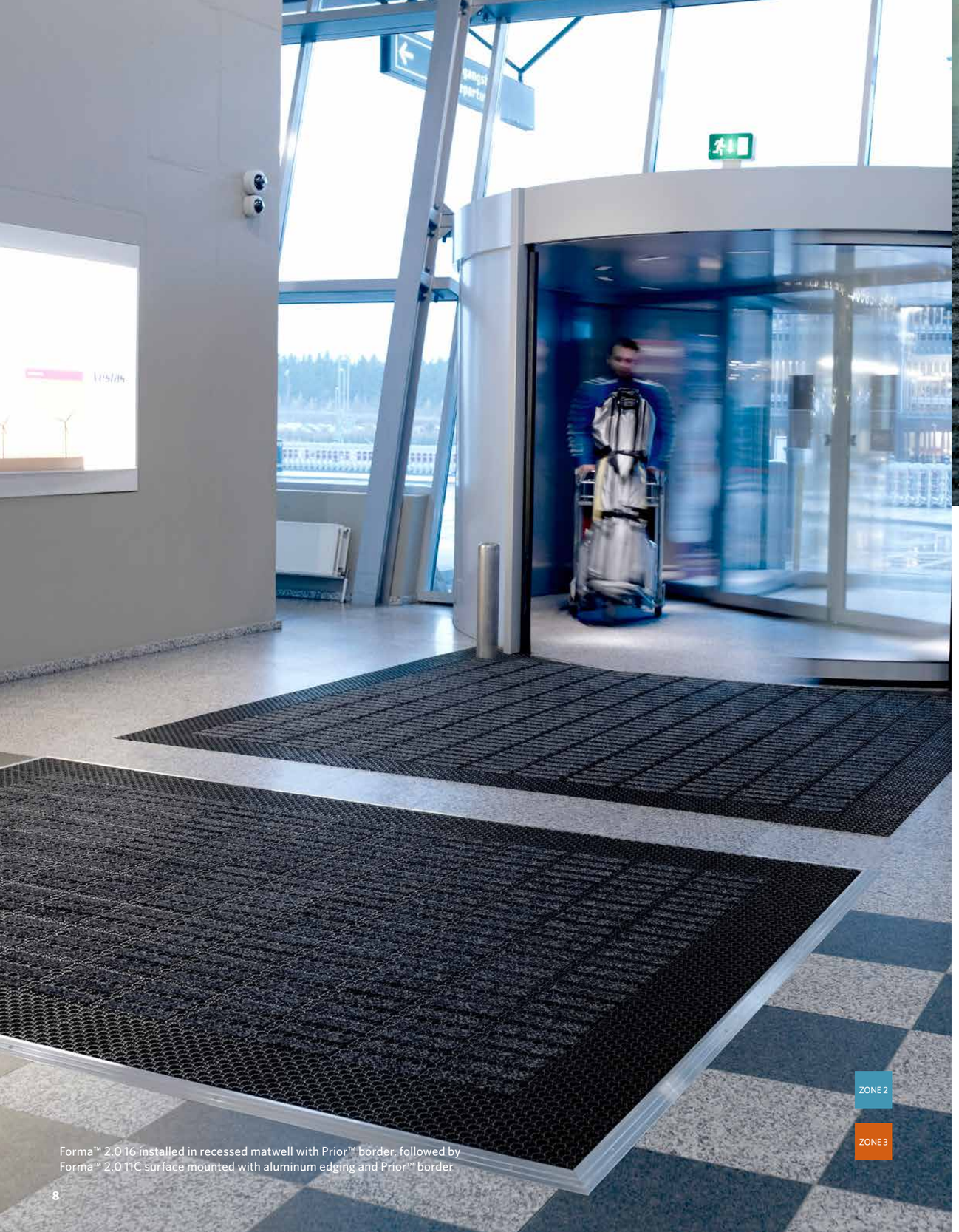
Combining Tergo™ and Forma™ 2.0 tiles together on the same installation further increases performance on dry dirt pick up by 50%. Forma™ 2.0 is suitable for high traffic areas such as airports and shopping centers.



Prior™ & Tergo™



Prior™

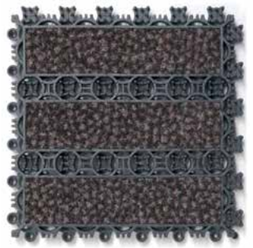


Forma™ 2.0 16 installed in recessed matwell with Prior™ border, followed by Forma™ 2.0 11C surface mounted with aluminum edging and Prior™ border

Forma™ 2.0

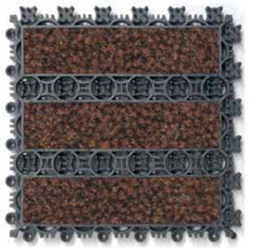
Forma™ 2.0 colorline

FOR144-27 BOUNDARY



FOR13-27 FORCE

FOR23-27 CONVERGE

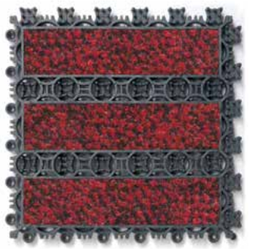


FOR98-27 RADIUS

FOR73-27 JETTISON

FOR123-27 SHOCKWAVE

FOR119-27 STREAMLINE



FOR109-27 FRICTION

Construction & Installation

Prior™ 11C / Tergo™ 11C / Forma™ 2.0 11C

- Closed construction to allow easy cleaning from the surface
- 11 mm thickness for installation in shallow matwells (3/8" deep) or surface mounted
- Directly on the subfloor next to any type of floor covering.

Prior™ 16 / Tergo™ 16 / Forma™ 2.0 16

- Open structure for an efficient drainage and storage of dirt and moisture
- 16 mm thickness for installation in deeper recessed matwells (5/8" depth)
- Suitable for sites with matwell drains, cleaning will require removing product from recessed matwell

Prior™ 16C / Tergo™ 16C / Forma™ 2.0 16C

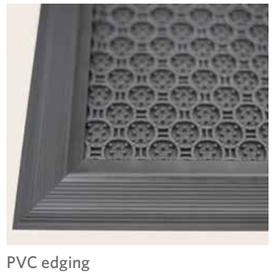
- 16 mm thickness for installation in recessed deeper matwells (5/8" depth) or surface mounted
- Closed construction to allow easy cleaning from the surface

Easy to install

1. Arrives pre-assembled in 6 tile units

2. Quick to assemble with a hammer

3. Easy to cut with ruler and knife



PVC edging

Aluminum edging

Edging System

A simple and easy to assemble edging system is available for surface mounted installation.

- A PVC edging system is available for products in 11 mm or 16 mm thickness.
- A universal aluminum edging system for products between 8 mm and 16 mm thickness.

Specs

Prior™ (Prior™ 11C, Prior™ 16, Prior™ 16C)

Tile Material
UV-Resistant PVC

Tile Construction
11C: Closed, *16*: Open, *16C*: Closed

Total Thickness
11C: 11 mm (.433")
16 & 16C: 16 mm (.630")

Total Weight
11C: 1.110 lb/ft² (5.419 kg/m²)
16: 1.456 lb/ft² (7.109 kg/m²)
16C: 1.913 lb/ft² (9.340 kg/m²)

Outdoor Temperature Resistance
-22 °F to +122°F (-30°C to 50°C)

Tile Size
Nominal:
200 mm x 200 mm (7.87" x 7.87")
Usable when installed:
195 mm x 195 mm (7.677" x 7.677")

ADA / BS 8300 / ISO 2152
Compliant

LEED®
Point Contributor

Tergo™ (Tergo™ 11C, Tergo™ 16, Tergo™ 16C)

Tile Material
UV-Resistant PVC

Tile Construction
11C: Closed, *16*: Open, *16C*: Closed

Total Thickness
11C: 11 mm (.433")
16 & 16C: 16 mm (.630")

Textile Construction
Tufted, Cut Pile

Yarn Type
Milliken-Certified WearOn® Nylon Type 6,6 Monofilaments

Textile Dye Technology
Solution Dyed

Total Weight
11C: 1.397 lb/ft² (6.821 kg/m²)
16: 1.860 lb/ft² (9.081 kg/m²)
16C: 2.124 lb/ft² (10.370 kg/m²)

Tile Size
Nominal:
200 mm x 200 mm (7.87" x 7.87")
Usable when installed:
195 mm x 195 mm (7.677" x 7.677")

ADA / BS 8300 / ISO 2152
Compliant

LEED®
Point Contributor

Forma™ 2.0 (Forma™ 2.0 11C, Forma™ 2.0 16, Forma™ 2.0 16C)

Tile Material
UV-Resistant PVC

Tile Construction
11C: Closed, *16*: Open, *16C*: Closed

Total Thickness
11C: 11 mm (.433")
16 & 16C: 16 mm (.630")

Textile Construction
Tufted, Cut Pile

Yarn Type
Milliken-Certified WearOn® Nylon Type 6,6 Mono- and Multi-filaments Twisted and Heat Set

Textile Dye Technology
Millitron®

Total Weight
11C: 1.403 lb/ft² (6.850 kg/m²)
16: 1.866 lb/ft² (9.111 kg/m²)
16C: 2.130 lb/ft² (10.400 kg/m²)

Tile Size
Nominal:
200 mm x 200 mm (7.87" x 7.87")
Usable when installed:
195 mm x 195 mm (7.677" x 7.677")

ADA / BS 8300 / ISO 2152
Compliant

LEED®
Point Contributor

ARX
Prior™ / Tergo™ / Forma™ 2.0

Have you seen our other collections? Visit us online today.

Arcadia

Color Field

Identity One

LVT

Next Dimension

Quadrus

This tile product is covered by one or more patents, published applications and/or patents pending. Specifications are subject to normal manufacturing tolerances and may be changed without prior notice.

Growing greener for over 100 years.
Visit www.millikenfloors.com for more information.

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Cover image: *Ancient door in historical quarter of the city of Orvieto, Italy,* by zebra0209. © 2015 Shutterstock

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CP 0815

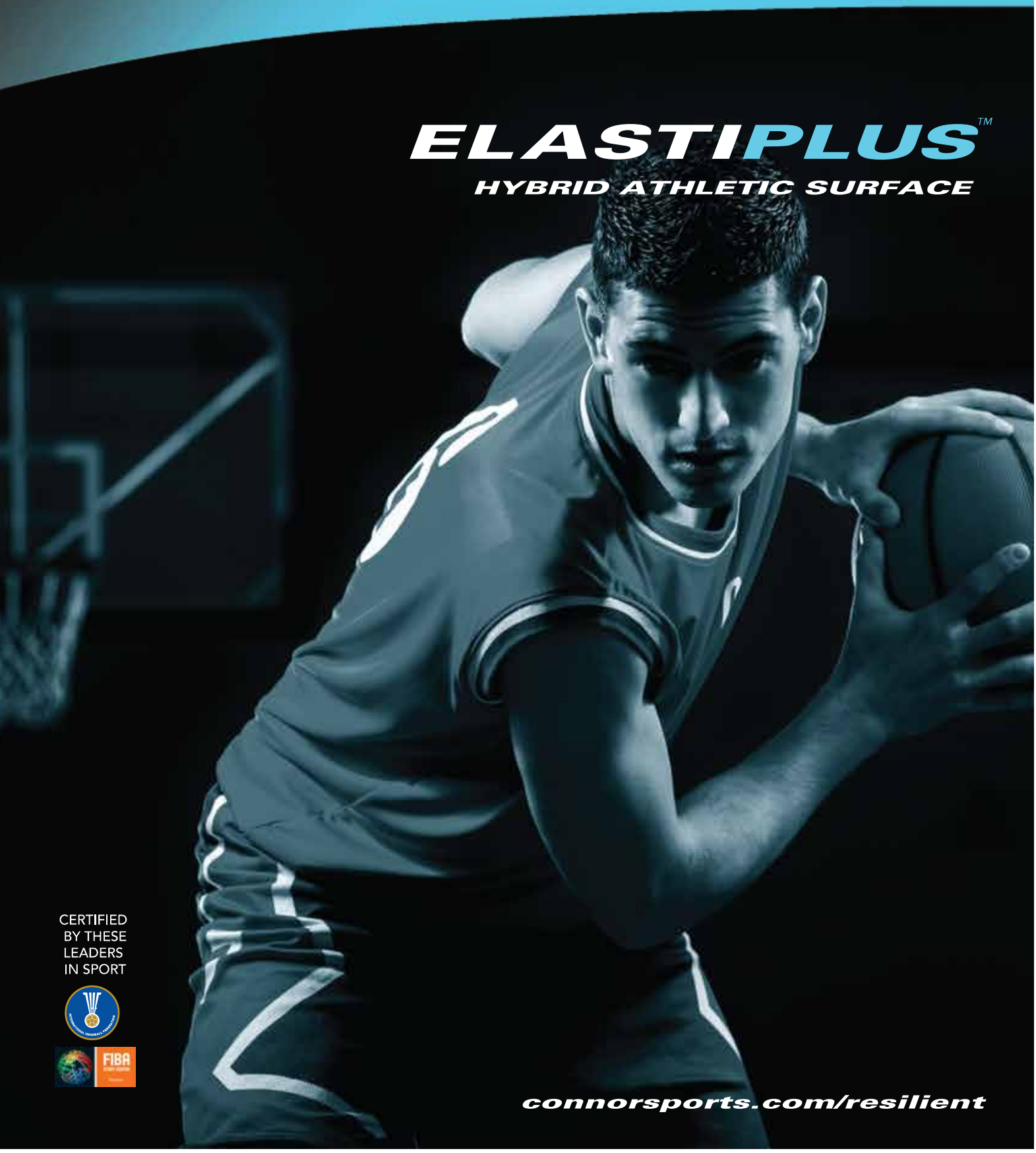
SF-1,4

CONNOR SPORTS

RESILIENT SYSTEMS

ELASTIPLUS™

HYBRID ATHLETIC SURFACE



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ELASTIPLUS™

HYBRID ATHLETIC SURFACE

Connor Sports • 800.283.9522 • 847.290.9020 • info@connorsports.com • connorsports.com/resilient

Transform your gym into the most desirable space in the building with vibrant VOC compliant water based coating.

Generate multiple sports & activity from track to basketball and everything in-between. Your field house can cater to multiple uses from sports halls to social occasions, such as this Armory.

The ultimate in versatility, this polyurethane and rubber sandwich system is terrific for the desired performance and budget.

Spike Resistant and High Strength ElastiPlus are also available for track, inline skating, and hockey use.

ELASTIPLUS/ SILVER MINE 7001

WEAR LAYER

2 mm Dual Durometer System to Distribute Point Load Over a Softer Cushion Layer.

SEALANT LAYER

Polyurethane Seal Coats

BASE LAYER

Consistent System Thickness for Controlled Performance. Choose from 4 mm to 14 mm.

TOP COAT LAYER

Three-part Solvent Free Urethane Coating. Excellent Abrasion Resistance, Uniform Color and Low Maintenance.

ELASTIPLUS IS AVAILABLE IN THREE PRODUCT TYPES.

ELASTIPLUS:
Overall thickness options range from 6 mm to 11 mm, depending on intended use; suitable for multipurpose activity and everyday sporting activity.

ELASTIPLUS SPIKE RESISTANT:
Designed to be used with running track and spikes, system thickness can range from 13 mm to 18 mm for indoor use. Outdoor formulations available as well.

ELASTIPLUS HIGH STRENGTH:
Inline skating and hockey clubs appreciate this high durometer, tough floor which is also suitable for other team sports.

NOTE: Textured options are available

DESERT SAND/1001

BURNT CLAY/1011

ARID BRONZE/1019

CANYON RED/3009

SILVER MINE/7001

MESA BLUE/5010

ASPEN SKY/5024

GAME LINE PAINT COLOR OPTIONS

Red

Green

White

Black

Yellow

Blue

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SF-2,3,5,6

ecore | Built by Yes.

Galaxy rx

Sales Data Sheet

Flooring Basics

At the very least, a flooring should satisfy the most basic requirements. A flooring should be:

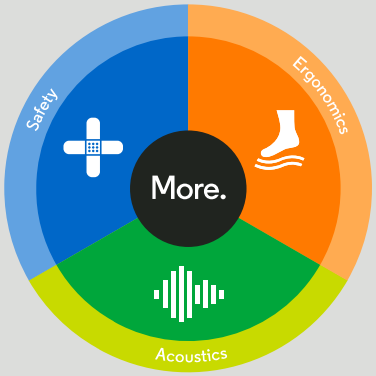
- ☑ Durable
- ☑ Easy to Maintain
- ☑ Affordable
- ☑ Slip Resistant
- ☑ Sustainable

Galaxy rx is a prescription for comfort. As part of an exceptional group of Rx products offered by Ecore, Galaxy rx features premium rubber sheet flooring bonded to an Ecore recycled rubber backing. The finished two layered rubber product is designed to reduce the severity of patient or resident injuries while mitigating liability for the owners of a healthcare facility.

Can A Floor Do More? Yes.

At Ecore, we are building our company and the products we offer based on the simple notion that floors should elevate beyond current expectations. Our energy is focused on the interaction between people and the surface. We engineer performance well beyond industry standards related to acoustics, ergonomics and safety. Harvesting the unique power from a myriad of waste streams, Ecore creates products that align–substantial force reduction with a balanced amount of energy return to create dynamic surfaces that are catered to the individual and the application.

So you may ask yourself, what does this mean for Galaxy rx? Can it provide more than just the flooring basics? Yes. In addition to providing a soothing environment, Galaxy rx is engineered to provide superior safety, acoustics, and ergonomics versus an average flooring system. It will help reduce the risk of injury associated with falls and significantly reduce impact and structure-borne sounds. In addition, Galaxy rx provides improved ergonomics for patients, residents and staff.



Applications

Healthcare

Falls will happen in a healthcare facility, and reducing the likelihood and/or severity of the injury from a fall is a priority for healthcare administrators. Identifying the right product that provides the safety factors needed to minimize the severity of a fall can be a challenge. Galaxy rx goes beyond the basic standards of how to prevent slips and falls, and provides a surface that will reduce the degree of impact a patient will experience if they should fall.

Education

Laughter from the classroom next door, students walking down the hall and chairs from the class upstairs are just a few examples of the noises that fill an educational facility everyday. As noise cannot be avoided, it is important to equip classrooms with materials to help absorb these higher noise levels. Selecting the right flooring will help make the difference between a challenging learning environment for students, or one that allows them to focus on the lesson at hand.

Vulcan Vanilla 2700	Tribbles Tan 2701	Beam Me Up Beige 2702
Princess Greya 2703	Spockolate 2704	Binks Brown 2705
Rastro Grey 2706	R2D Blue 2707	Dark Vader 2708
Yellroy 2709	Martian Green 2710	Jetson Blue 2711

Product Options

Available as a standard sheet, 7mm thickness. All custom options should be discussed with your local sales representative to determine availability, pricing, minimums and lead times.

6'/1.83m x 30'/9.14m
Thickness: 7mm nominal
2mm surface layer, 5mm rubber backing

Color Options: 12
Design possibilities: countless

Galaxy rx provides a scattered chip appearance. The 12 colors selected to represent this product were specifically chosen to provide a more calming and peaceful healing and learning environment. Because Galaxy rx was developed using itstru technology, the result is a surface with anti-fatigue capabilities, unprecedented durability and greater design diversity.

Technical Details

Performance Criteria	Standard	Typical Results
Flexibility	ASTM F137	Pass 1/4" Mandrel
Coefficient of Friction	ASTM D2047	>0.6
Chemical Resistance	ASTM F925	Pass
Thermal Conductivity	ASTM C518	1.0 Btu-in/h-ft^2-F
Abrasion Resistance	ASTM D3389/EN 649	<1g, 1000 cycle
Flammability - Critical Radiant Flux	ASTM E648	Class I
Optical Density of Smoke	ASTM E662	Pass
Static Load Limit @250 lbs	ASTM F970	0.005"
Hardness (Shore A)	ASTM D2240	>85
Chair Casters	ASTM D6962BS/EN 985	Excellent after 25,000 cycles
Impact Insulation Class (IIC)*	ASTM E492	54
Sound Transmission Class (STC)*	ASTM E90	50
Noise Reduction Coefficient	ASTM C423	0.10
Delta IIC	ASTM E2179	23
CHPS/CA Section 01350	ASTM D5116	Pass

*Tests conducted on 6" slab, no adhesive, no ceiling.

SF-7,8,9

ecore | Built by Yes.

Forest Rx/Strait Rx

Sales Data Sheet

Flooring Basics

At the very least, a flooring should satisfy the most basic requirements. A flooring should be:

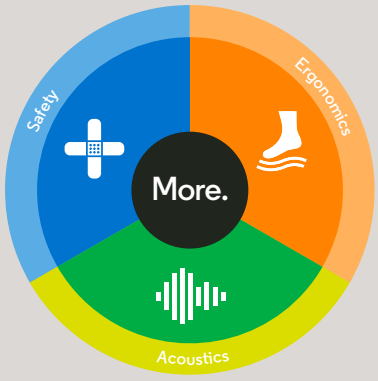
- ☑ Durable
- ☑ Easy to Maintain
- ☑ Affordable
- ☑ Slip Resistant
- ☑ Sustainable

Forest Rx and Strait Rx were developed to meet the performance, as well as the aesthetic, requirements of a space. Both products provide a unique solution, featuring an Ecore performance rubber backing fusion-bonded to a contemporary, modern heterogeneous vinyl sheet. This combination creates a surface that reduces the risk of injury associated with falls, offers sound control and comfort underfoot.

Can A Floor Do More? Yes.

At Ecore, we are building our company and the products we offer based on the simple notion that floors should elevate beyond current expectations. Our energy is focused on the interaction between people and the surface. We engineer performance well beyond industry standards related to acoustics, ergonomics and safety. Harvesting the unique power from a myriad of waste streams, Ecore creates products that align–substantial force reduction with a balanced amount of energy return to create dynamic surfaces that are catered to the individual and the application.

So you may ask yourself, what does this mean for Forest Rx and Strait Rx? Can they provide more than just the flooring basics? Yes. In addition to providing a soothing environment, Forest Rx and Strait Rx are engineered to provide superior safety, acoustics, and ergonomics versus an average flooring system. They will help reduce the risk of injury associated with falls and significantly reduce impact and structure-borne sounds. In addition, Forest Rx and Strait Rx provide improved ergonomics for patients, guests and staff.



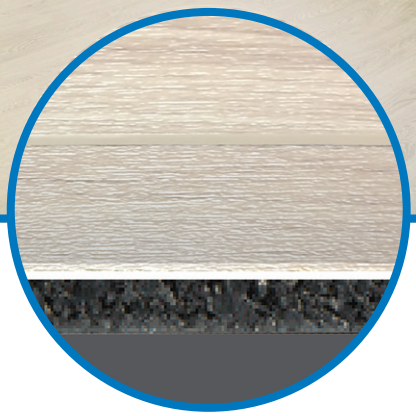
Applications

Healthcare

Noise within a healthcare facility is a challenge that not only affects patient recovery, but impacts staff as well. Since noise cannot be avoided, using materials that help absorb the noise becomes critical when designing a clinical space. Forest Rx and Strait Rx exceed industry standards and in accordance with ASTM E2179, are able to reduce sound by 23 decibels, giving the patients the quiet needed to heal.

Hospitality

To enhance any guest experience, staff must constantly be on their feet to assist with registration, opening of doors and even providing directions to the best restaurant in town. Due to the stress and strain on legs, backs and feet, providing a walking/standing surface that takes all these movements into consideration is vital. Forest Rx and Strait Rx have been tested and shown to provide an exceptional force reduction and energy return compared to other traditional resilient floorcoverings.



Product Options

Available as a standard sheet, 7mm thickness. All custom options should be discussed with your local sales representative to determine availability, pricing, minimums and lead times.

6’/1.83m x 30’/9.14m
Thickness: 7mm
2mm surface layer, 5mm rubber backing

Color Options: 11 Forest Rx, 6 Strait Rx
Design possibilities: countless
Custom logo ability: yes

Forest Rx and Strait Rx provide the visual appearance of wood, linen or concrete. These designs allow facilities to create comforting, calming and welcoming environments. Because these products were developed using itstru technology, the results are surfaces with anti fatigue capabilities, unprecedented durability and greater design diversity.

U.S. GREEN BUILDING COUNCIL MEMBER

floor score
by SCScertified

Technical Details

Performance Criteria	ASTM Standard	Typical Results
Flexibility	F137	Pass 1/4" Mandrel
Coefficient of Friction	D2047	>0.6
Thermal Conductivity	C518	>0.6 Btu-in/h-ft^2-F
Static Load Limit @400 lbs	F970	<0.005"
Chemical Resistance	F925	No Change
Impact Insulation Class*	E492	52
Sound Transmission Class*	E90	56
Noise Reduction Coefficient	C423	0.10
Delta IIC	E2179	Typical Result: 26
Sustainability	E2129	Data Collected
CHPS/CA Section 01350	D5116	Pass

*Tests conducted on 6" slab, no ceiling.

STONHARD

STONCLAD® UT

PRODUCT DATA

PRODUCT DESCRIPTION

Stonclad UT is a dense, liquid-rich, self-priming, textured, four-component, notch trowel applied, polyurethane mortar system. Stonclad UT consists of a urethane-urea binder, pigments and graded quartz aggregates. Stonclad UT is a nominal 1/4 in./6 mm system. Stonclad UT is a high impact resistant mortar which exhibits excellent abrasion, thermal shock, thermal cycling and chemical resistant characteristics making it ideal for the food and beverage industry, as well as any other applications requiring these properties.

SYSTEM OPTIONS

Cove Base

To provide for an integral seal at the joint between the floor and the wall, cove bases in heights from 2 to 6 in./5 to 15 cm may be specified.

Textures

To find the necessary balance between cleanability and slip resistance, Stonclad UT is offered in two levels of texture. The texture is specified as light or medium.

Waterproofing

Where the total system must be waterproofed, the use of Stonhard's Stonproof ME7 membrane system with Texture #3 broadcast to refusal is required with a strict adherence to application instructions.

Crack Treatment

When crack treatment is needed due to cracks in the substrate, the use of Stonhard's Stonproof CT5 or RH7 with Texture #3 broadcast to refusal is required with a strict adherence to application instructions.

PACKAGING

Stonclad UT is packaged in units for easy handling. Each unit consists of:

Mortar

2 cartons, each containing:
- 4 foil bags of Isocyanate
- 4 poly bags of Polyol

8 individual bags of Part C-1 aggregate

Pigment

0.67 cartons containing:
- 12 bags of Part C-2 pigment packs powder

Broadcast

- 2 individual bags of broadcast aggregate for light textured systems
- 2 individual bags of broadcast aggregate for medium textured systems

PHYSICAL CHARACTERISTICS

Compressive Strength (ASTM C-579)	7,700 psi after 7 days
Tensile Strength (ASTM C-307)	1,000 psi
Flexural Strength (ASTM C-580)	2,400 psi
Flexural Modulus of Elasticity (ASTM C-580)	2.6×10^6 psi
Hardness (ASTM D-2240, Shore D)	80 to 84
Impact Resistance (ASTM D-2794)	>160 in./lbs.
Abrasion Resistance (ASTM D-4060, CS-17)	0.03 gm *
Flammability (ASTM E-648)	Class 1
Thermal Coefficient of Linear Expansion (ASTM C-531)	1.1×10^{-5} in./in.°F
Water Absorption (ASTM C-413)	< 1%
VOC Content (ASTM D-2369, Method E)	UT Mortar - 7 g/l Stonseal UT7 - 20 g/l
Cure Rate (@ 77°F/25°C)	6 hours for foot traffic 24 hours for normal operations

* Test samples finished with one coat of high solids urethane coating

Note: The above physical properties were measured in accordance with the referenced standards. Samples of the actual floor system, including binder and filler, were used as test specimens. All sample preparation and testing is conducted in a laboratory environment, values obtained on field applied materials may vary and certain test methods can only be conducted on lab-made test coupons.

Stonseal UT7

1 carton containing:
- 4 foil bags of Isocyanate
- 4 poly bags of Polyol

COVERAGE

Each unit of Stonclad UT will cover approximately 190 sq. ft/17.6 sq. m at a nominal thickness of 1/4 in./6 mm.

STORAGE CONDITIONS
Store all components of Stonclad UT between 60 to 85°F/16 to 30°C in a dry area. Avoid excessive heat and do not freeze. The shelf life of the liquids is one year while the C-1 has a 6 month shelf life in the original, unopened container.

COLOR
Stonclad UT is available in 12 standard colors. Refer to the Stonclad Color Sheet. Contact your local Stonhard representative or Technical Service with any questions.

SUBSTRATE
Stonclad UT, with the appropriate primer, is suitable for application over concrete, wood, brick, quarry tile, metal or Stonset TG6. For questions regarding other possible substrates contact your local Stonhard representative or Technical Service.

> **Note:** Stonclad UT is suitable for application over new/green concrete. The concrete must be in place for a minimum of 5 days, be dry and have sufficient strength to handle mechanical preparation.

SUBSTRATE PREPARATION
Proper preparation is critical to ensure an adequate bond and system performance. The substrate must be dry and properly prepared utilizing mechanical methods. Questions regarding substrate preparation should be directed to your local Stonhard representative or Technical Service.

PRIMING
Stonclad UT is a self priming mortar. No additional primer is necessary.

MIXING
- Proper mixing is critical for the product to exhibit the proper application properties, cure properties and ultimate physical properties.
- Mechanical mixing using a JB Blender (or equivalent 5 gal. pail mixer) or a larger mortar mixer (e.g., a Baugh 3 Batch Mixer) is required.
- See Stonclad UT Directions for further details.

APPLYING
- Material must be used immediately after mixing.
- A Screed Applicator is used to distribute the mixed Stonclad UT onto the floor.
- Notched finishing trowels and spiked rollers are used to smooth the surface of the material to the required thickness.
- Texture aggregate is then broadcast into the wet mortar.
- After mortar cures remove excess broadcast aggregate.
- Allow the mortar to cure 6 to 8 hours, then apply the sealer coat.
- Detailed instructions on application and installation can be found in the Stonclad UT Directions.

NOTES
- Use only with adequate ventilation.
- Procedures for maintenance of the flooring system during operations are described in the Stonkleen Floor Cleaning Procedures Brochure.
- Specific information regarding chemical resistance is available in the Stonclad Chemical Resistance Guide. If a coating is utilized to seal the Stonclad UT surface, please ensure that you consult the Product Data sheet for the coating for details regarding chemical resistance of the coating utilized.
- Stonclad UT Part C-1 contains Portland Cement and silica fines. A NIOSH approved dust/mist respirator is required during mixing. Use only with adequate ventilation.
- Safety Data Sheets for Stonclad UT are available online at www.stonhard.com under Products or upon request.
- A staff of technical service engineers is available to assist with installation or to answer questions related to Stonhard products.
- Requests for literature can be made through local sales representatives and offices, or corporate offices located worldwide.
- The appearance of all floor, wall and lining systems will change over time due to normal wear, abrasion, traffic and cleaning. Generally, high gloss coatings are subject to a reduction in gloss, while matte finish coatings can increase in gloss level under normal operating conditions.
- Surface texture of resinous flooring surfaces can change over time as a result of wear and surface contaminants. Surfaces should be cleaned regularly and deep cleaned periodically to ensure no contaminant buildup occurs. Surfaces should be periodically inspected to ensure they are performing as expected and may require traction-enhancing maintenance to ensure they continue to meet expectations for the particular area and conditions of use.

IMPORTANT:
Stonhard believes the information contained here to be true and accurate as of the date of publication. Stonhard makes no warranty, expressed or implied, based on this literature and assumes no responsibility for consequential or incidental damages in the use of the systems described, including any warranty of merchantability or fitness. Information contained here is for evaluation only. We further reserve the right to modify and change products or literature at any time and without prior notice.

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STONHARD

STONRES™ RTZ

PRODUCT DATA

PRODUCT DESCRIPTION

Stonres RTZ is a nominal 3/16 in./5 mm resilient urethane flooring system. This easy-to-clean, seamless, resilient system provides exceptional acoustic efficiency and ergonomic comfort. The system combines superior aesthetics with excellent wear and stain resistance offering progressive design options. It is comprised of:

Note: This product is highly recommended for healthcare environments.

Stonres RTZ Mortar
A three-component, UV-resistant, resilient, urethane mortar consisting of urethane resin, curing agent, and coarse aggregate.

Stonres Groutcoat
A two-component, clear, UV-resistant, aliphatic, polyaspartic urethane grout coat.

Stonseal CF7
A two-component, non-reflective, high-performance, water-based, VOC-compliant polyurethane coating.

PACKAGING

Stonres RTZ is packaged in units for easy handling. Each unit consists of:

Stonres RTZ Mortar
12 boxes, each containing:
1 foil bag of Isocyanate
(12) 5 gallon pails of Polyol
12 bags of Part C aggregate

Stonres Flex Groutcoat
0.5 carton containing:
1 poly bag of Isocyanate
(1) 1 gallon can of Amine

Stonres RTZ Skim Coat
0.2 carton containing:
1 can of Isocyanate
1 can of Stonres RTZ Skim Coat Polyol
1 bag of Stonres RTZ Part C Aggregate

Stonseal CF7
1 carton containing
1 foil bag of Isocyanate
(1) 1 gallon pail of Polyol

PHYSICAL CHARACTERISTICS

Tensile Strength (ASTM C-307)	1200 psi	
Hardness (ASTM D-2240, Shore A)	85	
Percent Elongation (ASTM D-638)	150%	
Impact Resistance (ASTM D-2794)	60 in./lbs.	
Static Load Limit (ASTM F-970)	0.002 in./0.05 mm	(125 lb./57 kg. load)
Resistance to Heat (ASTM F-1514)	Delta E <8	(7 days @ 158°F/70°C)
Residual Indentation (ASTM F-1914)	<1% thickness	(140 lb./64 kg. load)
Abrasion Resistance (ASTM D-4060 CS-17)	0.03 gm	
Thermal Coefficient of Linear Expansion (ASTM C-531)	3.3 x 10^{-5} in./in.°F	
Flammability (ASTM E-648)	Class 1	
Noise Reduction Coefficient (ASTM C-423)	0.05	
VOC Content (ASTM D-2369, Method E)	RTZ Mortar - 10 g/l Stonres Groutcoat - 90 g/l Stonseal CF7 - 47 g/l (Method C)	
Cure Rate (@77F°/25°C)	12 hours for foot traffic 48 hours for normal operations	

Note: The above physical properties were measured in accordance with the referenced standards. Samples of the actual floor system, including binder and filler, were used as test specimens. All sample preparation and testing is conducted in a laboratory environment, values obtained on field-applied materials may vary and certain test methods can only be conducted on lab-made test coupons.

COVERAGE

Each unit of Stonres RTZ will cover approximately 220 sq. ft./20.4 sq. m of surface at a nominal 3/16 in./5 mm finished thickness. A batch of Stonres RTZ Base is made up of one foil bag of Isocyanate, one 5 gallon pail of Polyol, and one bag of Part C. When mixed, each batch will cover approximately 18 sq. ft./1.67 sq. m at the above thickness.

STORAGE CONDITIONS
Store all components of Stonres RTZ from 65 to 85°F/18 to 30°C in a dry area. Avoid excessive heat and do not freeze. The shelf life of the Mortar is 3 years, all other components are one year in the original, unopened container.

COLOR
Stonres RTZ is available in 8 standard colors and an extensive color palette. Refer to the Stonres RTZ Color Sheet. Custom Colors are available upon request.

SUBSTRATE
Stonres RTZ is suitable for application over properly prepared concrete, wood or steel surfaces. It is not recommended for use over asphalt, mastic, gypsum-based products, brick or painted surfaces. These must first be removed by mechanical means to expose the substrate prior to overlayment.

SUBSTRATE PREPARATION
Proper preparation is critical to ensure an adequate bond and system performance. The substrate must be dry and properly prepared utilizing mechanical methods. Questions regarding substrate preparation should be directed to your local Stonhard representative or Technical Service.

Note: A flat level substrate is required for Stonres RTZ application and cannot be installed over a pitched surface.

PRIMING
The use of the Standard Primer/SL Primer priming system is required for all applications of RTZ over concrete or wood. Metal substrates must be primed immediately following preparation with HT primer.

The substrate must be free of voids and pinholes after priming and prior to the start of the Mortar application and the primer layer must not be cured for longer than 24 hours to ensure proper intercoat adhesion.

MIXING
- Proper mixing is critical for the products to exhibit the proper application properties, cure properties and ultimate physical properties.
- Mechanical mixing is required for all components.
- See Stonres RTZ Directions for further details.

APPLYING
- DO NOT attempt to install material if the temperature of the Stonres RTZ components and substrate are not within 65 to 85°F/18 to 30°C. **The cure time and application properties of the material are severely affected if the temperatures are outside of this range.**
- Stonres RTZ Mortar material is mixed just prior to use in accordance with prescribed directions. The base material is then screed rake applied and spike rolled to finish.
- After a minimum of 20 hours curing time, sand the surface of the RTZ Mortar using the recommended grit sandpapers.
- Squeegee apply and backroll Stonres Groutcoat with a medium nap roller.
- After 4 hours of minimum cure time, roller apply Stonseal CF7. After 12 hours of cure, inspect and apply Stonres RTZ Skim Coat as per the directions. Apply a second coat of Stonseal CF7. Allow a minimum of 12 hours of cure before foot traffic and 48 hours before washdown/cleaning procedures commence. (Reference the Stonseal CF7 Product Data for further details.)

  Note: Two coats of Stonseal CF7 are required for all applications of Stonres RTZ.

- Detailed application instructions can be found in the Stonres RTZ Directions.

NOTES
- Procedures for maintenance of the flooring system during operations are described in the Stonkleen Floor Cleaning Procedures Brochure.
- Specific information regarding chemical resistance is available in the Stonres Chemical Resistance Guide.
- Safety Data Sheets for Stonres RTZ are available online at www.stonhard.com under Products or upon request.
- A staff of technical service engineers is available to assist with installation or to answer questions related to Stonhard products.
- Requests for technical service or literature can be made through local sales representatives and offices or corporate offices located worldwide.
- The appearance of all floor, wall and lining systems will change over time due to normal wear, abrasion, traffic and cleaning. Generally, high-gloss coatings are subject to a reduction in gloss, while matte-finish coatings can increase in gloss level under normal operating conditions.
- Surface texture of resinous flooring surfaces can change over time as a result of wear and surface contaminants. Surfaces should be cleaned regularly and deep cleaned periodically to ensure no contaminant buildup occurs. Surfaces should be periodically inspected to ensure they are performing as expected and may require traction-enhancing maintenance to ensure they continue to meet expectations for the particular area and conditions of use.

IMPORTANT:
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Canada	(905)430.3333	South America	(54-3327)44.2222	Middle East	(971)4.3470460	Asia	(86)21.5466.5118

SF-14,15

Industrial Flooring

Sika®ComfortFloor Decorative Pro System

Seamless Low VOC Elastromeric Decorative Flooring for interior Concrete Surfaces finish of 240 - 320 mils

Description

Sika ComfortFloor Decorative Pro is an ergonomic, sound dampening, low emission floor which is UV stable, aesthetically pleasing, easy to care for and to maintain while contributing to project LEED certification. ComfortFloor Decorative Pro is a 320 mil, seamless, fluid applied urethane floor system comprised of 100% solids urethane adhesive, 5mm recycled rubber pad of more than 80% recycled content, pigmented self leveling aliphatic urethane wear course, optional decorative vinyl flake and a wear resistant, clear water based urethane topcoat. Sika ComfortFloor contributes to sustainable building construction by using rapidly renewable resources as the raw material basis.

Where to Use

Particularly suitable for all commercial and public buildings including healthcare facilities, schools, retail spaces, laboratories, nursing facilities, showrooms, lobbies, museums and office space. For interior use only.

Advantages

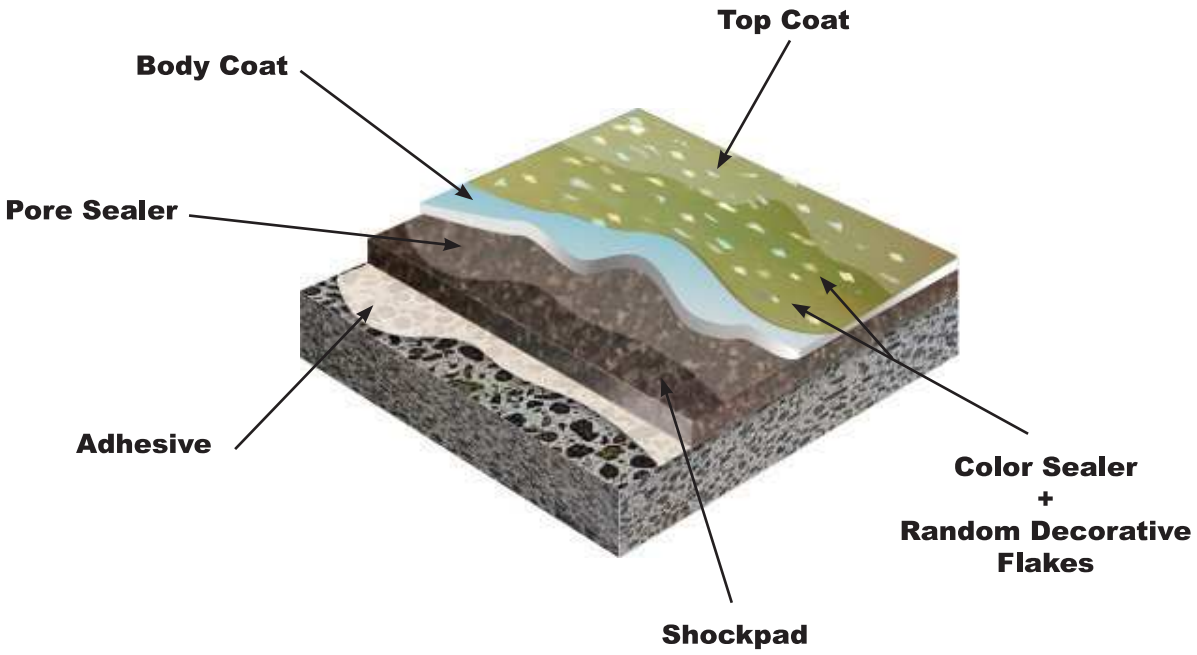
- Exceedingly low VOC emission
- Flexible and resilient
- Good acoustic isolation
- Good mechanical resistance
- Good UV resistance
- Reduces footfall sound
- Attractive colors available using pigmented UV stable topcoat
- Solvent Free
- Non shrinking after cure
- High strength
- Low maintenance and life cycle cost versus tile, sheet goods and carpet.
- Uses recycled rubber pad comprised of 86% recycled post consumer waste.
- Contains Rapidly Renewable raw material
- Tough, durable and seamless floor
- (Optional) Integral cove base and curbs
- Excellent adhesion in areas with heavy traffic and rolling loads such as carts, gurneys and wheelchairs.
- Use of this Sikafloor system can help contribute to project LEED certification.

Industrial Flooring

System Build Up

Coating	Product Name	Typical Thickness (mils)
Adhesive	Sika ComfortFloor Adhesive	
Shockpad	Sika ComfortFloor Regupol 6015H Shockpad	157
Pore Sealer	Sika Comfort Porefiller	
Body Coat	Sikafloor 330	80
Color Sealer	Sikafloor 305W	8
Color Flakes	Random Decorative Flakes	
Top Coat / Clear Sealer	Sikafloor 304W	8
Optional 2nd Sealer Coat	Sikafloor 304W	8

System Build Up Step Diagram



KEEP CONTAINER TIGHTLY CLOSED • KEEP OUT OF REACH OF CHILDREN • NOT FOR INTERNAL CONSUMPTION • FOR INDUSTRIAL USE ONLY

All information provided by Sika Corporation ("Sika") concerning Sika products, including but not limited to, any recommendations and advice relating to the application and use of Sika products, is given in good faith based on Sika's current experience and knowledge of its products when properly stored, handled and applied under normal conditions in accordance with Sika's instructions. In practice, the differences in materials, substrates, storage and handling conditions, actual site conditions and other factors outside of Sika's control are such that Sika assumes no liability for the provision of such information, advice, recommendations or instructions related to its products, nor shall any legal relationship be created by or arise from the provision of such information, advice, recommendations or instructions related to its products. The user of the Sika product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with the full application of the product(s). Sika reserves the right to change the properties of its products without notice. All sales of Sika product(s) are subject to its current terms and conditions of sale which are available at http://usa.sika.com/ or by calling 800-933-7452.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at http://usa.sika.com or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instrucstion for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

Visit our website at www.sikafloorusa.com **1-800-933-SIKA NATIONWIDE**

Regional Information and Sales Centers. For the location of your nearest Sika sales office, contact your regional center.

Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Phone: 800-933-7452
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Sika Canada Inc.
601 Delmar Avenue
Pointe Claire
Quebec H9R 4A9
Phone: 514-697-2610
Fax: 514-694-2792

Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

Surface Finishes

2019

PT-1,2,3,4,5,6,7,8,9,10,11
12,13,14,15,16,17,18,19,
20,21,22,23,24,25,26

101.99

PAINT SHIELD®

Interior Latex
Eg-Shel
Microbicidal

D12W00051 Extra White

EPA Reg. No. 64695-1

As of 07/14/2016, Complies with:			
OTC	Yes	LEED® 09 NC, CI	Yes
SCAQMD	Yes	LEED® 09 CS	Yes
CARB	Yes	LEED® 09 H&S	Yes
CARB SCM 2007	Yes	LEED® v4 Emissions	Yes
MPI		LEED® v4 VOC	Yes

Ingredients Statement
Active Ingredient:
Alkyl (C14 50%, C16 10%, C12 40%) Dimethyl Benzyl Ammonium Chloride .. 0.52%
Other Ingredients: 99.48%
TOTAL: 100.00%

DIRECTIONS FOR USE:

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

WHERE TO USE

For use on hard, non-porous interior ceilings, walls, doors, and trim in nursing homes, assisted living facilities or other group homes, day care centers, doctor & dentist offices, and non-critical areas of hospitals such as waiting rooms, examination rooms, hallways and walkways. For use in residences, offices, commercial facilities, universities, colleges, dorm rooms, and health clinics. Do not use on floors or on exterior surfaces.

Paint Shield™ Interior Latex Eg-Shel Microbicidal:

• Introducing the first EPA-registered paint that continuously kills 99.9% of Methicillin-resistant *Staphylococcus aureus (MRSA)*, *Enterobacter aerogenes, Staphylococcus aureus* (Staph)*, and* Vancomycin resistant *Enterococci* (VRE) within 2 hours of exposure on a painted surface.

• Helps prevent the spread of bacteria on painted surfaces†.

• Painted surfaces kill greater than 99.9% of bacteria within 2 hours of exposure, and continue to kill 90% of bacteria even after repeated contamination.

†*Staphylococcus aureus* (Staph)*, Enterobacter aerogenes,* Methicillin-resistant *Staphylococcus aureus (MRSA)*, Vancomycin-resistant *Enterococcus faecalis* (VRE), and *Escherichia coli* (E.coli)*.*

Extra White D12W00051

Vehicle Type:
VOC (less exempt solvents):
< 50 g/L; 0.42 lb/gal
As per 40 CFR 59.406 and SOR/2009-264, s.12
Volume Solids: 41.5 ± 2%
Weight Solids: 58 ± 2%
Weight per Gallon: 11.49 lb

SPECIFICATIONS

Required; 2 coats of paint over a primer for new construction or 2 coats of paint over previously painted sound surfaces:

On Drywall: Use Harmony® Latex Primer, or equivalent
On Masonry: Use Loxon® Concrete & Masonry Primer, or equivalent
On Block: Use Loxon® Block Surfacer, or equivalent
On Plaster: Use Premium Wall & Wood Primer, or equivalent
On Wood: Use Premium Wall & Wood Primer, or equivalent

APPLICATION

Apply at temperatures above 50°F.
Do not thin. Apply two coats by brush (nylon/polyester) or roller (1/4" – 3/4" nap synthetic cover).
Do not apply by airless sprayer.

Color: ~550 colors available
Coverage: 350 - 400 sq ft/gal @ 4.0 mils wet; 1.8 mils dry
Drying Time, @ 77°F, 50% RH:
Touch: 1 hour
Recoat: 4 hours
Drying and recoat times are dependent on temperature, humidity, and film thickness.
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (**NIOSH** approved) or leave the area.
Flash Point: N/A
Finish: Eg-Shel
Tinting with CCE only:

Base	oz/gal	Strength
Extra White	0-3 oz	Special

May be tinted with no more than 3 oz. of ColorCast Ecotoner® colorant per gallon. Do not exceed 3 ounces per gallon of total colorant. Check color before use.

SURFACE PREPARATION

ATTENTION! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (**NIOSH** approved) and proper containment and cleanup. For more information, call the National Lead Information Center at **1-800-424-LEAD** (in US) or contact your local health authority.
To determine what protective measures must be taken while using this product, read the Directions for Use and the Precautionary Statements on the label.

Remove surface contaminants with an appropriate cleaner. Remove peeled or damaged paint. Sand glossy surfaces dull. Seal stains with the appropriate primer.

Drywall: Fill cracks and holes with patching paste or spackle and sand smooth.

Masonry, Cement, Block: Fill rough surfaces with block filler. All surfaces must be cured. If not cured, use Loxon® Concrete & Masonry Primer. Remove all form release and curing agents.

Plaster: Plaster must be cured and hard.

Wood: Sand to a fresh surface. Patch imperfections with a wood filler.

Caulking: Fill gaps with appropriate caulk after priming.

PDS provided for informational purposes only and based upon information known at the time of publication. Please visit HEARS on the Web in SOURCE to obtain the most current version and/or an SDS.

continued on back

101.99

PAINT SHIELD®

Interior Latex
Eg-Shel
Microbicidal

D12W00051 Extra White

SURFACE CARE AND REPAINT SCHEDULE

The surface may be cleaned when soiled and up to once per month or based on current standard cleaning schedule. Cleaning does not impact bacterial reduction performance of the surface.

To insure continuous protection, repaint surface if film becomes damaged (cracked, chipped, etc.) or if paint becomes covered (i.e., film, wax, oils, other paints, crayons, etc.) or within 4 years.

The use of an antimicrobial treated surface is a supplement to and not a substitute for standard infection control practices; user must continue to follow all current infection control practices, including those practices related to cleaning and disinfection of environmental surfaces. The painted surface material has been shown to reduce microbial contamination, but does not necessarily prevent cross contamination.

Proper Care and Use: The use of Sherwin-Williams Paints does not replace standard infection control procedures and good hygienic practices. The surfaces must be cleaned and disinfected according to standard practice. Health care facilities must maintain the product in accordance with infection control guidelines; users must continue to follow all current infection control practices, including those practices related to disinfection of environmental surfaces.

Cleaning Directions: Routine cleaning to remove dirt and filth is necessary for good sanitization and to assure the effective antibacterial performance of the surface. Cleaning agents typically used on painted surfaces are permissible. The appropriate cleaning agent depends on the type of soiling and the measure of sanitization required.

FIRST AID:

IF IN EYES:
– Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.
– Call a poison control center or doctor for treatment advice.

IF ON SKIN:
– Take off contaminated clothing.
– Rinse skin immediately with plenty of water for 15-20 minutes.
– Call a poison control center or doctor for treatment advice.

IF SWALLOWED:
– Call a poison control center or doctor immediately for treatment advice.
– Have person sip a glass of water if able to swallow.
– Do not induce vomiting unless told to by a poison control center or doctor.

Do not give anything to an unconscious person.

Have the product container label with you when calling a Poison Contol Center or doctor or going for treatment. For emergency information concerning this product, call the National Pesticides Information Center at 1-800-858-7378, 6:30 AM to 4:30 PM Pacific time (PT), seven days a week. During other times, call the poison control center 1-800-222-1222.

PRECAUTIONARY STATEMENTS: HAZARD TO HUMANS AND DOMESTIC ANIMALS.

CAUTION: Causes moderate eye irritation. Harmful if absorbed through the skin or swallowed. Avoid contact with eyes, skin, or clothing. Wear safety glasses and gloves. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

ATTENTION: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN. FOR INTERIOR USE ONLY. PROTECT FROM FREEZING. ENVIRONMENTAL HAZARDS

Do not apply directly to lakes, streams, ponds, estuaries, oceans or other waters by cleaning of equipment or disposal of wastes. Dispose of paint debris in an approved landfill. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE:

Store away from food and pet food. **Open dumping is prohibited.** Keep container closed when not in use. Do not transfer contents to other containers. Protect pesticide containers from extreme heat and cold.

PESTICIDE DISPOSAL and CONTAINER HANDLING:

Nonrefillable container. Do not reuse or refill this container. *If empty: Place in trash or offer for recycling if available. If partly filled: Call your local solid waste agency for disposal instructions.* Never place unused product down any indoor or outdoor drain. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Shades by Crossville®

Porcelain Stone

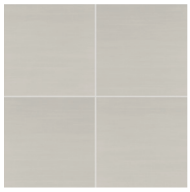
PWT-1,2,3,4,5,6,7,8,9

Color Palette

AV241 ▸ Frost UPS

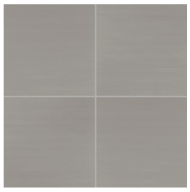
AV242 ▸ Vapor UPS

AV243 ▸ Fog UPS



AV244 ▸ Mist UPS

AV245 ▸ Clay UPS



AV246 ▸ Ash UPS

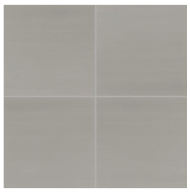
AV241 ▸ Frost HON

AV242 ▸ Vapor HON

AV243 ▸ Fog HON

AV244 ▸ Mist HON

AV245 ▸ Clay HON

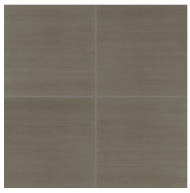


AV246 ▸ Ash HON

AV247 ▸ Haze UPS

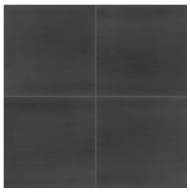
AV248 ▸ Thunder UPS

AV249 ▸ Ink UPS



AV247 ▸ Haze HON

AV248 ▸ Thunder HON



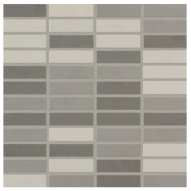
AV249 ▸ Ink HON

Features and Benefits

- Honed mosaics and metallic borders add design versatility and aesthetic appeal
- Cross-Sheen® finish for easy cleaning (available on UPS only)
- Comprised of nine contemporary colors
- Field tile is **rectified** and designed to be modular with a minimum 3mm grout joint
- Features subtle linear pattern. This pattern can run in the same direction or alternate to provide greater visual texture
- Contains a minimum of 4% pre-consumer recycled content and is manufactured by Crossville® using processes that is Green Squared℠ certified

Mosaic blends available**

SBC1/.10103HMOS ▸
Warm Grays
(AV243, AV245, AV247)



SBC2/.10103HMOS ▸
Cool Grays
(AV244, AV246, AV248)

SBC3/.10103HMOS ▸
Whites
(AV241, AV242)

1 x 3 Mosaic Border***

SBC1/.10212MT ▸ Luster

SBC2/.10212MT ▸ Shine

** Honed finish only.
*** Globally sourced.

CROSSVILLE®
ELEVATE YOUR SPACE

Crossville, Inc. • P.O. Box 1168, Crossville, TN 38557 • Phone: 931.484.2110 • Fax: 931.456.2956 • E-Mail: Crossc@CrossvilleInc.com • CrossvilleInc.com

Shades by Crossville®

Porcelain Stone

Sizes & Finishes

Field Tile

Available in all colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
6 x 24	147 x 597	10.5	UPS/HON
12 x 24	297 x 597	10.5	UPS/HON
24 x 24	597 x 597	10.5	UPS/HON

Note: All field tile is **rectified** and modular with a minimum 3mm grout joint.
Actual measurements stated in inches indicate tile is calibrated (non-rectified).
Actual measurements stated in mm indicate tile is rectified.

Mosaic & Mosaic Border

Available in all colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
1 x 3 Mosaics*	297 x 297	10.5	HON
1 x 3 Mosaics Border**	47 x 334.5	10.5	Metallic

* 1 x 3 honed mosaics mesh mounted in 11-7/8 x 11-7/8 sheets.
** Mounted on a 2 x 13 sheet. Globally sourced.

Coordinating Trim

Available in all colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
4 x 24 Single Bullnose	96 x 597	10.5	UPS/HON
6 x 12 Cove Base	150 x 297	10	UPS

4 x 24 Bullnose
Honed (Honed finish) is semi-polished

6 x 12 Cove Base (universal, flat top)

Product Performance

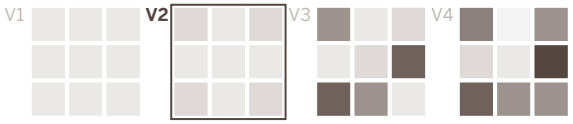
Breaking Strength	>500 lbf	ASTM C648
Bond Strength	>200 psi	ASTM C482
Chemical Resistance	Unaffected	ASTM C650
Frost Resistance	Resistant	ASTM C1026
Water Absorption	<0.20%	ASTM C373
Scratch Hardness	7	Mohs Scale

Wet Dynamic COF

UPS	0.50 – 0.60	DCOF AcuTest™
HON	0.42 – 0.52	DCOF AcuTest™

Shade & Texture Index

Shades by Crossville™ has a shade variation of V2.



V1 Uniform appearance
V2 Slight Variation
V3 Moderate Variation
V4 Substantial Variation

This porcelain tile product is produced with a V2 variation. Differences among pieces from the same production run are minimal. Inspect the product upon delivery and for best results, blend tile from several cartons during installation.

Sizes (Shown in AV248 Thunder UPS)

Get Planked!

Our Porcelain Stone® products are available in popular plank shapes with no minimum order and quick fulfillment. Depending on the product, there are up to 4 widths and 7 lengths, creating more than 2,796 combinations.

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Shades by Crossville®

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Recommended Use

Shades by Crossville® is recommended for interior floors, walls, countertops, and exterior walls in both residential and commercial applications. Shades by Crossville™ is not recommended for exterior horizontal surfaces or exterior paving. **The honed field tile is not recommended for wet areas where standing water may occur.** If offset pattern is required for tiles 18 inches or longer, Crossville® recommends an offset of not greater than 33%. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage.See CrossvilleInc.com for detailed installation instructions.

Wet Tile Use

Crossville® produces the Shades by Crossville® mosaics with the honed (HON) finish and the AcuTest℠ Wet Dynamic COF ≥ .42. Their small sizes ensure frequent grout joints which provides traction and drainage. Crossville cannot control situations involving incorrect installation, improper slope to the drain for elimination of standing water and poor surface cleaning.

This information is provided so that customers may make a realistic and informed decision when comparing Shades by Crossville to other tile products in wet area environments, such as residential/commercial bathrooms, showers, and interior pool decks.

Care and Maintenance

Regular cleaning is the best way to keep Shades by Crossville® tile looking good for years to come. Use clean, hot water (combined with a household cleaner for more aggressive cleaning). Rinse thoroughly and dry with a soft cloth. No waxes are needed. More information regarding the care and maintenance of Crossville® products is available at CrossvilleInc.com.

EcoCycle Tile Process™

Shades by Crossville® contains a minimum of 4 percent pre-consumer recycled content and is manufactured by Crossville® using processes that recycle nearly 12 million pounds of previously discarded filtrate and fired tile waste. In addition to its own fired waste recycling, Crossville also accepts and recycles reclaimed, previously installed tile through its Tile Take-Back™ Program. For more information, visit CrossvilleInc.com/green.

Green Squared℠ Certified

Crossville® has earned Green Squared℠ certification from the Tile Council of North America (TCNA) for its entire U.S.-manufactured porcelain product line-up, as well as its manufacturing processes. The company is among the first ever recipients of this certification standard for the tile industry. TCNA developed the Green Squared certification under American National Standards Institute (ANSI) process. The multi-attribute program (ANSI A138.1) scores products in five categories of performance: product characteristics, manufacturing, corporate governance, innovation and end-of-life. Crossville's certified products and processes received stringent evaluation from Scientific Certification Systems (SCS), the green building industry's longest standing third-party certifier.

Hydrotect

Our porcelain tiles are available with Hydrotect™. Crossville's revolutionary invisible coating harnesses the power of light, water, and oxygen to create the best defense against dirt and pollution. Whether indoors or out, floors and walls stay cleaner, providing a superior experience in any space. For complete details check our website at CrossvilleInc.com.

HYDROTECT™ by CROSSVILLE

National Accounts

For over 20 years we have been offering Porcelain tile to commercial customers at National Accounts pricing programs with special discounts. The National Accounts department provides materials forecasting, sales support and samples.

Exterior Cladding

Crossville's Porcelain Stone® Exterior Cladding Systems are suitable for virtually any conventional masonry application. When used in conjunction with our exterior cladding systems, Crossville's Porcelain Stone offers clear advantages: decreased construction costs, less site disturbance, low-to-zero maintenance after installation, accelerated construction schedules and greater strength than traditional masonry.

Our Warranty

Crossville Inc. guarantees that its products will meet or exceed the performance specifications outlined in ANSI A137.1-2012 and in the performance data section of the Crossville, Inc. general product catalog. For complete details check our website at CrossvilleInc.com.

Crossville® Sample Express

Sample fulfillment & Help Line
Samples@CrossvilleInc.com
1 800 221.9093

Loose Samples for
Architects & Designers

Loose Tile Samples
Sizes may vary depending on product series
Max. of 4 large field tile per order

Replacement Chips for PSS Rack
Max. of 5, 2 x 2 chips per color

Standard Shipping
UPS Ground

Information listed here is subject to change. Please refer to CrossvilleInc.com for the latest, most accurate information.

Trade Organizations

Environmentally Aware

FS-SHADES-8-17

Argent

Porcelain Stone®

Color Palette

A1401 ▸ Winter Garden I

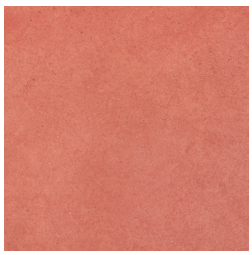
A1413 ▸ Under the Sea I

A1410 ▸ Orange Crush III

A1417 ▸ Clean Slate II

A1402 ▸ Sacred Sand I

A1405 ▸ Hollywood and Vine II



A1411 ▸ Sunset Boulevard III

A1414 ▸ Carnegie Cool III

A1409 ▸ Lemon Drop II

A1406 ▸ Emerald City II

A1412 ▸ Chicago Fire III

A1415 ▸ Memphis Blues III

A1403 ▸ No Reservations I

A1407 ▸ Water Vapors II

A1418 ▸ Concrete Jungle I

A1416 ▸ Grapes of Wrath III

A1404 ▸ Cowboy Up I

A1408 ▸ Glacier Lake II

A1419 ▸ Muddy Waters I

A1420 ▸ On the Rocks II

I = Price Group I, II = Price Group II, III = Price Group III

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Argent

Porcelain Stone®

Sizes & Finishes

Field Tile

Available in all colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
6 x 6*	147 x 147	9.5	UPS
6 x 24*	147 x 602.5	9.5	UPS
12 x 24	299 x 602.5	9.5	UPS/HON

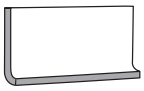
*HON finish available through special order
All field tiles except 12 x 12* are rectified and modular with a 4.5 mm grout joint. 12 x 12 is nonrectified, recommended grout joint 3/16 to 1/4 inch.

Nominal (in)	Actual (in)	Thickness (mm)	Finish
12 x 12*†	11-13/16 x 11-13/16	9.5	UPS

*HON finish available through special order
† Calibrated and measured in inches
Note: All field tile exc.ept 12 x 12† are rectified and modular with a 4.5mm grout joint.
12 x 12† is non-rectified, recommended grout joint of 3/16" to 1/4"

Coordinating Trim

Nominal (in)	Actual (in)	Thickness (in)	Finish
6 x 12 Cove Base	147 x 299	9.5	UPS
4 x 12 Single Bullnose	96 x 299	9.5	UPS



6 x 12 Cove Base (universal, flat top) (available only in A1401, A1402, A1403, A1404, A1417, A1418, A1419 and A1420)

4 x 12 Single Bullnose (available in all colors)

Product Performance

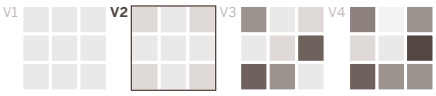
Breaking Strength	>500 lbf	ASTM C648
Bond Strength	>200 psi	ASTM C482
Chemical Resistance	Unaffected	ASTM C650
Frost Resistance	Resistant	ASTM C1026
Water Absorption	<0.20%	ASTM C373
Scratch Hardness	7	Mohs Scale

Wet Dynamic COF

UPS	.50 – .60	DCOF AcuTest™
HON	.42 – .52	DCOF AcuTest™

Shade & Texture Index

Argent has a shade variation of V2.

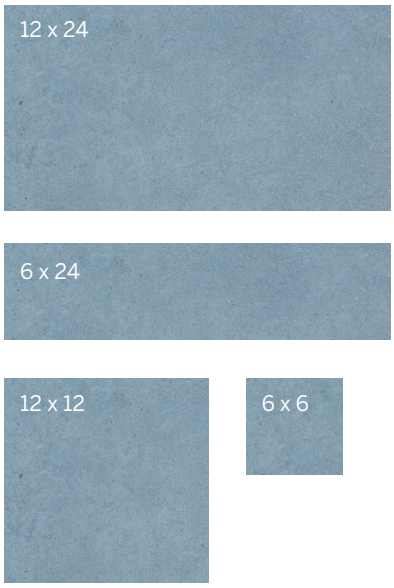


V1 Uniform appearance
V2 Slight Variation
V3 Moderate Variation
V4 Substantial Variation

This porcelain tile product is produced with a V2 variation. Differences among pieces from the same production run are minimal. Inspect the product upon delivery and for best results, blend tile from several cartons during installation.

Information listed here is subject to change. Please refer to CrossvilleInc.com for the latest, most accurate information.

Sizes (UPS and HON Finish)



Get Planked!

Our Porcelain Stone® products are available in popular plank shapes with no minimum order and quick fulfillment. Depending on the product, there are up to 4 widths and 7 lengths, creating more than 2,796 combinations.

A1405 ▸ Hollywood and Vine 12 x 24, 6 x 24 and 3 x 24
A1406 ▸ Emerald City 12 x 24, 6 x 24 and 3 x 24

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Argent

Crossville, Inc.
PO Box 1168
Crossville, TN
38557

Phone 931.484.2110
Fax 931.456.2956
E-Mail Crossc@CrossvilleInc.com
Web CrossvilleInc.com

Features and Benefits

- Broad coordinating color palette provides dramatic design versatility
- Rectangular sizes are enhanced with Get Planked® options
- Cross-Sheen® finish for easy cleaning (available on UPS only)
- Honed colors available in stock as 12 x 24

Recommended Use

Argent is recommended for interior floors, walls, countertops, and exterior walls in both residential and commercial applications. Argent is not recommended for exterior horizontal surfaces or exterior paving. The honed finish is not recommended for wet areas where standing water may occur. If offset pattern is required for tiles 18 inches or longer, Crossville® recommends an offset of not greater than 33%. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage. See CrossvilleInc.com for detailed installation instructions.

Care and Maintenance

Regular cleaning is the best way to keep Argent tile looking good for years to come. Use clean, hot water (combined with a household cleaner for more aggressive cleaning). Rinse thoroughly and dry with a soft cloth. No waxes are needed. More Information regarding the care and maintenance of Crossville® products is available at CrossvilleInc.com.

Photo Below:
A1409 ▸ Lemon Drop 6 x 24
A1402 ▸ Winter Garden 12 x 24

EcoCycle Tile Process™

Argent contains a minimum of 4 percent pre-consumer recycled content and is manufactured by Crossville® using processes that recycle nearly 12 million pounds of previously discarded filtrate and fired tile waste. In addition to its own fired waste recycling, Crossville also accepts and recycles reclaimed, previously installed tile through its Tile Take-Back™ Program. For more information, visit CrossvilleInc.com/green.

Green Squared℠ Certified

Crossville® has earned Green Squared℠ certification from the Tile Council of North America (TCNA) for its entire U.S.-manufactured porcelain product line-up, as well as its manufacturing processes. The company is among the first ever recipients of this certification standard for the tile industry. TCNA developed the Green Squared certification under American National Standards Institute (ANSI) process. The multi-attribute program (ANSI A138.1) scores products in five categories of performance: product characteristics, manufacturing, corporate governance, innovation and end-of-life. Crossville's certified products and processes received stringent evaluation from Scientific Certification Systems (SCS), the green building industry's longest standing third-party certifier.

Hydrotect

Our porcelain tiles are available with Hydrotect™. Crossville's revolutionary invisible coating harnesses the power of light, water, and oxygen to create the best defense against dirt and pollution. Whether indoors or out, floors and walls stay cleaner, providing a superior experience in any space. For complete details check our website at CrossvilleInc.com.

HYDROTECT™ by CROSSVILLE

National Accounts

For over 20 years we have been offering Porcelain tile to commercial customers at National Accounts pricing programs with special discounts. The National Accounts department provides materials forecasting, sales support and samples.

Exterior Cladding

Crossville's Porcelain Stone® Exterior Cladding Systems are suitable for virtually any conventional masonry application. When used in conjunction with our exterior cladding systems, Crossville's Porcelain Stone offers clear advantages: decreased construction costs, less site disturbance, low-to-zero maintenance after installation, accelerated construction schedules and greater strength than traditional masonry.

Crossville® Sample Express

Sample fulfillment & Help Line
Samples@CrossvilleInc.com
1 800 221.9093

Loose Samples for
Architects & Designers

Loose Tile Samples
Sizes may vary depending on product series
Max. of 4 large field tile per order

Replacement Chips for PSS Rack
Max. of 5, 2 x 2 chips per color

Standard Shipping
UPS Ground

Our Warranty

Crossville Inc. guarantees that its products will meet or exceed the performance specifications outlined in ANSI A137.1-2012 and in the performance data section of the Crossville, Inc. general product catalog. For complete details check our website at CrossvilleInc.com.

Information listed here is subject to change. Please refer to CrossvilleInc.com for the latest, most accurate information.

Trade Organizations

Environmentally Aware

FS-ARGENT-8-17

MANUFACTURER

Iris U.S.
1360 S Vernon Street,
Anaheim, CA 92805
Telephone: **800.323.9906**
Fax: **866.398.4747**
Web: **www.irisus.com**

1. PRODUCT NAME

Travertini Al Contro Collection

Bianco Al Contro

Grigio Al Contro

Argento Al Contro

Note to Specifier: Click on color with Internet Connection to hyperlink directly to product color data at the Iris US website.

2. PRODUCT DESCRIPTION

(Green Choice includes pre-consumer recycled materials and post-consumer recycled materials)

Iris US proudly contains factory and products certifications:

Size/thickness:

24" x 48" x 5/16" nominal
8" x 48" x 5/16" nominal
12" x 24" x 5/16" nominal
6" x 24" x 5/16" nominal

Finishes:
Honed and Polished

Recommended Grout Joint: 3/32" or greater
All sizes modular with 3/16" grout joint (≈5 mm)

Grout joints of 1/8" inch or less, especially with larger format tiles or running bond patterns, may require floor flatness values in excess of the 1/4" in 10' (or 1/16" in 1.0') standard required by ANSI.

See ANSI A108.01 2.6.2.2

For patterns with running bond/brick joints patterns Iris US recommends a maximum of 33% offset.

See ANSI A108.02 section 4.3.8

3. TECHNICAL DATA

Physical Properties	ASTM Test	Industry Standards	Iris US Results
Water Absorption	C373	Impervious <0.5%	≤ 0.1%
Thickness Dimension	C499	Range ±0.04in Max.	≤ ±0.04 in
Facial Dimension	C499	±0.25%	≤ ±0.25%
Warpage Average	C485	± 0.40% on any edge	≤ ± 0.40%
Warpage Average	C485	± 0.40% on diagonal	≤ ± 0.40%
Wedging Average	C502	± 0.25%	≤ ± 0.25%
Bond Strength	C482	≥ 50 psi	≥ 200 psi
Breaking Strength	C648	≥ 250 lbf	≥ 400 lbf
Hardness (Mohs)	Scratch Test (No regulated)	Range 0 - 10	≥ 7
Visible Abrasion Resistance for Glaze Tile	C1027	No requirement Range 0 - 5	Class 4
Frost Resistance (Freeze/Thaw)	C1026	No sample must show alterations to surface	No evidence of damage
Chemical Resistance	C650	No Requirement Range E - A	Class A
Stain Resistance	C1378	No Requirement Range E - A	Class A*
Coefficient of Friction (Dynamic)	DCOF Acutest sm (wet)	≥ 0.42	≥ 0.50*
Aesthetic Classification	Visual Evaluation Shade & Texture	No Requirement Range V0 – V4	V2

* All values given are for matte or honed material. No values are given for polished material. Iris U.S. does not recommend polished surfaces in area subject to exposure from grease, oil or water.

For level interior spaces to be walked upon when wet (see ANSI A137.1 section 6.2.2.1.10 – Section 9.6 for test procedure).

4. INSTALLATION

All installation work using Iris US tiles will conform to the standards set forth in the latest version of ANSI A108/118 and/or the TCNA Handbook for Ceramic Tile installations.

Installation or setting materials:

Movement joints shall be provided throughout the tile and work will conform to ANSI Specification A108.01-3.7; A108.02 – 4.4. and TCNA Details EJ171.

Setting materials used will conform to the ANSI 118.4 standard or greater and be recommended by the selected manufacturer for the installation & setting materials for ceramic or porcelain tile based on the application requirements.

5. WARRANTY

Iris US guarantees that its products will be free of manufacturing defects and they will meet or exceed the performance specifications set forth in ANSI 137.1.

6. MAINTENANCE

Care and Maintenance Recommendations Guide

Please refer to **Iris US Care and Maintenance Recommendations Guide** for all technical information as to the care of this collection.

7. TECHNICAL SERVICES

Technical Assistance

Guide Specifications, literature, MSDS, tile samples, details and installation procedures are all available for your use or libraries.

Please contact your nearest Iris US representative for catalogues, physical samples, or architectural binders.

PWT-13,14,17,18

Nest™

Porcelain Stone®

Oak Colors

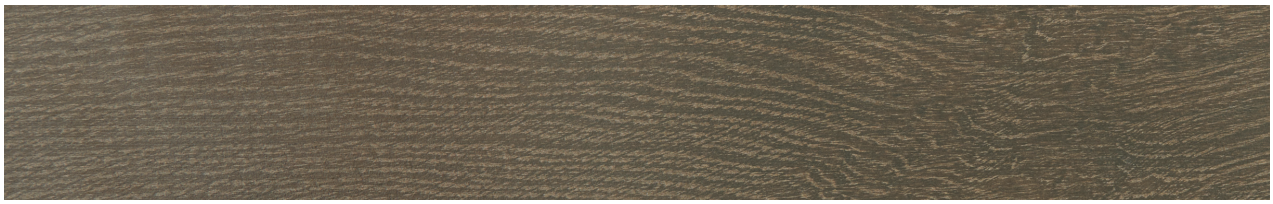
AV351 ▸ Levity Oak

AV352 ▸ Joyous Oak

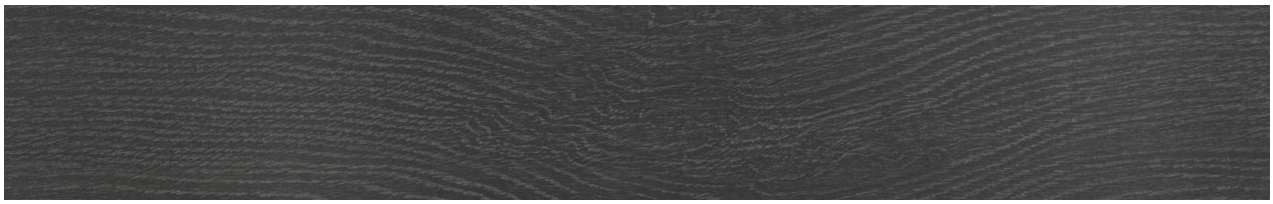
AV353 ▸ Blissful Oak

AV354 ▸ Mindful Oak

AV355 ▸ Peaceful Oak



AV356 ▸ Slumber Oak



AV357 ▸ Meditative Oak

CROSSVILLE®
ELEVATE YOUR SPACE

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Nest™

Porcelain Stone®

Olive Colors

AV361 ▸ Levity Olive

AV362 ▸ Joyous Olive

AV363 ▸ Blissful Olive

AV364 ▸ Mindful Olive

AV365 ▸ Peaceful Olive

AV366 ▸ Slumber Olive

AV367 ▸ Meditative Olive

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Nest™

Porcelain Stone®

Olive Colors

NBC01 ▸ Levity in Oak and Olive MIX
1 x 6 Mosaics

NBC02 ▸ Joyous in Oak and Olive Mix
1 x 6 Mosaics

NBC03 ▸ Blissful in Oak and Olive Mix
1 x 6 Mosaics

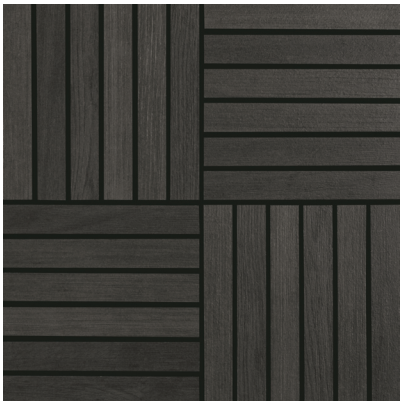
NBC04 ▸ Mindful in Oak and Olive Mix
1 x 6 Mosaics

NBC05 ▸ Peaceful in Oak and Olive Mix
1 x 6 Mosaics

NBC06 ▸ Slumber in Oak and Olive Mix
1 x 6 Mosaics

Features and Benefits

- Nest™ offers a soothing, neutral color palette, all with the sophisticated clean graining of premium wood .
- The two available grains replicate the allure of rough cut oak planks and the simplistic beauty of olive wood
- Both grains are offered in seven distinct colors that compliment the characteristics of each species
- Combine the 1 x 6 sheet mounted mosaics and 3 x 15 planks for a unique parquet look
- Coordinates with Notorious™ for additional design opportunities
- Modular sizes 6 x 36 and 8 x36 including a flexible 3 x 15 plank
- A trim package with both bullnose and cove base
- Contains a minimum 4 percent pre-consumer third-party recycled content and is Green Squared℠ Certified.
- Made in U.S.A.



NBC07 ▸ Meditative in Oak and Olive Mix
1 x 6 Mosaics

NBC08 ▸ Levity, Blissful, and Mindful in Olive Mix
1 x 6 Mosaics

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Nest™

Porcelain Stone®

Sizes UPS Finish, available in all colors

1 x 6 Mosaics
(shown in NBC02)
UPS Finish,
8 colors available
Mesh mounted on a
297mm x 297mm sheet

Sizes & Finishes

Field Tile

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
3 x 15	72 x 372	10.5	UPS
6 x 36	147 x 897	10.5	UPS
8 x 36	197 x 897	10.5	UPS

Note: All field tile is rectified and modular with a minimum 3mm grout joint.
Actual measurements stated in inches indicate tile is calibrated (non-rectified).
Actual measurements stated in mm indicated tile is rectified.

Mosaics

Available in 8 colors

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
1 x 6 Mosaics	297 x 297	10.5	UPS

Mesh mounted on a 297mm x 297mm sheet.

Coordinating Trim

Nominal (in)	Actual (mm)	Thickness (mm)	Finish
6 x 18 Single Bullnose	147 x 447	10.5	UPS
6 x 12 Cove Base (Olive only)	150 x 297	10	UPS

6 x 18 Single Bullnose

6 x 12 Cove Base
(Olive only)

Product Performance

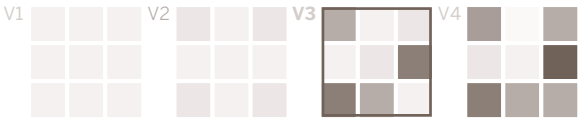
Breaking Strength	>450 lbf	ASTM C648
Bond Strength	>200 psi	ASTM C482
Chemical Resistance	Unaffected	ASTM C650
Frost Resistance	Resistant	ASTM C1026
Water Absorption	<0.10%	ASTM C373
Scratch Hardness	7	Mohs Scale

Wet Dynamic Coefficient of Friction

UPS	.42 – .52	AcuTest℠

Shade & Texture Index

Nest™ has a shade variation of V3.



V1 Uniform appearance
V2 Slight Variation
V3 Moderate Variation
V4 Substantial Variation

This porcelain tile product is produced with a V3 variation. Expect that the amount of color and texture on each piece may vary significantly. Inspect the product upon delivery and for best results, blend tile from several cartons during installation.

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Nest™

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Crossville, TN
38557

Phone 931.484.2110
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E-Mail Crossc@CrossvilleInc.com
Web CrossvilleInc.com

Recommended Use

Nest™ is recommended for interior floors, walls, counter tops and exterior walls in both residential and commercial applications. If offset pattern is required for tiles 18 inches or longer, Crossville® recommends an offset of not greater than 33%. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage. See CrossvilleInc.com for detailed installation instructions.

Care and Maintenance

Regular cleaning is the best way to keep Nest tile looking good for years to come. Use clean, hot water (combined with a household cleaner for more aggressive cleaning). Rinse thoroughly and dry with a soft cloth. No waxes are needed. More Information regarding the care and maintenance of Crossville® products is available at CrossvilleInc.com.

AV355 ▸ Peaceful Oak 6 x 36 on floor
NBC05 ▸ Peaceful in Oak and Olive Mix 1 x 6 Mosaics on shower floor
AV354 ▸ Mindful Oak 6 x 36 on wall

Hydrotect™

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HYDROTECT™ by CROSSVILLE

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National Accounts

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Exterior Cladding

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Loose Samples for
Architects & Designers

Loose Tile Samples
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Max. of 5, 2 x 2 chips per color

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UPS Ground

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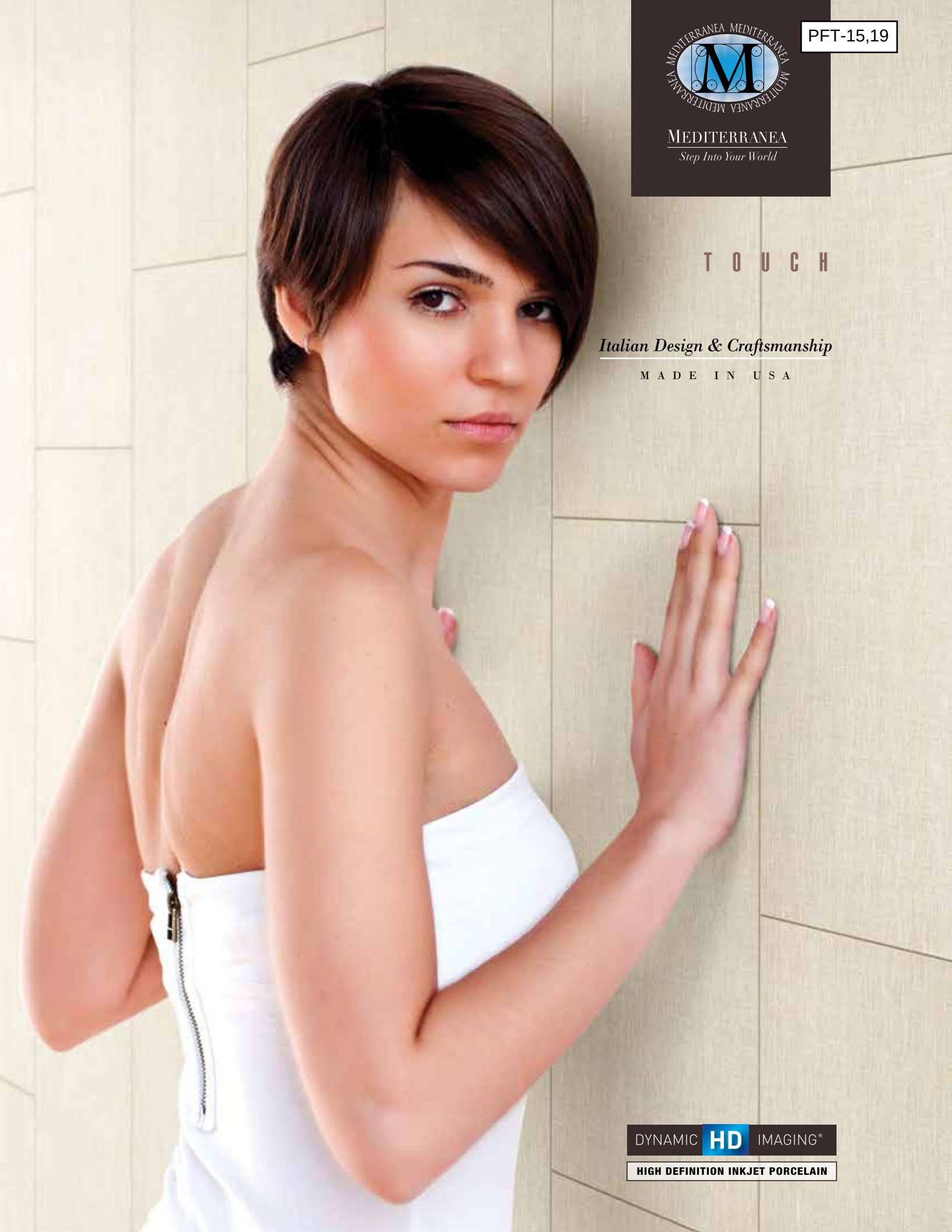
Trade Organizations

Environmentally Aware



PFT-15,19

MEDITERRANEA

Step Into Your World

TOUCH

Italian Design & Craftsmanship

MADE IN USA

DYNAMIC HD IMAGING®

HIGH DEFINITION INKJET PORCELAIN

S U N G L O W

18” x 36”
RECTIFIED

12” x 24”
RECTIFIED

12” x 12”
RECTIFIED

3” x 6”

3” x 12” BULLNOSE

3” x 12”

4” x 36” BULLNOSE

4” x 18”

DYNAMIC HD IMAGING®

HIGH DEFINITION INKJET PORCELAIN

E V E N I N G S U N S E T

P E A R L E S S E N C E

SNOW CREST

18” x 36”
RECTIFIED

12” x 24”
RECTIFIED

12” x 12”
RECTIFIED

3” x 6”

3” x 12” BULLNOSE

3” x 12”

4” x 36” BULLNOSE

4” x 18”

DYNAMIC HD IMAGING®

HIGH DEFINITION INKJET PORCELAIN

TECHNICAL SPECIFICATION TABLE

PHYSICAL PROPERTIES		TEST	AVG.RESULTS
	Visible Abrasion Resistance	ASTM C1027	4
	Water Absorption	ASTM C373	0.05%
	Chemical Resistance	ASTM C650	Class A
	Dynamic C.O.F.	BOT 3000	0.58
	MOHS		7
	Breaking Strength	ASTM C648	502 lbf

See me ... Feel me ... Touch me.

It's been over 40 years since Roger Daltrey of The Who sang those immortal lyrics in the rock opera "Tommy". And today, a porcelain tile has been created that you truly do have to see, feel and touch to totally experience. Mediterranea proudly introduces the Touch series – a product unlike any other in the 25-year history of the world-renowned tile design and manufacturing company.

Now available in the 18" x 36" format, Touch features a unique and unmistakable linen texture not found in other manufactured products. Running your hands over the surface, you understand that your eyes are not deceiving you – the tile truly does have the "touch" of the world's nest textured linen. Created using Mediterranea's unique Dynamic HD Imaging® design process, Touch features classic colors and subtle design elements to make it ideal for use in any distinctive installation. Touch is available in five refined colors suited for the most elegant settings – Evening Sunset (olive), Summer Breeze (taupe), Snow Crest (white), Sun Glow (beige) and Pearl Essence (grey).

Touch is manufactured in 18" x 36", 12" x 24" and 12" x 12", with artistic medallions featuring unique 3" x 6", 3" x 12" and 4" x 18" formats designed to satisfy the latest design trends. Bullnose in a 3" x 12" size is also available to round out the collection. Touch is truly a series for all the senses – a tile that needs to be both seen – and touched - to be appreciated.

Version: Dec. 6, 2016

MAPEI®

Kerapoxy®

Premium Epoxy Grout and Mortar

GRT-1,2,3,4,5

GREEN INNOVATION

R2 RG

DESCRIPTION

Kerapoxy is a premium-grade, water-cleanable, 100%-solids, high-strength epoxy mortar and chemical-resistant nonsagging grout. Available in all MAPEI colors for grouting, *Kerapoxy* is excellent for countertops, high-traffic areas, and areas needing stain and chemical resistance.

FEATURES AND BENEFITS

- Stain-free†
- No sealer required
- Water-cleanable

† *With immediate cleaning and proper maintenance,* Kerapoxy *stain-free grout is resistant to staining when exposed to most common household goods and cleaning agents. Long-term exposure to any material can increase the potential for staining grout.*

INDUSTRY STANDARDS AND APPROVALS

- ANSI: Meets A118.3 requirements
- ISO 13007: Classification R2/RG

LEED v4 Points Contribution — LEED Points

Health Product Declaration (HPD)* ..... Up to 2 points

** Using this product may help contribute to LEED certification of projects in the category shown above. Points are awarded based on contributions of all project materials.*

Additional Green Certifications

- Living Building Challenge (LBC) Red List Free: This product has been verified per the most current Red List on the LBC website.

WHERE TO USE

For use as a grout

- For grouting most ceramic, porcelain and quarry tiles; acid-resistant floor brick; pavers; and natural-stone tile**
- For grouting interior residential and commercial floor/wall applications
- For grouting exterior residential and commercial floor applications (contact MAPEI's Technical Services Department)
- For industrial, commercial and institutional installations with high-strength, chemical-resistant and nonsagging grout requirements, see "Chemical Resistance" chart in this document. For extreme industrial or commercial applications such as dairies, breweries and high-volume food kitchens, *Kerapoxy IEG CQ* is recommended.
- For heavy traffic areas such as subway stations, shopping malls and airport terminal buildings
- For areas requiring stain-resistant grout such as countertops, vanities and laboratory tabletops.

For use as a mortar

- For setting interior floors and walls
- For exterior installations (contact MAPEI's Technical Services Department)
- For setting most ceramic, porcelain and quarry tiles, acid-resistant floor brick, pavers and natural-stone tile**
- For the installation of moisture-sensitive natural stone and their agglomerates. When setting light-colored marble, which can be stained by epoxy, use white *Granirapid*®, white *Ultraflex*™ *RS* or white *Ultracontact*™ *RS* or white *Ultraflex LFT*™ *Rapid*.**

- For residential wall, floor and countertop installations
- For installations in areas subject to high water use or submerged conditions (such as gang showers, pools, spas and fountains)
- For industrial, commercial and institutional installations with high mortar requirements, see "Chemical Resistance" chart in this document.

*** Marble, granite and slate are products of nature made from a vast combination of minerals and chemicals that may cause the material to behave or react in a manner beyond our control. Likewise, we do not have control over any of the materials or processes used in the manufacturing of agglomerates. Therefore, determine the suitability of all the materials before proceeding with the installation. To ensure desired results, a mockup installation is required before the actual installation.*

LIMITATIONS

For use as a grout

- Joint width should be between 1/16" and 3/8" (1,5 and 10 mm).
- Do not use for grouting white or translucent marble.
- Do not use in areas subject to excessive heat. Once cured, *Kerapoxy* will resist temperatures up to 212°F (100°C).
- When used as a grout on exterior installations, color variations may occur over time, especially with lighter shades due to ultraviolet rays or environmental contaminants.

Note: Some types of glazed ceramic tiles, marble and granite as well as marble agglomerates can be permanently stained, scratched, dulled or damaged when grouted with pigmented, sanded and epoxy grout formulas. Take all the necessary precautions to ensure that the marble, granite or tiles are compatible with colored grouts. To determine the suitability of the product with colored and/or sanded grouts, check the tile or marble manufacturer's literature and test grout on a separate sample area before grouting.

For use as a mortar

- Do not install over substrates containing asbestos.
- Do not exceed 1/4" (6 mm) in epoxy mortar thickness under the tile.
- Do not apply over particleboard, presswood, oriented strand board (OSB), Masonite, chipboard, Luaun, gypsum floor-patching compounds or similar dimensionally unstable substrates.
- Do not install over peel-and-stick crack-isolation membranes or cutback adhesive residue.

SUITABLE SUBSTRATES

For use as a mortar

- Fully cured concrete (at least 28 days old)
- Cement block and brick masonry
- Cement mortars and leveling coats
- Exterior-grade plywood (interior residential floor and countertop applications in dry areas only)
- Cement backer units (CBUs)
- Existing ceramic tile
- Cement and epoxy terrazzo

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

SURFACE PREPARATION

The temperature of the substrate or tilework must be between 60°F and 90°F (16°C and 32°C) while grouting for best results. For proper curing, maintain this temperature range for 24 to 72 hours after application.

For use as a grout

- The application of a grout release over certain types of porcelain or textured surface tiles or stone may be advantageous where a fine surface porosity might trap fine cement particles or color pigments. Seek the advice of the tile or stone manufacturer and site-test (mock up) on separate samples before grouting.
- Before grouting, make sure that the tiles or stones are firmly set and that the adhesive or mortar is completely dry.
- Remove all spacers, pegs, ropes and strings.
- Grout joints must be clean and free of standing water, dust, dirt and foreign matter. Remove excess adhesive or mortar from the joint area so that 2/3 of the tile depth is left available for grouting.
- Clean the tile or stone surface to remove dust, dirt, mortar, adhesive and other contaminants that may cause grout discoloration.

For use as a mortar

- All substrates should be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion.

See MAPEI's "Surface Preparation Requirements" document in the Reference & Installation Guides section of the Tile & Stone Installations Systems page on MAPEI's Website.

MIXING

Choose all appropriate safety equipment before use. Refer to the Safety Data Sheet for details.

1. Parts A and B are packaged to exact quantity ratios for proper curing.
2. Pour out all material from the Part B container into Part A. To improve flowability, allow enough time for the material to flow completely out of the container. Always mix complete units. Do not add other materials to this mixture.
3. Use a slow-speed mixer (at about 300 rpm), or manually mix smaller kits with a margin trowel.

4. Avoid prolonged mixing, which will trap air and shorten the pot life.
5. Mix thoroughly until a homogenous, consistent color is obtained.
6. Wash tools immediately with water before the epoxy hardens. *Kerapoxy* is extremely difficult to remove once cured.
7. Do not place the lid on the container after the material has been mixed.

PRODUCT APPLICATION

For use as a grout

1. Remove mixed product from the container and place it in small piles. (If grouting a wall, place on kraft paper laid on the floor.) *Kerapoxy* is a thermosetting product, so that it sets up faster in a container or in a large mass.
2. Use a hard-rubber float with a sharp edge to force the grout into the joints in a continuous manner, leaving it flush with the tile edge.
3. Be certain that all joints are well-compacted and free of voids/gaps. Fill the joints with the maximum amount of grout possible.
4. Thoroughly remove excess *Kerapoxy* from the face of the tile before it loses its plasticity or begins to set. This is most easily accomplished by holding the rubber float at a 90-degree angle to the tile surface and dragging the float across the tile surface diagonally to the grout lines, leaving as little epoxy grout on the tile surface as possible.
5. Clean tiles immediately after applying each unit of *Kerapoxy*. Grout and clean in small areas. Do not attempt to use more than one *Kerapoxy* unit before cleaning tiles. Do not allow *Kerapoxy* to harden on the tile surface. On large projects, working in teams of 2 to 3 people will simplify the installation.

6a. For horizontal surfaces:

- Apply a liberal amount of cold water to the freshly grouted area. Scrub the tile surface diagonally to the joint line using a nonwoven, nylon, white scouring pad (use a more aggressive pad if the tile has an abrasive surface). Apply enough pressure on the pad to loosen any film without removing grout from the joints. Rinse pads frequently while cleaning. Be careful not to get any water in the ungrouted joints.
- To remove the loosened epoxy residue and water, drag a clean sponge diagonally across the tile surface. Use one side of the sponge for each pass over the tile, rinsing the sponge following the second pass and regularly changing water in the buckets to avoid residue buildup.
- Do not allow excess water to remain on the tile surface, which would allow a film to form on the surface that would be difficult to remove once hardened.
- In certain applications, a short-nap terry-cloth towel may be substituted for the sponge, which may work more effectively for removing the loosened epoxy residue and water. Using the "towel drag" method, hold the towel by two corners and drag it diagonally across the grout joints. Rinse the towel often and keep changing water in the buckets to avoid residue buildup.
- Do not step on freshly cleaned tiles, as this could permanently damage the grout.

6b. For vertical surfaces:

- Mist the surface using a spray bottle in small workable areas. Use a non-abrasive nylon scrubpad and apply enough pressure on the pad to loosen any film without removing grout from the joints. Rinse pads frequently while cleaning. Be careful not to get any water into the ungrouted joints.
- To touch up grout joint imperfections during initial rinsing, the grout joint can be smoothed with a sharp-edged cellulosic sponge.

7. Perform a final wash within 15 to 20 minutes for best results. To aid in the cleaning process, 1 U.S. oz. (29,6 mL) of a clear dishwashing soap may be added (if needed) to a 3-gallon (11,4-L) pail of clean water. Use a clean, white scrubpad to loosen any remaining residue left on the tile from the first wash. Then follow the same cleaning process as referenced in the section above.
8. Check the installation the following day to make sure it is completely clean. If a tacky residue is found within 24 hours of installation, follow the above instructions for the cleaning removal process.
9. Use only fresh material to fill any voids discovered while cleaning.
10. Check the installation the same day before leaving the jobsite to make sure it is completely clean. If the tile surface has any shiny or tacky residue, remove it with the solution of liquid detergent and water mentioned in Step 7. For more severe cases of epoxy grout haze, use MAPEI's *UltraCare*™ Epoxy Grout Haze Remover.

For use as a mortar

1. Remove the mixed product from the container and place it in piles on the floor. *Kerapoxy* is a thermosetting product, so it sets faster in a container or a large mass.
2. Choose a notched trowel (see the "Approximate Coverage" chart) with sufficient depth to achieve more than 80% mortar contact to both the tile and substrate for interior applications, and more than 95% contact for exterior installations, commercial floor installations and wet applications. All edges of the tile or stone must be supported by the mortar. It may be necessary to back-

butter tiles in order to reach these requirements. (Refer to ANSI A108.5 specifications and TCNA guidelines.)

3. With pressure, apply a coat by using the trowel's flat side to key mortar into the substrate.
4. Apply additional mortar, combing it in a single direction with the trowel's notched side.
5. Spread only as much mortar as can be tiled before the product hardens and loses its ability to transfer to the tile. Open time can vary with jobsite conditions.
6. Place the tiles firmly into the wet mortar. Push the tiles back and forth in a direction perpendicular to trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between the mortar, tile and substrate by periodically lifting a few tiles to check for acceptable coverage (see TCNA adhesive placement guidelines).
7. Remove excess mortar from the joint areas so that at least 2/3 of the tile depth is available for grouting (see ANSI A108.10 guidelines).
8. Provide for expansion and control joints as specified per TCNA Detail EJ171 or TTMAC Specification Guide 09 30 00, Detail 301MJ.
9. Clean tools immediately with fresh water.
10. Check the installation the same day before leaving the jobsite to make sure it is completely clean. If the tile surface has any shiny or tacky residue, remove it with a solution of 1 U.S. oz. (29,6 mL) of a clear dishwashing soap added (if needed) to a 3-gallon (11,4-L) pail of clean water.

PROTECTION

- Protect grout installations for at least 7 days, and wait at least 3 days before checking hardness.
- The optimum curing temperature is 73°F (23°C). Cooler temperatures may require extended protection times.
- Do not disturb grout or walk over installed tiles for at least 24 hours after setting. Do not allow heavy traffic over installed tiles for at least 48 hours after setting.
- Because propane gas heaters will yellow epoxy, refrain from using such heaters or properly vent all exhaust.
- *Kerapoxy* should be cured for at least 10 to 14 days at 73°F (23°C) before water immersion or exposure to chemicals. Longer times will be needed for colder temperatures.
- Do not allow any activity in the area that will cause dirt or debris to become embedded in the grout joints as they are curing.

MAINTENANCE

- *Kerapoxy* should be cured for at least 3 days before routine cleaning.
- When cleaning *Kerapoxy* as grout, keep steam-cleaning wands 6" to 12" (15 to 30 cm) above the tile surface.
- MAPEI grout products are produced to the highest standards of quality. To maintain a clean tile surface, use a neutral-pH cleaner for maintaining the floor, followed by a clean-water rinse.
- Do not use harsh chemicals to maintain the tile surface. Before proceeding with cleaning, consult the cleaner's manufacturer for compatibility, use and application instructions. Remove or rinse fatty acid residue from the grout surface to avoid potential grout deterioration caused by prolonged exposure.

CHEMICAL RESISTANCE (tested according to ISO 13007)

Resistance to chemicals depends on the concentration, temperature and duration of exposure. For long-term durability and improved grout appearance, clean up spills immediately after they occur.

Laboratory tests reveal variable resistance to certain chemicals. The following table may be considered as a general guide for *Kerapoxy* applications at 73°F (23°C).

For recommendations regarding chemicals not listed or concentrations exceeding the levels stated, contact MAPEI's Technical Services Department.

Legend

++ Excellent resistance

\+ Good resistance; long exposure could cause some deterioration; clean surface rapidly with water

\- Poor or no resistance

Product Types	Concentration	Laboratory	Long Time	Short Time
ACIDS				
Vinegar	2.5%	++	++	++
	5%	++	+	++
	10%	-	-	-
Hydrochloric acid	10%	++	++	++
Chromic acid	20%	-	-	-
Citric acid	10%	++	++	++
Formic acid	2.5%	++	++	++
	10%	-	-	-
Lactic acid	2.5%	++	++	++
	5%	++	+	++
	10%	+	-	+
Nitric acid	10%	++	+	++
	50%	-	-	-
Phosphoric acid	50%	++	++	++
	75%	+	-	+
Sulfuric acid	1.5%	++	++	++
	10%	++	++	++
	96%	-	-	-
Tannic acid	10%	++	++	++
Oxalic acid	10%	++	++	++
Oleic acid		-	-	-
BASE AND SALT SOLUTIONS				
Ammonia solution	25%	++	++	++
Caustic soda	50%	++	++	++
Hypochlorite solution				
• Act. CL 6.4 g/L		++	+	++
• Act. CL 165 g/L		-	-	-
Sodium hyposulfite		++	++	++
Calcium chloride		++	++	++
Iron chloride		++	++	++
Sodium chloride		++	++	++
Sodium chromate		++	++	++
Sugar		++	++	++
Aluminum sulfate		++	++	++
Potassium permanganate				
	5%	++	+	++
	10%	+	-	+
Caustic potash	50%	++	++	++
Hydrogen peroxide	1%	++	++	++
	10%	++	++	++
	25%	++	++	++
Sodium bisulfite		++	++	++
OILS AND COMBUSTIBLE PRODUCTS				
Gasoline		++	++	++
Turpentine		++	++	++
Diesel fuel		++	++	++
Peanut oil		++	++	++
Tar		++	+	+
Olive oil		++	++	++
Heating oil		++	++	++
SOLVENTS				
Acetone		-	-	-
Ethylene glycol		++	++	++
Glycerol		++	++	++
Methylcellosolve		-	-	-
Perchloroethylene		-	-	+
Carbon tetrachloride		+	-	+
Chloroform		-	-	-
Methylene chloride		-	-	-
Toluene		-	-	+
Carbon disulfide		+	-	+
Mineral spirits		++	++	++
Benzene		-	-	+
Trichloroethane		-	-	-
Xylene		-	-	-

Kerapoxy®

MAPEI®

ISO 13007 Classification

Classification Code	Test Characteristics	Classification Requirement
RG (reaction resin grout)	Abrasion resistance†	≤ 0.015 cu. in. (250 mm^3)
	Flexural strength†	Greater than 4,350 psi (30 MPa)
	Compressive strength†	Greater than 6,525 psi (45 MPa)
	Shrinkage†	Less than 0.06 in./3.28 ft. (1,5 mm/m)
	Water absorption†	Less than 0.0002 lb. (0,1 g)
R2 (reaction resin adhesive, improved)	Shear adhesion strength	≥ 2 N/mm^2
	Shear adhesion strength after water immersion	≥ 2 N/mm^2
	Open time: tensile adhesion strength	≥ 0,5 N/mm^2 after not less than 20 minutes
	Shear adhesion strength after thermal shock	≥ 2 N/mm^2

† *28-day cure*

ANSI Specification

Test Method	Specification Standard	Test Results
ANSI A118.3 (5.1) – water cleanability	80 minutes	Pass
ANSI A118.3 (5.2)		
Initial setting time	> 2 hours	Pass
Service setting time	< 7 days	Pass
ANSI A118.3 (5.3) – shrinkage	< 0.25%	Pass
ANSI A118.3 (5.4) – sag	No change	Pass
ANSI A118.3 (5.5) – quarry shear bond	> 1,000 psi (6,90 MPa)	Pass
ANSI A118.3 (5.6) – compressive strength	> 3,500 psi (24,1 MPa)	Pass
ANSI A118.3 (5.7) – tensile strength	> 1,000 psi (6,90 MPa)	Pass
ANSI A118.3 (5.8) – thermal shock	> 500 psi (3,45 MPa)	Pass

Shelf Life and Product Characteristics (before mixing)

Shelf life	2 years when stored in original, unopened packaging at 73°F (23°C)
Physical state	Resin (Part A) and hardener (Part B)
Colors	Available in MAPEI's palette of 40 colors, organized into 5 color collections. Refer to MAPEI's grout/caulk color chart. Sample color chips are available upon request.
VOCs (Rule #1168 of California's SCAQMD)	7 g per L

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

Application Properties at 73°F (23°C) and 50% relative humidity

Pot life††	45 to 60 minutes
Full cure††	14 days
Application temperature range	60°F to 90°F (16°C to 32°C)

†† *Pot life and curing time will vary depending on ambient temperature, substrate temperature and humidity.*

Packaging

Size
Kit: 1 U.S. qt. (946 mL)
Kit: 1 U.S. gal. (3,79 L)
Kit: 2 U.S. gals. (7,57 L)

Approximate Coverage*

• For use as a grout**

Coverage per 1 U.S. qt. (946 mL)				
Tile Size	Grout Joint Width			
	1/16" (1,5 mm)	1/8" (3 mm)	1/4" (6 mm)	3/8" (10 mm)
1" x 1" x 1/4" (25 x 25 x 6 mm)	14 sq. ft. (1,30 m²)	8 sq. ft. (0,74 m²)	4 sq. ft. (0,37 m²)	3 sq. ft. (0,28 m²)
2" x 2" x 1/4" (50 x 50 x 6 mm)	27 sq. ft. (2,51 m²)	14 sq. ft. (1,30 m²)	8 sq. ft. (0,74 m²)	6 sq. ft. (0,56 m²)
3" x 3" x 1/4" (75 x 75 x 6 mm)	40 sq. ft. (3,72 m²)	20 sq. ft. (1,86 m²)	11 sq. ft. (1,02 m²)	8 sq. ft. (0,74 m²)
4" x 4" x 3/8" (100 x 100 x 10 mm)	35 sq. ft. (3,25 m²)	18 sq. ft. (1,67 m²)	9 sq. ft. (0,84 m²)	7 sq. ft. (0,65 m²)
4" x 8" x 1/2" (100 x 200 x 12 mm)	35 sq. ft. (3,25 m²)	18 sq. ft. (1,67 m²)	9 sq. ft. (0,84 m²)	6 sq. ft. (0,56 m²)
4" x 8" x 3/4" (100 x 200 x 19 mm)	23 sq. ft. (2,14 m²)	12 sq. ft. (1,11 m²)	6 sq. ft. (0,56 m²)	4 sq. ft. (0,37 m²)
4" x 8" x 1-1/8" (100 x 200 x 29 mm)	15 sq. ft. (1,39 m²)	8 sq. ft. (0,74 m²)	4 sq. ft. (0,37 m²)	3 sq. ft. (0,28 m²)
4" x 8" x 1-3/8" (100 x 200 x 35 mm)	13 sq. ft. (1,21 m²)	6 sq. ft. (0,56 m²)	3 sq. ft. (0,28 m²)	2 sq. ft. (0,19 m²)
4-1/4" x 4-1/4" x 1/4" (108 x 108 x 6 mm)	56 sq. ft. (5,20 m²)	28 sq. ft. (2,60 m²)	15 sq. ft. (1,39 m²)	10 sq. ft. (0,93 m²)
6" x 6" x 1/4" (150 x 150 x 6 mm)	78 sq. ft. (7,25 m²)	40 sq. ft. (3,72 m²)	20 sq. ft. (1,86 m²)	14 sq. ft. (1,30 m²)
6" x 6" x 1/2" (150 x 150 x 12 mm)	39 sq. ft. (3,62 m²)	20 sq. ft. (1,86 m²)	10 sq. ft. (0,93 m²)	7 sq. ft. (0,65 m²)
8" x 8" x 3/8" (200 x 200 x 10 mm)	69 sq. ft. (6,41 m²)	35 sq. ft. (3,25 m²)	18 sq. ft. (1,67 m²)	12 sq. ft. (1,11 m²)
10" x 10" x 3/8" (250 x 250 x 10 mm)	86 sq. ft. (7,99 m²)	44 sq. ft. (4,09 m²)	22 sq. ft. (2,04 m²)	15 sq. ft. (1,39 m²)
12" x 12" x 1/2" (300 x 300 x 12 mm)	78 sq. ft. (7,25 m²)	39 sq. ft. (3,62 m²)	20 sq. ft. (1,86 m²)	13 sq. ft. (1,21 m²)
16" x 16" x 3/8" (406 x 406 x 10 mm)	138 sq. ft. (12,8 m²)	69 sq. ft. (6,41 m²)	35 sq. ft. (3,25 m²)	24 sq. ft. (2,23 m²)

Approximate Coverage*

• For use as a grout**

Coverage per 1 U.S. gal. (3,79 L)				
Tile Size	Grout Joint Width			
	1/16" (1,5 mm)	1/8" (3 mm)	1/4" (6 mm)	3/8" (10 mm)
1" x 1" x 1/4" (25 x 25 x 6 mm)	56 sq. ft. (5,20 m²)	31 sq. ft. (2,88 m²)	18 sq. ft. (1,67 m²)	14 sq. ft. (1,30 m²)
2" x 2" x 1/4" (50 x 50 x 6 mm)	108 sq. ft. (10,0 m²)	56 sq. ft. (5,20 m²)	31 sq. ft. (2,88 m²)	22 sq. ft. (2,04 m²)
3" x 3" x 1/4" (75 x 75 x 6 mm)	159 sq. ft. (14,8 m²)	82 sq. ft. (7,62 m²)	43 sq. ft. (3,99 m²)	31 sq. ft. (2,88 m²)
4" x 4" x 3/8" (100 x 100 x 10 mm)	140 sq. ft. (13,0 m²)	72 sq. ft. (6,69 m²)	37 sq. ft. (3,44 m²)	26 sq. ft. (2,42 m²)
4" x 8" x 1/2" (100 x 200 x 12 mm)	139 sq. ft. (12,9 m²)	71 sq. ft. (6,60 m²)	37 sq. ft. (3,44 m²)	25 sq. ft. (2,32 m²)
4" x 8" x 3/4" (100 x 200 x 19 mm)	93 sq. ft. (8,64 m²)	47 sq. ft. (4,37 m²)	24 sq. ft. (2,23 m²)	17 sq. ft. (1,58 m²)
4" x 8" x 1-1/8" (100 x 200 x 29 mm)	62 sq. ft. (5,76 m²)	32 sq. ft. (2,97 m²)	16 sq. ft. (1,49 m²)	11 sq. ft. (1,02 m²)
4" x 8" x 1-3/8" (100 x 200 x 35 mm)	51 sq. ft. (4,74 m²)	26 sq. ft. (2,42 m²)	13 sq. ft. (1,21 m²)	9 sq. ft. (0,84 m²)
4-1/4" x 4-1/4" x 1/4" (108 x 108 x 6 mm)	223 sq. ft. (20,7 m²)	114 sq. ft. (10,6 m²)	59 sq. ft. (5,48 m²)	41 sq. ft. (3,81 m²)
6" x 6" x 1/4" (150 x 150 x 6 mm)	313 sq. ft. (29,1 m²)	159 sq. ft. (14,8 m²)	82 sq. ft. (7,62 m²)	56 sq. ft. (5,20 m²)
6" x 6" x 1/2" (150 x 150 x 12 mm)	156 sq. ft. (14,5 m²)	79 sq. ft. (7,34 m²)	41 sq. ft. (3,81 m²)	28 sq. ft. (2,60 m²)
8" x 8" x 3/8" (200 x 200 x 10 mm)	277 sq. ft. (25,7 m²)	140 sq. ft. (13,0 m²)	72 sq. ft. (6,69 m²)	49 sq. ft. (4,55 m²)
10" x 10" x 3/8" (250 x 250 x 10 mm)	345 sq. ft. (32,1 m²)	174 sq. ft. (16,2 m²)	89 sq. ft. (8,27 m²)	60 sq. ft. (5,57 m²)
12" x 12" x 1/2" (300 x 300 x 12 mm)	310 sq. ft. (28,8 m²)	156 sq. ft. (14,5 m²)	79 sq. ft. (7,34 m²)	54 sq. ft. (5,02 m²)
16" x 16" x 3/8" (406 x 406 x 10 mm)	551 sq. ft. (51,2 m²)	277 sq. ft. (25,7 m²)	140 sq. ft. (13,0 m²)	94 sq. ft. (8,73 m²)

• For use as a mortar

Trowel Size	Coverage per 1 U.S. qt. (946 mL)	Coverage per 1 U.S. gal. (3,79 L)	Coverage per 2 U.S. gals. (7,57 L)
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm), square-notch	4.5 sq. ft. (0,42 m²)	18 sq. ft. (1,67 m²)	36 sq. ft. (3,34 m²)
5/32" x 5/32" (4 x 4 mm), V-notch	10 sq. ft. (0,93 m²)	40 sq. ft. (3,72 m²)	80 sq. ft. (7,43 m²)

** Trowel dimensions are width/depth/space. Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to actual tile size and thickness, exact joint width, job conditions and grouting methods.*

*** When grouting abrasive or slip-resistant floor tiles, anticipated coverage can be dramatically decreased. Alternatives to the traditional grouting technique, such as a grout bag or commercial sealant gun, may be of assistance. Consult MAPEI's Technical Services Department for approximate coverage not shown in the above table or use the grout calculator at www.mapei.com.*

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RELATED DOCUMENTS

Reference Guide: Surface Preparation Requirements for tile and stone installation systems	RGT0309*
Grout Troubleshooting Guide*	

** At www.mapei.com*

Refer to the SDS for specific data related to health and safety as well as product handling.

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com. **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

We proudly support the following industry organizations:

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Services in Mexico
0-1-800-MX-MAPEI (0-1-800-696-2734)

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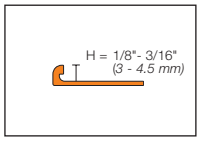
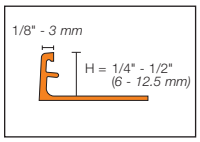
Product Item Numbers





Notes:
- Radius available for JOLLY in metal profiles only.
- JOLLY in polished aluminum and chrome-plated brass require a relatively large bending radius.

2.3 Schluter®-JOLLY

H = mm - *in.*	Item No.					
	Chrome-plated solid brass (MC)	Polished chrome anodized aluminum (ACG)	Brushed chrome anodized aluminum (ACGB)	Satin nickel anodized aluminum (AT)	Polished nickel anodized aluminum (ATG)	Brushed nickel anodized aluminum (ATGB)
6 - *1/4*	MC 60	A 60 ACG	A 60 ACGB	A 60 AT	A 60 ATG	A 60 ATGB
8 - *5/16*	MC 80	A 80 ACG	A 80 ACGB	A 80 AT	A 80 ATG	A 80 ATGB
10 - *3/8*	MC 100	A 100 ACG	A 100 ACGB	A 100 AT	A 100 ATG	A 100 ATGB
12.5 - *1/2*	MC 125	A 125 ACG	A 125 ACGB	A 125 AT	A 125 ATG	A 125 ATGB

H = mm - *in.*	Item No.					
	Satin copper anodized aluminum (AK)	Polished copper anodized aluminum (AKG)	Brushed copper anodized aluminum (AKGB)	Brushed antique bronze anodized aluminum (ABGB)	Satin brass anodized aluminum (AM)	Polished brass anodized aluminum (AMG)
6 - *1/4*	A 60 AK	A 60 AKG	A 60 AKGB	A 60 ABGB	A 60 AM	A 60 AMG
8 - *5/16*	A 80 AK	A 80 AKG	A 80 AKGB	A 80 ABGB	A 80 AM	A 80 AMG
10 - *3/8*	A 100 AK	A 100 AKG	A 100 AKGB	A 100 ABGB	A 100 AM	A 100 AMG
12.5 - *1/2*	A 125 AK	A 125 AKG	A 125 AKGB	A 125 ABGB	A 125 AM	A 125 AMG

H = mm - *in.*	Item No.		
	Brushed brass anodized aluminum (AMGB)	Bright black anodized aluminum (AGSG)	Brushed graphite anodized aluminum (AGRB)
4.5 - *3/16*	-	A 45 AGSG	-
6 - *1/4*	A 60 AMGB	A 60 AGSG	A 60 AGRB
8 - *5/16*	A 80 AMGB	A 80 AGSG	A 80 AGRB
10 - *3/8*	A 100 AMGB	A 100 AGSG	A 100 AGRB
12.5 - *1/2*	A 125 AMGB	A 125 AGSG	A 125 AGRB

2.3 Schluter®-JOLLY

H = mm - *in.*	Item No.	
	Color-coated aluminum (AC)	PVC (P)
3 - *1/8*	A 30 ***color****	-
4.5 - *3/16*	A 45 ***color****	***color**** 45
6 - *1/4*	A 60 ***color****	***color**** 60
8 - *5/16*	A 80 ***color****	***color**** 80
10 - *3/8*	A 100 ***color****	***color**** 100
12.5 - *1/2*	A 125 ***color****	***color**** 125

Length supplied: 8' 2-1/2" — *2.5 m*

*Color Codes

- **BW** Bright white
- **W** White
- **SP** Sand pebble
- **BH** Bahama
- **HB** Light beige
- **HG** Light grey
- **PG** Classic grey
- **G** Grey
- **GS** Black
- **RB**[1] Red brown
- **SB**[1] Black brown

* To complete the item number, add the **color** code (e.g., **G** 45).

1: RB (Red brown) and SB (Black brown) are only available in color-coated aluminum in sizes 80, 100, and 125.

2.3 Schluter®-JOLLY

H = mm - *in.*	Item No. Textured color-coated aluminum (TS)
6 - *1/4*	A 60 ***color****
8 - *5/16*	A 80 ***color****
10 - *3/8*	A 100 ***color****
11 - *7/16*	A 110 ***color****
12.5 - *1/2*	A 125 ***color****

Length supplied: 8' 2-1/2" — *2.5 m*

*Color Codes

TSR Rustic brown
TSDA Dark anthracite
TSLA Light anthracite
TSSG Stone grey
TSC Cream
TSBG Greige
TSI Ivory
TSB Beige
TSOB Bronze
TSG Pewter

* To complete the item number, add the **color** code (e.g., A 60 **TSC**).

2.3 Schluter®-JOLLY

H = mm - *in.*	Item No. Textured color-coated aluminum
3 - *1/8*	A 30 ***color****
4.5 - *3/16*	A 45 ***color****
6 - *1/4*	A 60 ***color****
8 - *5/16*	A 80 ***color****
10 - *3/8*	A 100 ***color****
11 - *7/16*	A 110 ***color****
12.5 - *1/2*	A 125 ***color****

Length supplied: 8' 2-1/2" — *2.5 m*

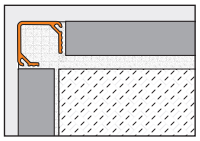
*Color Codes

MGS Matte black
MBW Matte white

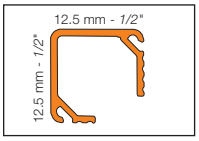
* To complete the item number, add the **color** code (e.g., A 60 **MGS**).

Note: Additional finishes are available for this product. The design configuration of JOLLY is identical to that of SCHIENE (see Floor Profiles). However, their materials and finishes do vary. SCHIENE, in all materials and finishes, is suitable for floor applications, as well as wall and countertop applications. JOLLY is suited primarily for walls and countertops. However, JOLLY in AM, AMGB, AK, AKGB, AT, ATGB, ABGB and ACGB is also suitable for floors and may be used in such applications to increase design options.

Aluminum



Aluminum



2.10 Schluter®-QUADEC-K

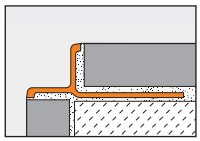
H = mm - *in.*	Item No. Satin anodized aluminum (AE)	Polished chrome anodized aluminum (ACG)	Satin nickel anodized aluminum (AT)	Brushed antique bronze anodized aluminum (ABGB)
12.5 - *1/2*	Q 125 AE K	Q 125 ACG K	Q 125 AT K	Q 125 ABGB K

Length supplied: 8' 2-1/2" — *2.5 m*

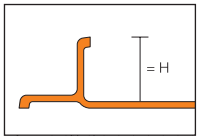
Accessories	Item No.
End cap, outside/inside corner	EV/ Q 125 ***finish****
Connector	V/RO 125

How to order corners:

*To complete the item number for corners, add the corresponding ***finish*** (e.g., EV/ Q 125 **AE**).



Aluminum



2.12 Schluter®-INDEC

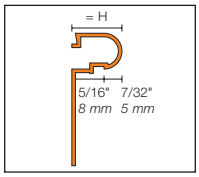
H = mm - *in.*	Item No. Satin anodized aluminum (AE)	Polished chrome anodized aluminum (ACG)
8 - *5/6*	IN 80 AE	IN 80 ACG
10 - *3/8*	IN 100 AE	IN 100 ACG
11 - *7/16*	IN 110 AE	IN 110 ACG
12.5 - *1/2*	IN 125 AE	IN 125 ACG

Length supplied: 8' 2-1/2" — *2.5 m*

Accessories	Item No.
Outside corner 90°	ED / IN ***profile item number****

How to order corners:

*To complete the item number for corners, add the corresponding ***profile item number*** (e.g., ED / IN ***100 AE***).

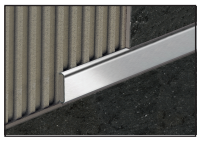


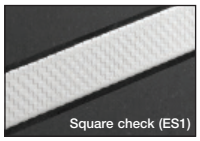
2.5 Schluter®-RONDEC-DB

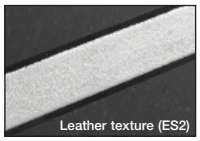
H = mm - *in.*	Item No. Satin anodized aluminum (AE)	Satin copper anodized aluminum (AK)	Satin brass anodized aluminum (AM)
14 - *17/32*	DB 14 AE	DB 14 AK	DB 14 AM

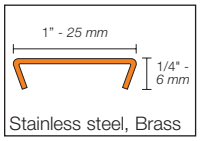
Length supplied: 8' 2-1/2" — *2.5 m*

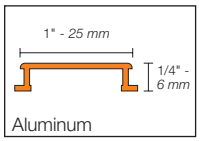
Accessories	Item No. Satin anodized aluminum (AE)
Outside corner, 90°	EV/DB 14 AE











2.2 Schluter®-DESIGNLINE

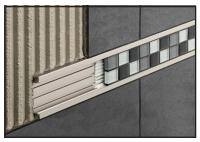
H = mm - *in.*	Item No. Stainless steel 304 (1.4301 = V2A) (E)	Brushed stainless steel 304 (1.4301 = V2A) (EB)	Stainless steel 304 (1.4301 = V2A) square check (ES1)	Stainless steel 304 (1.4301 = V2A) leather texture (ES2)	Chrome-plated solid brass (MC)
6 - *1/4*	DL 625 E	DL 625 EB	DL 625 ES1	DL 625 ES2	DL 625 MC

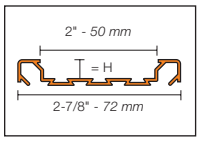
H = mm - *in.*	Item No. Satin anodized aluminum (AE)	Polished chrome anodized aluminum (ACG)	Brushed chrome anodized aluminum (ACGB)	Satin nickel anodized aluminum (AT)	Polished nickel anodized aluminum (ATG)	Brushed nickel anodized aluminum (ATGB)
6 - *1/4*	DL 625 AE	DL 625 ACG	DL 625 ACGB	DL 625 AT	DL 625 ATG	DL 625 ATGB

H = mm - *in.*	Item No. Satin copper anodized aluminum (AK)	Polished copper anodized aluminum (AKG)	Brushed copper anodized aluminum (AKGB)	Satin brass anodized aluminum (AM)	Polished brass anodized aluminum (AMG)	Brushed brass anodized aluminum (AMGB)
6 - *1/4*	DL 625 AK	DL 625 AKG	DL 625 AKGB	DL 625 AM	DL 625 AMG	DL 625 AMGB

Length supplied: 8' 2-1/2" — *2.5 m*

Note: All corresponding item numbers of the RONDEC finishes match DESIGNLINE.





2.11 Schluter®-QUADEC-FS

H = mm - *in.*	Item No. Satin anodized aluminum (AE)	Polished chrome anodized aluminum (ACG)	Satin nickel anodized aluminum (AT)	Brushed antique bronze anodized aluminum (ABGB)
8 - *5/16*	QF8 / 50 AE	QF8 / 50 ACG	QF8 / 50 AT	QF8 / 50 ABGB

Length supplied: 8' 2-1/2" — *2.50 m*

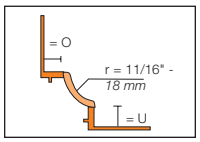
Accessories	Item No.
End cap, outside/inside corner	EV/ ***profile item number****

Note: The same corner piece can be used to produce a 90° inside corner and a 90° outside corner. It can also be used as an end cap.

How to order corners:

*To complete the item number for corners, add the corresponding ***profile item number*** (e.g., EV/ **QF8 / 50 AE**).

Inside/outside corner/ End cap



4.12 Schluter®-DILEX-HKW

Item No.
HKW U 7 / O 7 ***color****
HKW U 9 / O 9 ***color****
HKW U 11 / O 11 ***color****

Length supplied: 8' 2-1/2" — *2.5 m*

U:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*
O:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*

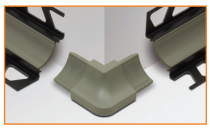
Accessories	Item No.
Outside corner	A / HKW / ***color****
Inside corner (2-way)	I / HKW 2 R18 ***color****
Inside corner (3-way)	I / HKW 3 R18 ***color****
End cap	E / HKW / G ***(grey only)***

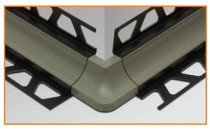
*Color Codes

BW Bright white · **HB** Light beige · **PG** Classic grey · **G** Grey

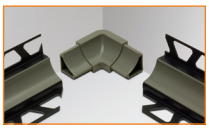
To complete the item number, add the ***color*** code (e.g., HKW U 9 / O 9 **HB**).

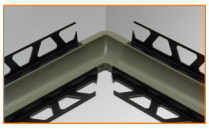
Outside Corner



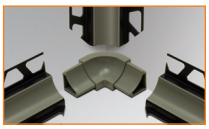


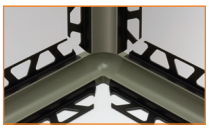
Inside Corner (2-way)



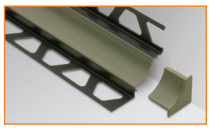


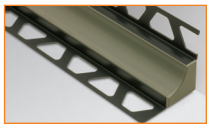
Inside Corner (3-way)

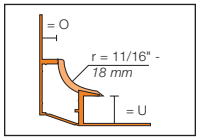




End Cap







4.11 Schluter®-DILEX-HK

Item No.
HK U 12 / O 9 ***color****

Length supplied: 8' 2-1/2" — *2.5 m*

U:	1/2" = *12 mm*
O:	11/32" = *9 mm*

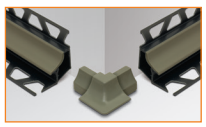
Accessories	Item No.
Outside corner	A / HK / ***color****
Inside corner (2-way)	I / HK 2 R18 ***color****
Inside corner (3-way)	I / HK 3 R18 ***color****
Connector	V / HK
End cap (left)	EL / HK / G ***(grey only)***
End cap (right)	ER / HK / G ***(grey only)***

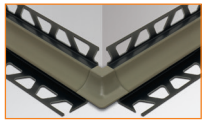
*Color Codes

BW Bright white · **HB** Light beige · **G** Grey

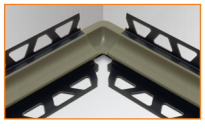
To complete the item number, add the ***color*** code (e.g., HK U 12 / O 9 **BW**).

Outside Corner

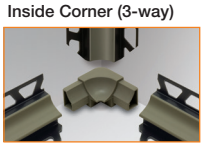


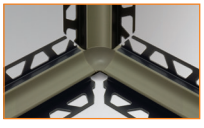


Inside Corner (2-way)

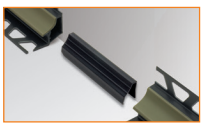


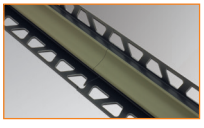
Inside Corner (3-way)



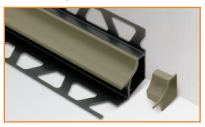


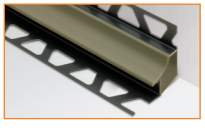
Connector

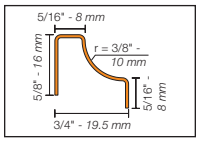




End Cap



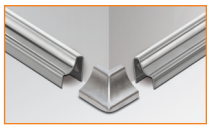




4.22 Schluter®-DILEX-HKU (10 mm - *3/8*" radius)

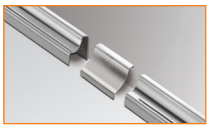
H = mm - *in.*	Item No.		
	Stainless steel 304 (1.4301 = V2A) (E)	Brushed stainless steel 304 (1.4301 = V2A) (EB)	Stainless steel 316L (1.4404 = V4A) (EV4A)
10 - *3/8*	HKUR 10 E	HKUR 10 EB	HKUR 10 E / V4A

Outside Corner



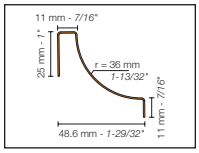
Inside Corner (2- or 3-way)

Connector



Accessories	Item No.
Outside corner 90°	EQ / HKUR 10 ***finish****
Outside corner 135°	E135 / HKUR 10 ***finish****
Inside corner 90°	I / HKU 3 R 10 ***finish****
Inside corner 135°	I135 / HKUR 10 ***finish****
Connector	V / HKUR 10 ***finish****

* To complete the item number, add the ***finish*** code (e.g., EQ / HKUR 10 **E**).



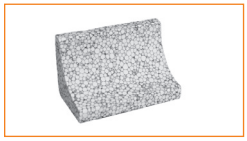
4.22 Schluter®-DILEX-HKU (36 mm - *1-13/32*" radius)

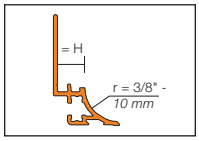
H = mm - *in.*	Item No.
	Stainless steel 304 (1.4301 = V2A) (E)
36 - *1-13/32*	HKUR 36 E

Length supplied: 8' 2-1/2" — *2.5 m*

Accessories	Item No.
Outside corner 90°	E / HKUR 36 E
Inside corner 90°	I / HKU 3 R 36 10 E
Connector	V / HKUR 36 E
Internal connector	VI / HKUR 36
End Cap	EK / HKUR 36 E

Internal connector (EPS foam)





4.22 Schluter®-DILEX-AHKA

H = mm - *in.*	Item No.			
	Satin anodized aluminum (AE)	Brushed chrome anodized aluminum (ACGB)	Satin nickel anodized aluminum (AT)	Brushed nickel anodized aluminum (ATGB)
8 - *5/16*	AHKA 80 AE	AHKA 80 ACGB	AHKA 80 AT	AHKA 80 ATGB
10 - *3/8*	AHKA 100 AE	AHKA 100 ACGB	AHKA 100 AT	AHKA 100 ATGB
12.5 - *1/2*	AHKA 125 AE	AHKA 125 ACGB	AHKA 125 AT	AHKA 125 ATGB
15 - *9/16*	AHKA 150 AE	AHKA 150 ACGB	AHKA 150 AT	AHKA 150 ATGB

H = mm - *in.*	Item No.
	Textured color-coated aluminum (TS)
8 - *5/16*	AHKA 80 ***color****
10 - *3/8*	AHKA 100 ***color****
12.5 - *1/2*	AHKA 125 ***color****
15 - *9/16*	AHKA 150 ***color****

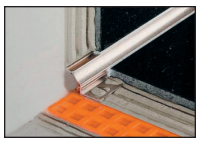
*Color Codes

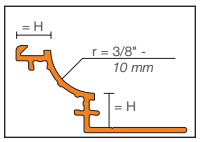
TSR Rustic brown · **TSDA** Dark anthracite · **TSLA** Light anthracite · **TSSG** Stone grey · **TSC** Cream · **TSBG** Greige · **TSI** Ivory · **TSB** Beige · **TSOB** Bronze · **TSG** Pewter

* To complete the item number, add the **color** code (e.g., AHKA 80 **TSB**).

Accessories	Item No.
Outside corner, 90°	E 90 / AHKA / ***finish****
Outside corner, 135°	E 135 / AHKA / ***finish****
Inside corner, 90°	I 90 / AHKA / ***finish****
Inside corner, 135°	I 135 / AHKA / ***finish****
End cap (Left)	EL / AHKA / ***finish****
End cap (Right)	ER / AHKA / ***finish****

* To complete the item number, add the ***finish*** or ***color*** code (e.g., E 90 / AHKA / **AE**).





4.21 Schluter®-DILEX-AHK

H = mm - *in.*	Item No.				
	Satin anodized aluminum (AE)	Polished chrome anodized aluminum (ACG)	Brushed chrome anodized aluminum (ACGB)	Satin nickel anodized aluminum (AT)	Polished nickel anodized aluminum (ATG)
8 - *5/16*	AHK 1S 80 AE	AHK 1S 80 ACG	AHK 1S 80 ACGB	AHK 1S 80 AT	AHK 1S 80 ATG
10 - *3/8*	AHK 1S 100 AE	AHK 1S 100 ACG	AHK 1S 100 ACGB	AHK 1S 100 AT	AHK 1S 100 ATG
12.5 - *1/2*	AHK 1S 125 AE	AHK 1S 125 ACG	AHK 1S 125 ACGB	AHK 1S 125 AT	AHK 1S 125 ATG
15 - *9/16*	-	-	-	AHK 1S 150 AT	-

H = mm - *in.*	Item No.				
	Brushed nickel anodized aluminum (ATGB)	Satin copper/bronze anodized aluminum (AK)	Polished copper/bronze anodized aluminum (AKG)	Brushed copper/bronze anodized aluminum (AKGB)	Satin brass anodized aluminum (AM)
8 - *5/16*	AHK 1S 80 ATGB	AHK 1S 80 AK	AHK 1S 80 AKG	AHK 1S 80 AKGB	AHK 1S 80 AM
10 - *3/8*	AHK 1S 100 ATGB	AHK 1S 100 AK	AHK 1S 100 AKG	AHK 1S 100 AKGB	AHK 1S 100 AM
12.5 - *1/2*	AHK 1S 125 ATGB	AHK 1S 125 AK	AHK 1S 125 AKG	AHK 1S 125 AKGB	AHK 1S 125 AM

H = mm - *in.*	Item No.		
	Polished brass anodized aluminum (AMG)	Brushed brass anodized aluminum (AMGB)	Brushed graphite anodized aluminum (AGRB)
8 - *5/16*	AHK 1S 80 AMG	AHK 1S 80 AMGB	AHK 1S 80 AGRB
10 - *3/8*	AHK 1S 100 AMG	AHK 1S 100 AMGB	AHK 1S 100 AGRB
12.5 - *1/2*	AHK 1S 125 AMG	AHK 1S 125 AMGB	AHK 1S 125 AGRB
15 - *9/16*	-	-	AHK 1S 150 AGRB

H = mm - *in.*	Item No.
	Textured color-coated aluminum (TS)
8 - *5/16*	AHK 1S 80 ***color****
10 - *3/8*	AHK 1S 100 ***color****
12.5 - *1/2*	AHK 1S 125 ***color****
15 - *9/16*	AHK 1S 150 ***color****

*Color Codes

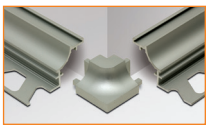
TSR Rustic brown · **TSDA** Dark anthracite · **TSLA** Light anthracite · **TSSG** Stone grey · **TSC** Cream · **TSBG** Greige · **TSI** Ivory · **TSB** Beige · **TSOB** Bronze · **TSG** Pewter

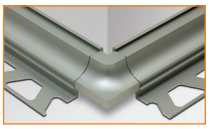
* To complete the item number, add the **color** code (e.g., AHK 1S 80 **TSB**).

Accessories	Item No.
Outside corner, 90°	E 90 / AHK 1S / ***finish****
Outside corner, 90° (to match Schluter®-QUADEC profile)	E 90 Q / AHK 1S / ***finish****
Outside corner, 135°	E 135 / AHK 1S / ***finish****
Inside corner, 90°	I 90 / AHK 1S / ***finish****
Inside corner, 135°	I 135 / AHK 1S / ***finish****
Connector	V / AHK
End cap	E / AHK 1S / ***finish****

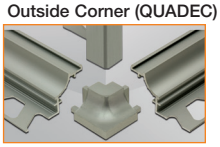
* To complete the item number, add the ***finish*** or ***color*** code (e.g., E 90 / AHK 1S / **AE**). **Note: E 90 Q** (outside corner piece to match QUADEC) is only available in AE, ACG, AT, and TS finishes.

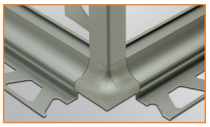
Outside Corner



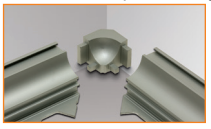


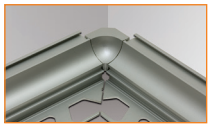
Outside Corner (QUADEC)



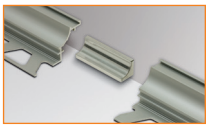


Inside Corner (2- or 3-way)

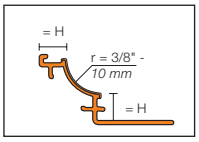




Connector



End cap



4.21 Schluter®-DILEX-PHK

H = mm - *in.*	Item No.
8 - *5/16*	PHK 1S 80 + ***color****
10 - *3/8*	PHK 1S 100 + ***color****
12.5 - *1/2*	PHK 1S 125 + ***color****

Length supplied: 8' 2-1/2" — *2.5 m*

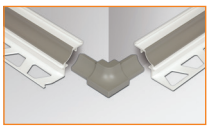
*Color Codes

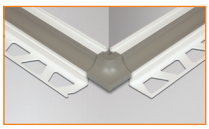
BW Bright white · **W** White · **SP** Sand pebble · **BH** Bahama
HB Light beige · **PG** Classic grey · **G** Grey

* To complete the item number, add the **color** code (e.g., PHK 1S 80 **BW**).

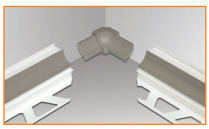
Accessories	Item No.
Outside corner, 90°	E 90 / PHK 1S + ***color****
Outside corner, 135°	E 135 / PHK 1S + ***color****
Inside corner, 90°	I 90 / PHK 1S + ***color****
Inside corner, 135°	I 135 / PHK 1S + ***color****
Connector	V / PHK
End cap	E / PHK 1S + ***color****

Outside corner

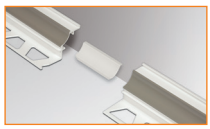




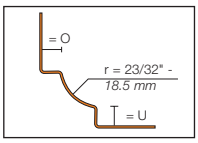
Inside Corner



Connector



End cap



4.15 Schluter®-DILEX-EHK

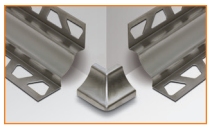
Item No.		
Stainless steel 304 (1.4301 - V2A)	**Stainless steel 316 L (1.4404 - V4A)**	**Brushed stainless steel 304 (1.4301 = V2A)**
(E)	**(EV4A)**	**(EB)**
EHK U 7 / O 7	EHK U 7 / O 7 / V4A	EBHK U 7 / O 7
EHK U 9 / O 9	EHK U 9 / O 9 / V4A	EBHK U 9 / O 9
EHK U 11 / O 11	EHK U 11 / O 11 / V4A	EBHK U 11 / O 11
-	EHK U 16 / O 16 / V4A	-

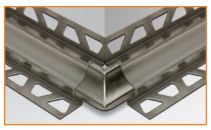
Length supplied: 8' 2-1/2" — *2.5 m*

U:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*	5/8" = *16 mm*
O:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*	5/8" = *16 mm*

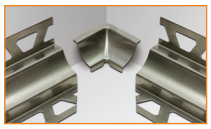
Accessories	Item No.	
	Stainless steel 304 (1.4301 - V2A) **(E)**	**Brushed stainless steel 304 (1.4301 = V2A)** **(EB)**
Outside corner	A / EHK 2 R18	A / EBHK 2 R18
Outside corner, 135°	E 135 / EHK 2 R18	E 135 / EB HK 2 R18
Inside corner (2-way)	I / EHK 2 R18	I / EBHK 2 R18
Inside corner (3-way)	I / EHK 3 R18	I / EBHK 3 R18
Inside corner, 135°	I 135 / EHK 2 R18	I 135 / EB HK 2 R18
Connector	V / EHK	V / EBHK
End cap	E / HKW / G *	E / HKW / G *
	***Available in grey PVC only**	

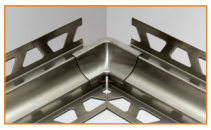
Outside Corner



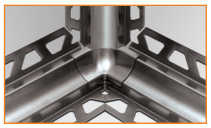


Inside Corner (2-way)

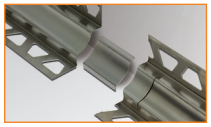


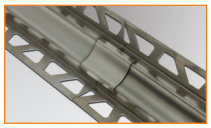


Inside Corner (3-way)

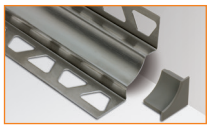


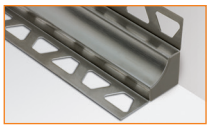
Connector

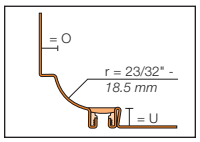




End Cap







4.15 Schluter®-DILEX-HKS

Item No.
Stainless steel 304 (1.4301 - V2A) (E)
U = floor or wall, O = wall
HKS V2A U 8 / O 7 + ***color****
HKS V2A U 10 / O 7 + ***color****
HKS V2A U 12 / O 7 + ***color****
HKS V2A U 14 / O 7 + ***color****
HKS V2A U 16 / O 7 + ***color****
HKS V2A U 18 / O 7 + ***color****
HKS V2A U 21 / O 7 + ***color****
HKS V2A U 25 / O 7 + ***color****
HKS V2A U 30 / O 7 + ***color****
HKS V2A U 8 / O 9 + ***color****
HKS V2A U 10 / O 9 + ***color****
HKS V2A U 12 / O 9 + ***color****
HKS V2A U 14 / O 9 + ***color****
HKS V2A U 16 / O 9 + ***color****
HKS V2A U 18 / O 9 + ***color****
HKS V2A U 21 / O 9 + ***color****
HKS V2A U 25 / O 9 + ***color****
HKS V2A U 30 / O 9 + ***color****
HKS V2A U 8 / O 11 + ***color****
HKS V2A U 10 / O 11 + ***color****
HKS V2A U 12 / O 11 + ***color****
HKS V2A U 14 / O 11 + ***color****
HKS V2A U 16 / O 11 + ***color****
HKS V2A U 18 / O 11 + ***color****
HKS V2A U 21 / O 11 + ***color****
HKS V2A U 25 / O 11 + ***color****
HKS V2A U 30 / O 11 + ***color****

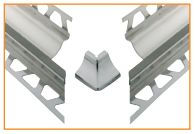
Length supplied: 8' 2-1/2" — *2.5 m*

Accessories	Item No.
Outside corner 90°	A / EHK 2 R18
Inside corner 90° (2 directions)	I / EHK 2 R18
Inside corner 90° (3 directions)	I / EHK 3 R18
Outside corner 135°	E135 / EHK 2 R18
Inside corner 135°	I135 / EHK 2 R18
Connector	V / EHK
End cap	E / HKW / G (Grey only)

Accessories	Item No.
Stainless steel 304 (1.4301 - V2A) (E)	
90° outside corner with pre-cut profile sections	E90 V2A U ... / O ... + ***color****
Stainless steel 316L (1.4404 = V4A) (E)	
90° outside corner with pre-cut profile sections	E90 V4A U ... / O ... + ***color****

** To complete the item number, add the "**U**" and "**O**" values, and the **color code** (e.g., E90 V2A U **12** / O **9 G**).
Available for U = 8, 10, 12, 14 and 16 mm only.

Outside corner with pre-cut profile sections



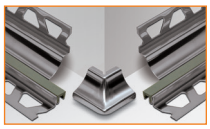
*Color Codes

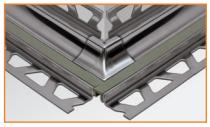
HB Light beige
PG Classic grey
G Grey
GS Black

To complete the item number, add the ***color*** code (e.g., HKS V2A U 18 / O 7 **G**).

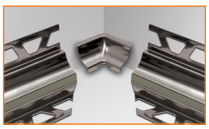
U:	5/16" = *8 mm*	3/8" = *10 mm*	15/32" = *12 mm*	17/32" = *14 mm*	5/8" = *16 mm*
	23/32" = *18 mm*	13/16" = *21 mm*	1" = *25 mm*	1-3/16" = *30 mm*	
O:	9/32" = *7 mm*	11/32" = *9 mm*	7/16" = *11 mm*		

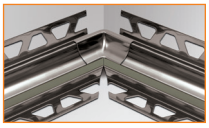
Outside Corner



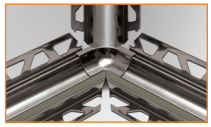


Inside Corner (2-way)

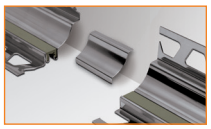


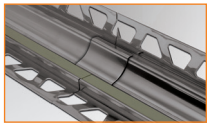


Inside Corner (3-way)

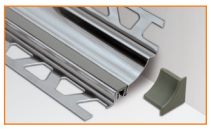


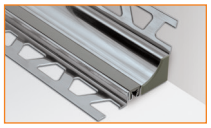
Connector





End Cap





Note: 3-way corners are to be used with DILEX-EHK on the vertical.

Note: DILEX-HKS is also available in stainless steel 316 L (1.4404 = V4A).

Wall Protection

2019

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Models SCR-64N, SCR-64MN, BCR-64N and ECR-64N

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Crash Rails

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Corner Guards, Bumper Guards, Accent Rails, Wall Covering, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"
  2. Blocking in walls for fasteners; refer to section 09 22 00 "Supports for Plaster and Gypsum Board"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)
B. American Society for Testing and Materials (ASTM)
C. Underwriters Laboratories (UL)
D. California 01350 specification

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of crash rails. Show methods of attachment to adjoining construction.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and end cap attachment and alignment:
  1. 12" (304.8mm) long sample of each model specified including end cap.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA, Life Safety and CA 01350.
D. Fire performance characteristics: Provide engineered PETG wall protection system components with UL label indicating that they are identical to those tested in accordance with ASTM E84 for Class A/1 characteristics listed below:
  1. Flame spread: 25 or less
  2. Smoke developed: 450 or less
E. Impact Strength: Provide assembled wall protection units that have been tested in accordance with the applicable provisions of ASTM F476.
F. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.

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G. Color match: Provide wall protection components that are color matched in accordance with the following:

1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)

H. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a cool, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40°F (4°C) and a maximum of 100°F (38°C) should be maintained.

C. Material must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65°-75°F (18°-24°C) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Extruded material should be high-impact Acrovyn 4000 with Shadowgrain texture, nominal .078" (1.98mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

B. Regrind PETG: PVC-free regrind absorption cushion.

C. Aluminum: Extruded aluminum should be 6063-T6 alloy, nominal .085" (2.16mm) thickness. Minimum strength and durability properties as specified in ASTM B221.

D. Fasteners: All fasteners to be non-corrosive and compatible with aluminum components. All necessary fasteners to be supplied by the manufacturer.

2.03 Crash Rails

A. Engineered PETG Crash Rails to be CS Acrovyn: Surface mounted assembly consisting of standard aluminum clips with snap-on Acrovyn 4000 cover and integral shock absorbing cushions. End caps shall be mechanically fastened with concealed fasteners. Color matched end caps and corners shall be removable for ease of replacement. Attachment hardware shall be appropriate for wall conditions.

1. **Model SCR-64N 8" (203.2mm) high surface mounted crash rail with continuous regrind PETG cushion for added absorption. Assembly mounts to wall with 1-1/2" (38.1mm) wide aluminum clips. Specify SCR-64MN for continuous aluminum retainer, BCR-64N for bumper mount option or ECR-64N for extended mount option. Select from one of Acrovyn solid colors or Chameleon™ simulated patterns.** (Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver. *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.)

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2.04 Fabrication

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finish and member sizes.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations, using only approved mounting hardware and locating all components firmly into position, level and plumb.

B. Temperature at the time of installation must be between 65°-75°F (18°-24°C) and be maintained for at least 48 hours after the installation.

C. Adjust installed end caps as necessary to ensure tight seams.

D. Where splices occur in horizontal runs, splice retainer and rail at different locations along the run.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean material in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Model FR-251N

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Accent Rails

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Corner Guards, Bumper Guards, Crash Rails, Wall Coverings, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)
B. American Society for Testing and Materials (ASTM)
C. Underwriters Laboratories (UL)

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of accent rails. Show methods of attachment to adjoining construction.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture and pattern:
  1. 12" (304.8mm) long sample of each model specified.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA and Life Safety.
D. Fire performance characteristics: Provide engineered PETG wall protection system assembled from components that are identical to those tested in accordance with ASTM E84 for Class B/2 characteristics listed below:
  1. Flame spread: 75 or less
  2. Smoke developed: 450 or less
E. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.
F. Color match: Provide wall protection components that are color matched in accordance with the following:
  1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)

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G. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a clean, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40ºF (4ºC) and a maximum of 100ºF (38ºC) should be maintained.

C. Materials must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65-75ºF (18-24ºC) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: High-impact Acrovyn 4000 sheet with Suede texture, nominal .040" (1.02mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

B. Medium Density Fiber (MDF): 3/4" (19.05mm) board material with no added urea formaldehyde.

2.03 Accent Rails

A. Engineered PETG Accent Rails to be CS Acrovyn: Surface mounted assembly consisting of Acrovyn 4000 sheet formed over shaped MDF board.

1. **Model FR-251N 2 1/2" (63.5mm) high engineered PETG contemporary accent rail. Select from one of Acrovyn solid colors or Chameleon™ simulated patterns.**

2.04 Fabrication

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finish and sizes.

2.05 Accessories

A. Adhesive: Acrovyn wall protection shall be furnished as a complete packaged system, including appropriate standard adhesive.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations, using only approved adhesive, and locating all components firmly into position, level and plumb.

B. Temperature at the time of installation must be between 65-75ºF (18-24ºC) and be maintained for at least 48 hours after the installation.

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3.04 Cleaning

A. General: Immediately upon completion of installation, clean rails and accessories in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Models HR-6CN, HR-6CRBN, HR-6CNSS, HR-6CRBNSS, HRO-6CN and HRO-6CRBN

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Handrails

B. Related sections: The following sections contain requirements related to this section:
  1. Corner Guards, Bumper Guards, Crash Rails, Accent Rails, Wall Covering, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"
  2. Blocking in walls for fasteners; refer to section 09 22 00 "Supports for Plaster and Gypsum Board"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA, OSHA, Life Safety, OSHPD and ADA)
B. American Society for Testing and Materials (ASTM)
C. Underwriters Laboratories (UL)
D. California 01350 specification

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of handrails. Show methods of attachment to adjoining construction.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and end cap attachment and alignment:
  1. 12" (304.8mm) long sample of each model specified including end cap.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA, OSHA, Life Safety, OSHPD, ADA and CA 01350.
D. Fire performance characteristics: Provide engineered PETG wall protection system components with UL label indicating that they are identical to those tested in accordance with ASTM E84 for Class A/1 characteristics listed below:
  1. Flame spread: 25 or less
  2. Smoke developed: 450 or less
E. Impact Strength: Provide assembled wall protection units that have been tested in accordance with the applicable provisions of ASTM F476.
F. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.

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G. Color match: Provide wall protection components that are color matched in accordance with the following:

1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)

H. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a cool, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40°F (4°C) and a maximum of 100°F (38°C) should be maintained.

C. Material must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65°-75°F (18°-24°C) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Extruded material should be high-impact Acrovyn 4000 with Shadowgrain texture, nominal .078" (1.98mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

B. Aluminum: Extruded aluminum retainer should be 6063-T6 alloy with nominal .090" (2.29mm) thick for models HR-6CN, HR-6CRBN, HR-6CNSS and HR-6CRBNSS or 6063-T6 alloy with nominal .075" (1.90mm) for models HRO-6N and HRO-6RBN. Minimum strength and durability properties as specified in ASTM B221.

C. Stainless Steel: Components shall be fabricated from type 304 stainless steel with a #4 satin finish, specify model HR-6CRBN, HRO-6RBN, HR-6CNSS or HR0-6CRBNSS.

D. Fasteners: All fasteners to be non-corrosive and compatible with aluminum retainers. All necessary fasteners to be supplied by the manufacturer.

2.03 Handrails

A. Engineered PETG Handrails to be CS Acrovyn: Surface mounted assembly consisting of a continuous extruded aluminum retainer with snap-on Acrovyn 4000 cover. Color matched mounting brackets to be spaced as indicated on installation instructions. Color matched end caps and corners shall be attached to allow post installation adjustment. Attachment hardware shall be appropriate for wall construction.

1. Model HR-6CN 1 1/2" (38.1mm) high singular round rail configuration. Select from one of Acrovyn solid colors or Chameleon™ simulated patterns. Specify HR-6CRBN for stainless steel round brackets. Specify HR-6CNSS for stainless steel end caps; specify HR-6CRBNSS to add stainless steel brackets. Optional 90 degree stainless steel inside and outside corners and 3" (76.2mm) splices available. Optional powder coat finish available for stainless steel end caps, corners and splices; select standard powder coat finish. [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which model variations, colors and

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patterns are *Cradle to Cradle Certified*™ Gold or Silver (exceptions: stainless steel end caps, corners and splices). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]

2. **Model HRO-6 1 1/2" (38.1mm) high singular oval rail configuration. Select from one of Acrovyn solid colors or Chameleon™ simulated patterns. Specify HRO-6RBN for stainless steel round brackets. Optional vertical accent reveal available for HRO-6CN and HRO-6CRBN; select from Acrovyn solid colors.** [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver (exception: vertical accent reveal). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]

2.04 Fabrication

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finish and member sizes.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations using only approved mounting hardware and locating all components firmly into position, level and plumb.

B. Temperature at the time of installation must be between 65°-75°F (18°-24°C) and be maintained for at least 48 hours after the installation.

C. Adjust installed end caps as necessary to ensure tight seams.

D. Where splices occur in horizontal runs, splice retainer and rail at different locations along the run.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean rails and accessories in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Models HRB-4CN, HRB-4CCMN, HRB-4CHLN and HRB-4CCMHLN

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Handrails

B. Related sections: The following sections contain requirements related to this section:
  1. Corner Guards, Bumper Guards, Crash Rails, Accent Rails, Wall Covering, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"
  2. Blocking in walls for fasteners; refer to section 09 22 00 "Supports for Plaster and Gypsum Board"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA, Life Safety, OSHA, OSHPD and ADA)
B. American Society for Testing and Materials (ASTM)
C. Underwriters Laboratories (UL)
D. California 01350 specification

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of handrails. Show methods of attachment to adjoining construction.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and end cap attachment and alignment:
  1. 12" (304.8mm) long sample of each model specified including end cap.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA, Life Safety, OSHA, OSHPD, ADA and CA 01350.
D. Fire performance characteristics: Provide engineered PETG wall protection system components with UL label indicating that they are identical to those tested in accordance with ASTM E84 for Class 1 characteristics listed below:
  1. Flame spread: 25 or less
  2. Smoke developed: 450 or less
E. Impact Strength: Provide assembled wall protection units that have been tested in accordance with the applicable provisions of ASTM F476.
F. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.

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G. Color match: Provide wall protection components that are color matched in accordance with the following:

1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)

H. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a cool, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40°F (4°C) and a maximum of 100°F (38°C) should be maintained.

C. Material must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65°-75°F (18°-24°C) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Extruded material should be high-impact Acrovyn 4000 with Shadowgrain texture, nominal .078" (1.98mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

B. Aluminum: Extruded aluminum should be 6063-T6 alloy with nominal .1" (2.54mm) thickness for models HRB-4CN and HRB-4CHLN or 6105-T5 alloy with nominal .075" (1.90mm) thickness for models HRB-4CCMN and HRB-4CCMHLN. Minimum strength and durability properties as specified in ASTM B221.

C. Fasteners: All Fasteners to be non-corrosive and compatible with aluminum retainers. All necessary fasteners to be supplied by the manufacturer.

2.03 Handrails

A. Engineered PETG Handrails to be CS Acrovyn: Surface mounted assembly consisting of a continuous extruded aluminum retainer with snap-on Acrovyn 4000 cover and integral shock absorbing cushions where indicated. Color matched mounting brackets to be spaced as indicated on installation instructions. Color matched end caps and corners shall be attached to allow post installation adjustment. Attachment hardware shall be appropriate for wall construction.

1. Model HRB-4CN 5 1/2" (139.7mm) high combination handrail/bumper guard configuration with patented Quick Lock mounting system. Select from one of Acrovyn solid colors or Chameleon™ simulated patterns. Optional vertical accent reveal available; select from Acrovyn solid colors. Optional high load mounting tested to withstand over 1,000 pound peak loads; specify HRB-4CHLN. Specify HRB-4CCMN for optional ligature resistant mounting bracket. Specify HRB-4CCMHLN for optional ligature resistant mounting bracket tested to withstand over 1,000 pound peak loads. (Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors and patterns are *Cradle to Cradle*

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Certified™ Gold or Silver. *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.)

2.04 Fabrication

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finish and member sizes.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations using only approved mounting hardware and locating all components firmly into position, level and plumb.

B. Temperature at the time of installation must be between 65°-75°F (18°-24°C) and be maintained for at least 48 hours after the installation.

C. Adjust installed end caps as necessary to ensure tight seams.

D. Where splices occur in horizontal runs, splice retainer and rail at different locations along the run.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean rails and accessories in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Models HRBW-10CN, HRBW-10CHLN and HRBW-10CCMN

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Handrails

B. Related sections: The following sections contain requirements related to this section:
  1. Corner Guards, Bumper Guards, Crash Rails, Accent Rails, Wall Covering, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"
  2. Blocking in walls for fasteners; refer to section 09 22 00 "Supports for Plaster and Gypsum Board"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA, OSHA, Life Safety, OSHPD and ADA)
B. American Society for Testing and Materials (ASTM)
C. Underwriters Laboratories (UL)
D. California 01350 specification

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of handrails. Show methods of attachment to adjoining construction.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern, finish and end cap attachment and alignment:
  1. 12" (304.8mm) long sample of each model specified including end cap.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA, OSHA, Life Safety, OSHPD, ADA and CA 01350.
D. Fire performance characteristics: Provide engineered PETG wall protection system components with UL label indicating that they are identical to those tested in accordance with ASTM E84 for Class A/1 characteristics listed below:
  1. Flame spread: 25 or less
  2. Smoke developed: 450 or less
E. Fire performance characteristics: Provide wood components tested in accordance with ASTM E84 for Class A/1 fire characteristics.
F. Impact Strength: Provide assembled wall protection units that have been tested in accordance with the applicable provisions of ASTM F476.
G. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.

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H. Color match: Provide wall protection components that are color matched in accordance with the following:

1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)

I. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a cool, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40°F (4°C) and a maximum of 100°F (38°C) should be maintained.

C. Material must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65°-75°F (18°-24°C) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Solid Wood Components: Shall be manufactured from plain sawn, FAS grade hardwood, kiln dried to a moisture content of 6% to 10%.

B. Engineered PETG: Extruded material should be high-impact Acrovyn 4000 with Shadowgrain texture, nominal .078" (1.98mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

C. Aluminum: Extruded aluminum should be 6063-T6 alloy with nominal .090" (2.29mm) thickness for models HRBW-10CN and HRBW-10CHLN or 6105-T5 alloy with nominal .075" (1.90mm) thickness for model HRBW-10CMN. Minimum strength and durability properties as specified in ASTM B221.

D. Fasteners: All fasteners to be non-corrosive and compatible with aluminum retainers. All necessary fasteners to be supplied by the manufacturer.

2.03 Handrails

A. Engineered PETG Handrails to be CS Acrovyn: Surface mounted assembly consisting of a continuous extruded aluminum retainer with removable wood handrail and Engineered PETG crash rail. Color matched mounting brackets to be spaced as indicated on installation instructions. Color matched end caps and corners shall be attached to allow post installation adjustment. All wooden components shall be removable without removing aluminum retainer from wall to allow repair and refinishing with minimum disruption to facility. Attachment hardware shall be appropriate for wall construction.

1. Model HRBW-10CN 6 1/4" (159mm) high handrail / crash rail configuration. Select handrail from one of Renaissance™ wood species and finishes. FSC certified wood can be specified. Custom woods and finishes available. Select crash rail from one of Acrovyn solid colors or Chameleon™ simulated patterns. Select accent reveal from one of Acrovyn solid colors. Specify HRBW-10CQLN for optional Quick Lock mounting bracket. For optional high load mounting tested to withstand over 1,000 pound peak

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loads, specify HRBW-10CHLN. Specify HRBW-10CCMN for optional ligature resistant mounting bracket. (Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors, patterns, woods and finishes are *Cradle to Cradle Certified*™ Gold or Silver for Acrovyn wall guards. *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.)

2.04 Finishes

A. All wood components shall be factory finished. Wood components to be final coated with water based, high solids, clear lacquer using a two coat process. Finish shall be in accordance with specified AWI finish system. Coverage shall be a minimum of 3-5 mils. Gloss shall be measured on 60° gloss meter as per ASTM D523.

2.05 Fabrication

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finish and member sizes.

B. Preassemble wood components in shop as much as possible to minimize field assembly.

C. Fabricate components with wood joints lightly chamfered. Provide surfaces free of chipping, dents and other imperfections.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations using only approved mounting hardware and locating all components firmly into position, level and plumb.

B. Temperature at the time of installation must be between 65°-75°F (18°-24°C) and be maintained for at least 48 hours after the installation.

C. Adjust installed end caps as necessary to ensure tight seams.

D. Where splices occur in horizontal runs, splice retainer and rails at different locations along the run.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean rails and accessories in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn Models HRS-6C and HRS-6CLB

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Handrails

B. Related Sections: The following sections contain requirements related to this section:
  1. Corner Guards, Bumper Guards, Crash Rails, Accent Rails, Wall Covering, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"
  2. Blocking in walls for fasteners; refer to section 09 22 00 "Supports for Plaster and Gypsum Board"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA, OSHA, Life Safety, OSHPD and ADA)

B. American Society for Testing and Materials (ASTM)

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.

B. Shop drawings showing locations, extent and installation details of handrails. Show methods of attachment to adjoining construction.

C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, finish and end cap attachment and alignment:
  1. 12" (304.8mm) long sample of each model specified including end cap.

D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.

E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.

B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.

C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA, OSHA, Life Safety, OSHPD and ADA.

D. Fire performance characteristics: Provide metal components tested in accordance with ASTM E84 for Class A/1 fire characteristics.

E. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a cool, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40°F (4°C) and a maximum of 100°F (38°C) should be maintained.

C. Material must be stored flat.

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1.06 Project Conditions

A. Materials must be acclimated in an environment of 65°-75°F (18°-24°C) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Stainless Steel Components: shall be fabricated from type 304 stainless steel with a #4 satin finish; minimum strength and durability properties as specified in ASTM A276.

B. Fasteners: All necessary fasteners to be supplied by the manufacturer.

2.03 Handrails

A. Handrails to be CS Acrovyn: Surface mounted assembly consisting of stainless steel handrail furnished to field-verified dimensions with stainless steel ends and brackets installed in field. Attachment hardware shall be appropriate for wall construction.

1. **Model HRS-6C A 5 1/4" (133.8mm) high single line stainless steel rail assembly including stainless steel end caps and round brackets. For optional stainless steel L brackets specify HRS-6CLB; 4 3/4" (120.5mm) high single line stainless steel rail assembly. Optional powder coat finish available for stainless steel rail and optional L brackets; select from standard powder coat finishes.**

2.04 Finishes

A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applications and designations of finishes.

2.05 Fabrication

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finish and member sizes. All based upon required field verified dimensions.

B. Preassemble components in shop as much as possible to minimize field assembly.

C. Fabricate components with wood joints lightly chamfered. Provide surfaces free of chipping, dents and other imperfections.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations.

B. Use only approved mounting hardware, and locating all components firmly into position, level and plumb.

C. Temperature at the time of installation must be between 65°-75°F (18°-24°C) and be maintained for at least 48 hours after the installation.

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3.04 Cleaning

A. General: Immediately upon completion of installation, clean rails and accessories in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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Bellagard®

DHR - UPGRADED HANDRAIL

Koroseal Interior Products
Bellagard® Handrails

BellaLucent Rail

BellaStone Rail

BellaLaminate Rail

Now you can have it all—beauty and functionality in one unique wall finishing. Designed for use in high visibility areas, **Bellagard**® is a flexible option for lobbies, conference rooms, hallways, and other areas where beauty and functionality are a must.

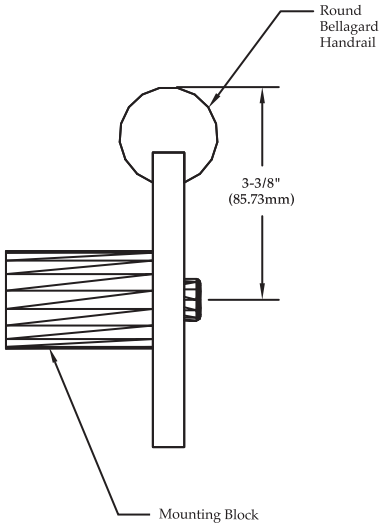
Handrails are available in five materials including BellaLucent, BellaStone, BellaLaminate, Elegant Metal, and Elegant Wood. With each option, you may select your choice of top and bottom caps, which can be specified in either wood or aluminum. Select from a rounded or oval handgrip. Bottoms caps are available in rounded, oval, or U-channel. Caps are available in a variety of styles, colors, and wood species to create a handrail that perfectly complements your interior environment.

- BellaLucent Rails are 1/2"-thick (12.7mm) translucent high-performance composite with sandstone surface texture. Multiple wood species and finishes are available as are a variety of BellaLucent patterns.
- BellaStone Rails are 1/2"-thick (12.7mm) non-porous, high-performance solid acrylic. Multiple wood species and finishes are available as are a multitude of BellaStone colors.
- BellaLaminate Rails are 1/2"-thick (12.7mm) and available in 4 different patterns.
- Elegant Metal Rails are 1/2"-thick (12.7mm) decorative metal laminates. Multiple wood species and finishes are available as are a multitude of Elegant Metal patterns.
- Elegant Wood Rails are 1/2"-thick (12.7mm) and available in 6 different species with 17 stain options.

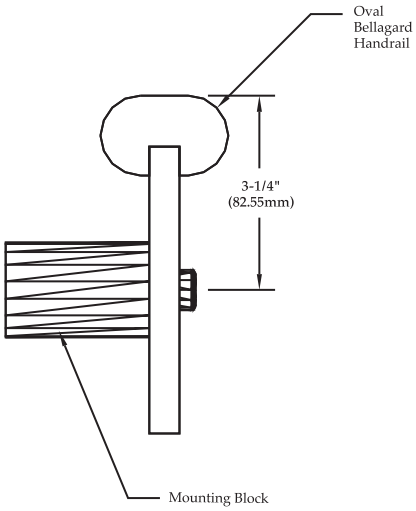
FSC®-Certified Wood is available for Bellagard Handrails.*

For more information on **Bellagard** handrails or **Koroseal** Interior Products, please call your local **Koroseal** distributor at 800-628-0449.

**FSC-C117062*



Rounded Top Cap



Oval Top Cap

Product Guide Specification

SECTION 10 26 00 HANDRAILS

PART 1 GENERAL

1.01 SUMMARY

Section Includes: Decorative Handrail Systems

1.02 SUBMITTALS

A. Comply with Section 01 33 00.
B. Product Data: Submit manufacturer's product data.
C. Shop Drawings: Submit shop drawings showing components, dimensions, and mounting details.
D. Samples: For selection of models, colors, patterns, and finishes. 12"(304.8mm) long samples of each type handrail required.

1.03 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain handrail system components from a single source.
B. Deliver materials in original factory wrappings and containers, clearly labeled with manufacturer and brand name.
C. Store materials in original undamaged packages and containers inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.
    1. Maintain room temperature within the storage area between 60˚F (16˚C) and 80˚F (27˚C) during the period plastic materials are stored. Keep materials out of direct sunlight to avoid excessive surface temperatures.
    2. Store handrail materials in a horizontal position for a minimum of 72 hours, or until the material attains the ambient room installation temperature of between 65˚F (18˚C) and 75˚F (24˚C).

1.04 PROJECT CONDITIONS

A. Maintain ambient temperature within building at not less than 65˚F (18˚C) or greater than 75˚F (24˚C) for a minimum 72 hours prior to beginning of installation.
B. Do not install handrail system components until the space is enclosed, weatherproof and climate controlled.
C. Do not install handrail systems until temperature is stable and permanent lighting is in place.

1.05 MAINTENANCE

A. Maintenance Instructions: Include precautions against cleaning materials and methods that may be detrimental to finishes and performance.
B. Replacement Materials: Minimum two percent of each type, color, and pattern of materials and components. Include accessory components as required. Replacement materials shall be from the same production run as installed materials. Package with protective coverings and appropriate labels.

PART 2 PRODUCTS

2.01 MANUFACTURER

Korogard Wall Protection Systems,
A Division of Koroseal Interior Products, LLC

2.02 HANDRAIL SYSTEMS

"Bellagard" by Korogard: Modular handrail system supplied factory-fabricated, -finished, and -assembled for installation with supplied mounting blocks.
1. Wood: Select species and stain from manufacturer's selection.
2. Rails: Select type, color, and pattern from manufacturer's selection.
3. Trim: Select aluminum or wood from manufacturer's selection.
4. Stand-Off: Select aluminum, clear acrylic, or wood from manufacturer's selection.

2.03 MATERIALS

A. Solid Wood Components: Shall be kiln-dried FAS-grade hardwood. All wood components shall be factory finished.
B. BellaStone Rails: Shall be 1/2"-thick (12.7mm) non-porous, high-performance solid acrylic.
C. BellaLucent Rails: Shall be 1/2"-thick (12.7mm) translucent, high-performance composite with sandstone surface texture.
D. BellaLaminate Rails: Shall be 1/2"-thick (12.7mm) high-performance laminate.
E. Elegant Metal Rails: Shall be 1/2"-thick (12.7mm) high-performance decorative metal laminate.
F. Elegant Wood Rails: Shall be 1/2"-thick (12.7mm) solid wood with high-performance finish.
G. Aluminum Trim: Extruded 6063-T5 alloy.

2.04 FINISHES

A. Wood Finish: Handrail shall be factory-finished with two coats of catalyzed, clear conversion varnish.
B. Aluminum Finish: Mill

2.05 FABRICATION

A. Comply with requirements indicated for design, dimensions, details, finish, and member sizes.
B. Factory-assemble components to the greatest extent possible. Disassemble only as necessary for shipping and handling.
C. Fabricate components with tight seams and joints. Provide surfaces free of wrinkling, chipping, uneven coloration, dents, and other imperfections. Fabricate units and fittings to produce flush, smooth, and rigid hairline joints.
D. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, and miscellaneous fittings for interconnection of units to other construction.

PART 3 EXECUTION

3.01 PREPARATION

A. Provide horizontal structural blocking/back-up in wall to accept fasteners.
B. Provide field "as-built-and-measured" cut-list to factory for fabrication of rail sections.
C. Allow 10 weeks for manufacture and supply of handrail.

3.02 EXAMINATION

A. Examine areas and conditions in which wall surface protection components and wall protection systems will be installed.
B. Complete finishing operations, including painting, before beginning installation of wall surface protection system materials.
C. Wall surfaces shall be dry and free from dirt, grease, loose paint, and scale.
D. Do not proceed with installations until unsatisfactory conditions have been corrected.

3.03 INSTALLATION

A. Install handrail units plumb, level, and true to line without distortions.
B. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible.
C. Install units in strict accordance with the manufacturer's instructions.
D. Attachment hardware (supplied by others) shall be appropriate for wall construction.
E. Where splices occur in horizontal runs of over 10-12 feet (3-4 m), splice applicable components at staggered locations along the run.

3.04 CLEANING

Immediately upon completion of installation, clean rails and accessories in accordance with manufacturer's recommended methods.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn Models CO-8, CO-8M, ACO-8 and ACO-8M

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Corner Guards

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Bumper Guards, Crash Rails, Accent Rails, Wall Covering, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"
  2. Blocking in walls for fasteners; refer to section 09 22 00 "Supports for Plaster and Gypsum Board"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)

B. American Society for Testing and Materials (ASTM)

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.

B. Shop drawings showing locations, extent and installation details of corner guards. Show methods of attachment to adjoining construction.

C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of guard:
  1. 12" (304.8mm) long sample of each model specified.

D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.

E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.

B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.

C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA and Life Safety.

D. Fire performance characteristics: Provide metal components tested in accordance with ASTM E84 for Class A/1 fire characteristics.

E. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Material must be stored flat.

1.06 Project Conditions

A. Installation areas must be enclosed and weatherproofed before installation commences.

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Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Stainless steel: To be type 304 alloy with #4 satin finish for models CO-8 and CO-8M; minimum strength and durability properties as specified in ASTM A276.

B. Aluminum: To be alloy 5005 H34 with clear anodized finish for models ACO-8 and ACO-8M; minimum strength and durability properties as specified in ASTM B221.

C. All necessary fasteners to be supplied by the manufacturer.

2.03 Corner Guards

A. Stainless steel corner guards to be CS Acrovyn: Surface mounted guards to be 16 gauge stainless steel.

1. Model CO-8 90° stainless steel corner guard with 3/16" (4.8mm) radius and 3 1/2" (88.9mm) standard legs. Bull nose 3/4" (19.1mm) radius optional. Mounted with construction adhesive standard; stainless steel screws optional. Available in variable angles and leg sizes. For odd angle specify model CO-8M. Optional powder coat finish available; select from standard powder coat finishes.

B. Aluminum corner guards to be CS Acrovyn: Surface mounted guards to be .063" (1.6mm) thick.

1. Model ACO-8 90° aluminum corner guard with 3/16" (4.8mm) radius and 3 1/2" (88.9mm) standard legs. Bull nose 3/4" (19.1mm) radius optional. Mounted with construction adhesive standard; stainless steel screws optional. Available in variable angles and leg sizes. For odd angle specify model ACO-8M. Optional powder coat finish available; select from standard powder coat finishes.

2.04 Fabrication

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finish and member sizes.

B. Preassemble components in shop as much as possible to minimize field assembly.

2.05 Finishes

A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applications and designations of finishes.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations, using only approved adhesive or mounting hardware and locating all components firmly into position, level and plumb.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean material in accordance with manufacturer's recommended cleaning method.

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B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Models FS-20N and FS-20RN

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Corner Guards

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Bumper Guards, Crash Rails, Accent Rails, Wall Covering, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"
  2. Blocking in walls for fasteners; refer to section 09 22 00 "Supports for Plaster and Gypsum Board"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)
B. American Society for Testing and Materials (ASTM)
C. Underwriters Laboratories (UL)
D. California 01350 specification

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of corner guards. Show methods of attachment to adjoining construction.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture and pattern:
  1. 12" (304.8mm) long sample of each model specified.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA, Life Safety and CA 01350 (exception: fire barrier).
D. Fire performance characteristics: Provide engineered PETG wall protection system components with UL label indicating that they are identical to those tested in accordance with ASTM E84 for Class A/1 characteristics listed below:
  1. Flame spread: 25 or less
  2. Smoke developed: 450 or less
E. **Fire performance characteristics: Provide engineered PETG wall protection units with fire barrier that are identical to those tested in accordance with UL-263 (E-119) for one hour or two hour rated installation.**
F. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.

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G. Color match: Provide wall protection components that are color matched in accordance with the following:

1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)

H. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a cool, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40°F (4°C) and a maximum of 100°F (38°C) should be maintained.

C. Material must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65°-75°F (18°-24°C) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Extruded material should be high-impact Acrovyn 4000 with Shadowgrain texture, nominal .078" (1.98mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

B. Aluminum: Extruded aluminum retainers should be 6063-T6 alloy, nominal .070" (1.78mm) thickness. Minimum strength and durability properties as specified in ASTM B221.

C. Fasteners: All fasteners to be non-corrosive and compatible with aluminum retainers. All necessary fasteners to be supplied by the manufacturer.

2.03 Corner Guards

A. Engineered PETG Corner Guards to be CS Acrovyn: Flush mounted guards consisting of continuous aluminum retainer with snap-on Acrovyn 4000 cover. Retainer to be taped and spackled into adjacent drywall. Extruded aluminum base and closure gasket where indicated. Attachment hardware shall be appropriate for wall construction.

1. **Model FS-20N 90° flush mounted corner guard with 3" (76.6mm) legs and 1/4" (6.4 mm) radiused cover. For optional integral fire barrier, specify FS-20RN 1HR for one hour fire rated installation or FS-20RN 2HR for two hour fire rated installation. Select from one of Acrovyn solid colors or Chameleon™ simulated patterns.** [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which model variations, colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver (exception: fire barrier). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]

2.04 Fabrication

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finish and member sizes.

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Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations, using only approved mounting hardware, and locating all components firmly into position, level and plumb.

B. Temperature at the time of installation must be between 65°-75°F (18°-24°C) and be maintained for at least 48 hours after the installation.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean guards and accessories in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Models SM-20N, SM-20AN and SM-20MN

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Corner Guards

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Bumper Guards, Crash Rails, Accent Rails, Wall Covering, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"
  2. Blocking in walls for fasteners; refer to section 09 22 00 "Supports for Plaster and Gypsum Board"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)
B. American Society for Testing and Materials (ASTM)
C. Underwriters Laboratories (UL)
D. California 01350 specification

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of corner guards. Show methods of attachment to adjoining construction.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and end cap attachment and alignment:
  1. 12" (304.8mm) long sample of each model specified including end cap.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA, Life Safety and CA 01350.
D. Fire performance characteristics: Provide engineered PETG wall protection system components with UL label indicating that they are identical to those tested in accordance with ASTM E84 for Class A/1 characteristics listed below:
  1. Flame spread: 25 or less
  2. Smoke developed: 450 or less
E. Impact strength: Provide wall protection components that have been tested in accordance with the applicable provisions of ASTM F476.
F. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.

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G. Color match: Provide wall protection components that are color matched in accordance with the following:

1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)

H. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a cool, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40°F (4°C) and a maximum of 100°F (38°C) should be maintained.

C. Material must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65°-75°F (18°-24°C) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Extruded material should be high-impact Acrovyn 4000 with Shadowgrain texture, nominal .078" (1.98mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

B. Regrind PETG: PVC-free regrind retainer for model SM-20N.

C. Aluminum: Extruded aluminum retainers should be 6063-T6 alloy, nominal .062" (1.57mm) thickness for models SM-20AN and SM-20MN. Minimum strength and durability properties as specified in ASTM B221.

D. Fasteners: All fasteners to be non-corrosive and compatible with aluminum retainers. All necessary fasteners to be supplied by the manufacturer.

2.03 Corner Guards

A. Engineered PETG Corner Guards to be CS Acrovyn: Surface mounted guards consisting of continuous retainer with snap-on Acrovyn 4000 cover. Color matched end caps to be provided for both partial and full height applications. Attachment hardware shall be appropriate for wall construction.

1. Model SM-20N 90° surface mounted corner guard with 3" (76.1mm) legs, 1/4" (6.4mm) radius cover and regrind PETG retainer. Specify SM-20AN for continuous aluminum retainer or SM-20MN for odd degree corners. Select from one of Acrovyn solid colors or Chameleon™ simulated patterns. Optional horizontal accent reveal available in Black only (90° only). [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver (exception: optional horizontal accent reveal). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]

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2.04 Fabrication

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finish and member sizes.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations, using only approved mounting hardware and locating all components firmly into position, level and plumb.

B. Temperature at the time of installation must be between 65°-75°F (18°-24°C) and be maintained for at least 48 hours after the installation.

C. Adjust installed end caps as necessary to ensure tight seams.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean material in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 .040N Sheet

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Wall Covering

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Corner Guards, Bumper Guards, Crash Rails, Accent Rails, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)
B. American Society for Testing and Materials (ASTM)
C. Underwriters Laboratories (UL)
D. California 01350 specification

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of wall covering products.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and thickness:
  1. Sample of each product specified.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA, Life Safety and CA 01350.
D. Fire performance characteristics: Provide engineered PETG wall protection system components with UL label indicating that they are identical to those tested in accordance with ASTM E84 for Class A/1 characteristics listed below:
  1. Flame spread: 25 or less
  2. Smoke developed: 450 or less
E. Impact strength: Provide wall protection components that have been tested in accordance with the applicable provisions of ASTM F476.
F. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.

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G. Color match: Provide wall protection components that are color matched in accordance with the following:

1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)

H. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in undamaged packaging in a clean, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40ºF (4ºC) and a maximum of 100ºF (38ºC) should be maintained.

C. Materials must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65-75ºF (18-24ºC) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Rigid sheet should be high-impact Acrovyn 4000 with standard Suede texture, nominal .040" (1.02mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

B. Aluminum: Optional aluminum trims to be alloy 6063 T5 with clear anodized finish; minimum strength and durability properties as specified in ASTM B221.

2.03 Wall Covering

A. **Engineered PETG rigid sheet to be CS Acrovyn: Nominal .040" (1.02mm) thick rigid sheet supplied in 4' x 8' or 10' (1.2m x 2.4m or 3.0m) sheet sizes in standard Suede texture. Optional textures shall be 43" x 90" or 114" (1.1m x 2.3m or 2.9m). Select from one of Acrovyn solid colors or Chameleon™ simulated patterns. Standard Chameleon sheet size is 4' x 10' (1.2m x 3.0); pattern direction runs parallel to 10' (3.0m) side of sheet. Specify color-matched caulk, clear caulk, Acrovyn trims or aluminum trims as needed for joints/transitions.** [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver (exceptions: adhesive, primer and caulk). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]

2.04 Fabrication

A. General: Fabricate wall covering to comply with requirements indicated for design, dimensions, detail, finish and sizes.

2.05 Finishes

A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applications and designations of finishes.

2.06 Accessories

A. Adhesive: Acrovyn wall covering shall be furnished as a complete packaged system, including appropriate standard adhesive.

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B. Primer, caulk and trims available for purchase.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations using approved adhesive.

B. Temperature at the time of installation must be between 65-75ºF (18-24ºC) and be maintained for at least 48 hours after the installation to allow for proper adhesive set-up.

C. Relative humidity shall not exceed 80%.

D. Do not expose wall covering to direct sunlight during or after installation. This will cause the surface temperature to rise, which in turn will cause bubbles and delamination.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean material in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn by Design® .040N Sheet

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Wall Covering

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Corner Guards, Bumper Guards, Crash Rails, Accent Rails, Wall Panels, Door Protection; refer to section 10 26 00 "Wall and Door Protection"

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)
B. American Society for Testing and Materials (ASTM)
C. Underwriters Laboratories (UL)
D. California 01350 specification

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 "Submittal Procedures":

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of wall covering products.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and thickness:
  1. Sample of each product specified.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Assemblies should conform to all applicable codes including IBC, UBC, SBCCI, BOCA, Life Safety and CA 01350.
D. Fire performance characteristics: Provide engineered PETG wall protection system components identical to those tested in accordance with ASTM E84 for Class A/1 characteristics listed below:
  1. Flame spread: 25 or less
  2. Smoke developed: 450 or less
E. Impact strength: Provide wall protection components that have been tested in accordance with the applicable provisions of ASTM F476.
F. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.
G. Color match: Provide wall protection components that are computer controlled within manufacturing tolerances and typical limitations of digital printing color matching.
H. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

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1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a clean, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40ºF (4ºC) and a maximum of 100ºF (38ºC) should be maintained.

C. Materials must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65-75ºF (18-24ºC) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Rigid sheet should be high-impact Acrovyn by Design with standard Suede texture, nominal .040" (1.02mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer.

B. Aluminum: Optional aluminum trims to be alloy 6063 T5 with clear anodized finish; minimum strength and durability properties as specified in ASTM B221.

2.03 Wall Covering

A. **Engineered PETG rigid sheet to be Acrovyn by Design: Nominal .040" (1.02mm) thick rigid sheet supplied in 4' x 8' or 10' (1.2m x 2.4m or 3.0m) sheet sizes in standard Suede texture. High definition graphic file reverse printed on clear sheet and sealed with protective backer. Select from one of standard pattern colorways or supply custom artwork with copyright clearance. Specify color-matched caulk, clear caulk, Acrovyn trims or aluminum trims as needed for joints/transitions.**

2.04 Fabrication

A. General: Fabricate wall covering to comply with requirements indicated for design, dimensions, detail, finish and sizes.

2.05 Finishes

A. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applications and designations of finishes.

2.06 Accessories

A. Adhesive: Acrovyn wall covering shall be furnished as a complete packaged system, including appropriate standard adhesive.

B. Primer, caulk and trims available for purchase.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

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3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations using approved adhesive.

B. Temperature at the time of installation must be between 65-75ºF (18-24ºC) and be maintained for at least 48 hours after the installation to allow for proper adhesive set-up.

C. Relative humidity shall not exceed 80%.

D. Do not expose wall covering to direct sunlight during or after installation. This will cause the surface temperature to rise, which in turn will cause bubbles and delamination.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean material in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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Specialty Walls

2019

FRL®
FIBER REINFORCED LAMINATES

Guide Specifications

FRL® (Fiber Reinforced Laminate) is the innovative wall surfacing product from Panolam Industries. Engineered and manufactured to exacting standards you can be assured that it will not delaminate internally like similar products currently available. This wall panel provides ease of installation, job-site workability, long lasting style and exceptional durability year-after-year. For more information, please visit our website www.panolam.com or call 888-375-9255.

SECTION 066401

FIBER-REINFORCED LAMINATES

PART 1 - GENERAL

1.1 SUMMARY

A. Provide fiber-reinforced laminates (FRL) for wall applications.

B. Related Sections: Coordinate with Work of other sections including the following:

1. Section 092900 – Gypsum Board.
2. Section 096513 – Resilient Base.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's literature including product characteristics, accessories and limitations.

B. Selection Samples: Submit samples of colors and finishes if requested by Architect.

C. Verification Samples: Submit samples of materials selected specified to verify color and finish.

D. Industry Certifications and Standards: Submit copy of documentation indicating compliance.

1.3 QUALITY ASSURANCE

A. Manufacturer: Minimum of 5 years experience manufacturing similar products.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver materials and products in unopened factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations.

1.5 WARRANTY

A. Manufacturer's Warranty: Provide manufacturer's standard warranty against defects in manufacturing.

PART 2 - PRODUCTS

2.1 FIBER-REINFORCED LAMINATES

A. Manufacturer: Panolam Industries International, Inc., 20 Progress Drive, Shelton, CT 06484. Tel: 888-375-9255. Web: www.panolam.com. Panels shall comply with the following:

1. Thickness: 0.075 inches.
2. Color and Finish: As selected by Architect from manufacturer's full range of Nevamar or Pionite colors and designs.

3. Surface Burning Characteristics: US Standard UL-723/ASTM E 84 Class A; Canadian Standard ULC-S102 Class A for Surface Burning Characteristics of Building Materials.
4. Sustainability, Indoor Air Quality: GREENGUARD Gold Certification.
5. IMO Certified for marine use.
6. Wear Resistance (Cycles) NEMA 3.13: 3500 typical.
7. Flexural Strength ASTM D790: 20,148 psi typical.
8. Molding Profiles: Outside corners flat, outside corners round, division bars, inside corners, standard end caps.
9. Adhesive: Construction Adhesive #4319 by Franklin Adhesives and Polymers or equal approved by panel manufacturer.
10. Joint Caulking: Color Sil by Color Rite or equal approved by panel manufacturer; 100 percent silicone based colored caulking.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install products in strict accordance with manufacturer's instructions and approved submittals.

1. Clean substrate of dirt, dust, waxes, and other bond breaking substances prior to beginning installation.
2. Install panels with bottom edge located to clear top of any rigid wall base. Rubber wall bases may be bonded over the FRL using a polymer or urethane based adhesive.
3. Apply adhesive uniformly using adhesive manufacturers recommended notched trowel to the entire back of panels completely to the edge.
4. Lay FRL® panels in place leaving approximately 1/8 inch vertical installations 3/16 inch for horizontal installations between panel joints.
5. Follow adhesive manufacturer's recommendations for set and application times.
6. Apply pressure to entire panel face with laminate type roller, removing trapped air and ensure proper adhesion between surfaces.
7. If no trim is used, seal panel joints and top, side, and bottom edges with colored caulking to match panel color. Wipe smooth and remove excess caulk from FRL panel face.

3.3 ADJUSTING AND CLEANING

A. Replace installations out of plumb and not aligned with adjacent panels and construction.

B. Clean panel face to remove soiling, stains, dust, and dirt using clean rags, and cleaning agents as instructed by manufacturer.

C. Leave installation clean, free of residue and debris resulting from work of this Section.

END OF SECTION

SRP-1,3,5,6,7

3form varia ecoresin®

Product Description

3form Varia Ecoresin is a dynamic interlayer system with design possibilities as diverse as your imagination. By allowing you to custom-select the color, pattern, texture, interlayer and finish of your material, Varia Ecoresin transforms into the perfect medium for your architectural application.

An award-winning 3form product, Varia Ecoresin has the added benefit of being made from a specially-formulated co-polyester resin that combines performance with environmental responsibility. Ecoresin incorporates 40% pre-consumer recycled content without compromising aesthetics or overall physical properties, is compatible with one of the largest post-consumer recycle streams, and is GREENGUARD® Indoor Air Quality Certified.

FEATURES AND BENEFITS

- Produced on an individual order basis, allowing for creative design and product selection (minimum order quantity – ONE sheet!)
- Heat-formable into virtually any shape or size for eye-catching installations
- SCS-certified recycled content helps achieve LEED® credits for building sustainability
- Very tough, allowing for easy fabrication and maximum installed durability
- Extremely versatile which enables designers to achieve full design potential
- Lightweight, half the density of glass, which makes for easier installation and reduces structural support requirements
- Excellent chemical resistance which reduces potential harm incurred by cleaning agents
- Varia Ecoresin is GREENGUARD Indoor Air Quality Certified
- Varia Ecoresin is Underwriters Laboratories registered

AVAILABLE INTERLAYERS AND COLORS

Varia Ecoresin is available in a variety of standard interlayer and color options. Visit 3-form.com for all available options.

TEXTURES AND FINISHES

Each product in the Varia Ecoresin collection comes standard with both a front and back finish. Additionally, 3form provides the option of substituting between standard finishes. In most cases, you can even pick different front and back finishes.

Finishes include:

- **Grain** - Refined organic detail in a translucent wood grain finish.The pattern direction runs parallel to the eight foot side of the panel.
- **Grid** - Fine, horizontal crosshatched lines create a subtle texture.
- **Patent** - A high gloss finish with highest light transmittance
- **Patina** - A non-glare finish with smooth appearance
- **Sandstone** - A more durable finish with a subtle texture
- **Stucco** - A durable finish with a pebbled texture
- **Supermatte** - A frosted matte finish for maximum light diffusion
- **Vellum** - A random brushed matte finish similar to the 3form renewable matte finish.
- **Velvet** - Durable blurred finish with a crushed velvet appearance. The pattern direction runs parallel to the four foot side of the panel.

Additionally 3form low-VOC functional coatings may be applied to the surface of 3form Varia Ecoresin. Finishes include:

- **Patina Plus** - Non-glare finish with slightly frosted appearance
- **SFX Frost** - Applied frosted finish with paper-like appearance

PANEL SIZES AND TOLERANCES

Varia Ecoresin panels are offered in 4' x 8' (1.2 m x 2.4 m) and 4' x 10' (1.2 m x 3 m). All dimensions and squareness are subject to a 3/16" (4.7 mm) tolerance. 5' x 10' (1.5 m x 3 m) is also available, though some restrictions apply.

Varia Ecoresin is available in gauges from 1/16 inch to 1 inch.

NOMINAL THICKNESS GAUGE	MINIMUM ALLOWANCE GAUGE	MAXIMUM ALLOWANCE GAUGE
1/8" (3.1 mm)	0.098″	0.138″
3/16" (4.7 mm)	0.155″	0.205″
1/4" (6.3 mm)	0.196″	0.306″
3/8" (9.5 mm)*	0.304″	0.434″
1/2" (12.7 mm)	0.412″	0.562″
3/4" (19.0 mm)	0.618″	0.798″
1.0" (25.4 mm)	0.850″	1.090″

*Add +/- 1/32″ (+/-0.8 mm) to the above tolerance for hint textured sheets.
**Add +/- 3/16″ (+/-4.7 mm) to the above tolerance for all embossed texture sheets.

Sheet tolerance readings are based on an average of several measurements along both long edges of each panel. These measurements are taken 2-3 inches (50-75 mm) from the edges of the panel.

PATTERN SKEW TOLERANCE

Linear patterns in Varia Ecoresin panels have a skew tolerance of 1/4" skew over 48". Panels containing a pattern (Capiz, Timber, etc.) will not match up from sheet to sheet. If the sheets are intended to match, they should be field cut on-site to a smaller final sheet dimension. HiRes panels will have an alignment tolerance of 1/4" from sheet to sheet.

FLATNESS TOLERANCE

Varia Ecoresin panels shall not have distortion in the form of a wrinkle, twist or scallop along the perimeter of the sheet. Overall warp extending across the sheet is permitted to a maximum of 9/32" (7.14 mm) for each 48" (1.2 m) or fraction thereof. Panel is to be measured when laying horizontally under its own weight on a flat continuous surface.

Specifications

FLAMMABILITY & SMOKE TEST RESULTS – BUILDING CODE APPROVALS

Varia Ecoresin has been independently tested and meet the criteria for approved interior finishes and light transmitting resin materials as described in the 2016 International Building Code®.

TEST	3FORM VARIA ECORESIN	RESULT
ASTM D 2843 Smoke Density	71.6%	PASS Less than 75
ASTM D 635 Flame Spread	Self extinguishing	PASS CC1
ASTM D 1929 Self-ignition Temperature	716°F	PASS Greater than 650°F
UL94	Flame Class - HB	PASS
UPITT Mortality Test	PASS	Not more toxic than wood
NFPA 286 1/4" thickness + below (walls only or ceilings only) 3/8" thickness + below (walls in standoff configuration or ceilings only)	 Pass Pass	 Pass Pass
The NFPA 286 corner burn test is accepted by the 2012 IBC for interior finishes. Passing the NFPA 286 test allows for materials to be utilized where Class A materials are required (IBC 803.1.2).		
ASTM E84 Flame Spread, 3/16" thickness Smoke generated	 25 250	 Class A: 0-25 <450
ASTM E84 Flame Spread, 1/4" thickness Smoke generated	 65 425	 Class B: 26-75 <450
ASTM E84 Flame Spread, 1/2" thickness Smoke generated	 55 400	 Class B: 26-75 <450
ASTM E84 Flame Spread, 3/4" thickness Smoke generated	 35 450	 Class B: 26-75 <450
ASTM E84 Flame Spread, 1" thickness Smoke generated	 20 250	 Class A: 0-25 <450

Due to their specialty construction, 3from Dichroic, Reflect and 3form Wood have their own unique set of fire performance results.

TEST	3FORM DICHROIC/REFLECT	RESULT
ASTM D 2843 Smoke Density	47.5%	PASS Less than 75
ASTM D 635 Flame Spread	17.4 mm/min	PASS CC2
ASTM D 1929 Self-ignition Temperature	716°F	PASS Greater than 650°F
ASTM E84 Flame Spread, 1/4" thickness Smoke generated	 65 450	 Class B: 26-75 <450

TEST	3FORM TIMBER	RESULT
ASTM E84-03 Flame Spread, 3/8" thickness Smoke generated	 75 450	 Class B: 26-75 <450

PANEL WEIGHT

THICKNESS (INCHES)	WEIGHT FLUX (LB/FT²)
1/16" (1.5 mm)	0.4 lb/ft² (2.0 kg/m²)
1/8" (3.1 mm)	0.8 lb/ft² (3.9 kg/m²)
3/16" (4.7 mm)	1.2 lb/ft² (5.9 kg/m²)
1/4" (6.3 mm)	1.7 lb/ft² (8.3 kg/m²)
3/8" (9.5 mm)	2.5 lb/ft² (12.2 kg/m²)
1/2" (12.7 mm)	3.3 lb/ft² (16.1 kg/m²)
3/4" (19.0 mm)	5.0 lb/ft² (24.4 kg/m²)
1.0" (25.4 mm)	6.6 lb/ft² (32.2 kg/m²)

EXPANSION/CONTRACTION ALLOWANCES

Like all resin products, 3form Varia Ecoresin will expand and contract nominally with fluctuations in temperature. The following formula provides allowances that should be made in framed or fitted applications:

- Longest length of panel (inches) x temperature change of the sheet (°F) x 0.00004 = Amount of Linear Expansion/ Contraction (inches)

EXAMPLE:

- 48" x 96" panel experiencing 50°F temperature change will expand/ contract: 96 inches x 50 degrees x 0.00004 in/in °F = 0.192 inches Installers should take extra precautions if installation is occurring before the HVAC systems are operational. Allowances should also be made in the following situations:
- Fastening points
- Channel depths in frames
- Holes for standoffs and other hardware
- Meeting points for multiple sheets of 3form Varia Ecoresin

USAGE LIMITATIONS

DO NOT use cyanoacrylate or solvent type thread locking materials with Varia Ecoresin. To more permanently secure hardware, use the recommended products from the 3form adhesives matrix."

REFLECT

When using Varia Reflect in pressure fitting applications, such as stand-off supports, use a pressure distribution plate or neoprene gasket to prevent localized panel separations.

Varia Reflect cannot be heat formed.

DICHROIC

3form Dichroic has an inherent linerarity running parallel to the panel length. The 3form Dichoic interlayer is very delicate, it is not recommended for use in exterior applications.

DO NOT cut Dichroic with a jigsaw, scroll saw, or waterjet.

When using Dichroic in pressure fitting applications, such as stand-off supports, use a pressure distribution plate or neoprene gasket to prevent localized panel separations.

NATURALS

Varia Ecoresin Panels utilizing natural or organic materials (ie. leaves, branches or twigs) my change in appearance over time. Natural materials are also subject to inherent inconsistency in color, texture and shape. Small areas of delamination are also to be expected, especially near saw cut edges.

METALLICS

Varia Ecoresin panels utilizing metallic interlayers (ie. Hollywood, Electra, Itemba, Mirror print) may change in appearance over time due to antiquing of the metallic materials.

TIMBER

Because 3form Timber is produced from engineered wood products, it is not recommended for use in high moisture or exterior applications. Wood products are very responsive to environmental conditions (moisture, humidity, temperature changes) and therefore is restricted to interior applications. Wood pieces in Timber may contain knots, imperfections, dark spots, stains and color variation.

After trimming, the following treatments improve the edge aesthetics.

Natural: Sand edges with 220 grit sandpaper and carefully wipe the edges with Weld-On 3 (or MEK) making sure not to get any of the chemical on the face or back of the sheet.

Mocha: Sand edges with 220 grit sandpaper and carefully wipe the edges with Minwax Special Walnut 224 stain.

OTHER

Birch will sometimes bleed and cause small amounts of yellowing while being manufactured. In addition, due to the manufacturing press process, birch bulbs may be dispersed within the sheet, some of which will be trapped in clear areas for the Birch Grove pattern.

Structured Bamboo is a one-sided product.

FABRICATION

See the 3form Varia Fabrication Manual for details guidelines and instructions on cutting, drilling, routing, etc. of Varia Ecoresin panels.

EDGE SEALING

Certain Varia Ecoresin designed layers (organics, papers and fabrics in particular) can have a tendency to wick moisture over time if the edges become wet and are not adequately sealed. These Varia Ecoresin products should not be exposed to water or wet conditions without first applying an approved edge sealing treatment. Varia Ecoresin produced using C3 or HighRes do not require edge sealing. These are good options to use as an alternative to Woven Colors and Organics. Edge sealing is required on all exposed edges (including any holes that are created to allow for stand-off fastening). There are some designed Varia Ecoresin Woven Colors that do not exhibit wicking behavior and therefore do not need to be edge sealed. If you have additional questions or concerns regarding edge sealing of 3form products please contact 3form.

DEFLECTION

3form Varia Ecoresin will exhibit different amounts of deflection given a variety of factors: fastening techniques, loads, gauges and panel dimensions to list a few. 3form can assist you with general deflection guidelines for your application. You may also consult the Varia Deflection Charts technical white paper. If your application has specific engineering requirements, please contact 3form for additional direction.

HEAT FORMING/COLD BENDING

Varia Ecoresin can be cold bent for simple bends and curved areas. As a general rule, a minimum radius of 100 times thickness is acceptable for Varia Ecoresin (will depend on interlayer material). A minimum radius of 250 times thickness should be used for Dichroic. A minimum radius of 200 times thickness should be used for Timber (with the bending axis parallel to the wood slats).

Heat formed Dichroic panels will have a finished size 6” less on each dimension than the standard size sold.

STANDARD SIZE	SIZE AFTER FORMING
48” x 96”	42” x 90”
48” x 120”	42” x 116”

	MINIMUM COLD BEND RADII		
PANEL THICKNESS	VARIA ECORESIN	DICHROIC/REFLECT	WOOD
1/16" (1.5 mm)	7" (178 mm)	-	-
1/8" (3.1 mm)	12" (305 mm)	32" (813 mm)	24" (610 mm)
3/16" (4.7 mm)	19" (483 mm)	47" (1194 mm)	37" (950 mm)
1/4" (6.3 mm)	25" (635 mm)	63" (1600 mm)	50" (1270 mm)
3/8" (9.5 mm)	37" (940 mm)	94" (2388 mm)	75" (1905 mm)
1/2" (12.7 mm)	50" (1270 mm)	125" (3175 mm)	100" (2540 mm)
3/4" (19.0 mm)	75" (1905 mm)	188" (4775 mm)	150" (3810 mm)
1" (25.4 mm)	100" (2540 mm)	250" (6350 mm)	200" (5080 mm)

Because of its low thermoforming temperature, Varia Ecoresin is easy to line bend or drape form. For specific details on line bending and heatforming please consult the 3form Varia Ecoresin Fabrication Manual.

The special construction of 3form Dichroic and Wood introduces challenges in terms of heat forming. Because both are rigid interlayers, complex curvature is not possible. Simple curves and bends may be accomplished.Timber can only be heat-formed in simple curves, perpendicular to the direction of the wood. Minimum heat forming radius for Timber is 48”.

For highly complex shapes and curves, consult with or employ the services of the experts in 3form Fabrication.

EDGE FINISHING

Edges of 3form Varia Ecoresin panels are able to be machined or routed into a variety of different forms. In addition to a straight edge, edges may
accept beveling, rounding, etc. Additional finishing, such as sanding or polishing, can also be provided to some edges.

Selected Mechanical and Physical Properties for 3form Varia Ecoresin

Values reported for Varia Ecoresin with no decorative inserts. Decorative inserts may increase or may decrease specific test results. Should your application require specific test values, consult the 3form Product Technology Department.

		TYPICAL VALUE			
		0.118" (3 MM)		0.236" (6 MM)	
PROPERTY*	**ASTM METHOD**	**SI**	**U.S.**	**SI**	**U.S.**
GENERAL					
Density	D 1505	1,270 kg/m³	79 lb/ft³	1,270 kg/m³	79 lb/ft³
Water Absorption	D 570 23° C (73° F), 24h immersion	0.2%	0.2%	0.1%	0.1%
MECHANICAL					
Tensile Stress @ Yield	D 638	53 MPa	7,700 psi	53 MPa	7,700 psi
Tensile Stress @ Break	D 638	26 MPa	3,800 psi	26 MPa	3,800 psi
Elongation @ Yield	D 638	4.8%	4.8%	5.0%	5.0%
Elongation @ Break	D 638	50%	50%	40%	40%
Tensile Modulus	D 638	2,200 MPa	320,000 psi	—	—
Flexural Modulus	D 790	2,100 MPa	310,000 psi	2,000 MPa	290,000 psi
Flexural Strength	D 790	77 MPa	11,200 psi	83 MPa	12,000 psi
Shear Strength	D 732	62 MPa	9,000 psi	62 MPa	9,000 psi
Shear Modulus	—	793 MPa	115,000 psi	—	—
Rockwell Hardness	D 785	115	115	117	117
Safety Glazing	ANSI 97.1	PASS		PASS	
Izod Impact Strength, Notched	D 256 @ 73°F D 256 @ 32°F D 256 @–22°F	88 J/m 66 J/m 39 J/m	1.7 ft·lbf/in. 1.2 ft·lbf/in. 0.7 ft·lbf/in.	62 J/m — —	1.2 ft·lbf/in. — —
Impact Strength, Unnotched	D 4812 @ 73°F D 4812 @ 32°F D 4812 @ –22°F	NB** NBB NBB	NB** NBB NBB	NB** — —	NB** — —
Impact Resistance—Puncture, Energy @ Max. Load	D 3763 @ 73°F D 3763 @ 32°F D 3763 @ 14°F D 3763 @ –4°F D 3763 @ –22°F	33 J 40 J 42 J 43 J 47 J	24 ft·lbf 30 ft·lbf 31 ft·lbf 32 ft·lbf 34 ft·lbf	71 J 93 J 96 J >100 J >100 J	53 ft·lbf 69 ft·lbf 71 ft·lbf >74 ft·lbf >74 ft·lbf
THERMAL					
Cont. Max Use Temperature -Varia	–	65ºC	150ºF	65ºC	150ºF
Cont. Max Use Temperature - Dichroic/ Reflect	–	60ºC	140ºF	60ºC	140ºF
Heat Deflection Temp	D 648 @ 264psi	70ºC	157ºF	73ºC	164ºF
Vicat Softening Temperature	D 1525 @ 1 kg	83ºC	181ºF	—	—
Forming Temperature	—	138-160ºC	280-320ºF	—	—
Thermal Conductivity	ASTM D 5930	0.205 W/ m·K	0.118 Btu/ hr·ft²·ºF	0.205 W/ m·K	0.118 Btu/ hr·ft²·ºF
Coefficient of Thermal Expansion	ASTM D 696	7x10⁻⁵ mm/ mm/ºC	4x10⁻⁵ in/ in/ºF	7x10⁻⁵ mm/ mm/ºC	4x10⁻⁵ in/ in/ºF

*Unless noted otherwise, all tests are run @ 73°F (23°C) and 50% relative humidity, using specimens machined from extruded sheeting with a thickness as indicated.

**Nonbreak as defined in ASTM D 4812 using specimens having a thickness as indicated. Properties reported here are typical of average lots. 3form makes no representation that the material in any particular shipment will conform exactly to the values given.

REFINISHING

It is possible for Varia Ecoresin to become damaged by scratching. Patent is the only Varia Ecoresin finish that may be repaired, and requires use of a flame polishing technique.

Light scratches and scuffs on the sandstone surface finish can be repaired with a plastic polish. The majority of 3form products have a surface finish that would be ruined by buffing.

SOUND TRANSMISSION CLASS (STC) VALUES FOR VARIA ECORESIN

Measurement protocol: ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

THICKNESS	STC VALUES
1/8" (3.1 mm)	25
3/16" (4.7 mm)	29
1/4" (6.3 mm)	31
3/8" (9.5 mm)	34
1/2" (12.7 mm)	34
1" (25.4 mm)	39

THERMAL INSULATION VALUES FOR VARIA ECORESIN

Insulative values are a function of both the convective properties (U-values and shading coefficients) and the conductive properties (thermal conductivity).

Measurement protocol: ASTM E 903 - Standard Test Method for Solar Absorbance, Reflectance and Transmittance of Materials Using Integrating Spheres. ASTM E 891-87 - Tables for Terrestrial Direct Normal Solar Spectral Irradiance Tables for Air Mass. ASTM E 408-71 - Standard Test Method for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.

VARIA ECORESIN CLEAR THICKNESS	WINTER U-VALUE (BTU/HR-FT²-°F)	SUMMER U-VALUE (BTU/HR-FT²-°F)
1/4" (6.3 mm)	0.97	0.93
3/8" (9.5 mm)	0.90	0.87
1/2" (12.7 mm)	0.83	0.80

Chemical Resistance of 3form Varia Ecoresin to Select Compounds

365 DAY FULL IMMERSION TESTING @ 73ºF (23ºC)

Polymer materials are affected by chemicals in different ways. Changes in performance or appearance can be attributed to fabrication methods, exposure conditions, concentration of chemical substances or exposure duration. Such factors can even influence the final effect of substances that 3form Varia Ecoresin is considered "Resistant" to under test conditions. Further details are explained below:

FABRICATION

Stresses generated from sanding, grinding, drilling, polishing, machining, sawing and/or forming (hot or cold).

EXPOSURE

Exposure duration, stresses imparted during the application life-cycle due to loads, temperature changes, heat, environments, etc.

APPLICATION OF CHEMICALS

Application from contact, rubbing, wiping, spraying, soaking, etc. Also having an affect is the relative concentration of the chemical in question.

The following data is based on complete immersion of Varia Ecoresin in the chemical or reagent shown. Samples remained immersed and were stored at 73ºF (23ºC) for a period of one year. Following the test period the samples were removed from immersion and inspected.

The following table provides indicative performance of the chemical resistance characteristics of Ecoresin. The following codes are used to describe the chemical resistance characteristics:

R = RESISTANT

3form Varia Ecoresin is able to withstand the identified compound for long exposure periods up to 120ºF (7 days, full immersion)

LR = LIMITED RESISTANCE

3form Varia Ecoresin is only resistant when in contact with this compound for short periods at room temperature. It is advised that further determination of the effect of the substance be further tested in your particular application.

NR = NOT RESISTANT

3form Varia Ecoresin is not resistant to the compound. The material will swell, craze, haze, dissolve or experience some physical change when exposed to this substance.

REAGENT	RESULT	REAGENT	RESULT
Acetic Acid, 5%	R	Acetic Acid, conc.	NR
Acetone	NR	Ammonium Hydroxide, conc.	NR
Antifreeze, Automotive Ethylene Glycol Type	R	Benzene	NR
Brake Fluid, DOT3	R	Brake Fluid	LR
Carbon Tetrachloride	NR	Chromic Acid, 40%	R
Citric Acid, 10%	R	Cottonseed Oil	R
Deionized Water	R	Detergent, Alconox (0.25%)	R
Di (2-Ethylhexyl) Phthalate	R	Dibutyl Sebacate	R
Diesel Fuel	LR	Dimethyl Formamide	NR
Ethanol, 50%	R	Ethanol, 100%	R
Ethyl Acetate	NR	Ethylene Dichloride	NR
Gasohol, 10% Ethanol	LR	Gasohol, 10% Methanol	LR
Gasoline, Base for Gasohol	LR	Gasoline, Premium Unleaded	LR
Gasoline, Regular	R	Gasoline, Regular Unleaded	LR
Grease, Automotive	R	Hand Cleaner, Waterless Jergens SBS30	R
Hexane	R	Hydrochloric Acid, conc.	NR
Hydrochloric Acid, 10%	R	Hydrogen Peroxide, 3%	R
Hydrogen Peroxide, 28%	R	Isooctane	R
Kerosene	R	Lacquer Thinner	LR
Methyl Alcohol	LR	Mineral Oil	R
Motor Oil	R	Nitric Acid, conc.	NR
Nitric Acid, 10%	R	Nitric Acid, 40%	LR
Oleic Acid, 83%	R	Olive Oil	R
OxiCide, product use dilution	R	Penetrating Oil, Liquid Wrench #1	NR
Phenol, 5%	NR	Silicone Spray Lubricant	NR
Soap Solution, 1%	R	Sodium Carbonate, 2%	R
Sodium Carbonate, 20%	R	Sodium Chloride, 10%	R
Sodium Hydroxide, 1%	R	Sodium Hydroxide, 10%	R
Sodium Hypochlorite, 3.5%	R	Sulfuric Acid, conc.	NR
Sulfuric Acid, 3%	R	Sulfuric Acid, 30%	R
Tapping Oil	R	Toluene	NR
Transformer Oil	LR	Transmission Fluid, Auto	R
Turpentine	LR		

Cleaning Instructions

3form Varia Ecoresin, like all thermoplastic resin materials, should be cleaned periodically. A regular, seasonal cleaning program will dramatically help prevent noticeable weathering and dirt build-up. 3form recommends the use of the following common cleaning products: Windex, Formula 409, Simple Green, Fantastik, Virex, 10:1 Water/Bleach Solution.

Rinse the sheets with lukewarm water. (Be careful not to expose edges of organic or fabric interlayers to water) Remove dust and dirt from Varia Ecoresin with a soft cloth or sponge and a solution of mild soap and/or liquid detergent in water. A 50:50 solution of isopropyl alcohol and water also works well. Rinse thoroughly with lukewarm water.

Always use a soft, damp cloth to blot dry. Rubbing with a dry cloth can scratch the material and create a static charge. Never use scrapers or squeegees on Varia Ecoresin. Also avoid scouring compounds, gasoline, benzene, acetone, carbon tetrachloride, certain deicing fluids, lacquer thinner or other strong solvents.

DO:

- Keep edges dry and free of liquids
- Apply cleaning solution or water to a clean cloth and wipe resin clean

DO NOT:

- Use a squeegee.
- Use strong solvents, highly alkaline or abrasive cleaning agents.
- Clean in hot sun or at elevated temperatures.
- Rub with a dry cloth.
- Do not completely saturate panel with cleaning solution or water
- Expose organic or fabric interlayers to water or cleaning solution

PRESSURE WASHING

Pressure washing can also be an effective way to remove miscellaneous debris from surfaces of 3form Varia Ecoresin installations that are in exterior or hard-to-reach places.

Pre-soak panels with a light water spray to loosen and remove incidental surface debris.

It is recommended that the water pressure for cleaning Varia Ecoresin panels be 1,500 psi or less. 3form Varia Ecoresin is a tough material but can be damaged if high pressure is concentrated in a single position too long. Use a gradual sweeping motion over the application. Never concentrate water spray in a single position. Pressure nozzle should never be positioned closer than 8 inches (203 mm) from the panel surface.

Test a portion of the sheet first before spraying. If test piece shows any sign of material fatigue, abrasion or delamination – discontinue pressure washing and proceed with manual cleaning instructions as described above.

Coated or painted parts are not suitable for pressure washing as finish may be stripped off. Pressure washing is also not suitable for Varia Ecoresin panels that have been edge sealed or seamed. If using detergent, use mild detergents only. Rinse sheet with light water spray after washing.

DO NOT:

- Concentrate spray in single position.
- Use more than 1,500 psi pressure.
- Position pressure nozzle closer than 8" (203 mm) from panel.
- Proceed with pressure washing if test piece shows detrimental effects to panel.
- Pressure wash Varia Ecoresin panels that have been painted or coated to maintain coating integrity.
- Pressure wash Varia Ecoresin panels with sealed edges to ensure edge seals remain in tact.

If debris or dirt is not removed by pressure washing attempt to clean with manual procedures described in preceding section.

For more information, please visit 3-form.com or call 877-649-2670.

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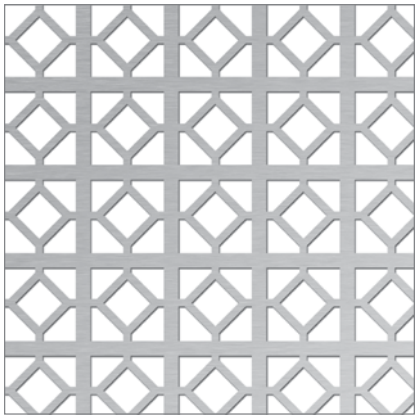
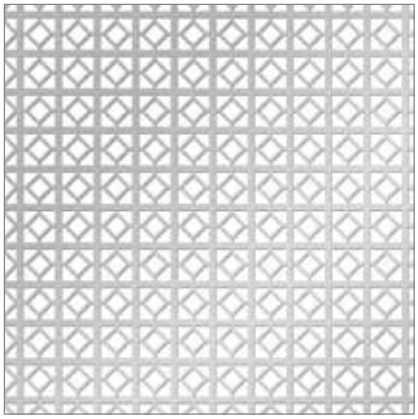
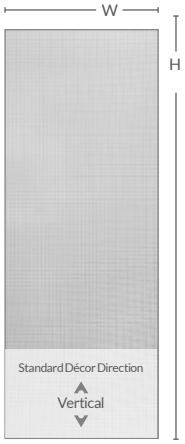
INTERSECT™



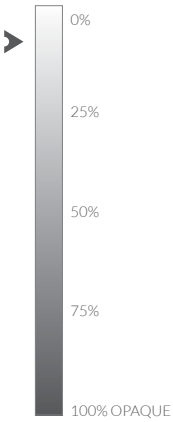
SCALE | 3½"x 3½"
9 x 9 cm



SCALE | 8"x 8"
20 x 20 cm



SCALE | 34" x 96"
86 x 244 cm



OPACITY
Based on approximate amount of light showing through the panel.

PRODUCT SPECIFICATIONS

	GAUGES*	LC	LF	LS
Available Sizes	3/64" .050" (1.27 mm) **			
	1/16" .060" (1.5 mm)			
	1/8" .118" (3 mm)			
	5/32" .160" (4 mm)	•		
	3/16" .196" (5 mm)	•		
	1/4" .236" (6 mm)	•	•	
	3/8" .354" (9 mm)	•	•	
	1/2" .472" (12 mm)	•		
	3/4" .708" (18 mm)			
	1" .944" (24 mm)			
	Standard: **34"**x 96" (**864** x 2438 mm)	•	•	
	Oversize: 48"x 120" (1219 x 3048 mm)			
Design	Standard Finishes	Gloss/Matte		
	Décor Direction	Vertical		
	Pattern Repeat	1 1/8" SQ		
$	Price Group	D		

* Not all decors are available in every gauge and may vary by resin. Gauge tolerance is ± 10%.

** Outside of the Wall Protection program a ten sheet minimum will apply for the .050" gauge.

KEY | LC = Lumiclear LF = Lumiform
LS = Lumishield EX • = Option Available

DESCRIPTION

A metallic framework with a deliberate, yet delicate pattern that will add a sophisticated rhythm and subtle aesthetic to any upscale space.

All metal décors are produced using industrial grade materials. As is common in industrial sheet metals, some surface tooling marks, light scratches, or slight color variation may exist, adding authenticity to the character of the product. This variation is part of the aesthetic interest of metallic products. The metal pattern starts and stops differently from sheet to sheet.

For side-to-side or top to bottom applications, a reveal is suggested, as this décor is not intended to edge align.

Thermoforming is not available for this particular décor.

AVAILABLE ADD-ONS

ChemShield™
A barrier used to increase the chemical resistance of Lumiclear panels.

Reflective Finishes™
A reflective surface that adds dimension and a sophisticated sparkle.

Illume™
Adding Illume to the back of a panel provides a soft light diffusion.

Marker Board™
A high quality dry erase finish that can be added to any Lumicor panel.

Opaque™
An opaque backing on Lumiclear or Lumiform creates a fully opaque panel.

Spectrum™
Lumicor's color technology can be applied to add a splash of color to any standard décor.

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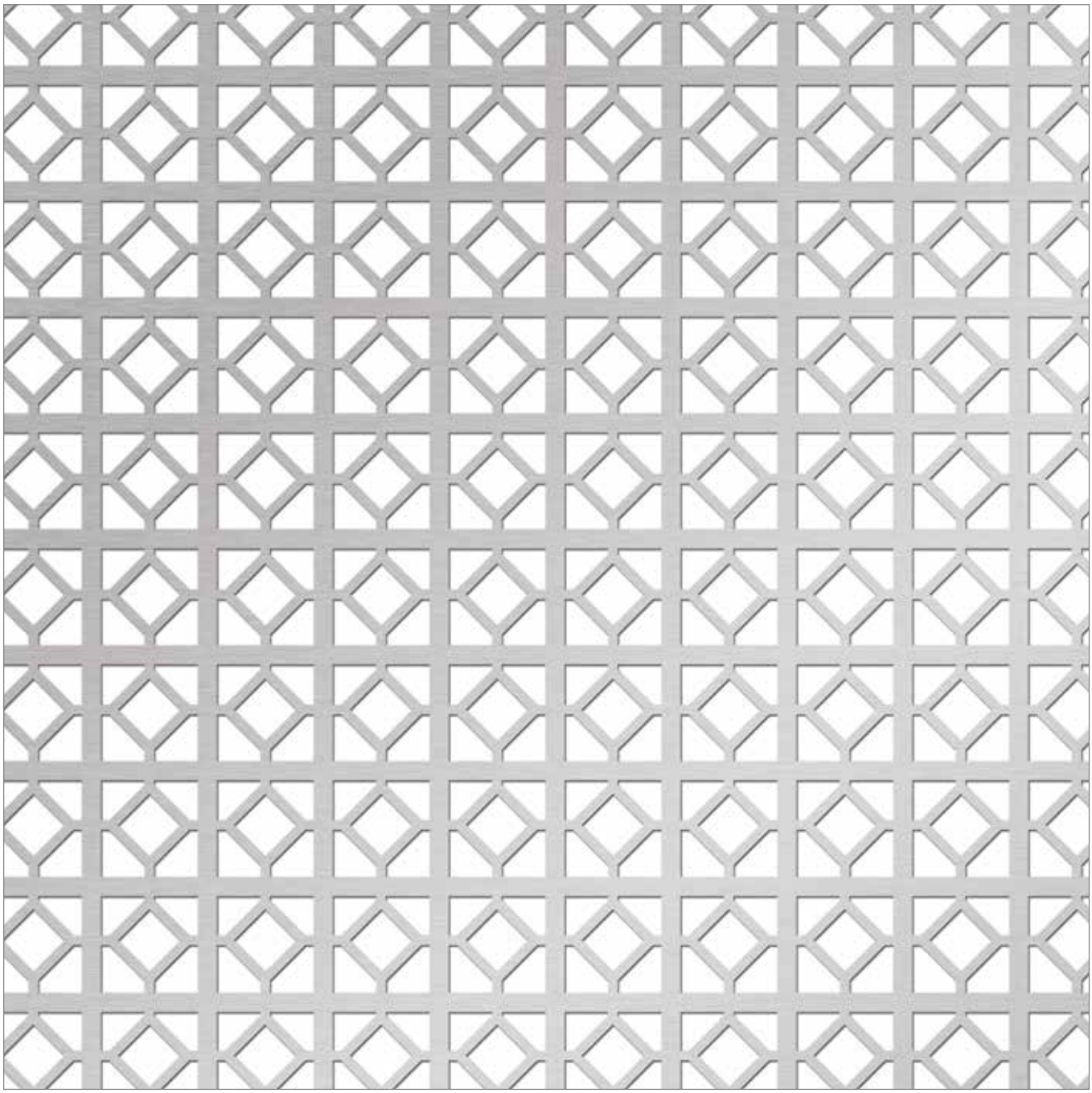
Metallic ›

INTERSECT™



Pattern to scale

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Lumicor®

www.lumicor.com | 1.888.LUMICOR

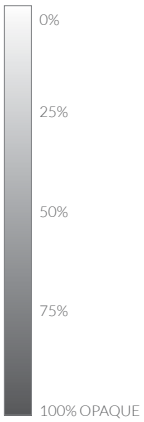
Textiles › Pattern ›

KAURI™

SCALE | 3½"x 3½"
9 x 9 cm

SCALE | 8"x 8"
20 x 20 cm

SCALE | 48"x 96"
122 x 244 cm



OPACITY
Based on approximate amount of light showing through the panel.

PRODUCT SPECIFICATIONS

	GAUGES*	LC	LF	LS
Available Sizes	3/64" .050" (1.27 mm) **		•	
	1/16" .060" (1.5 mm)			
	1/8" .118" (3 mm)	•	•	
	5/32" .160" (4 mm)	•		
	3/16" .196" (5 mm)	•		
	1/4" .236" (6 mm)	•	•	
	3/8" .354" (9 mm)	•	•	
	1/2" .472" (12 mm)	•	•	
	3/4" .708" (18 mm)	•		
	1" .944" (24 mm)	•		
	Standard: 48"x 96" (1219 x 2438 mm)	•	•	
	Oversize: 48"x 120" (1219 x 3048 mm)	•	•	
Design	Standard Finishes	Satin/Satin		
	Décor Direction	Vertical		
	Pattern Repeat	23"V, 19.6"H		
$	Price Group	C		

* Not all decors are available in every gauge and may vary by resin. Gauge tolerance is ± 10%.

** Outside of the Wall Protection program a ten sheet minimum will apply for the .050" gauge.

KEY | LC = Lumiclear LF = Lumiform
LS = Lumishield EX • = Option Available

DESCRIPTION

This unique burnout fabric features a sophisticated pattern that captivates the senses. Combine this décor with any Spectrum Add-On to add a splash of color and customize your design!

AVAILABLE ADD-ONS

ChemShield™
A barrier used to increase the chemical resistance of Lumiclear panels.

Reflective Finishes™
A reflective surface that adds dimension and a sophisticated sparkle.

Illume™
Adding Illume to the back of a panel provides a soft light diffusion.

Marker Board™
A high quality dry erase finish that can be added to any Lumicor panel.

Opaque™
An opaque backing on Lumiclear or Lumiform creates a fully opaque panel.

Spectrum™
Lumicor's color technology can be applied to add a splash of color to any standard décor.

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Textiles › Pattern ›

KAURI™

Pattern to scale

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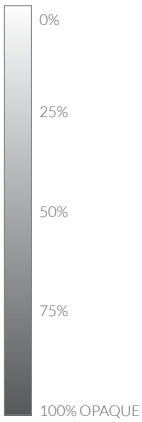
Natural › Grasses & Reeds ›

MOJAVE™ *More Colors Available*

SCALE | 3½"x 3½"
9 x 9 cm

SCALE | 8"x 8"
20 x 20 cm

SCALE | 48"x 96"
122 x 244 cm



OPACITY
Based on approximate amount of light showing through the panel.

PRODUCT SPECIFICATIONS

	GAUGES*	LC	LF	LS
Available Sizes	3/64" .050" (1.27 mm) **			
	1/16" .060" (1.5 mm)			
	1/8" .118" (3 mm)			
	5/32" .160" (4 mm)			
	3/16" .196" (5 mm)			
	1/4" .236" (6 mm)		•	
	3/8" .354" (9 mm)		•	
	1/2" .472" (12 mm)		•	
	3/4" .708" (18 mm)			
	1" .944" (24 mm)			
	Standard: 48"x 96" (1219 x 2438 mm)		•	
	Oversize: 48"x 120" (1219 x 3048 mm)		•	
Design	Standard Finishes	Satin/Satin		
	Décor Direction	Horizontal/Vertical		
	Fade (Standard Finish: Satin/Satin)	Yes		
$	Price Group	C		

* Not all decors are available in every gauge and may vary by resin. Gauge tolerance is ± 10%.

** Outside of the Wall Protection program a ten sheet minimum will apply for the .050" gauge.

KEY | LC = Lumiclear LF = Lumiform
LS = Lumishield EX • = Option Available

DESCRIPTION

Contrasting leaves and grasses are woven into this tropical décor. The strong and broad palm leaves are separated by delicate blades of grass to form a natural screen and separation of space within any project.

All natural décors are produced using a hand applied technique. Layout and coverage will vary slightly from sheet to sheet due to the artisan nature of the manufacturing process. Some products use natural materials that can change color over time and will vary in size, shape, color and texture within a single sheet. Colors may vary with harvest season.

PAT. US D663,863 S

AVAILABLE ADD-ONS

Reflective Finishes™
A reflective surface that adds dimension and a sophisticated sparkle.

Illume™
Adding Illume to the back of a panel provides a soft light diffusion.

Marker Board™
A high quality dry erase finish that can be added to any Lumicor panel.

Opaque™
An opaque backing on Lumiclear or Lumiform creates a fully opaque panel.

Spectrum™
Lumicor's color technology can be applied to add a splash of color to any standard décor.

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Natural › Grasses & Reeds ›

MOJAVE™

More Colors Available

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Acoustical Ceiling Tile

2019

ULTIMA®
ULTIMA® High NRC

Tegular
fine texture

TOTAL ACOUSTICS®
Sound Absorption (NRC)
+ Sound Blocking (CAC)

ACT-1

10-YEAR REPLACEMENT PANEL AVAILABILITY
1911, 1912,
1914, 1915

Ultima

Ultima High NRC

Ultima® Beveled Tegular panels with Sonata® 9/16" suspension system (Pg. 401)

See more photos at:
armstrongceilings.com/photogallery
SEARCH: ultima

A smooth visual ceiling with Total Acoustics® performance, sound absorption, and blocking needed for today's flexible spaces

KEY SELECTION ATTRIBUTES

- Get total noise control and design flexibility with Total Acoustics® ceiling panels: NRC + CAC = Total Acoustics® performance
- Ultima® panels are part of the Sustain™ portfolio and meet the most stringent sustainability compliance standards today
- Smooth, clean, durable finish – Washable, Impact-resistant, Scratch-resistant, Soil-resistant
- Excellent sound absorption
- High CAC for excellent sound blocking – items 1894, 1895, 1951, 1952
- Ceiling-2-Ceiling™ Post-consumer Recycled Content options: items 1911HRC, 1912HRC, 1914HRC, 1915HRC. 71% Pre-consumer; 15% Post-consumer
- USDA-Certified Biobased Product – 88%
- Available with AirGuard™ coating
- Visual coordinates with Optima® panels for mixed (open/closed plan) applications
- Item 1912 available with Create!™ printed images and patterns – see pages 245-247
- Non-directional visual reduces scrap and installation time
- Compatible with the TechZone® Ceiling Systems (Pgs. 337-344)
- 30-Year Limited System Warranty against visible sag (excludes items 1905 and 1929), mold, and mildew

TYPICAL APPLICATIONS

- Offices – closed spaces for privacy and confidentiality; open spaces for focus, collaboration, and teaming
- Healthcare – assists in addressing HIPAA, HCAHPS, and FGI acoustical requirements
- Classrooms
- Corridors
- Lobbies/reception areas
- Department stores/retail

COLOR

White
(WH)

DETAILS (Other Suspension Systems compatible. Refer to listing on page 316.)

1. Ultima® Beveled Tegular
2. Ultima® with Suprafine® 9/16" suspension system
3. Ultima® with Silhouette® XL® 9/16" suspension system with 1/4" reveal

ULTIMA®
ULTIMA® High NRC

Tegular
fine texture

CLOSED LOOP RECYCLED CONTENT CEILING•2•CEILING

Declare℠ Living Building Challenge Compliant

SUSTAIN™ High Performance Sustainable Ceiling Systems

UP TO 84% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED®: energy management; construction waste mgmt; regional materials; design for flexibility; EPD; recyclable/extended producer resp.; biobased materials; recycled content; sourcing of raw materials; material ingredient reporting; low emitting/materials; lighting quality; acoustics

▲ LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION

Dots represent high level of performance. $$$$

Edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC	UL Classified Acoustics CAC	Total Acoustics[1]	Articulation Class	Fire Performance	Light Reflect	Anti-Mold & Mildew (Bio-Block)	Sag Resist (Humi-Guard+)	Certified Low VOC Emissions	Durability: Wash	Durability: Impact	Durability: Scratch	Durability: Soil	Recycled Content	Recycle Program	30-Yr Warranty
ULTIMA® High NRC																			
15/16" Beveled Tegular	15	**1941**	24 x 24 x 7/8"	0.80	35	BEST	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	15	**1944**	24 x 48 x 7/8"	0.80	35	BEST	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	15	new **1433**	24 x 60 x 7/8"	0.80	35	BEST	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	15	new **1436**	24 x 72 x 7/8"	0.80	35	BEST	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	15	**Other Size Panels**	W: 12" – 24" / L: 24" – 60" 7/8" Thick	N/A	N/A	–	–	Class A	0.87	•	•	•	•	•	•	•	•	•	•
9/16" Beveled Tegular	29, 44, 48, 52, 56	**1942**	24 x 24 x 7/8"	0.80	35	BEST	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1942HRC**	24 x 24 x 3/4"	0.75	35	BETTER	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1945**	24 x 48 x 7/8"	0.80	35	BEST	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	29, 44, 48,52, 56	new **1431**	30 x 30 x 7/8"	0.80	35	BEST	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	29, 44, 48,52, 56	new **1434**	24 x 60 x 7/8"	0.80	35	BEST	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	29, 44, 48,52, 56	new **1437**	24 x 72 x 7/8"	0.80	35	BEST	170	Class A	0.87	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**Other Size Panels**	W: 12" – 24" / L: 24" – 48" 7/8" Thick	N/A	N/A	–	–	Class A	0.87	•	•	•	•	•	•	•	•	•	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.
GOOD (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)
HRC items not available in other size panels.

SUSPENSION SYSTEMS

15/16" Prelude®

9/16" Silhouette® 1/4" Reveal; Silhouette 1/8" Reveal; Suprafine®; Interlude® XL® HRC; Sonata® XL®

Blizzard White – Suspension System Finish
A color and texture coordinated suspension system to complement Ultima ceiling panels for a monolithic look and feel.

PHYSICAL DATA

Material
Wet-formed mineral fiber with DuraBrite® acoustically transparent membrane

Surface Finish
DuraBrite scrim with factory-applied latex paint

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled). Fire Guard™: A fire-resistive ceiling when used in applicable UL assemblies (Class A).

ASTM E1264 Classification
Type IV, Form 2, Pattern E
Fire Class A

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

Mold/Mildew Protection
Ceiling panels with BioBlock® performance resist the growth of mold and mildew.

VOC Emissions
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

Acoustical Performance
CAC testing conducted using Prelude® XL® suspension system for 15/16" edge detail and Silhouette® suspension system for 9/16" edge detail.

Primary (Embodied) Energy
See all LCA information on our EPDs.

High Recycled Content
Contains greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines. HRC items contain 15% or greater post-consumer recycled ceilings.

Insulation Value
R Factor – 2.2 (BTU units)
R Factor – 0.39 (Watts units)

30-Year Performance Guarantee & Warranty
When installed with Armstrong® Suspension System. Details at armstrongceilings.com

Weight; Square Feet/Carton
1945 – 1.14 lbs/SF; 48 SF/ctn
1941, 1942 – 1.125 lbs/SF; 40 SF/ctn
1944 – 1.125 lbs/SF; 48 SF/ctn
1433 – 1.05 lbs/SF; 60 SF/ctn
1436 – 1.04 lbs/SF; 72 SF/ctn
1431 – 1.06 lbs/SF; 62.5 SF/ctn
1434 – 1.05 lbs/SF; 60 SF/ctn
1437 – 1.04 lbs/SF; 72 SF/ctn

Minimum Order Quantity
1 carton, excludes other size panels

Metric Items Available
1941M, 1944M, 1945M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

ULTIMA®
ULTIMA® High NRC

Tegular
fine texture

CLOSED LOOP RECYCLED CONTENT
CEILING•2•CEILING

Declare℠ Living Building Challenge Compliant

SUSTAIN™ High Performance Sustainable Ceiling Systems

UP TO 84% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED® v4: energy management ✓ | construction waste mgmt ✓ | regional materials ✓ | design for flexibility ✓ | EPD ✓ | recyclable/ extended producer resp. ✓ | biobased materials ✓ | recycled content ✓ | sourcing of raw materials ✓ | material ingredient reporting ✓ | low emitting/ materials ✓ | lighting quality ✓ | acoustics ✓

▲ LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION

Dots represent high level of performance.

$$$$

Edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC	+ CAC	= Total Acoustics[1] NRC x CAC	Fire Performance	Light Reflect	Anti-Mold & Mildew Bio-Block	Sag Resist Humi-Guard+	Certified Low VOC Emissions	Durability: Wash	Impact	Scratch	Soil	Recycled Content	Recycle Program	30-Yr Warranty
ULTIMA®																		
15/16" Beveled Tegular	15	**1422**	6 x 48 x 3/4"	N/A	N/A	–	Class A	0.90 •	0.90 •	•	•	•	•	•	•	•	•	•
	15	**1917**	12 x 24 x 3/4"	N/A	N/A	–	Class A	0.90 •	0.90 •	•	•	•	•	•	•	•	•	•
	15	**1993**	12 x 48 x 3/4"	N/A	N/A	–	Class A	0.90 •	0.90 •	•	•	•	•	•	•	•	•	•
	15	**1994**	12 x 60 x 3/4"	N/A	N/A	–	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	15	**1995**	12 x 72 x 3/4"	N/A	N/A	–	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	15	**1911** / **1911HRC**	24 x 24 x 3/4" / 24 x 24 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	• •	•	•
	15	**1951**	24 x 24 x 3/4"	0.60	40 •	GOOD	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	15	**1894**	24 x 24 x 3/4"	0.60	40 •	GOOD	Fire Guard™	0.90 •	•	•	•	•	•	•	•	•	•	•
	15	**1914** / **1914HRC**	24 x 48 x 3/4" / 24 x 48 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	• •	•	•
	15	**1985**	24 x 60 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	15	**1981**	24 x 72 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	15	FS **FastSize™ Panels**	W: 4" - 24" / L: 4" - 72" 3/4" thick	N/A	N/A	–	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
9/16" Beveled Tegular	29, 44, 48, 52, 56	**1423**	6 x 48 x 3/4"	N/A	N/A	–	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1427**	6 x 60 x 3/4"	N/A	N/A	–	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1916**	12 x 24 x 3/4"	N/A	35 •	–	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1996**	12 x 48 x 3/4"	0.65	35 •	GOOD	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1997**	12 x 60 x 3/4"	0.65	35 •	GOOD	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1998**	12 x 72 x 3/4"	0.65	35 •	GOOD	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1912** / **1912HRC**	24 x 24 x 3/4" / 24 x 24 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	• •	•	•
	29, 44, 48, 52, 56	**1952**	24 x 24 x 3/4"	0.60	40 •	GOOD	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1895**	24 x 24 x 3/4"	0.60	40 •	GOOD	Fire Guard	0.90 •	•	•	•	•	•	•	•	•	•	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.
GOOD (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)
HRC items not available in other size panels.

FS **FastSize**: Factory-finished, made-to-order sizes, shipped fast (1 carton min.)

ULTIMA®
ULTIMA® High NRC

Tegular
fine texture

CLOSED LOOP RECYCLED CONTENT CEILING•2•CEILING

Declare℠ Living Building Challenge Compliant

SUSTAIN™ High Performance Sustainable Ceiling Systems

UP TO 84% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED®: energy management ✓ | construction waste mgmt ✓ | regional materials ✓ | design for flexibility ✓ | EPD ✓ | recyclable/ extended producer resp. ✓ | biobased materials ✓ | recycled content ✓ | sourcing of raw materials ✓ | material ingredient reporting ✓ | low emitting/ materials ✓ | lighting quality ✓ | acoustics ✓

▲ LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION

Dots represent high level of performance. $$$$

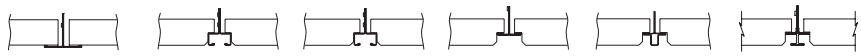
Edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC	+ CAC	= Total Acoustics[1] NRC+CAC	Fire Performance	Light Reflect	Anti-Mold & Mildew: Bio-Block	Sag Resist: Humi-Guard+	Certified Low VOC Emissions	Durability: Wash	Durability: Impact	Durability: Scratch	Durability: Soil	Recycled Content	Recycle Program	30-Yr Warranty
ULTIMA®																		
9/16" Beveled Tegular	29, 44, 48, 52, 56	**1915** **1915HRC**	24 x 48 x 3/4" 24 x 48 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	• •	•	•
	29, 44, 48, 52, 56	**1986**	24 x 60 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1982**	24 x 72 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1905** **1905HRC**	30 x 30 x 3/4" 30 x 30 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	Std	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1929**	30 x 54 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	Std	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	FS **FastSize™ Panels**	W: 4" - 24" / L: 4" - 72" 3/4" Thick	N/A	N/A	–	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
ULTIMA® with AirGuard™ Coating Actively removes formaldehyde from indoor air.																		
15/16" Beveled Tegular	15	**1901**	24 x 24 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	15	**1904**	24 x 48 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
9/16" Beveled Tegular	29, 44, 48, 52, 56	**1902**	24 x 24 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•
	29, 44, 48, 52, 56	**1906**	24 x 48 x 3/4"	0.75 •	35 •	BETTER	Class A	0.90 •	•	•	•	•	•	•	•	•	•	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product. **GOOD** (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)
HRC items not available in other size panels.

FS **FastSize**: Factory-finished, made-to-order sizes, shipped fast (1 carton min.)

SUSPENSION SYSTEMS

9/16"



Prelude® XL® | Silhouette® 1/4" Reveal | Silhouette 1/8" Reveal | Suprafine® | Interlude® XL® HRC | Sonata® XL®

Blizzard White – Suspension System Finish
A color and texture coordinated suspension system to complement Ultima® ceiling panels for a monolithic look and feel.

PHYSICAL DATA

Material
Wet-formed mineral fiber with DuraBrite® acoustically transparent membrane

Surface Finish
DuraBrite with factory-applied latex paint

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled). Fire Guard™: A fire-resistive ceiling when used in applicable UL assemblies (Class A).

ASTM E1264 Classification
Type IV, Form 2, Pattern E
Fire Class A

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications. (Excludes items 1905 and 1929).

Mold/Mildew Protection
Ceiling panels with BioBlock® performance resist the growth of mold and mildew.

VOC Emissions
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/ USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

Acoustical Performance
CAC testing conducted using Prelude® XL® suspension system for 15/16" edge detail and Silhouette® suspension system for 9/16" edge detail.

Primary (Embodied) Energy
See all LCA information on our EPDs.

High Recycled Content
Contains greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines. HRC items contain 15% or greater post-consumer recycled ceilings.

Insulation Value
R Factor – 2.2 (BTU units)
R Factor – 0.39 (Watts units)

30-Year Performance Guarantee & Warranty
When installed with Armstrong® Suspension System. Details at armstrongceilings.com

Weight; Square Feet/Carton
1917, 1993 – 1.05 lbs/SF; 24 SF/ctn
1422 – 1.08 lbs/SF; 24 SF/ctn
1905 – 1.05 lbs/SF; 62.5 SF/ctn
1911, 1912, 1914, 1915 – 1.05 lbs/SF; 48 SF/ctn
1916, 1996 – 1.05 lbs/SF; 24 SF/ctn
1423 – 1.08 lbs/SF; 24 SF/ctn
1427 – 1.07 lbs/SF; 24 SF/ctn
1929 – 1.02 lbs/SF; 68 SF/ctn
1895, 1952, 1951 – 1.31 lbs/SF; 48 SF/ctn
1901, 1902, 1904, 1906 – 1.08 lbs/SF; 48 SF/ctn
1997, 1994 – 1.05 lbs/SF; 30 SF/ctn
1998, 1995 – 1.05 lbs/SF; 36 SF/ctn
1981, 1982 - 1.08 lbs/SF; 72 SF/ctn
1894, 1985, 1986 – 1.08 lbs/SF; 80 SF/ctn

Minimum Order Quantity
1 carton

Metric Items Available
1905M, 1912M, 1912MHRC, 1914M, 1915M, 1916M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

TechLine / 1 877 276 7876
armstrongceilings.com/commercial
(search: ultima)
BPCS-3039-1117

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Armstrong® CEILING & WALL SOLUTIONS

CERAMAGUARD®/ CERAMAGUARD® FINE FISSURED™

ACT-2

Square Lay-in
medium texture

Perforated

Unperforated

Ceramaguard® panels with Prelude® Plus XL® Fire Guard™ 15/16" suspension system (Pg. 390)

See more photos at:
armstrongceilings.com/photogallery
SEARCH: ceramaguard

This is a non-directional ceiling panel for special application areas prone to moisture.

KEY SELECTION ATTRIBUTES

- Inorganic product. Resistant to the growth of mold and mildew
- Durable – Washable, Scrubbable, Soil-resistant
- Resistance to chemical fumes
- Non-directional visual reduces scrap and installation time
- Superior resistance to sagging in high humidity conditions including standing water and outdoor applications
- 30-Year Limited System Warranty against visible sag, mold, and mildew

TYPICAL APPLICATIONS

- Laboratories
- Locker rooms/indoor pools
- Hydrotherapy/shower areas
- Food preparation areas (unperforated only)
- Exterior soffits/canopies
- Indoor parking garages
- Marine use (See note under "Application Considerations")

COLOR

White
(WH)

DETAILS

1. Ceramaguard® Square Lay-in
2. Ceramaguard with Prelude® Plus XL® 15/16" suspension system

CERAMAGUARD®/ CERAMAGUARD® FINE FISSURED™

Square Lay-in
medium texture

37% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED®: energy management ✓ | construction waste mgmt ✓ | regional materials ✓ | design for flexibility ✓ | EPD | recyclable/ extended producer resp. ✓ | biobased materials ✓ | recycled content ✓ | sourcing of raw materials ✓ | material ingredient reporting ● | low emitting/ materials ✓ | lighting quality ✓ | acoustics ✓

▲ LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION

Dots represent high level of performance. $$$$

Edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC	CAC	= Total Acoustics[1]	Fire Performance	Light Reflect	Anti-Mold & Mildew (Bio-Block)	Sag Resist (Humi-Guard MAX)	Certified Low VOC Emissions	Wash (Durability)	Scrub (Durability)	Soil (Durability)	Recycled Content	Recycle Program	30-Yr Warranty
CERAMAGUARD® – Unperforated*																	
15/16" Square Lay-in	1	**605***	24 x 48 x 5/8"	N/A	40 •	–	Fire Guard™	0.88 •	•	•	•	•	•	•	Std	–	•
CERAMAGUARD® FINE FISSURED™ – Perforated																	
15/16" Square Lay-in	1	**607**	24 x 24 x 5/8"	0.55	38 •	–	Fire Guard	0.82	•	•	•	•	•	•	Std	–	•
	1	**608**	24 x 48 x 5/8"	0.55	40 •	–	Fire Guard	0.82	•	•	•	•	•	•	Std	–	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.
* Plain pattern (unperforated) is not appropriate where aesthetics or visual consistency is important.

SUSPENSION SYSTEMS

15/16"

Prelude®, Prelude® Plus XL® Aluminum, Prelude® XL® Fire Guard™, Prelude® Plus XL® Fire Guard™, Prelude Plus XL Stainless Steel, Prelude XL for Exterior Applications

PHYSICAL DATA

Material
Wet-formed ceramic and mineral fiber composite

Surface Finish
Scrubbable factory-applied plastic paint finish

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled). Fire Guard™: A fire-resistive ceiling when used in applicable UL assemblies (Class A).

ASTM E1264 Classification
Type XX (high density ceramic-like composition with scrubbable finish).
Pattern C E (items 607, 608);
Pattern G (item 605)
Fire Class A

Humidity/Sag Resistance
HumiGuard® Max ceiling panels are recommended for areas with maximum humidity, including outdoor applications.

Mold/Mildew Protection
Ceiling panels with BioBlock® performance resist the growth of mold and mildew.

VOC Emissions
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

Insulation Value
R Factor — 1.4 (BTU units)
R Factor — 0.25 (Watts units)

Application Considerations
For outdoor soffits and canopies, wind uplift should be considered. Ceramaguard® is non-combustible per ASTM E136 and ISO 1182. See USCG Approval 164.109/52/0 for marine applications in all waters.

30-Year Performance Guarantee & Warranty
When installed with Armstrong® Suspension System. Details at armstrongceilings.com

Weight; Square Feet/Carton
605, 608 – 1.52 lbs/SF; 48 SF/ctn
607 – 1.48 lbs/SF; 48 SF/ctn

Minimum Order Quantity
1 carton

Metric Items Available
605M, 607M, and 608M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

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CLEAN ROOM™ FL/ CLEAN ROOM™ VL & VL

Square Lay-in
smooth texture

ACT-3

10-YEAR REPLACEMENT PANEL AVAILABILITY

1715, 1716, 1720, 1721

Clean Room™ FL panels with Clean Room 15/16" suspension system (Pg. 382)

Clean Room VL panels with Clean Room 1-1/2" suspension system (Pg. 382)

VL panels with Prelude® 15/16" suspension system (Pgs. 391-392)

Clean Room™ panels meet guidelines for controlled environments and USDA/FSIS guidelines.

KEY SELECTION ATTRIBUTES

- Clean Rooms up to ISO Class 5 (Class 100) (excludes items 869, 871)
- Excellent sound blocking CAC (35-40)
- Durable – Washable, Scrubbable, Water-repellant, Impact-resistant, Scratch-resistant, Soil-resistant
- Non-directional visual reduces scrap and installation time
- 30-Year Limited System Warranty against visible sag, mold, and mildew

TYPICAL APPLICATIONS

Clean Room FL, Clean Room VL

- Clean Rooms
- Kitchens/food preparation areas
- Laboratories
- Healthcare
  - Patient rooms
  - Treatment rooms
  - Semi-restricted surgical areas
  - Emergency rooms

VL (Perforated)

- Lavatories/restrooms
- Utility Rooms

COLORS

White (WH) (Clean Room VL & VL)

White with Gray Spatter (Clean Room FL)

DETAILS (Other Suspension Systems compatible. Refer to listing on page 240.)

1. Clean Room FL
2. Clean Room VL
3. VL
4. Clean Room FL with 15/16" suspension system
5. Clean Room VL with 1-1/2" suspension system

CLEAN ROOM™ FL/ CLEAN ROOM™ VL & VL

Square Lay-in
smooth texture

UP TO 76% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED® ✓ energy management ✓ construction waste mgmt ✓ regional materials ✓ design for flexibility ✓ EPD ✓ recyclable/ extended producer resp. ● biobased materials ✓ recycled content ✓ sourcing of raw materials ✓ material ingredient reporting ✓ low emitting/ materials ✓ lighting quality ✓ acoustics

▲ LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION
Dots represent high level of performance. $$$$

Edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC	CAC	Total Acoustics[1]	Fire Performance	Light Reflect	Anti-Mold & Mildew RH90	Sag Resist Humi-Guard+	Certified Low VOC Emissions	Water Repel (Durability)	Wash (Durability)	Scrub (Durability)	Impact (Durability)	Scratch (Durability)	Soil (Durability)	Recycled Content	Recycle Program	30-Yr Warranty
Clean Room™ FL Field Panel																				
15/16" or 1-1/2" Square Lay-in	1, 6, 7	**1715**	24 x 24 x 3/4"	0.55	35 •	–	Class A	0.79	•	•	•	•	•	•	•	•	•	•	–	•
	1, 6, 7	**1716**	24 x 48 x 3/4"	0.55	35 •	–	Class A	0.79	•	•	•	•	•	•	•	•	•	•	–	•
Clean Room™ FL Border Panel																				
15/16" or 1-1/2" Square Lay-in	1, 6, 7	**1720**	24 x 24 x 5/8"	N/A	35 •	–	Class A	0.79	•	•	–	•	•	•	•	•	•	Std	–	•
	1, 6, 7	**1721**	24 x 48 x 5/8"	N/A	35 •	–	Class A	0.79	•	•	–	•	•	•	•	•	•	Std	–	•
	1, 6, 7	**Other Size Panels**	W: 24" / L: 24" – 48" 5/8" Thick	N/A	N/A	–	Class A	0.79	•	•	–	•	•	•	•	•	•	Std	–	•
Clean Room™ VL Unperforated																				
15/16" or 1-1/2" Square Lay-in	1, 6, 7	**868**	24 x 24 x 5/8"	N/A	40 •	–	Fire Guard™	0.80	•	•	–	•	•	•	•	•	•	Std	–	•
	1, 6, 7	**870**	24 x 48 x 5/8"	N/A	40 •	–	Fire Guard	0.80	•	•	–	•	•	•	•	•	•	Std	–	•
VL Perforated (Not for Clean Rooms)																				
15/16" or 1-1/2" Square Lay-in	1	**869**	24 x 24 x 5/8"	0.55	35 •	–	Fire Guard	0.78	•	•	–	–	•	•	•	•	•	Std	–	•
	1	**871**	24 x 48 x 5/8"	0.55	35 •	–	Fire Guard	0.78	•	•	–	–	•	•	•	•	•	Std	–	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product. Also see Optima® Health Zone™ and Ultima® Health Zone™ for use in Clean Rooms.

SUSPENSION SYSTEMS

15/16"

Prelude®
Prelude® Plus XL® Aluminum
Prelude® XL® Fire Guard™

Clean Room™
(Steel or Aluminum)

1-1/2"

Clean Room
(Steel or Aluminum)

NOTE: Clean Room Class 5 (Class 100) UL Classified for Acoustics on 15/16" suspension system only.

PHYSICAL DATA

Material
Wet-formed mineral fiber

Surface Finish
1715, 1716, 1720, 1721 – Soil-resistant polyester film
868, 870, 869, 871 – Vinyl-faced membrane

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled). Fire Guard™: A fire-resistive ceiling when used in applicable UL assemblies (Class A).

ASTM E1264 Classification
1715, 1716, 1720, 1721 – Type IV, Form 2, Pattern G H
868, 870, – Type IV, Form 2, Pattern E
869, 871 – Type IV, Form 2, Pattern C E
Fire Class A

Mold & Mildew Protection
Clean Room ceiling panels resist the growth of mold and mildew

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

VOC Emissions
(Excludes FL Border and VL Panels) Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

High Recycled Content
Contains greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines.

Insulation Value
R Factor – 1.5 (BTU units)
R Factor – 0.26 (Watts units)

30-Year Performance Guarantee & Warranty
When installed with Armstrong® Suspension System. Details at armstrongceilings.com

Weight; Square Feet/Carton
1715 – 1.02 lbs/SF; 48 SF/ctn
1716 – 1.02 lbs/SF; 64 SF/ctn
1720 – 1.04 lbs/SF; 48 SF/ctn
1721 – 1.17 lbs/SF; 64 SF/ctn
868, 869 – 1.10 lbs/SF; 48 SF/ctn
870, 871 – 1.11 lbs/SF; 64 SF/ctn

NOTE: For assistance on proper Clean Room installation, contact TechLine at 1 877 276-7876.

Minimum Order Quantity:
1 carton, excludes other size panels.

Metric Items Available
1715M, 1716M, 1720M, 1721M, 868M, 870M, 869M, 871M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

TechLine / 1 877 276-7876
armstrongceilings.com/commercial
(search: clean room)
BPCS-3044-617

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Armstrong® CEILING & WALL SOLUTIONS

MINERAL FIBER

LYRA® with Plant-based Binder
LYRA® High CAC
with Plant-based Binder
Square Lay-in
smooth texture

TOTAL ACOUSTICS®
Sound Absorption (NRC)
+ Sound Blocking (CAC)

Lyra® PB High CAC Square Tegular panels with Suprafine® 9/16" suspension system (Pgs. 400-401)

plus... capabilities to do more

armstrongceilings.com/capabilities
See more photos at:
armstrongceilings.com/photogallery

These smooth, white, drywall-like visual panels are available in 12 standard sizes.

KEY SELECTION ATTRIBUTES

- Get total noise control and design flexibility with Total Acoustics® ceiling panels: NRC + CAC = Total Acoustics® performance
- Lyra® PB panels are part of the Sustain™ portfolio and meet the most stringent sustainability compliance standards today
- All items are manufactured with a plant-based binder
- Smooth drywall-like ceiling visual
- 12 standard panel sizes
- High acoustics (NRC 0.95, AC up to 200)
- Excellent sound-blocking High CAC item 8732 and 8752
- Washable, Impact-resistant, Scratch-resistant, Soil-resistant
- Sag-resistant panels
- Compatible with the TechZone® Ceiling Systems (pgs. 337-344)
- Coordinates with Blizzard White suspension system and Axiom® trim
- Specials capability for non-standard sizes
- Product can be recycled through the Armstrong® Ceilings Recycling Program
- 30-Year Limited System Warranty against visible sag, mold, and mildew

TYPICAL APPLICATIONS

- Offices – closed spaces for privacy and confidentiality; open spaces for focus, collaboration, and teaming
- Healthcare – assists in addressing HIPAA, HCAHPS, and FGI acoustical requirements
- Classrooms
- Corridors
- Lobbies/reception areas
- Department stores/retail

COLOR

White
(WH)

Made-to-order
Sherwin-Williams®
Colors Available

NOTE: Custom colors not available on Lyra® PB High CAC panels

DETAILS

Lyra® PB Square
Lay-in

LYRA® with Plant-based Binder
LYRA® High CAC
with Plant-based Binder
Square Lay-in
smooth texture

PLANT BASED BINDER

Declare℠ Living Building Challenge Compliant

SUSTAIN™ High Performance Sustainable Ceiling Systems

UP TO 71% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED®: energy management; construction waste mgmt; regional materials; design for flexibility; EPD; recyclable/extended producer resp.; biobased materials; recycled content; sourcing of raw materials; material ingredient reporting; low emitting/materials; lighting quality; acoustics

▲ LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION

Dots represent high level of performance. $$$$

Edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)	UL Classified Acoustics: NRC	+ CAC	= Total Acoustics[1] NRC+CAC	Articulation Class AC	Fire Performance	Light Reflect	Anti-Mold & Mildew: Bio-Block	Sag Resist: Humi-Guard+	Certified Low VOC Emissions	Durability: Wash	Impact	Scratch	Soil	Recycled Content	Recycle Program	30-Yr Warranty
LYRA® with Plant-based Binder High CAC																			
15/16" Square Lay-in	1	**8732PB**	24 x 24 x 1-3/4"	0.95*	42*	BEST	200	Class A	0.88	•	•	•	•	–	•	•	•	•	•
	1 new	**8752PB**	24 x 48 x 1-3/4"	0.95*	44*	BEST	200	Class A	0.88	•	•	•	•	–	•	•	•	•	•
LYRA with Plant-based Binder																			
15/16" Square Lay-in	1	**8372PB**	24 x 24 x 1"	0.95	N/A	–	190	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	1	**8373PB**	24 x 48 x 1"	0.95	N/A	–	190	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	1	**8450PB**	24 x 72 x 1"	0.95*	N/A	–	190	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	1	**8452PB**	30 x 30 x 1"	0.95*	N/A	–	190	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	1	**8453PB**	30 x 60 x 1"	0.95*	N/A	–	190	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	1	**8370PB**	48 x 48 x 1"	0.95	N/A	–	190	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	1, 23	**8334PB**	4 x 48 x 1"	N/A	N/A	–	N/A	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	1, 23	**8335PB**	4 x 60 x 1"	N/A	N/A	–	N/A	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	1, 23	**8336PB**	6 x 48 x 1"	N/A	N/A	–	N/A	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	1, 23	**8337PB**	6 x 60 x 1"	N/A	N/A	–	N/A	Class A	0.88	•	•	•	•	•	•	•	•	•	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.
GOOD (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)

* These items are not UL classified.

ACCESSORIES (must be ordered separately)

435

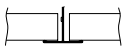
Stabilizer Clip (3/4" & 1")
Recommended for panels 60" and greater in length
NOTE: Panels 60" up to 96" – One clip near mid-point of each long edge.
Panels 96" and over – Two clips at 1/3 points of each long edge.

7870

Spring Border Clip
(For installations with the panel resting on the wall molding)

SUSPENSION SYSTEMS

15/16"



Prelude®

PHYSICAL DATA

Material
Lyra® PB: Fiberglass with acoustically transparent membrane
Lyra PB High CAC: Composite of fiberglass with acoustically transparent membrane and wet-formed mineral fiber.

Surface Finish
Acoustically transparent membrane with factory-applied latex paint

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled – excludes item 8732 and 8752).

ASTM E1264 Classification
Type XII, Form 2, Pattern E
Fire Class A

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

Mold/Mildew Protection
Ceiling panels with BioBlock® performance resist the growth of mold and mildew.

VOC Emissions
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

Acoustical Performance
CAC testing conducted using Prelude® XL® suspension system.

High Recycled Content
Classified as containing greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines.

Acoustical Details
A CAC value of 37 can be achieved by backloading fiberglass products with Item 769 or 770. Excludes Lyra PB High CAC.

Insulation Value
Lyra: R Factor – 4.4 (BTU units);
R Factor – 0.76 (Watts units)
Lyra High CAC: R Factor – 5.38 (BTU units);
R Factor – 0.95 (Watts units)

30-Year Performance Guarantee & Warranty
When installed with Armstrong® Suspension System. Details at armstrongceilings.com

Weight; Square Feet/Carton
8372, 8373 – 0.44 lbs/SF; 96 SF/ctn
8370 – 0.44 lbs/SF; 96 SF/ctn
8450 – 0.46 lbs/SF; 72 SF/ctn
8452 – 0.46 lbs/SF; 75 SF/ctn
8453 – 0.46 lbs/SF; 100 SF/ctn
8336 – 0.44 lbs/SF; 24 SF/ctn
8337 – 0.44 lbs/SF; 30 SF/ctn
8334 – 0.44 lbs/SF; 16 SF/ctn
8335 – 0.44 lbs/SF; 20 SF/ctn
8732, 8752 – 1.77 lbs/SF; 24 SF/ctn

TechLine / 1 877 276-7876
armstrongceilings.com/commercial
(search: lyra)
BPCS-4796-517

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Armstrong® CEILING & WALL SOLUTIONS

LYRA® with Plant-based Binder
LYRA® High CAC
with Plant-based Binder
Tegular
smooth texture

TOTAL ACOUSTICS®
Sound Absorption (NRC)
+ Sound Blocking (CAC)

10-YEAR REPLACEMENT PANEL AVAILABILITY

Lyra® Square Tegular panels with Suprafine® 9/16" suspension system (Pgs. 400-401)

plus... capabilities to do more

armstrongceilings.com/capabilities
See more photos at:
armstrongceilings.com/photogallery

These smooth, white, drywall-like visual panels are available in 28 standard sizes.

KEY SELECTION ATTRIBUTES

- Get total noise control and design flexibility with Total Acoustics® ceiling panels: NRC + CAC = Total Acoustics® performance
- Lyra® PB panels are part of the Sustain™ portfolio and meet the most stringent sustainability compliance standards today
- All items are manufactured with a plant-based binder
- Smooth drywall-like ceiling visual
- 28 standard panel sizes
- High acoustics (NRC 0.95, AC up to 200)
- Excellent sound-blocking High CAC
- Washable, Impact-resistant, Scratch-resistant, Soil-resistant
- Sag-resistant panels
- Product can be recycled through the Armstrong® Ceilings Recycling Program
- Compatible with the TechZone® Ceiling Systems (pgs. 311-318)
- Coordinates with Blizzard White suspension system and Axiom® trim
- Specials capability for non-standard sizes
- 30-Year Limited System Warranty against visible sag, mold, and mildew

TYPICAL APPLICATIONS

- Offices – closed spaces for privacy and confidentiality; open spaces for focus, collaboration, and teaming
- Healthcare – assists in addressing HIPAA, HCAHPS, and FGI acoustical requirements
- Classrooms
- Corridors
- Lobbies/reception areas
- Department stores/retail

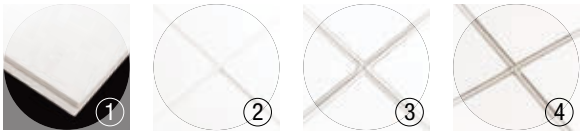
COLOR

White (WH)

Made-to-order Sherwin-Williams® Colors Available

NOTE: Custom colors not available on Lyra® PB High CAC panels

DETAILS (Other Suspension Systems compatible. Refer to listing on page 274, 276.)



1. Lyra® PB Square Tegular
2. Lyra PB Tegular with Suprafine® 9/16" suspension system and Blizzard White finish
3. Lyra PB Tegular with Silhouette® XL® 9/16" suspension system with 1/4" or 1/8" reveal and Blizzard White finish
4. Lyra PB Tegular with Interlude® XL® suspension system

LYRA® with Plant-based Binder
LYRA® High CAC
with Plant-based Binder
Tegular
smooth texture

PLANT BASED BINDER

Declare℠ Living Building Challenge Compliant

SUSTAIN™ High Performance Sustainable Ceiling Systems

UP TO 71% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED®: energy management; construction waste mgmt; regional materials; design for flexibility; EPD; recyclable/extended producer resp.; biobased materials; recycled content; sourcing of raw materials; material ingredient reporting; low emitting/materials; lighting quality; acoustics

LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION
Dots represent high level of performance. $$$$

Edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC + CAC =	Total Acoustics[1] NRC+CAC	Articulation Class AC	Fire Performance	Light Reflect	Anti-Mold & Mildew: Bio-Block	Sag Resist: Humi-Guard+	Certified Low VOC Emissions	Durability: Wash	Durability: Impact	Durability: Scratch	Durability: Soil	Recycled Content	Recycle Program	30-Yr Warranty
LYRA® with Plant-based Binder High CAC																		
15/16" Square Tegular	8	8730PB	24 x 24 x 1-3/4"	0.95* • + 42* =	BEST	200 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•
	8	new 8751PB	24 x 48 x 1-3/4"	0.95* • + 44* =	BEST	200 •	Class A	0.88	•	•	•	•	•	•	•	•	•	•
9/16" Square Tegular	26, 43, 47, 51, 55	8731PB	24 x 24 x 1-3/4"	0.95* • + 42* =	BEST	200 •	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	new 8748PB	24 x 48 x 1-3/4"	0.95* • + 44* =	BEST	200 •	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	new 8749PB	24 x 60 x 1-3/4"	0.95* • + 45* =	BEST	200 •	Class A	0.88	•	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	new 8750PB	30 x 30 x 1-3/4"	0.95* • + 44* =	BEST	200 •	Class A	0.88	•	•	•	•	•	•	•	•	•	•
LYRA with Plant-based Binder																		
15/16" Square Tegular	8	8360PB	24 x 24 x 1"	0.95 • + N/A =	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•
	8	8352PB	24 x 48 x 1"	0.95 • + N/A =	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•
	8	8355PB	48 x 48 x 1"	0.95 • + N/A =	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•
9/16" Square Tegular	26, 43, 47, 51,55	8344PB	4 x 48 x 1"	N/A + N/A =	–	NA	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51,55	8345PB	4 x 60 x 1"	N/A + N/A =	–	NA	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51,55	8346PB	6 x 48 x 1"	N/A + N/A =	–	NA	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51,55	8347PB	6 x 60 x 1"	N/A + N/A =	–	NA	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.
GOOD (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)

* These items are not UL classified.

ACCESSORIES (must be ordered separately)

435

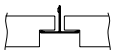
Stabilizer Clip (3/4" & 1")
Recommended for panels 60" and greater in length
NOTE: Panels 60" up to 96" – One clip near mid-point of each long edge.
Panels 96" and over – Two clips at 1/3 points of each long edge.

7870

Spring Border Clip
(For installations with the panel resting on the wall molding)

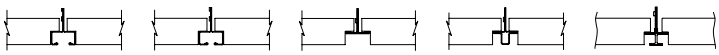
SUSPENSION SYSTEMS

15/16"



Prelude®

9/16"



Silhouette® 1/4" Reveal | Silhouette 1/8" Reveal | Suprafine® | Interlude® XL® HRC | Sonata® XL®*

* Sonata can not be used with Lyra High CAC 24" x 60" panels

PHYSICAL DATA

Material
Lyra® PB: Fiberglass with acoustically transparent membrane
Lyra PB High CAC: Composite of fiberglass with acoustically transparent membrane and wet-formed mineral fiber.

Surface Finish
Acoustically transparent membrane with factory-applied latex paint

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled – excludes items 8730, 8731 8751, 8748, 8749, and 8750).

ASTM E1264 Classification
Type XII, Form 2, Pattern E
Fire Class A

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

Mold/Mildew Protection
Ceiling panels with BioBlock® resist the growth of mold and mildew.

VOC Emissions
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

Acoustical Performance
CAC testing conducted using Prelude® XL® suspension system for 15/16" edge detail and Silhouette® suspension system for 9/16" edge detail.

High Recycled Content
Classified as containing greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines.

Acoustical Details
A CAC value of 37 can be achieved by backloading fiberglass products with Item 769 or 770. Excludes Lyra PB High CAC.

Insulation Value
Lyra: R Factor – 4.4 (BTU units);
R Factor – 0.76 (Watts units)
Lyra High CAC: R Factor – 5.38 (BTU units);
R Factor – 0.95 (Watts units)

30-Year Performance Guarantee & Warranty
When installed with Armstrong® Suspension System. Details at armstrongceilings.com

Weight; Square Feet/Carton
8360, 8352 – 0.46 lbs/SF; 96 SF/ctn
8355 – 0.46 lbs/SF; 96 SF/ctn
8346 – 0.44 lbs/SF; 24 SF/ctn
8347 – 0.44 lbs/SF; 30 SF/ctn
8344 – 0.44 lbs/SF; 16 SF/ctn
8345 – 0.44 lbs/SF; 20 SF/ctn
8730, 8731, 8751, 8748, 8749, 8750 – 1.77 lbs/SF; 24 SF/ctn

TechLine 877 276-7876
armstrongceilings.com/commercial

LYRA® with Plant-based Binder
LYRA® High CAC
with Plant-based Binder
Tegular
smooth texture

PLANT BASED BINDER

Declare℠ Living Building Challenge Compliant

SUSTAIN™ High Performance Sustainable Ceiling Systems

UP TO 71% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED® v4: energy management ✓ | construction waste mgmt ✓ | regional materials ✓ | design for flexibility ✓ | EPD ✓ | recyclable/extended producer resp. ✓ | biobased materials | recycled content ✓ | sourcing of raw materials ✓ | material ingredient reporting ✓ | low emitting/materials | lighting quality ✓ | acoustics ✓

▲ LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION
Dots represent high level of performance.

$$$$

Edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC + CAC =	Total Acoustics[1]	Articulation Class AC	Fire Performance	Light Reflect	Anti-Mold & Mildew Bio-Block	Sag Resist Humi-Guard+	Certified Low VOC Emissions	Durability: Wash	Durability: Impact	Durability: Scratch	Durability: Soil	Recycled Content	Recycle Program	30-Yr Warranty
LYRA® with Plant-based Binder Square Tegular																		
9/16" Square Tegular	26, 43, 47, 51, 55	**8377PB**	12 x 48 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8379PB**	12 x 96 x 1"	0.95* •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8361PB**	24 x 24 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8357PB**	24 x 48 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8365PB**	24 x 60 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8381PB**	24 x 72 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8382PB**	24 x 96 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8461PB**	28 x 30 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8359PB**	30 x 30 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8385PB**	30 x 60 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8376PB**	36 x 36 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8462PB**	42 x 48 x 1"	0.95* •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.
GOOD (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)
* These items are not UL classified.

LYRA® with Plant-based Binder
LYRA® High CAC
with Plant-based Binder
Tegular
smooth texture

PLANT BASED BINDER

Declare℠ Living Building Challenge Compliant

SUSTAIN™ High Performance Sustainable Ceiling Systems

UP TO 71% RECYCLED CONTENT

Calculate LEED contribution at armstrongceilings.com/greengenie

LEED®: energy management ✓ | construction waste mgmt ✓ | regional materials ✓ | design for flexibility ✓ | EPD ✓ | recyclable/ extended producer resp. ✓ | biobased materials ● | recycled content ✓ | sourcing of raw materials ✓ | material ingredient reporting ✓ | low emitting/ materials ✓ | lighting quality ✓ | acoustics ✓

▲ LOCATION DEPENDENT

VISUAL SELECTION

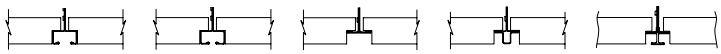
PERFORMANCE SELECTION
Dots represent high level of performance. $$$$

Edge Profile	Susp. Dwg. Pgs. 407-411 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC + CAC =	Total Acoustics[1] NRC + CAC	Articulation Class AC	Fire Performance	Light Reflect	Anti-Mold & Mildew Bio-Block	Sag Resist Humi-Guard+	Certified Low VOC Emissions	Durability: Wash	Durability: Impact	Durability: Scratch	Durability: Soil	Recycled Content	Recycle Program	30-Yr Warranty
LYRA® with Plant-based Binder Square Tegular																		
9/16" Square Tegular	26, 43, 47, 51, 55	**8463PB**	44 x 48 x 1"	0.95* •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8356PB**	48 x 48 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•
	26, 43, 47, 51, 55	**8466PB**	56 x 30 x 1"	0.95 •	N/A	–	190 •	Class A	0.88 •	•	•	•	•	•	•	•	•	•	•

[1] Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.
GOOD (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)
* This item is not UL classified.

SUSPENSION SYSTEMS

9/16"



Silhouette® 1/4" Reveal | Silhouette 1/8" Reveal | Suprafine® | Interlude® XL® HRC | Sonata® XL®*

* Sonata can not be used with Lyra High CAC 24" x 60" panels

PHYSICAL DATA

Material
Lyra® PB: Fiberglass with acoustically transparent membrane
Lyra PB High CAC: Composite of fiberglass with acoustically transparent membrane and wet-formed mineral fiber.

Surface Finish
Acoustically transparent membrane with factory-applied latex paint

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled Excludes items 8379, 8462, and 8463).

ASTM E1264 Classification
Type XII, Form 2, Pattern E
Fire Class A

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

Mold/Mildew Protection
Ceiling panels with BioBlock® resist the growth of mold and mildew.

VOC Emissions
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

High Recycled Content
Classified as containing greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines.

Insulation Value
Lyra: R Factor – 4.4 (BTU units);
R Factor – 0.76 (Watts units)
Lyra High CAC: R Factor – 5.38 (BTU units);
R Factor – 0.95 (Watts units)

30-Year Performance Guarantee & Warranty
When installed with Armstrong® Suspension System. Details at armstrongceilings.com

Weight; Square Feet/Carton
8356 – 0.46 lbs/SF; 96 SF/ctn
8377, 8379 – 0.50 lbs/SF; 48 SF/ctn
8361, 8357 – 0.46 lbs/SF; 96 SF/ctn
8365 – 0.50 lbs/SF; 100 SF/ctn
8381 – 0.50 lbs/SF; 72 SF/ctn
8382 – 0.50 lbs/SF; 96 SF/ctn
8359, 8376 – 0.46 lbs/SF; 75 SF/ctn
8385 – 0.46 lbs/SF; 100 SF/ctn
8461, 8466 – 0.44 lbs/SF; 70 SF/ctn
8462 – 0.44 lbs/SF; 112 SF/ctn
8463 – 0.44 lbs/SF; 117 SF/ctn

TechLine / 1 877 276-7876
armstrongceilings.com/commercial
(search: lyra)
BPCS-5146-517

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Armstrong® CEILING & WALL SOLUTIONS

Specialty and Upgrade Ceiling

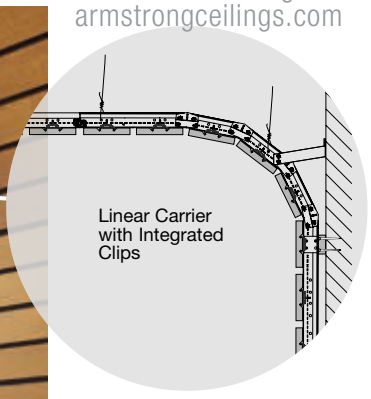
2019

WOODWORKS® Linear
Veneered Planks

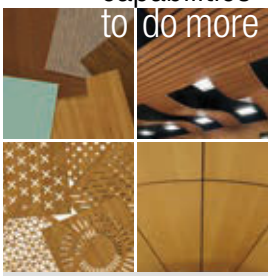
WCP-1,2,3

WoodWorks® Linear planks 96" x 3-3/4" in Natural Variations™ Light Cherry; Ceiling-to-Wall Faceted Transition

CAD/Revit® drawings at:
armstrongceilings.com



plus...
capabilities
to do more



armstrongceilings.com/capabilities
See more photos at:
armstrongceilings.com/photogallery

Standard, easy-to-install wood veneer planks offer a variety of installation options.

KEY SELECTION ATTRIBUTES

Lineared Planks

- Standard wood planks in two widths; nominal 4-1/2" and 6" modules, with traditional 3/4" reveals
- Standard factory-applied acoustic fleece
- Installation system allows for installation on the ceiling, wall, at 90º angle, or in a curved ceiling-to-wall transitions (one-foot minimum radius)
- Create upturns for continuous visuals and clouds with veneer-wrapped WoodWorks® Trim
- Suspension system and planks from one manufacturer; improved for 30-50% faster installation
- 100% Biobased content

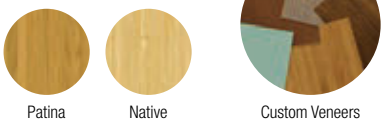
VENEERS

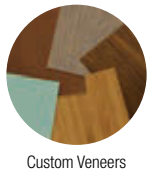
Due to printing limitations, shade may vary from actual product.

Natural Variations™
(Real Wood Veneers)

Constants™
(Real Wood Veneers)

Bamboo*





* Veneer is rapidly renewable. Bamboo is a grass that only requires 3-7 years for maturity and does not have to be replanted after each harvest.

WOODWORKS® Linear
Veneered Planks

USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 100%

FSC www.fsc.org FSC® C007626
The mark of responsible forestry

UP TO 92% RECYCLED CONTENT

For LEED contribution contact TechLine

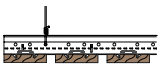
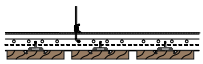
LEED®: energy management; construction waste mgmt; regional materials ✔; design for flexibility; EPD; recyclable/ extended producer resp.; biobased materials ✔; FSC (for wood) ✔; recycled content; sourcing of raw materials; material ingredient reporting; low emitting/ materials; lighting quality; acoustics

▲ LOCATION DEPENDENT

▲ WITH INFILL PANEL

VISUAL SELECTION

PERFORMANCE

Edge Profile	Item No. ◆	Dimensions Nominal W x L x H (Inches) Custom Sizes Available	Fire Rating	Acoustics NRC**
WOODWORKS® Linear – Nominal 4-1/2" Module				
	**6440W1**_ _ _	96 x 3-3/4 x 3/4" with 3/4" reveal	Class A	0.45 0.60**
	6640W1_ _ _ (FSC®-certified)	96 x 3-3/4 x 3/4" with 3/4" reveal	Class A	0.45 0.60**
WOODWORKS Linear – Nominal 6" Module				
	**6460W1** _ _ _	96 x 5-1/4 x 3/4" with 3/4" reveal	Class A	0.40 0.50**
	6660W1 _ _ _ (FSC®-certified)	96 x 5-1/4 x 3/4" with 3/4" reveal	Class A	0.40 0.50**

◆ When specifying or ordering, include the appropriate 3-letter color suffix (e.g., 6440W1 N M P)

** Adding acoustical infill (item 8200100, 5479, or 5823) for 4-1/2" module increases the NRC to 0.60. Adding acoustical fiberglass infill for 6" module increases the NRC to 0.45; adding BioAcoustic™ infill 5479 increases NRC to 0.50. For additional infill options, refer to the Acoustical Infill Panels catalog page 200.

ACCESSORIES

For additional accessory items see pages 183-184.

Item No.	Description	Dimensions Nominal (Inches)	Pieces/Carton
5843	Linear Wood Panel Splice	—	100
5948	Linear and Channeled Trim Connector Clip	N/A	30
RC2BL	Radius Clip for faceted grid applications (Black)	—	205 pcs/bucket
6459BL	Rigid Attachment Clip (Black)	5-1/2" x 1-3/4"	25
92715A620	Self-tapping Screws (Black)	#2 x 3/4" Length	25

TRIM AND ACOUSTICAL INFILL PANELS

Trim and infill panels are available.
See Pgs. 199-200 in this catalog or
visit armstrongceilings.com/woodworks

SUSPENSION SYSTEM

Item Number	Description	Dimensions (Inches)	Pieces/Carton
5370	12' HD Linear Carriers (concealed) with integral clips (factory-applied) for nominal 4-1/2" modules	144 x 15/16 x 1-11/16"	10 (Approx. 240 SF/ctn installed with planks)
5371	12' HD Linear Carriers (concealed) with integral clips (factory-applied) for nominal 6" modules	144 x 15/16 x 1-11/16"	10 (Approx. 240 SF/ctn installed with planks)

NOTE: For radiused applications, use standard panels and HD linear carriers faceted 12" on center with RC2BL clips.

PHYSICAL DATA

Material
Fire-retardant particle board with face-cut veneers. FSC®-certified fire-retardant particle board with face-cut veneers (RA-COC-003601). For more information about FSC®-certified products or to view our FSC®-certification letter, visit armstrongceilings.com/woodworksfsc

Factory-applied black fleece on each plank to cover the reveal.

Surface Finish
Clear or tinted semigloss coating

Fire Performance
ASTM E84 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less.

CAN/ULC S102 surface burning characteristics. Flame Spread Rating 25 or less. Smoke Developed Classification 50 or less.

Linear wood, as with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern, or possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, and local codes for guidance where automatic fire detection and suppression systems are present.

ASTM E1264 Classification
Composite – Fire Class A

Application Considerations
Variation among panels may occur due to the natural characteristics of the wood and grain.

It is very important that WoodWorks® planks are climatized prior to installation. Relative humidity between 25% and 55%, and temperatures between 50°F and 86°F, must be maintained.

Specification Consideration
Attention: For FSC-certified wood products to maintain their CoC certification, products must be sold to a CoC certified distributor or directly to the installing contractor. Failure to do so breaks the CoC.

Installation Considerations
Installation can use staggered, random joints for a monolithic appearance or consistent lengths for a modular style. For expansion, a 3/4" gap is recommended at every 24-foot run of plank. See installation instructions BPLA-297443 at armstrongceilings.com/installation.

Seismic Restraint
WoodWorks Linear planks have been engineered, tested, and approved for application in all seismic areas when installed per Armstrong Ceilings installation instructions.

Warranty
Warranty details at armstrongceilings.com

Weight
6440, 6640 – 2.88 lbs/SF
6460, 6660 – 2.89 lbs/SF
(Bulk packaged)

TechLine / 1 877 276-7876
armstrongceilings.com/woodworks
(search: woodworks linear veneered planks)

BPCS-5127-517

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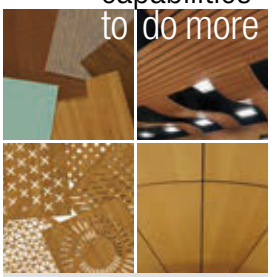
Armstrong® CEILING & WALL SOLUTIONS

WOODWORKS®

Vector®

WoodWorks® Vector® panels – Rg 5008 Perforation in Custom White Oak Rift with Prelude® XL® 15/16" suspension system (Pgs. 391-392)

plus... capabilities to do more



armstrongceilings.com/capabilities

See more photos at: armstrongceilings.com/photogallery

Fully accessible wood panels are available in multiple options for acoustical and aesthetic needs.

KEY SELECTION ATTRIBUTES

- Vector® edge detail provides safe and secure downward accessibility without tools and narrow reveal visual (1/4")
- Create upturns for continuous visuals and clouds with WoodWorks® Trim (see page 183 for trim options)
- Coordinating WoodWorks® walls available (see pages 421-422 for wall offering)
- 18" x 18" Tegular infill panels now available for Metaphors® Coffers; for details, visit armstrongceilings.com/metaphors
- Installation with minimum plenum clearance (Vector)
- Shorter lead times and lower cost than custom millwork

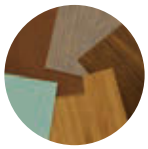
VENEERS

Due to printing limitations, shade may vary from actual product.

Natural Variations™
(Real Wood Veneers)

Constants™
(Real Wood Veneers)

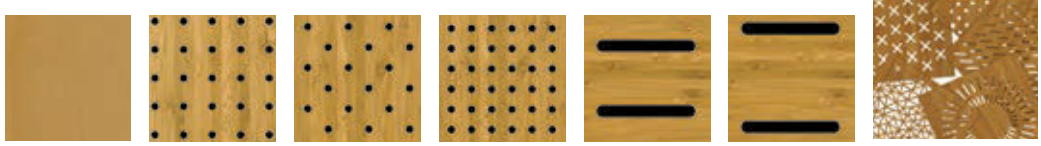
Bamboo*



* Veneer is rapidly renewable. Bamboo is a grass that only requires 3-7 years for maturity and does not have to be replanted after each harvest.

PERFORATION OPTIONS

(Actual 1:6 scale shown)



NOTE: Slotted perforations run parallel to the length of the panel. To view more perforation information and build swatches in real time, visit armstrongceilings.com/swatchit

Armstrong® CEILING & WALL SOLUTIONS

WOODWORKS®
Vector®

USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 100%

FSC www.fsc.org FSC® C007626 The mark of responsible forestry

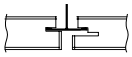
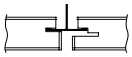
UP TO 92% RECYCLED CONTENT

For LEED contribution contact TechLine

LEED®	energy management	construction waste mgmt	regional materials	design for flexibility	EPD	recyclable/ extended producer resp.	biobased materials	FSC (for wood)	recycled content	sourcing of raw materials	material ingredient reporting	low emitting/ materials	lighting quality	acoustics
			✓	✓	✓		✓	✓	✓	✓		✓		✓

▲ LOCATION DEPENDENT ▲ WITH INFILL PANEL

VISUAL SELECTION

Edge Profile	Item No. ◆	Dimensions Nominal W x L x H (Inches) Custom Sizes Available		Perforations	Fire Rating
WOODWORKS® Vector®					
15/16" Vector – 1/4" Reveal 	**5401**_ _ _ _ _	24 x 24 x 3/4"	□	W1, W2, W3, W4, W5, W6	Class A
FSC®-certified WOODWORKS Vector					
15/16" Vector – 1/4" Reveal 	**5403**_ _ _ _ _	24 x 24 x 3/4"	□	W1, W2, W3, W4, W5, W6	Class A
	6480_ _ _ _ _	12 x 48 x 3/4"	▭		
	6482_ _ _ _ _	24 x 48 x 3/4"	▭		

◆ When specifying or ordering, include the appropriate 2-digit perforation and 3-letter color suffixes. For veneers, sizes, and perforation patterns available as special order, call TechLine at 1 877 276-7876.

PERFORMANCE

ACOUSTICAL INFORMATION

Dots represent high level of performance.

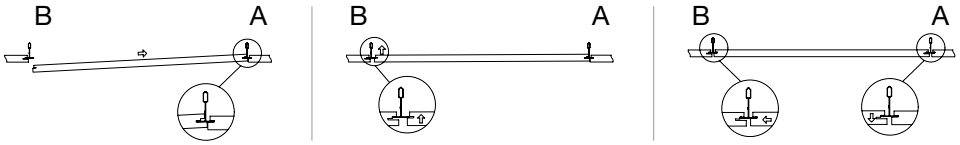
Perforation		NRC* (24" x 48") NRC	NRC* (all other sizes) NRC	CAC* CAC
W1	Unperforated	N/A	N/A	38 •
W2	Round Straight	0.50	0.40	28
W3	Round Diagonal	0.50	0.40	28
W4	Round Straight	0.70 •	0.65	28
W5	Oval Straight Slotted	0.55	0.55	28
W6	Oval Straight Slotted	0.45	0.40	28

* Maximum NRC achieved with acoustical infill (item 8200100 or 5479). When infill is used, CAC is 28. For additional infill options, refer to the Acoustical Infill Panels data page (BPCS-4172).

EXAMPLE: **5401 W2 NLC**

Panel Dimension/Type: 24" x 24" FSC-certified | Perforation: W2 Round Straight Rg 6006 | Finish: Natural Variations Light Cherry

VECTOR PANEL INSTALLATION DETAILS

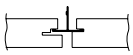


Step 1: Fully insert the deepest kerf of edge "A", the access kerf, onto the exposed grid flange.

Step 2: Raise the "B" edge of the panel, the registration kerf, into the grid opening until the kerf lines up with the grid flange.

Step 3: Slide the panel so that the registration kerf on edge "B" engages the grid flange. Ensure that the access kerf on edge "A" drops down into the correct position.

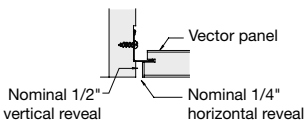
SUSPENSION SYSTEMS

15/16" Vector 

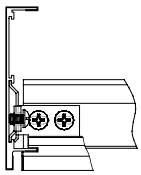
Prelude®

Prelude suspension system is available in many standard colors. Other colors available as special order.

WOODWORKS TRIM INSTALLATION



Wood Substrate Trim with Vector Panel



Aluminum Substrate Trim Assembly for Vector Panel

PHYSICAL DATA

Material
Fire-retardant particle board with face-cut veneers; FSC®-certified fire-retardant particle board with face-cut veneers (RA-COC-003601). For more information about FSC®-certified fire-retardant products, or to view our FSC®-certification letter, visit armstrongceilings.com/woodworksfsc

Surface Finish
Clear or tinted semigloss coating

Fire Performance
ASTM E84 surface burning characteristics, HPVA Certified with audit program per ASTM E84. Flame Spread Index 25 or less. Smoke Developed Index 50 or less.

CAN/ULC S102 surface burning characteristics. Flame Spread Rating 25 or less. Smoke Developed Classification 50 or less.

ASTM E1264 Classification
Composite – Fire Class A

Primary (Embodied) Energy
See all LCA information on our EPDs.

Application Considerations
Variation among panels may occur due to the natural characteristics of the wood and grain.

It is very important that WoodWorks panels are climatized prior to installation. Relative humidity between 25% and 55%, and temperatures between 50°F and 86°F, must be maintained throughout the life of the product.

Design Considerations
Different panel sizes should not be installed together. Perforated panel borders will vary (length and width) based on perforation selection and panel size. Do not mix perforations on the same installation.

Vector safety clips included with panels may be visible through panel perforations.

Specification Consideration
Attention: For FSC-certified wood products to maintain their CoC certification, products must be sold to a CoC-certified distributor or directly to the installing contractor. Failure to do so breaks the CoC.

Seismic Restraint
WoodWorks Vector solid wood panels have been engineered, tested, and approved for application in all seismic areas when installed per Armstrong Ceilings installation instructions.

Warranty
Details at armstrongceilings.com

Weight; Square Feet
Panels – 2.75 lbs/SF

TechLine / 1 877 276-7876
armstrongceilings.com/woodworks
(search: woodworks vector)
BPCS-5416-517

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Armstrong® CEILING & WALL SOLUTIONS

ACC

FORMATIONS™

Floating Clouds

Inspiring Great Spaces®

Armstrong®
CEILING & WALL SOLUTIONS

RAISING
The Standard

Formations™ Cloud Kits give you a great custom look using standard components – eliminating the hassle, cost, and risk associated with custom installations. Panel options offer great spot acoustics, too. Formations cloud kits make installing clouds quick and easy!

Formations™ Clouds with ULTIMA® Tegular panels and Axiom® 4" Classic trim ▶

5 Creating a Cloud Kit

9 FORMATIONS™ Circles

10 FORMATIONS™ Squares/ Rectangles

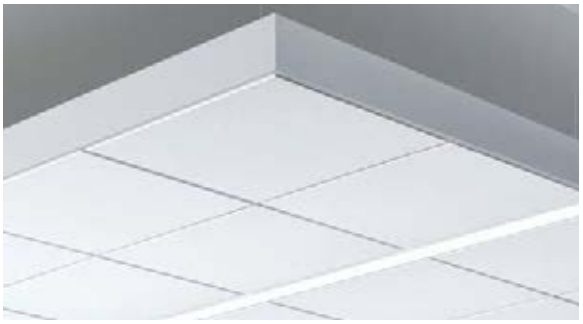
11 FORMATIONS™ Staggered

13 FORMATIONS™ Planks

14 FORMATIONS™ for Drywall

15 FORMATIONS™ with Integrated Lighting

17 FORMATIONS™ with DC FLEXZONE™



For Every Space
With a wide variety of options – including configurations, panels, sizes, trim color, lighting, and applications – the possibilities are endless.

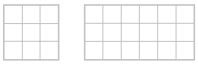
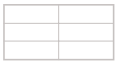
Great Acoustics
Formations cloud kits with acoustical panels provide greater sound absorption than a continuous ceiling of the same area.

Fewer Wires
Kits come complete with our proven StrongBack™ carrying channel, which eliminates 40% of the cables – minimizing visible wires.

Faster Installation
Aircraft cable allows for easy floor level installation – kits assemble and install up to 50% faster than stick built clouds.

FORMATIONS™
Cloud Kits Formations Cloud Kits Make it Easy to Create Unique Ceiling Designs

1 Start by choosing the FORMATIONS cloud type that fits your design vision.

CLOUD TYPE		DESCRIPTION
	FORMATIONS™ Curves	Soften and quiet an open room design by adding a few curves. • 16 suspension system/trim colors • 3 standard trim heights • 16 shapes and sizes
	FORMATIONS™ Squares/Rectangles 	Create a bold, captivating ceiling design with outstanding sound absorption. • 16 suspension system/trim colors • 3 standard trim heights • 15 shapes and sizes
	FORMATIONS™ Staggered	Create visually interesting clouds the easy way. • 16 suspension system/trim colors • 3 standard trim heights • 78 shapes and sizes
	FORMATIONS™ Planks 	Reduce the amount of visible suspension and create a sleek, clean look. • 16 suspension system/trim colors • 3 standard trim heights • 30 shapes and sizes
	FORMATIONS™ for Drywall	Improved floating visual compared to field constructed track and channeled clouds. • 3 standard trim heights • 21 shapes and sizes
	FORMATIONS™ with Integrated Lighting	Distribute safe, low-voltage direct current electrical power through the acoustical ceiling suspension system (grid) for more efficient lighting. • 2 standard trim heights • 3 suspension systems • 4 shapes and sizes
	FORMATIONS™ with DC FLEXZONE™	Distribute safe, low-voltage direct current (DC) electrical power through the acoustical ceiling suspension system (grid) for more efficient lighting. • 2 standard trim heights • 2 suspension systems • 12 shapes and sizes

AXIOM® trims and transitions customer service is available to help with your project from start to finish. Call 1 800 840 8521.

View installation videos or download CAD, Revit®, and SketchUp® files at armstrongceilings.com/formations

FORMATIONS™
Cloud Kits

2 Select a ceiling panel that works with your cloud.

ACOUSTICAL PANELS Due to printing limitations, shade may vary from actual product.

Curves

OPTIMA®/ULTIMA® Tegular and Vector® Panels

OPTIMA Tegular & Vector

ULTIMA Tegular & Vector

NOTE: ULTIMA and OPTIMA Vector are the only available factory-cut curved panels. Other 2' x 2' mineral fiber/fiberglass panels may be used but may require field cutting.

For other non-standard acoustical options, see pages 20-21.

Staggered & Planks

OPTIMA® Vector® Panels

OPTIMA Vector

Squares

CALLA®/LYRA®/OPTIMA/ULTIMA/CIRRUS®/CORTEGA®/DUNE™/FINE FISSURED™ Tegular, Vector®, and Square Lay-in Panels

CALLA Square Lay-in, Tegular & Vector

LYRA Tegular & Vector

OPTIMA Tegular & Vector

ULTIMA Tegular & Vector

CIRRUS Tegular

CORTEGA Tegular

DUNE Tegular

FINE FISSURED Tegular

ULTIMA® Health Zone™ Create!™ Lay-in Panels

Bamboo (BA)

Barnwood (BW)

Light Cherry (LC)

Oak (OK)

Walnut (WN)

RAL and Custom Colors Available

For more information on Create!, visit armstrongceilings.com/create

METALWORKS™ Square Tegular and Vector Panels

Micro-perforated

Extra Micro-perforated

White (WH)

Silver Grey (SG)

Gun Metal Grey (MY)

Effects™ Maple (FXMP)

Effects Cherry (FXCH)

Effects Dark Cherry (FXDC)

Effects Walnut (FXWN)

Effects Oak (FXOK)

Effects Walnut Espresso (FXWE)

NOTE: Effects colors are only available for extra microperforated panels. Solid wood panels cannot be used for clouds.

ACCENT PANELS Due to printing limitations, shade may vary from actual product.

Squares

METALWORKS Tin Tegular and Vector Panels (10 available)

White (TWH)

Chrome (TAM)

Lacquered Steel (TLS)

Copper (TCP)

METALWORKS Mesh Lay-in Panels (24 available)

White (TWH)

Silver Grey (SG)

Gun Metal Grey (MY)

Tech Black (BL)

Nickle Chrome (NC)

Bronze (BZ)

Copper (CP)

INFUSIONS® Lay-in Panels

Lay-in Color Choices (38 available)

Splash Lagoon (FZTRL)

Splash Tangerine (FZTRT)

Clear Arbor (TCA)

Blue Arbor (TBA)

WOODWORKS® Grille Tegular Panels (3 panel designs)

Open Cell Vector Panels (5 panel designs)

Grille Maple (GMP)

Grille Light Cherry (GLC)

Grille Dark Cherry (GDC)

Grille Walnut (GWN)

NOTE: For a complete list of panels, visit armstrongceilings.com/metalworks; armstrongceilings.com/infusions; armstrongceilings.com/woodworks

3 Select your suspension system and trim colors.

COLOR SELECTION Due to printing limitations, shade may vary from actual product.

Suspension System / AXIOM® Trim Colors

White
Cream (CR)
Haze (HA)
Camel (CM)
Platinum (PL)
Silver Satin (SA)
Silver Grey (SG)
Gun Metal Grey (MY)
Tech Black (BL)

Drywall
Unfinished (UF)

DC FlexZone™
White

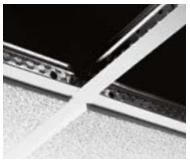
NOTE: If specifying a color other than White for Curves, Squares, Planks, or Staggered Clouds, remember to add the color suffix at the end of the Suspension Kit item number.

COLORATIONS® Colors

White (WH)
Shell (SH)
Pale Lemon (LM)
Pecan (PC)
Sky (SK)
Moss (MS)
Stone (SE)
Reef (RE)
Lagoon (LA)
Plum (PM)
Cranberry (CN)
Kiwi (KW)
Tangerine (TG)
Black (BK)†

† Use BL suffix for suspension systems and Axiom

SUSPENSION SYSTEMS



PRELUDE® 15/16" suspension system included in all kits (except Drywall or DC FLEXZONE™)

DC FLEXZONE™ SILHOUETTE® 1/4" Reveal 9/16" suspension system

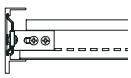
DC FLEXZONE™ SUPRAFINE® 9/16" suspension system

Drywall 1-1/2" suspension system

4 Select your AXIOM® trim profile and height.

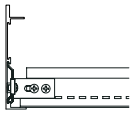
AXIOM® TRIM TYPES

AXIOM® Vector® for FORMATIONS™



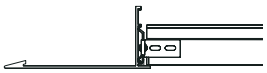
2", 4", and 6" heights

AXIOM® Vector® (Inverted) for FORMATIONS™

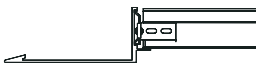


2", 4", and 6" heights

AXIOM® Knife Edge® for FORMATIONS™



AXIOM® Knife Edge® Vector® for FORMATIONS™



AXIOM TRIM PROFILE OPTIONS

AXIOM® for FORMATIONS™ Vector® trim (available in 2", 4", and 6" heights)

Vector panel with AXIOM® for FORMATIONS™ Vector® trim (available in 2", 4", and 6" heights)

Tegular panel with inverted AXIOM® for FORMATIONS™ Vector® trim (available in 2", 4", and 6" heights)

Tegular panel with AXIOM® for FORMATIONS™ Knife Edge® for Vector® trim

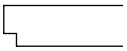
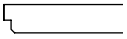
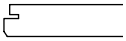
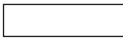
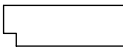
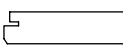
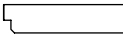
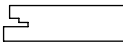
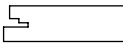
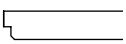
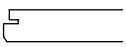
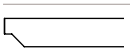
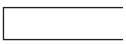
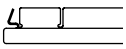
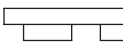
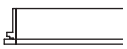
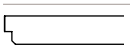
Vector panel with AXIOM® for FORMATIONS™ Knife Edge® for Vector® trim

AXIOM® trims and transitions customer service is available to help with your project from start to finish. Call 1 800 840 8521.

View installation videos or download CAD, Revit®, and SketchUp® files at armstrongceilings.com/formations

FORMATIONS™
Cloud Kits

COMPATIBLE CEILING PANELS

Edge Profile	Panel	Trim Choices: AXIOM® Vector®	AXIOM® Vector® (Inverted)	AXIOM® Knife Edge®	AXIOM® Knife Edge® Vector®
FORMATIONS™ Curves		Available in 2", 4", and 6" heights	Available in 2", 4", and 6" heights		
	Lay-in	–	•	–	–
	OPTIMA® Square Tegular	–	–	–	–
	OPTIMA® Vector® (Factory-cut)	•	–	–	–
	ULTIMA® Beveled Tegular	–	•	–	–
	ULTIMA® Vector (Factory-cut)	•	–	–	–
FORMATIONS™ Squares					
	Lay-in	–	•	•	–
	CALLA® Square Tegular	•	•	•	•
new 	CALLA® Vector (Factory-cut)	•	–	–	•
	LYRA® Square Tegular	•	•	•	•
new 	LYRA® Vector (Factory-cut)	•	–	–	•
	OPTIMA® Square Tegular	•	•	•	•
	OPTIMA® Vector (Factory-cut)	•	–	–	•
	ULTIMA® Beveled Tegular	•	•	•	•
	ULTIMA® Vector (Factory-cut)	•	–	–	•
	CIRRUS®/CORTEGA®/DUNE™/ FINE FISSURED™ Angled Tegular	–	•	•	–
	ULTIMA® Health Zone™ Create!™ Square Lay-in	–	•	•	–
	METALWORKS™ Square Tegular	•	•	•	•
	METALWORKS ™ Vector	•	–	–	•
	WOODWORKS® Grille Tegular	•	•	•	•
	WOODWORKS® Open Cell Vector	•	–	–	–
	INFUSIONS® Lay-in	•	•	•	•
FORMATIONS™ Planks & Staggered					
	OPTIMA® Vector	•	–	–	–
FORMATIONS™ for Drywall					
	N/A	AXIOM® One-piece Drywall Trim			
FORMATIONS™ with DC FLEXZONE™ / with Integrated Lighting					
	OPTIMA® Square Tegular	•*	–	–	–
	ULTIMA® Beveled Tegular	•*	–	–	–

* 2" trim height not available with DC FLEXZONE™

FORMATIONS™
Curves Cloud Kits

5 Specify kits, colors, and panel selections.

HOW TO SPECIFY

Based on the cloud size and shape you choose, you need to specify and order the suspension and trim kit item number, the special factory-cut curved Vector® panel kit number, and any extra cartons of the infill panels you may need.

Standard circle and rounded square clouds feature 15/16" PRELUDE® suspension system and your choice of 2", 4", or 6" high AXIOM® Vector® trim.

EXAMPLE:

C4VES 0606C _ _

4" High AXIOM® Vector Trim	6' x 6' Cloud	Color Suffix*

Also order OPTIMA® Vector® Curves Panel Kit: 3970

Custom options available that include a wide range of AXIOM® trim and suspension system options.

* If specifying a color other than White, remember to add the color suffix at the end of the Suspension Kit item number.

VISUAL SELECTION

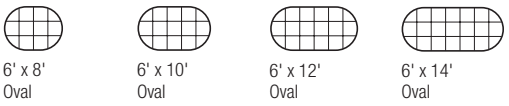
Cloud Size		Suspension Item No. (Axiom Trim & Suspension System)
Curves		15/16" Prelude
6'	Circle	**C _ VES0606C _ _**
6' x 8'	Oval	**C _ VES0608 _ _**
6' x 10'	Oval	**C _ VES0610 _ _**
6' x 12'	Oval	**C _ VES0612 _ _**
6' x 14'	Oval	**C _ VES0614 _ _**
8'	Circle	**C _ VES0808C _ _**
8' x 8'	Rounded Square	**C _ VES0808 _ _**
8' x 10'	Rounded Square	**C _ VES0810 _ _**
8' x 12'	Rounded Square	**C _ VES0812 _ _**
8' x 14'	Rounded Square	**C _ VES0814 _ _**
10'	Circle	**C _ VES1010C _ _**
10' x 10'	Rounded Square	**C _ VES1010 _ _**
10' x 12'	Rounded Square	**C _ VES1012 _ _**
10' x 14'	Rounded Square	**C _ VES1014 _ _**
11'-5"	Circle	**C _ VES1212C _ _**
12' x 12'	Rounded Square	**C _ VES1212 _ _**
12' x 14'	Rounded Square	**C _ VES1214 _ _**
14'	Circle	**C _ VES1414C _ _**
14' x 14'	Rounded Square	**C _ VES1414 _ _**

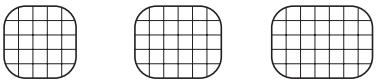
PANEL SELECTION

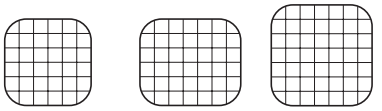
OPTIMA® Vector® Factory-cut Curved Panels			ULTIMA® Vector® Factory-cut Curved Panels		
Item No.	Cartons Required	Required Extra Item 3900 2' x 2' (Ctns)	Item No.	Cartons Required	Required Extra Item 1920 2' x 2' (Ctns)
3970	1	0	1970	1	0
3971	1	1	1971	1	1
3971	1	1	1971	1	1
3971	1	1	1971	1	1
3971	1	1	1971	1	1
3973	1	1	1973	1	1
3972	1	1	1972	1	1
3972	1	1	1972	1	1
3972	1	1	1972	1	1
3972	1	2	1972	1	2
3974	2	1	1974	2	1
3972	1	2	1972	1	2
3972	1	2	1972	1	2
3972	1	2	1972	1	2
3975	2	2	1975	2	2
3972	1	2	1972	1	2
3972	1	3	1972	1	3
3976	2	3	1976	2	3
3972	1	4	1972	1	4

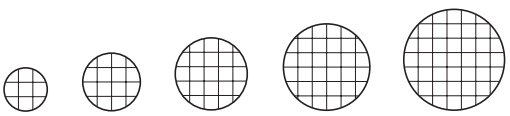
CLOUD SHAPE AND SIZE SELECTION

Curves

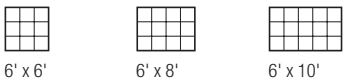


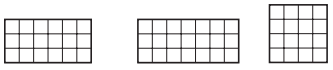


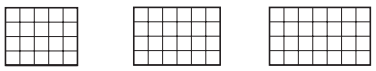


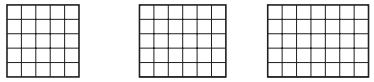


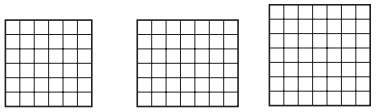
Squares











FORMATIONS™
Square/Rectangle Cloud Kits

5 Specify kits, colors, and panel selections.

HOW TO SPECIFY

Based on the cloud size and shape you choose, you need to specify and order the suspension and trim kit item number and the panel item number you select.

Standard square and rectangle clouds feature 15/16" PRELUDE® suspension system and your choice of 2", 4", or 6" high AXIOM® Vector® trim, AXIOM® Knife Edge® Tegular or Vector® trim.

EXAMPLE:

C4VEA 0606 _ _

4" High AXIOM® Vector Trim	6' x 6' Cloud	Color Suffix*

Also order OPTIMA® Vector® Squares Panel Kit: 3900 (2' x 2' panels – 1 carton).

Custom options available that include a wide range of AXIOM® trim and suspension system options.

* If specifying a color other than White, remember to add the color suffix at the end of the Suspension Kit item number.

VISUAL SELECTION

Cloud Size	AXIOM® Profile	Suspension Item No. (AXIOM® Trim & Suspension System)
Squares/Rectangles		15/16" Prelude
6' x 6'	Vector®	**C _ VEA0606 _ _**
	Knife Edge® Tegular	**CKETA0606 _ _**
	Knife Edge® Vector	**CKEVA0606 _ _**
6' x 8'	Vector®	**C _ VEA0608 _ _**
	Knife Edge® Tegular	**CKETA0608 _ _**
	Knife Edge® Vector	**CKEVA0608 _ _**
6' x 10'	Vector®	**C _ VEA0610 _ _**
	Knife Edge® Tegular	**CKETA0610 _ _**
	Knife Edge® Vector	**CKEVA0610 _ _**
6' x 12'	Vector®	**C _ VEA0612 _ _**
	Knife Edge® Tegular	**CKETA0612 _ _**
	Knife Edge® Vector	**CKEVA0612 _ _**
6' x 14'	Vector®	**C _ VEA0614 _ _**
	Knife Edge® Tegular	**CKETA0614 _ _**
	Knife Edge® Vector	**CKEVA0614 _ _**
8' x 8'	Vector®	**C _ VEA0808 _ _**
	Knife Edge® Tegular	**CKETA0808 _ _**
	Knife Edge® Vector	**CKEVA0808 _ _**
8' x 10'	Vector®	**C _ VEA0810 _ _**
	Knife Edge® Tegular	**CKETA0810 _ _**
	Knife Edge® Vector	**CKEVA0810 _ _**
8' x 12'	Vector®	**C _ VEA0812 _ _**
	Knife Edge® Tegular	**CKETA0812 _ _**
	Knife Edge® Vector	**CKEVA0812 _ _**
8' x 14'	Vector®	**C _ VEA0814 _ _**
	Knife Edge® Tegular	**CKETA0814 _ _**
	Knife Edge® Vector	**CKEVA0814 _ _**
10' x 10'	Vector®	**C _ VEA1010 _ _**
	Knife Edge® Tegular	**CKETA1010 _ _**
	Knife Edge® Vector	**CKEVA1010 _ _**
10' x 12'	Vector®	**C _ VEA1012 _ _**
	Knife Edge® Tegular	**CKETA1012 _ _**
	Knife Edge® Vector	**CKEVA1012 _ _**
10' x 14'	Vector®	**C _ VEA1014 _ _**
	Knife Edge® Tegular	**CKETA1014 _ _**
	Knife Edge® Vector	**CKEVA1014 _ _**
12' x 12'	Vector®	**C _ VEA1212 _ _**
	Knife Edge® Tegular	**CKETA1212 _ _**
	Knife Edge® Vector	**CKEVA1212 _ _**
12' x 14'	Vector®	**C _ VEA1214 _ _**
	Knife Edge® Tegular	**CKETA1214 _ _**
	Knife Edge® Vector	**CKEVA1214 _ _**
14' x 14'	Vector®	**C _ VEA1414 _ _**
	Knife Edge® Tegular	**CKETA1414 _ _**
	Knife Edge® Vector	**CKEVA1414 _ _**

* These items use AXIOM® for FORMATIONS™ Vector® trim (inverted).

PANEL SELECTION

OPTIMA® Vector Panels	ULTIMA® Vector® Panels	OPTIMA® Tegular Panels	ULTIMA® Tegular Panels
Item 3900 (Ctns)	Item 1920 (Ctns)	Items 3250, 3354, 3253 (Ctns)	Item 1911 (Ctns)
1	1	1*	1*
–	–	1	1
1	1	–	–
1	1	1*	1*
–	–	1	1
1	1	–	–
2	2	1*	2*
–	–	1	2
2	2	–	–
2	2	1*	2*
–	–	1	2
2	2	–	–
2	2	1*	2*
–	–	1	2
2	2	–	–
2	2	1*	2*
–	–	1	2
2	2	–	–
2	2	1*	2*
–	–	1	2
2	2	–	–
2	2	1*	3*
–	–	1	3
2	2	–	–
2	3	2*	3*
–	–	2	3
2	3	–	–
3	3	2*	3*
–	–	2	3
3	3	–	–
3	3	2*	3*
–	–	2	3
3	3	–	–
3	3	2*	3*
–	–	2	3
3	3	–	–
4	4	2*	4*
–	–	2	4
4	4	–	–
5	5	3*	5*
–	–	3	5
5	5	–	–

MORE PANEL OPTIONS

Place these panel orders with Armstrong Customer Service - 1 877 276 7876

Panel options featured on pg. 7
CALLA®
CIRRUS®
CORTEGA®
DUNE™
FINE FISSURED™
LYRA® / LYRA® Vector®
ULTIMA® Health Zone™ Create!™
METALWORKS™ Tegular
METALWORKS™ Vector®
METALWORKS™ Tin
METALWORKS™ Mesh
INFUSIONS®
WOODWORKS® Grille
WOODWORKS® Open Cell

FORMATIONS™
Staggered Cloud Kits

5 Specify kits, colors, and panel selections.

HOW TO SPECIFY

Based on the cloud size and shape you choose, you need to specify and order the suspension and trim kit item number and the panel item numbers you select.

Standard staggered clouds feature 15/16" PRELUDE® suspension system and your choice of 2", 4", or 6" high AXIOM® Vector® trim.

EXAMPLE:

0606 V2A 1222V _ _

6' x 6' Cloud	2" High AXIOM® Vector Trim	1' x 2' / 2' x 2' OPTIMA® Vector Panels	Color Suffix*

Also order OPTIMA® Vector® Staggered Panel Kits: 3903 (1' x 2' panels – 1 carton) and 3900 (2' x 2' panels – 1 carton).

* If specifying a color other than White, remember to add the color suffix at the end of the Suspension Kit item number.

VISUAL SELECTION

PANEL SELECTION

Cloud Size	Suspension Item No. (AXIOM® Trim & Suspension System)	OPTIMA® Vector® Panels		
		1' x 2' / 2' x 2'	2' x 2' / 2' x 4'	2' x 4' / 2' x 8'
Staggered	15/16" Prelude	Item 3903 / 3900 (Ctns)	Item 3900 / 3908 (Ctns)	Item 3908 / 3907 (Ctns)
6' x 6'	**0606V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
6' x 8'	**0608V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
6' x 10'	**0610V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
6' x 12'	**0612V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
6' x 14'	**0614V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
6' x 16'	**0616V _ A _ _ _ _ V _ _**	2 / 2	1 / 1	–
8' x 6'	**0806V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
8' x 8'	**0808V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
8' x 10'	**0810V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
8' x 12'	**0812V _ A _ _ _ _ V _ _**	2 / 2	2 / 2	–
8' x 14'	**0814V _ A _ _ _ _ V _ _**	2 / 2	2 / 1	–
8' x 16'	**0816V _ A _ _ _ _ V _ _**	2 / 2	2 / 1	–
10' x 6'	**1006V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
10' x 8'	**1008V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
10' x 10'	**1010V _ A _ _ _ _ V _ _**	2 / 2	2 / 1	–
10' x 12'	**1012V _ A _ _ _ _ V _ _**	2 / 2	2 / 2	–
10' x 14'	**1014V _ A _ _ _ _ V _ _**	2 / 2	2 / 2	–
10' x 16'	**1016V _ A _ _ _ _ V _ _**	2 / 2	2 / 2	–
12' x 6'	**1206V _ A _ _ _ _ V _ _**	1 / 1	1 / 1	–
12' x 8'	**1208V _ A _ _ _ _ V _ _**	2 / 2	1 / 1	–
12' x 10'	**1210V _ A _ _ _ _ V _ _**	2 / 2	2 / 2	–
12' x 12'	**1212V _ A _ _ _ _ V _ _**	2 / 2	2 / 2	–
12' x 14'	**1214V _ A _ _ _ _ V _ _**	2 / 2	2 / 2	–
12' x 16'	**1216V _ A _ _ _ _ V _ _**	3 / 3	2 / 2	–
16' x 6'	**1606V _ A _ _ _ _ V _ _**	2 / 2	2 / 2	1 / 1
16' x 8'	**1608V _ A _ _ _ _ V _ _**	2 / 2	2 / 2	2 / 2
16' x 10'	**1610V _ A _ _ _ _ V _ _**	2 / 2	3 / 2	2 / 2
16' x 12'	**1612V _ A _ _ _ _ V _ _**	3 / 3	3 / 2	2 / 2
16' x 14'	**1614V _ A _ _ _ _ V _ _**	3 / 3	3 / 2	2 / 2
16' x 16'	**1616V _ A _ _ _ _ V _ _**	3 / 3	1 / 1	2 / 2

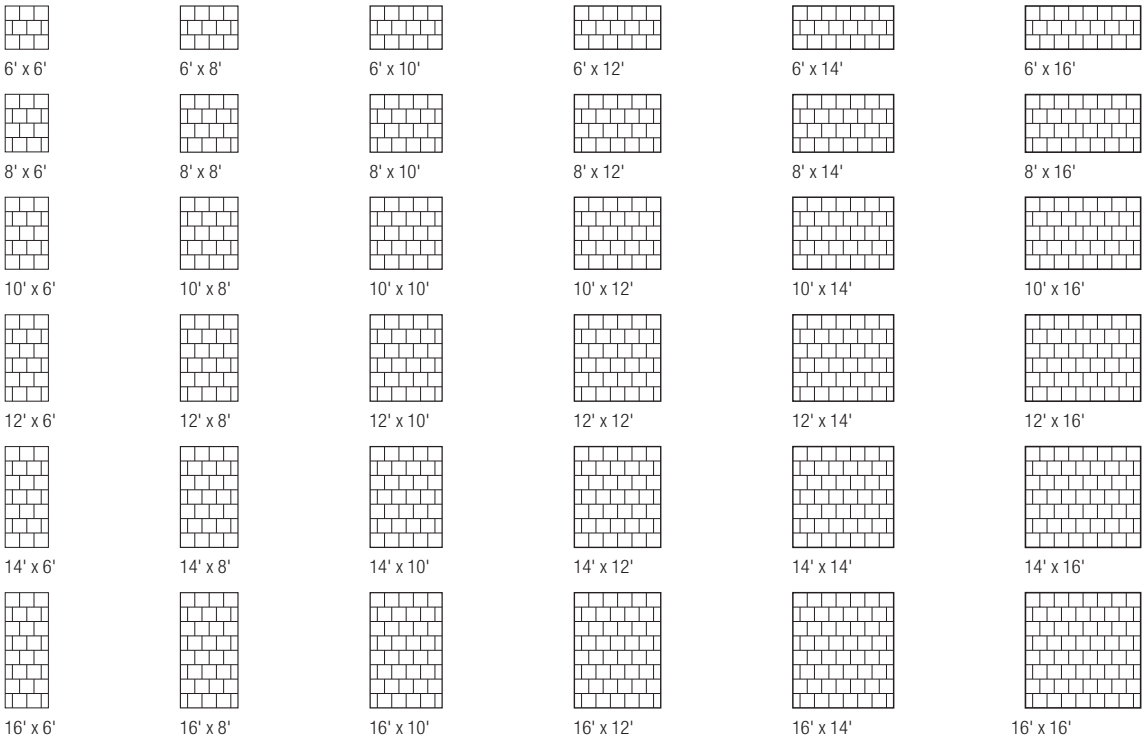
AXIOM® trims and transitions customer service is available to help with your project from start to finish. Call 1 800 840 8521.

View installation videos or download CAD, Revit®, and SketchUp® files at armstrongceilings.com/formations

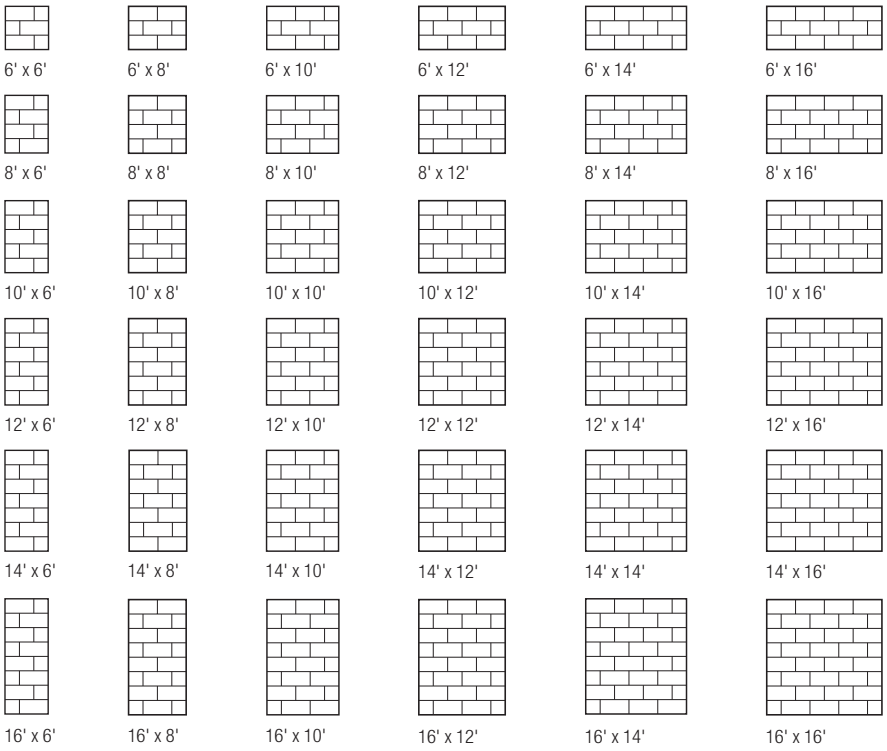
FORMATIONS™
Staggered Cloud Kits

STAGGERED CLOUD SHAPE AND SIZE SELECTION

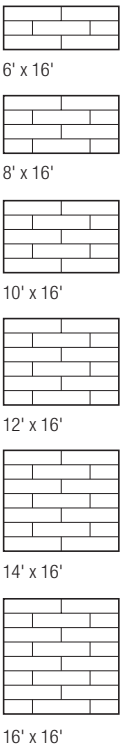
1' x 2' / 2' x 2' Panels



2' x 2' / 2' x 4' Panels



2' x 4' / 2' x 8' Panels



FORMATIONS™
Planks Cloud Kits

5 Specify kits, colors, and panel selections.

HOW TO SPECIFY

Based on the cloud size and shape you choose, you need to specify and order the suspension and trim kit item number and the panel item number you select.

Standard plank clouds feature 15/16" PRELUDE® suspension system and your choice of 2", 4", or 6" high AXIOM® Vector® trim.

EXAMPLE:

1210 V4P 26V _ _

12' x 10' Cloud	4" High AXIOM® Vector Trim	2' x 6' OPTIMA® Vector Panels	Color Suffix*

Also order OPTIMA® Vector® Plank Panel Kit: 3906 (2' x 6' – 1 carton).

* If specifying a color other than White, remember to add the color suffix at the end of the Suspension Kit item number.

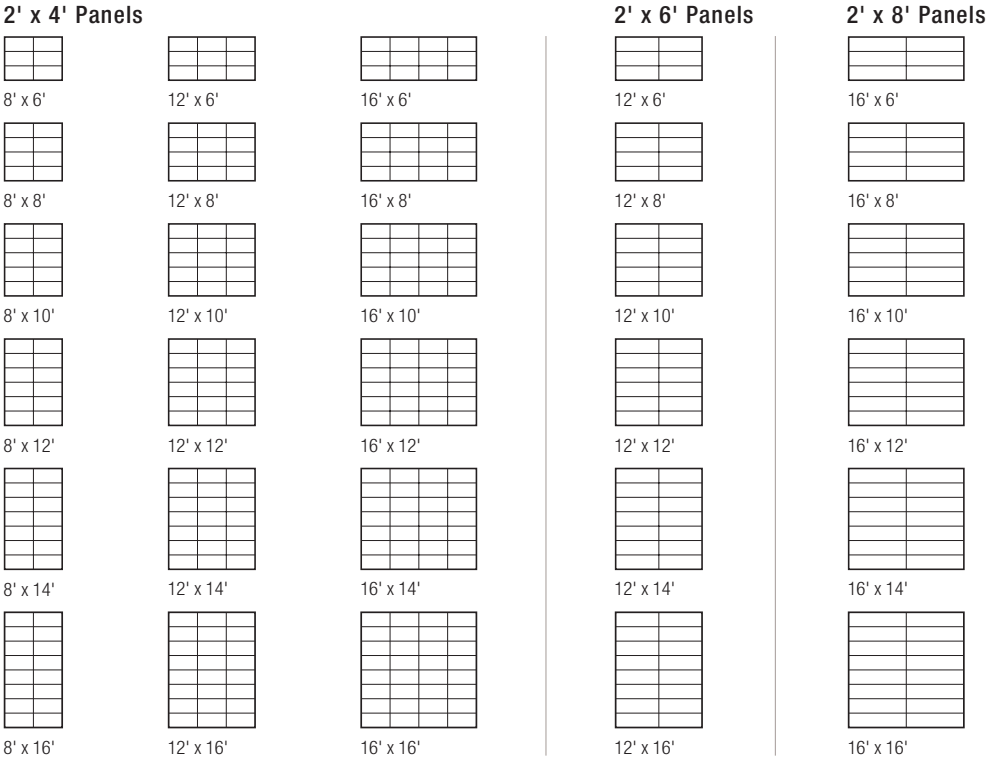
VISUAL SELECTION

Cloud Size	Suspension Item No. (AXIOM® Vector® Trim & Suspension System)
Planks	15/16" Prelude
8' x 6'	**0806V _ P24V _ _**
8' x 8'	**0808V _ P24V _ _**
8' x 10'	**0810V _ P24V _ _**
8' x 12'	**0812V _ P24V _ _**
8' x 14'	**0814V _ P24V _ _**
8' x 16'	**0816V _ P24V _ _**
12' x 6'	**1206V _ P _ _ V _ _**
12' x 8'	**1208V _ P _ _ V _ _**
12' x 10'	**1210V _ P _ _ V _ _**
12' x 12'	**1212V _ P _ _ V _ _**
12' x 14'	**1214V _ P _ _ V _ _**
12' x 16'	**1216V _ P _ _ V _ _**
16' x 6'	**1606V _ P _ _ V _ _**
16' x 8'	**1608V _ P _ _ V _ _**
16' x 10'	**1610V _ P _ _ V _ _**
16' x 12'	**1612V _ P _ _ V _ _**
16' x 14'	**1614V _ P _ _ V _ _**
16' x 16'	**1616V _ P _ _ V _ _**

PANEL SELECTION

OPTIMA® Vector® Panels		
2' x 4'	2' x 6'	2' x 8'
Item 3908 (Ctns)	Item 3906 (Ctns)	Item 3907 (Ctns)
1	–	–
1	–	–
1	–	–
2	–	–
2	–	–
2	–	–
1	2	1
2	2	2
2	2	2
2	3	2
2	3	2
3	3	3
2	–	2
2	–	2
2	–	2
3	–	3
3	–	3
3	–	3

PLANKS CLOUD SHAPE AND SIZE SELECTION



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View installation videos or download CAD, Revit®, and SketchUp® files at armstrongceilings.com/formations

FORMATIONS™
Drywall Cloud Kits

5 Specify kits.

HOW TO SPECIFY

Based on the cloud size and shape you choose, you need to specify and order the suspension and trim kit item number. FORMATIONS™ drywall cloud kits are only compatible with 5/8" thick drywall.

Standard drywall cloud kits feature your choice of 2", 4", or 6" high unfinished AXIOM® drywall trim for easy on-site painting.

EXAMPLE:

0404D A1P6UF

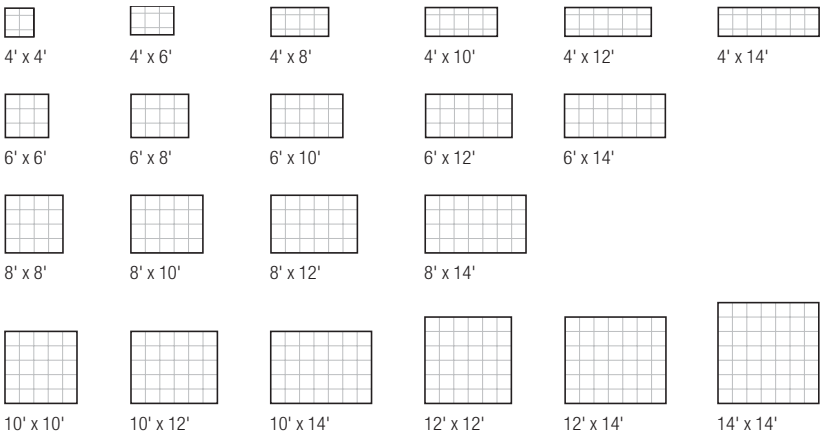
4' x 4' Drywall Cloud	6" High AXIOM® One-piece Drywall Trim Unfinished

VISUAL SELECTION

Cloud Size	Suspension Item No. (AXIOM® Trim & Suspension System)
Drywall	1-1/2" Drywall Grid
4' x 4'	**0404DA1P_ UF**
4' x 6'	**0406DA1P_ UF**
4' x 8'	**0408DA1P_ UF**
4' x 10'	**0410DA1P_ UF**
4' x 12'	**0412DA1P_ UF**
4' x 14'	**0414DA1P_ UF**
6' x 6'	**0606DA1P_ UF**
6' x 8'	**0608DA1P_ UF**
6' x 10'	**0610DA1P_ UF**
6' x 12'	**0612DA1P_ UF**
6' x 14'	**0614DA1P_ UF**

Cloud Size	Suspension Item No. (AXIOM® Trim & Suspension System)
Drywall	1-1/2" Drywall Grid
8' x 8'	**0808DA1P_ UF**
8' x 10'	**0810DA1P_ UF**
8' x 12'	**0812DA1P_ UF**
8' x 14'	**0814DA1P_ UF**
10' x 10'	**1010DA1P_ UF**
10' x 12'	**1012DA1P_ UF**
10' x 14'	**1014DA1P_ UF**
12' x 12'	**1212DA1P_ UF**
12' x 14'	**1214DA1P_ UF**
14' x 14'	**1414DA1P_ UF**

DRYWALL CLOUD SHAPE AND SIZE SELECTION



FORMATIONS™ with Integrated Lighting

5 Specify kits, colors, and panel selections.

HOW TO SPECIFY

Based on the cloud size and shape you choose, you need to specify and order the suspension and trim kit item number, the panel item number, and the Philips Ledalite light fixture you select.

EXAMPLE:

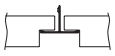
L0608T _ _* A V _ _ _

6' x 8' Cloud	Susp. System	6" or 8" AXIOM® Vector height	Color Suffix

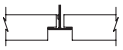
* PD = Prelude 15/16"
SF = Suprafine 9/16"
LD = Interlude 9/16"

All clouds come in the color White.

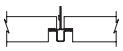
All clouds have a 4" wide opening in the center specifically designed for the integration of a Philips Ledalite TruGroove LED fixture.



PRELUDE® – 15/16"



SUPRAFINE® – 9/16"



INTERLUDE® XL® HRC – 9/16"

VISUAL SELECTION

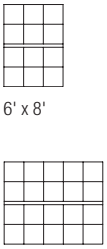
Cloud Size	Suspension Item No. (AXIOM® Vector® Trim & Suspension System)
6' x 8'	**L0608T_ _AV_ _ _**
8' x 8'	**L0808T_ _AV_ _ _**
8' x 10'	**L0810T_ _AV_ _ _**
10' x 10'	**L1010T_ _AV_ _ _**

PANEL SELECTION

OPTIMA® Square Tegular Panels		ULTIMA® Beveled Tegular Panels		CALLA® Beveled Tegular Panels		LYRA® Square Tegular Panels	
2' x 2'		2' x 2'		2' x 2'		2' x 2'	
15/16"	9/16"	15/16"	9/16"	15/16"	9/16"	15/16"	9/16"
3354	3251	1911	1912	2822	2824	8360	8361
3354	3251	1911	1912	2822	2824	8360	8361
3354	3251	1911	1912	2822	2824		
30" x 30"		30" x 30"		30" x 30"		30" x 30"	
15/16"	9/16"	15/16"	9/16"				
3258	3259		1905	–		–	

PLANKS CLOUD SHAPE AND SIZE SELECTION

2' x 2' Panels

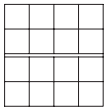


6' x 8'

8' x 8'

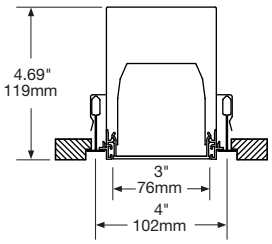
8' x 10'

30" x 30" Panels

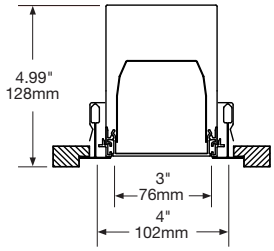


10' x 10'

CEILING PANEL / SUSPENSION SYSTEM / LIGHT FIXTURE INTERFACE



Armstrong® SUPRAFINE® 9/16" suspension system with Philips Ledalite TruGroove LED Light



Armstrong® PRELUDE® 15/16" suspension system with Philips Ledalite TruGroove LED Light

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FORMATIONS™
with Integrated Lighting

PHILIPS LEDALITE – TRUGROOVE LED RECESSED LIGHTING OVERVIEW

The epitome of simple sophistication – TruGroove LED lighting provides unrivaled performance and a truly innovative design, making a definitive statement in any architectural space.

SPECIFY YOUR COMPATIBLE LEDALITE LIGHTING FIXTURE

Family	Version	Distribution	Source	Color Temp	Lumen Package	Optics	Housing	Ceiling / Trim	Run Length/ Size	Wiring Type	Voltage	Ballast/ Driver
39	S	1	L	A	G	Q	S	5	6'	1	2	E
TruGroove Recessed	Standalone	**Performance Distribution** **1** Symmetric **Definition Distribution** **0** Symmetric	**L** LED	**A** 4000K **B** 3500K **C** 3000K	**E** 3000 lm/4 ft **G** 2200 lm/4 ft **K** 1500 lm/4 ft	**Performance Optics** **Q** Flush MesoOptics **R** Regressed MesoOptics **Definition Optics** **L** Flush Silk **M** Regressed Silk	**S** Standard	**5** Armstrong Cloud	**6'** 5' 11-7/8" o.a. **8'** 7' 11-7/8" o.a. **10'** 9' 11-7/8" o.a.	**1** 1 cct **3** 1 cct w/ emergency **7** 1 cct dimming	**1** 120V **2** 277V **3** 347V	**E** Standard

Contact your Philips lighting representative to order. For questions about lighting specifications:
Call: Philips Ledalite quotations at 604.888.6811 or
Email: quotes.ledalight@philips.com (Reference: Armstrong Clouds)

SPECIFY YOUR COMPATIBLE LEDALITE LIGHTING FIXTURE

Example based on 2200 lm (nominal per 4'), 4000K

Total Output	2187 lm
Efficacy	78.4 lm/W
CCT	4039K
CRI	84
R9	17
Distribution	0% Up / 100% Down
Spacing Criteria (0/90/180°)	1.41/1.75/NA

Meets RP-1-04 recommendations for VDT-Normal spaces

Values per 4 ft unit

Fixture photometry has been conducted by an NVLAP accredited testing laboratory in accordance with IESNA LM-79:2008

Lumen maintenance of the LEDs has been tested by the manufacturer in accordance with IESNA LM-80:2008

IES files for this and other photometric options can be downloaded online at www.ledalite.com

TRUGROOVE PHYSICAL DATA

Housing
Die-formed 20 gauge cold-rolled steel. Multiple upper wire entrances available for continuous row mounting of fixtures.

Weight
Maximum 3.5 lbs/ft.

Optical System
Performance version: White light emitted from the LED sources is internally reflected and laterally redirected by a biconvex lens. Light is then reflected by Miro-Silver panels and exits through the optical lens assembly. This assembly contains acrylic extrusion profiles to retain a layer of MesoOptics film, creating both an uninterrupted continuum of light and an optical batwing distribution.

Definition version: Light passes through a diffuse white acrylic lens to deliver a highly uniform luminous continuum.

Standard Driver
Dimming: 0-10V, 5-100%. Output is Class 2 rated.

Lumen Maintenance
At an ambient temperature of 25°C in non-insulated contact applications, the LED lumen maintenance expectation for each lumen package is:

K: L80 (12k) 71,000 hrs

G: L80 (12k) 68,000 hrs

E: L80 (12k) 54,000 hrs

Mounting
Mounting brackets on housing sides support T-Grid installation. 1/16" diameter aircraft cable with self-locking, tamper-resistant, miniature cable gripper provides vertical adjustment for drywall. Aircraft cable, crimp, and gripper independently tested to meet stringent safety requirements.

TRUGROOVE ELECTRICAL SPECIFICATIONS

Input Voltage	120V	277V
Input Voltage	27.9W	27.9W
Input Current	0.237A	0.115A
Power Factor	0.983	
Total Harm. Distortion	16.5%	

Tested values – contact technical support for rated values.
Off-state power zero unless certain controls are specified.

Joints
Self-aligning joining system with hands-free pre-joining wire access.

Electrical
Factory pre-wired to section ends with quick-wire connectors.

Approvals
Certified to UL, CSA, and IES standards. Insulation Contact (IC) rated.

Finish
Extruded aluminum trim and die-cast endplates coated with electrostatically applied and thermally cured polyester powder coat paint finish.

Environment
Rated for dry or damp locations in operating ambient temperatures 0-40°C (32-104°F).

FORMATIONS™ with DC FlexZone™

5 Specify kits, colors, and panel selections.

HOW TO SPECIFY

Based on the cloud size and shape you choose, you need to specify and order the suspension and trim kit item number, the panel item number you select, and any lighting or control options you choose to include.

Standard DC FLEXZONE™ clouds feature DC FLEXZONE™ 9/16" SUPRAFINE® or SILHOUETTE® 1/4" Reveal suspension system and your choice of 4" or 6" high AXIOM® Vector® trim.

EXAMPLE:

DC1014	TSL	AV4
10' x 14' Cloud	SILHOUETTE® 1/4" Reveal	4" High AXIOM® Vector Trim

Also order ULTIMA Panel Kit: 1912 (2' x 2' – 3 cartons).

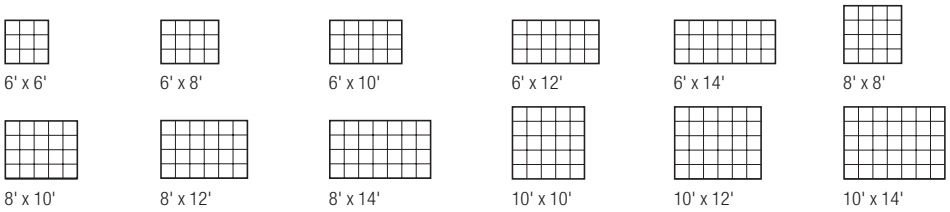
Order compatible lighting, power supply, cables, and controls through DC FLEXZONE™ partner sites.

VISUAL SELECTION

PANEL SELECTION

Cloud Size	Suspension Item No. (AXIOM® Trim & Suspension System)		OPTIMA® Tegular Panels	ULTIMA® Tegular Panels
DC FLEXZONE™	9/16" SILHOUETTE® 1/4" Reveal	9/16" SUPRAFINE®	Item 3251 (Ctns)	Item 1912 (Ctns)
6' x 6'	**DC0606TSLAV _**	**DC0606TSFAV _**	1	1
6' x 8'	**DC0608TSLAV _**	**DC0608TSFAV _**	1	1
6' x 10'	**DC0610TSLAV _**	**DC0610TSFAV _**	1	2
6' x 12'	**DC0612TSLAV _**	**DC0612TSFAV _**	1	2
6' x 14'	**DC0614TSLAV _**	**DC0614TSFAV _**	1	2
8' x 8'	**DC0808TSLAV _**	**DC0808TSFAV _**	1	2
8' x 10'	**DC0810TSLAV _**	**DC0810TSFAV _**	1	2
8' x 12'	**DC0812TSLAV _**	**DC0812TSFAV _**	1	2
8' x 14'	**DC0814TSLAV _**	**DC0814TSFAV _**	2	3
10' x 10'	**DC1010TSLAV _**	**DC1010TSFAV _**	1	3
10' x 12'	**DC1012TSLAV _**	**DC1012TSFAV _**	2	3
10' x 14'	**DC1014TSLAV _**	**DC1014TSFAV _**	2	3

DC FLEXZONE CLOUD SHAPE AND SIZE SELECTION



SYSTEM OVERVIEW

DC FLEXZONE™ Suspension System

- DC FLEXZONE™ suspension system is a "Power Distribution Platform"
- Each main beam becomes its own electrical circuit – 24VDC, 100 Watts, "Safe to Touch", Class 2
- Powered main beam: SUPRAFINE® has 1 circuit
  SILHOUETTE® has 2 circuits
- Only the main beams receive power, all other ceiling and suspension components are standard
- DC FLEXZONE™ suspension system is installed like any other acoustical ceiling; electricians simply "wire up" the grid instead of every light fixture
- At least 2.0 watts/SF of power is delivered through the ceiling, more than enough for lighting and other plenum-based electrical devices like sensors

Power Supply

- A power supply connects to the building's AC power and converts it to 24 Volt direct current (DC)
- Optional for the power supply to be directly connected to a renewable on-site source, like solar

Power Cables

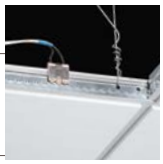
- Power cables bring power from the power supply to the DC FLEXZONE™ suspension system via special connector slots on the grid
- Each main beam receives power so it's available wherever you need it

Devices

- Device cables bring power from the DC FLEXZONE™ suspension system to devices anywhere along the main beam – just "plug and play"
- Compatible fixtures from lighting companies include:
  - Recessed 24" x 24" and 24" x 48", Pendant, and Downlight fixtures
  - Compact Fluorescent, Fluorescent, and LED lighting technology

Controls

- Standard off the shelf controls can be used that are separate from this plug and play DC power infrastructure
- Typically 0-10v control circuits will be used or relays and low voltage switches
- DC FLEXZONE™ compatible wireless control solutions are also available



FORMATIONS™
Cloud Kits

DC FLEXZONE™ COMPATIBLE POWER SUPPLY, CABLES, LIGHTING, AND CONTROLS

Cloud Size	Power Supply[1]	Power Cables[2]	Lights[3]	Controls
DC FlexZone	(Qty)	(Qty)		
6' x 6'	1	2	1	Design by Others
6' x 8'	1	2	1	Design by Others
6' x 10'	1	2	2	Design by Others
6' x 12'	1	2	2	Design by Others
6' x 14'	1	2	2	Design by Others
8' x 8'	1	2	2	Design by Others
8' x 10'	1	2	2	Design by Others
8' x 12'	1	2	2	Design by Others
8' x 14'	1	3	3	Design by Others
10' x 10'	1	2	2	Design by Others
10' x 12'	1	4	4	Design by Others
10' x 14'	1	4	4	Design by Others

1 Recommend specifying a Roal Electronics 4 channel Safe Energy Server.

2 Recommend specifying TE Connectivity 10' power feed cable assemblies.

3 Recommend specifying this quantity of lighting fixtures, each with a 5' TE load device cable assembly.

* All electrical devices shall be ordered from the electrical manufacturer and through normal electrical distribution channels.

All electrical items and quantities are strictly recommendations. All electrical devices shall be Armstrong® DC FLEXZONE™ compatible. Armstrong World Industries does not warrant, and assumes no liability for the accuracy, completeness, or performance of another manufacturer's product. The specifier is advised to consult with a duly licensed engineering or lighting designer in the particular locale of the installation to assume compliance with all legal requirements for the electrical design and layout.

For sample DC FLEXZONE™ for FORMATIONS™ layouts with compatible lighting and controls, visit www.armstrongceilings.com/dcflexzone

DC FLEXZONE™ COMPATIBLE PARTNERS

Products from each of the categories below need to be specified and ordered separately for a complete DC FLEXZONE™ Formations™ Cloud. Armstrong provides the DC FLEXZONE™ suspension system and ceiling panels.

The other product categories are provided by our DC FLEXZONE™ compatible partners through their normal electrical channels. For more information on DC FLEXZONE™ compatible partners' products, visit www.armstrongceilings.com/dcflexzone.

Power Distribution and Controls

AUDACY
ADVANCED WIRELESS SOLUTIONS BY IDEAL

Lighting Options

JLC • tech

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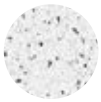
FORMATIONS™
Custom Cloud Kits

Size, panels, color, suspension, and trim – it's all up to you!

CEILING PANELS Due to printing limitations, shade may vary from actual product.

CIRRUS® High NRC/FINE FISSURED™ High NRC/ULTIMA® High NRC/MESA™/GEORGIAN™ Tegular and Square Lay-in Panels

CIRRUS High NRC Tegular & Square Lay-in


FINE FISSURED High NRC Tegular & Square Lay-in

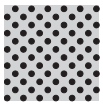
ULTIMA High NRC Tegular & Square Lay-in

MESA Tegular & Square Lay-in

GEORGIAN Tegular

METALWORKS™ TechZone® Tegular Panels

(M1) Unperforated


M15 (Rd 1612) (field panels only)

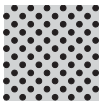
Whitelume (WHA)

Silverlume (SIA)

Gun Metal (MYA)

METALWORKS 3D Tegular Panels

M1 (Unperforated)


M15 (Rd 1612)

Whitelume (WHA)

Silverlume (SIA)

Gun Metal (MYA)

Reflections™ Laminate Finishes*

Rock Maple (LRM)

Light Cherry (LLC)

Wild Cherry (LWC)

* See BPCS-4785 for more finish options

METALWORKS Open Cell Lay-in Panels

White (WH)

RAL and Custom Colors Available

SUSPENSION SYSTEM / AXIOM® TRIM COLOR SELECTION

White

Cream (CR)

Haze (HA)

Camel (CM)

Vanilla (VA)

Platinum (PL)

Silver Satin (SA)

Silver Grey (SG)

Gun Metal Grey (MY)

Tech Black† (BL)

Drywall

Unfinished (UF)

DC FLEXZONE™

White

† Tech Black coordinates with COLORATIONS® Black (BK)

NOTE: If specifying a color other than White for Curves, Squares, Planks, or Staggered Clouds, remember to add the color suffix at the end of the suspension kit item number.

COLORATIONS® (Coordinates with CALLA® COLORATIONS® panels and SUPRAFINE® suspension systems)

White (WH)

Shell (SH)

Pale Lemon (LM)

Pecan (PC)

Sky (SK)

Moss (MS)

Stone (SE)

Reef (RE)

Lagoon (LA)

Plum (PM)

Cranberry (CN)

Kiwi (KW)

Tangerine (TG)

Black (BK)†

† Use BL suffix for suspension systems and AXIOM®

HOW TO SPECIFY CUSTOM KITS

Because each cloud can be so unique, there are no predetermined item numbers. Here's an example of how to develop an item number for a specification or order:

2448VPDAV6WH

Length & Width of Cloud	Panel Type	Suspension System Type	AXIOM® Type & Height	AXIOM® & Suspension System Colors
24' x 48' = 2448	L = Lay-in	PD = PRELUDE®*	AXIOM® Classic = AC2, AC4, AC6, AC8, AC10, AC12	Color of the AXIOM® and suspension system (codes listed above). Custom colors available upon request.
	T = Tegular	SF = SUPRAFINE®	AXIOM® Vector® = AV2, AV4, AV6	
	V = Vector®	SL = SILHOUETTE®	AXIOM® Knife Edge® = AKE	
		LD = INTERLUDE®	AXIOM® Knife Edge® Vector® = AKV	
		SN = SONATA®	AXIOM® Interlude = AL2, AL4, AL6	
		*You must choose PRELUDE® suspension system when using a Vector panel	AXIOM® Profiled (Cove = ACV, Crown = ACR, Convex = ACX, Concave = ACC)	
			AXIOM® Soft Edge Ripple = AR2 (2-1/2"), AR4	
			AXIOM® Soft Edge Soft Corner = AS2 (2-1/2"), AS4	
			AXIOM® Soft Edge Convex = AX2 (2-1/2), AX4	

TAKE THE NEXT STEP

1 877 276 7876

Customer Service Representatives
7:45 a.m. to 5:00 p.m. EST
Monday through Friday

TechLine – Technical information, detail drawings, CAD design assistance, installation information, other technical services – 8:00 a.m. to 5:30 p.m. EST, Monday through Friday. FAX 1 800 572 8324 or email: techline@armstrongceilings.com

armstrongceilings.com/commercial

Latest product news

Standard and custom product information

Online catalog

CAD, Revit®, SketchUp® files

A Ceiling for Every Space® Visual Selection Tool

Product literature and samples – express service or regular delivery

Contacts – reps, where to buy, who will install

YOU INSPIRE™ SOLUTIONS CENTER

1 800 988 2585
email: solutionscenter@armstrongceilings.com
armstrongceilings.com/youinspire

Design Assistance

Collaborative design

Detail drawings

Specifications

Planning and budgeting

Pre-construction Assistance

Layout drawings for standard and premium products

Project installation recommendations

Contractor installation assistance

you inspire™ solutions center

helping to bring your one-of-a-kind ideas to life

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armstrongceilings.com/formations

Inspiring Great Spaces®

Armstrong® CEILING & WALL SOLUTIONS

BPCS-3708-1117

METALWORKS™

Tegular
smooth texture

TOTAL ACOUSTICS™
Sound Absorption (NRC)
+ Sound Blocking (CAC)

TrioGuard™
Dirt-Resistant
Coating

MCT

MetalWorks™ Tegular unperforated panels in White with Prelude® XL® 15/16" suspension system and TrioGuard™ coating

armstrongceilings.com/capabilities
See more photos at:
armstrongceilings.com/photogallery

Now, get Total Acoustics™ performance with MetalWorks Tegular perforated panels – excellent noise reduction and sound blocking in one system.

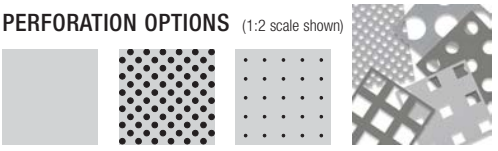
KEY SELECTION ATTRIBUTES

- Get total noise control and design flexibility with Total Acoustics ceiling panels: NRC + CAC = Total Acoustics performance
- Available with TrioGuard™ coating that resists dirt, bacteria, mold, mildew, and color fading
- Panels can be used to create continuous looks or clouds using Axiom® or Effects™ Wood Looks trim
- MetalWorks Tegular panels available for TechZone® ceiling systems applications
- Standard perforations available to enhance acoustical performance and design aesthetics
- Outstanding NRC with acoustical fleece or infill panel (0.65 – 0.90)
- BioAcoustic™ infill panels can enhance acoustics and contribute to LEED® credits
- 18" x 18" MetalWorks Tegular panels available for Metaphors® Coffers

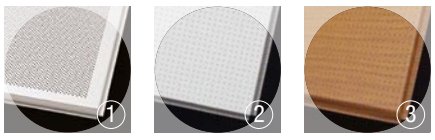
COLORS

Due to printing limitations, shade may vary from actual product.

PERFORATION OPTIONS (1:2 scale shown)



DETAILS



1. MetalWorks Tegular Microperforated
2. MetalWorks Tegular Extra Microperforated
3. Effects Wood Looks Tegular Extra Microperforated

METALWORKS™

Tegular
smooth texture

VISUAL SELECTION

Edge Profile	Item Number◆	Dimensions Nominal W x L (Inches) Custom Sizes Available	Perforations
METALWORKS™ Flush Tegular (with acoustical fleece)			
15/16" Flush Tegular	**6461**_ _ _ _	24 x 24" ☐	M1, M2
METALWORKS 5/16" Square Tegular (with acoustical fleece)			
15/16" Square Tegular	**6462**_ _ _ _	24 x 24" ☐	M1, M2, M3
9/16" Square Tegular	**6464**_ _ _ _ _ _◆◆◆	24 x 24" ☐	
METALWORKS 5/8" Square Tegular (with acoustical fleece)			
15/16" Square Tegular	**6463**_ _ _ _ †	24 x 24" ☐	M1, M2
9/16" Square Tegular	**6465**_ _ _ _ †	24 x 24" ☐	

PERFORMANCE

Dots represent high level of performance.

Light Reflect (White Only)	Wash	Scrub	Impact	Soil
	Durability			
0.77 (M1, M3) 0.61 (M2)	•	•	•	•
0.77 (M1, M3) 0.61 (M2)	•	•	•	•
0.77 (M1, M3) 0.61 (M2)	•	•	•	•

◆ When specifying or ordering, include the appropriate perforation, letter color, and, if needed, coating suffix with the item number (e.g., 6464 M 1 W H 3 G).
◆◆◆ Available in Effects™ Wood Looks and TrioGuard Finishes. NOTE: Perforation M2 not available in Effects finishes as a standard option. TrioGuard Finish available with M1 Unperforated only.
† "S" Service item with extended lead time.

ACOUSTICAL INFORMATION

Performance determined by perforation size

Perforation		Infill Panel Item Number	NRC	+ CAC	= Total Acoustics[1] NRC+CAC
M1	Unperforated		N/A	36 •	–
NOTE: Available with TrioGuard™ Coating					
M2	Micro-perforated	8200100	0.90 •	N/A	–
		5479	0.85 •	N/A	–
		5823	0.85 •	N/A	–
		1713	0.70 •	37 •	BETTER
		2820	0.80 •	35 •	BEST
M3	Extra Micro-perforated	8200100	0.70 •	N/A	–
		5479	0.70 •	N/A	–
		5823	0.70 •	N/A	–
		2820	0.60	40 •	GOOD

[1] Total Acoustics™ ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.
GOOD (NRC 0.60-0.65; CAC 35+)
BETTER (NRC 0.70-0.75; CAC 35+)
BEST (NRC 0.80+; CAC 35+)

EXAMPLE: **6464 M1 WH 3G**
- 6464: Panel Dimension/Type: 15/16" Square Tegular
- M1: Perforation: M1 Unperforated
- WH: Finish: White
- 3G: TrioGuard™ Coating

TOTAL ACOUSTICS™ PANEL INSTALLATION

MetalWorks™ Tegular ceiling panel with Calla® 2820 acoustic infill panel for Total Acoustics™ performance

METALWORKS™

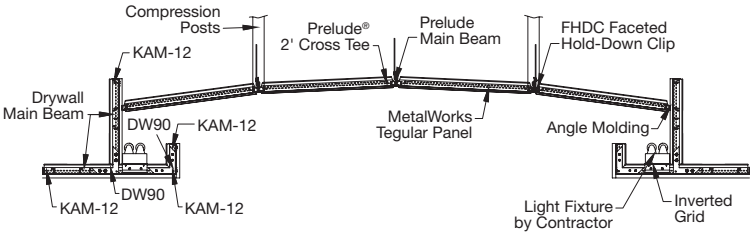
Tegular
smooth texture

FACETED INSTALLATION

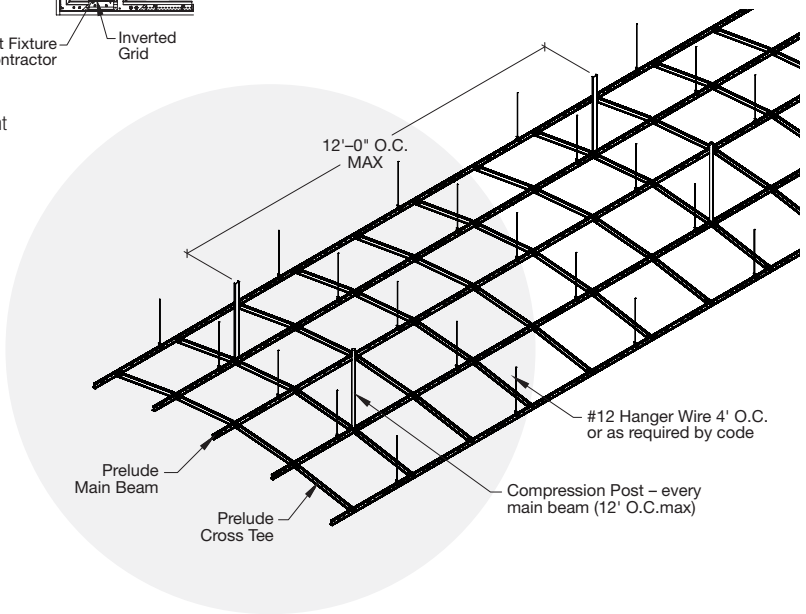
MetalWorks™ Tegular faceted panels

MetalWorks™ Tegular faceted panels

FACETED PERIMETER DETAILS



Perimeter conditions will require custom treatments. Moldings will need to be bent to match the angle of the ceiling where it contacts the walls at the straight sides, and will need to be cut to align with the panel segments on the faceted sides. It is recommended to have these installations tie into a wall or drywall bullhead rather than to attempt to create a floating ceiling condition.



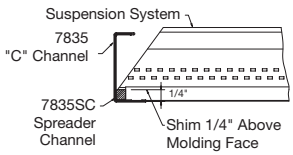
Armstrong® CEILING SOLUTIONS

METALWORKS™

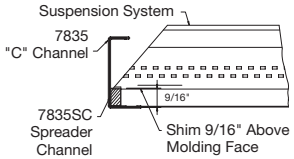
Tegular
smooth texture

PERIMETER INSTALLATION DETAILS (Spreader channel inserts into "C" channel.)

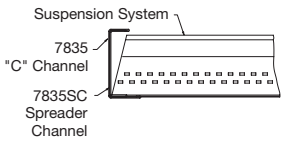
5/16" Square Tegular



5/8" Square Tegular



Flush Tegular

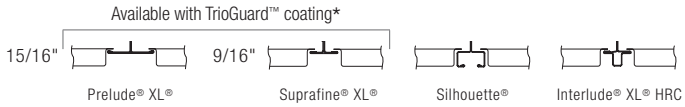


ACCESSORIES

Item Number◆	Description	Dimensions (Inches)	Pieces/Carton
5342 _ _ _ _	2" Effects™ Wood Looks Trim	120 x 3/4 x 2"	6
5344 _ _ _ _	4" Effects Wood Looks Trim	120 x 4 x 4"	6
5346 _ _ _ _	6" Effects Wood Looks Trim	120 x 6 x 6"	6
6096_ _◆	Edge Cap for Cut Tegular Panels for 15/16" suspension systems (not available in Effects colors, order in Black (BL))	Nominal 24" length	50
6099_ _◆	Edge Cap for Cut Tegular Panels for 9/16" suspension systems (not available in Effects colors, order in Black (BL))	Nominal 24" length	50
84008_ _◆	Single Single Slot Air Diffuser (not available in Effects colors, order in Black (BL))	24 x 24"	1
FXSPTHDC	Effects™ Hold Down Clip for Cut Panel Installations	N/A	10
FHDC	Faceted Hold Down Clip	N/A	10
1713	School Zone® Fine Fissured™ Square Lay-in Acoustic Panel	24 x 24 x 3/4"	14
2820	Calla® Square Lay-in Acoustic Panel	24 x 24 x 1"	10
5479	BioAcoustic™ Infill Panel (Beige – Matte)	24 x 24 x 5/8"	12
5823	BioAcoustic™ Infill Panel (Black – Matte)	24 x 24 x 5/8"	12
8200100	1" Fiberglass Infill Bag (Black – Gloss)	24 x 24"	12

◆ When specifying or ordering, include the appropriate 2-letter color suffix with the item number (e.g., 6098 B L).

SUSPENSION SYSTEMS



* For more information about TrioGuard™ coating for suspension system, refer to Prelude® XL®, Pgs. 391-392, Suprafine® XL®, Pgs. 399-400 and angle molding Pg. 156.
Prelude and Suprafine suspension systems are available in coordinating colors. All other suspension systems are available in standard White only. Other colors available as special order.

PHYSICAL DATA

Material
Electrogalvanized Steel – 0.021" thickness

Surface Finish
Factory-applied powder-coated finish (post-coated for color and/or TrioGuard™ coating).
Factory-applied powder-coated finish (post-coated on both sides). Effects finish on face only.

Product tested to be fade-resistant up to 10 years.

Custom colors also available. Contact TechLine for custom color matching requests at 1 877 ARMSTRONG.

Fire Performance
ASTM E84 and CAN/ULC S102. Flame Spread Index 25 or less. Smoke Developed Index 50 or less.

Acoustical Performance
CAC testing conducted using Prelude® XL® for 15/16" edge detail and Silhouette® for 9/16" edge detail.

ASTM E1264 Classification
Fire Class – Class A
Unperforated – Type XX, Pattern G
Perforated – Type XX, Pattern C

Installation Consideration
For Tegular faceted installations, a Faceted Hold Down Clip must be used, which will limit accessibility. If accessibility is required in a faceted application, use Vector® panels.

For information about faceted applications with square Tegular panels in 15/16" suspension system, refer to installation instructions on our web site at armstrongceilings.com/installation.

Seismic Restraint
MetalWorks Tegular panels have been engineered, tested, and approved for application in all seismic areas when installed per Armstrong Ceilings installation instructions.

Warranty
Details at armstrongceilings.com/warranty

Weight; Square Feet/Carton
6461M2 – 0.75 lbs/SF; 64 SF/Ctn
6461M1 – 0.80 lbs/SF; 64 SF/Ctn
6462M2 – 0.86 lbs/SF; 64 SF/Ctn
6462M1, 6463M2, 6465M2, 6462M3 – 0.89 lbs/SF; 64 SF/Ctn
6464M2, 6463M1, 6465M1, 6464M3 – 0.92 lbs/SF; 64 SF/Ctn
6464M1 – 0.97 lbs/SF; 64 SF/Ctn

TechLine / 1 877 276 7876
armstrongceilings.com/metalworks
(search: metalworks tegular)
BPCS-5109-1017

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Armstrong® CEILING SOLUTIONS

Healing Ceiling

2019

HEALING CEILINGS

Luminous SkyCeilings
Classic EcoPlus LED

Intertek 4010304

CONFORMS TO:
ANSI/UL STD 2108
CERTIFIED TO:
CAN/CSA STD C22.2 No. 250.0

Sky Factory

EP22-CLA Series Specifications

EcoPlus light box with attached Luminous SkyTile sits on, and is clipped to, Classic Elevator
EP22-CLA - 23.75" x 23.75" x 7.2" deep nominal (includes Elevator & SkyTile)
EP22M-CLA - 59.14cm x 59.14cm x 18.3cm deep metric (includes Elevator & SkyTile)
EP22G-CLA - 61.64cm x 61.64cm x 18.3cm deep German Metric (includes Elevator & SkyTile)

1 **Lighting (EcoPlus LED back lit light box):**
Color temperature: 6500K
Strict LED binning standards assure consistent & high quality illumination
State of the art back lit technologies provide uniform illumination
for the Luminous SkyTile graphic
Housed in a white powder-coated, extruded (non-ferrous) aluminum frame
Moisture and chemical resistant
Each unit has a four knock-out junction box
Use in MRI, and other RF-free environments

2 **Luminous SkyTile (lens):**
Acrylic, Acrylite, or polycarbonate substrate
Lightweight & durable
High resolution reproduction from proprietary digital image file
Color-calibrated for daylight quality light source
Non-glare matte finish
Fade resistant pigmented inks containing UV inhibitors

3 **Classic Elevator (frame):**
Moisture resistant, light weight aluminum
1.25" (31.8mm) vertical profile
Quick and easy installation
Powder coated, white matte finish to match standard grid
Compatible with standard 15/16" or 24mm grid systems
Precision machined corners, seamless architectural appearance

UL, CSA, and CE compliant:
EP22 Series when used with 24PS HLG Power System,
UL/CSA Listed or CE Compliant power supply
fully certified by Intertek Group plc

Electrical:
24V DC, .96 Amps, 23.0 Watts per EP22 Series fixture
Sky Factory 24PS HLG Power System
Converts 90-305V AC to 24V DC
Size and quantity per installation calculated by Sky Factory
Power system aluminum enclosure
Mounted on baseplate with junction box on input and output ends
See 24PS HLG Power System Technical Specifications sheet
Sky Factory provided HLG dimmable power supply (International Only)
Converts 90-305V, 47-63 Hz to 24V DC
Client provided UL/CSA Listed or CE Compliant power supply
Must convert V AC to 24V DC
Items not provided:
AC wiring between fuse/breaker panel and 24V DC power system
DC wiring between 24V DC power system and EcoPlus light box
Dimmer wiring between 24V DC power system and switch/dimmer control box
RFI/EMI filters for MRI installations
See Classic w/ EcoPlus Installation Instructions; and,
Classic w/ EcoPlus Electrical Packet (24PS HLG), Electrical Instructions (HLG) or
Electrical Instructions (Fixture Only)

Ceiling Clearance Dimensions:
Minimum space required above ceiling grid ranges from 7.25" (18.5cm) – 11" (28cm)
depending on extent of fixture pre-assembly before installation in grid,
and access to adjacent grid sections

Installation:
Elevators, tiles and luminaires easily installed into standard 15/16" or 24mm grid systems.
EP22 Series can be grouped with EP24 Series fixtures.
Classic EcoPlus SkyCeilings with perimeter can be recessed into a variety of hard ceilings.

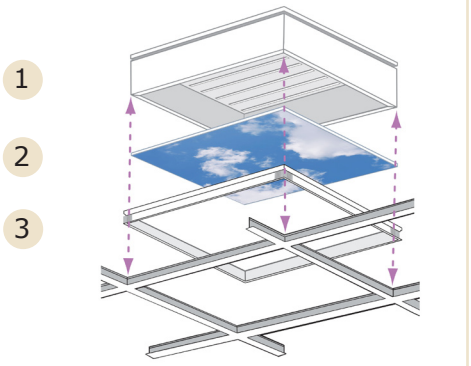
Factory Installed Options:
Seismic

Configurations:
For sample configurations, go to skyfactory.com

US Patent Information:
Our products, systems, and methods may be
protected by one or more of the following US Patents: Pat. 9,164,011, Pat. 8,851,700,
Pat. 7,959,316, and Pat. 7,481,550, as well as other patents pending.

Classic EP22 Series

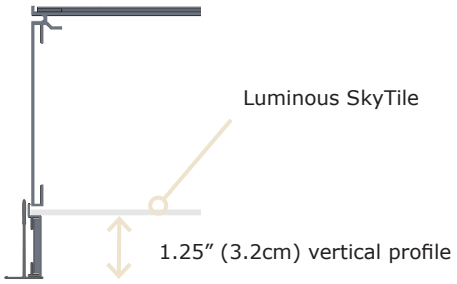
EP22-CLA, EP22M-CLA, EP22G-CLA
Ceiling Grid Mount
Back Illuminated Sky Image Ceiling



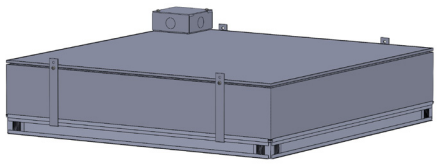
Client-provided standard ceiling grid system

Key Attributes:

15/16" (24mm) ceiling grid mount
Low profile – 7.2" (18.3cm) high
6500 Kelvin – cool daylight
Non-ferrous, RF-free construction



Dimensions and Weight



23.75" long x 23.75" wide x 7.2" deep
59.14cm long x 59.14cm wide x 18.3cm deep
61.64cm long x 61.64cm wide x 18.3cm deep
Fully assembled fixture is 11.3 lbs (5.2kg)

Luminous SkyCeilings
Classic EcoPlus LED

CONFORMS TO:
ANSI/UL STD 2108
CERTIFIED TO:
CAN/CSA STD C22.2 No. 250.0

Intertek
4010304

EP24-CLA Series Specifications

EcoPlus light box with attached Luminous SkyTile sits on, and is clipped to, Classic Elevator
EP24-CLA - 23.75" x 47.75" x 7.2" deep nominal (includes Elevator & SkyTile)
EP24M-CLA - 59.14cm x 119.14cm x 18.3cm deep metric (includes Elevator & SkyTile)
EP24G-CLA - 61.64cm x 124.14cm x 18.3cm deep German Metric (includes Elevator & SkyTile)

1 **Lighting (EcoPlus LED back lit light box):**
Color temperature: 6500K
Strict LED binning standards assure consistent & high quality illumination
State of the art back lit technologies provide uniform illumination
for the Luminous SkyTile graphic
Housed in a white powder-coated, extruded (non-ferrous) aluminum frame
Moisture and chemical resistant
Each unit has a four knock-out junction box
Use in MRI, and other RF-free environments

2 **Luminous SkyTile (lens):**
Acrylic, Acrylite, or polycarbonate substrate
Lightweight & durable
High resolution reproduction from proprietary digital image file
Color-calibrated for daylight quality light source
Non-glare matte finish
Fade resistant pigmented inks containing UV inhibitors

3 **Classic Elevator (frame):**
Moisture resistant, light weight aluminum
1.25" (31.8mm) vertical profile
Quick and easy installation
Powder coated, white matte finish to match standard grid
Compatible with standard 15/16" or 24mm grid systems
Precision machined corners, seamless architectural appearance

UL, CSA, and CE compliant:
EP24 Series when used with 24PS HLG Power System,
UL/CSA Listed or CE Compliant power supply
fully certified by Intertek Group plc

Electrical:
24V DC, 1.96 Amps, 47.0 Watts per EP24 Series fixture
Sky Factory 24PS HLG Power System
Converts 90-305V AC to 24V DC
Size and quantity per installation calculated by Sky Factory
Power system aluminum enclosure
Mounted on baseplate with junction box on input and output ends
See 24PS HLG Power System Technical Specifications sheet
Sky Factory provided HLG dimmable power supply
Converts 90-305V, 47-63 Hz to 24V DC
Client provided UL/CSA Listed or CE Compliant power supply
Must convert V AC to 24V DC
Items not provided:
AC wiring between fuse/breaker panel and 24V DC power system
DC wiring between 24V DC power system and EcoPlus light box
Dimmer wiring between 24V DC power system and switch/dimmer control box
RFI/EMI filters for MRI installations
See Classic w/ EcoPlus Installation Instructions; and,
Classic w/ EcoPlus Electrical Packet (24PS HLG), Electrical Instructions (HLG) or
Electrical Instructions (Fixture Only)

Ceiling Clearance Dimensions:
Minimum space required above ceiling grid ranges from 7.25" (18.5cm) – 11" (28cm)
depending on extent of fixture pre-assembly before installation in grid,
and access to adjacent grid sections

Installation:
Elevators, tiles and luminaires easily installed into standard 15/16" or 24mm grid systems.
EP24 Series can be grouped with EP22 Series fixtures.
Classic EcoPlus SkyCeilings with perimeter can be recessed into a variety of hard ceilings.

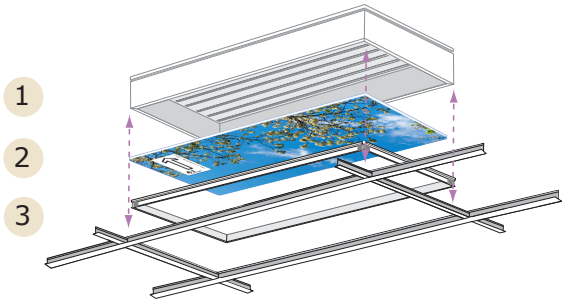
Factory Installed Options:
Seismic

Configurations:
For sample configurations, go to skyfactory.com

US Patent Information:
Our products, systems, and methods may be
protected by one or more of the following US Patents: Pat. 9,164,011, Pat. 8,851,700,
Pat. 7,959,316, and Pat. 7,481,550, as well as other patents pending.

Classic EP24 Series

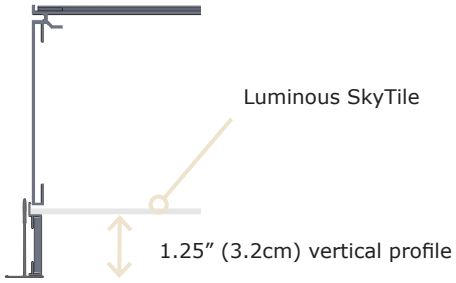
EP24-CLA, EP24M-CLA, EP24G-CLA
Ceiling Grid Mount
Back Illuminated Sky Image Ceiling



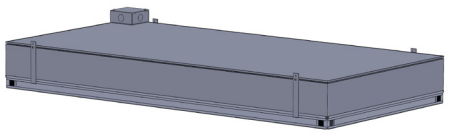
Client-provided standard ceiling grid system

Key Attributes:

15/16" (24mm) ceiling grid mount
Low profile – 7.25" (18.5cm) high
6500 Kelvin – cool daylight
Non-ferrous, RF-free construction



Dimensions and Weight



23.75" long x 47.75" wide x 7.2" deep
59.14cm long x 119.14cm wide x 18.3cm deep
61.64cm long x 124.14cm wide x 18.3cm deep
Fully assembled fixture is 19.5 lbs. (8.9kg)

Luminous SkyCeilings
Classic EcoSlim LED

CONFORMS TO:
ANSI/UL STD 2108
CERTIFIED TO:
CAN/CSA STD C22.2 No. 250.0

Intertek
4010304

ES22-CLA Series Specifications

EcoSlim light box with attached Luminous SkyTile sits on, and is clipped to, Classic Elevator
ES22-CLA - 23.75" x 23.75" x 5" deep nominal (includes Elevator & SkyTile)
ES22M-CLA - 59.14cm x 59.14cm x 12.7cm deep metric (includes Elevator & SkyTile)
ES22G-CLA - 61.64cm x 61.64cm x 12.7cm deep German Metric (includes Elevator & SkyTile)

1 **Lighting (EcoSlim LED edge lit light box):**
Color temperature: 6500K
Strict LED binning standards assure consistent & high quality illumination
State of the art edgelit technologies provide uniform illumination
for the Luminous SkyTile graphic
Housed in a white powder-coated, extruded (non-ferrous) aluminum frame
Moisture and chemical resistant
Each unit has a four knock-out junction box
Use in MRI, and other RF-free environments

2 **Luminous SkyTile (lens):**
Acrylic, Acrylite, or polycarbonate substrate
Lightweight & durable
High resolution reproduction from proprietary digital image file
Color-calibrated for daylight quality light source
Non-glare matte finish
Fade resistant pigmented inks containing UV inhibitors

3 **Classic Elevator (frame):**
Moisture resistant, light weight aluminum
1.25" (31.8mm) vertical profile
Quick and easy installation
Powder coated, white matte finish to match standard grid
Compatible with standard 15/16" or 24mm grid systems
Precision machined corners, seamless architectural appearance

UL, CSA, and CE compliant:
ES22 Series when used with 24PS HLG Power System,
UL/CSA Listed or CE Compliant power supply
fully certified by Intertek Group plc

Electrical:
24V DC, 1.02 Amps, 24.5 Watts per ES22 Series fixture
Sky Factory 24PS HLG Power System
Converts 90-305V AC to 24V DC
Size and quantity per installation calculated by Sky Factory
Power system aluminum enclosure
Mounted on baseplate with junction box on input and output ends
See 24PS HLG Power System Technical Specifications sheet
Sky Factory provided HLG dimmable power supply (International Only)
Converts 90-305V, 47-63 Hz to 24V DC
Client provided UL/CSA Listed or CE Compliant power supply
Must convert V AC to 24V DC
Items not provided:
AC wiring between fuse/breaker panel and 24V DC power system
DC wiring between 24V DC power system and EcoSlim light box
Dimmer wiring between 24V DC power system and switch/dimmer control box
RFI/EMI filters for MRI installations
See Classic w/ EcoSlim Installation Instructions; and,
Classic w/ EcoSlim Electrical Packet (24PS HLG),Electrical Instructions (HLG) or
Electrical Instructions (Fixture Only)

Ceiling Clearance Dimensions:
Minimum space required above ceiling grid ranges from 5.13" (13cm) – 9" (23cm)
depending on extent of fixture pre-assembly before installation in grid,
and access to adjacent grid sections

Installation:
Elevators, tiles and luminaires easily installed into standard 15/16" or 24mm grid systems.
ES22 Series cannot be grouped with ES24 Series fixtures.
Classic Ecoslim SkyCeilings with perimeter can be recessed into a variety of hard ceilings.

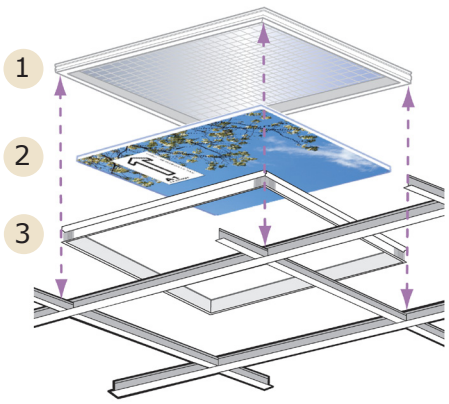
Factory Installed Options:
Seismic

Configurations:
For sample configurations, go to skyfactory.com

US Patent Information:
Our products, systems, and methods may be
protected by one or more of the following US Patents: Pat. 9,164,011, Pat. 8,851,700,
Pat. 7,959,316, and Pat. 7,481,550, as well as other patents pending.

Classic ES22 Series

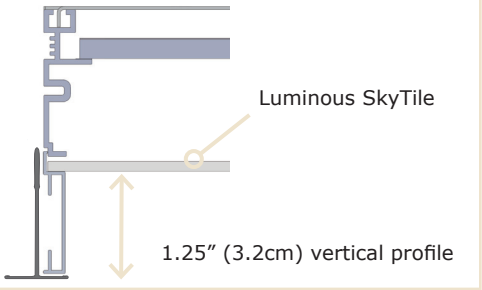
ES22-CLA, ES22M-CLA, ES22G-CLA
Ceiling Grid Mount
Back Illuminated Sky Image Ceiling



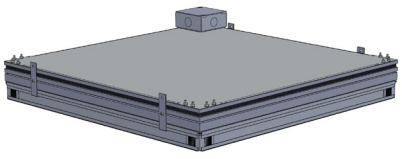
Client-provided standard ceiling grid system

Key Attributes:

15/16" (24mm) ceiling grid mount
Low profile – 5.13" (13cm) high
6500 Kelvin – cool daylight
Non-ferrous, RF-free construction



Dimensions and Weight



23.75" long x 23.75" wide x 5" deep
59.14cm long x 59.14cm wide x 12.7cm deep
61.64cm long x 61.64cm wide x 12.7cm deep
Fully assembled fixture is 14.8 lbs (6.7kg)

Luminous SkyCeilings
Classic EcoSlim LED

CONFORMS TO:
ANSI/UL STD 2108
CERTIFIED TO:
CAN/CSA STD C22.2 No. 250.0

Intertek
4010304

ES22-CLA Series Specifications

EcoSlim light box with attached Luminous SkyTile sits on, and is clipped to, Classic Elevator
ES22-CLA - 23.75" x 23.75" x 5" deep nominal (includes Elevator & SkyTile)
ES22M-CLA - 59.14cm x 59.14cm x 12.7cm deep metric (includes Elevator & SkyTile)
ES22G-CLA - 61.64cm x 61.64cm x 12.7cm deep German Metric (includes Elevator & SkyTile)

1 **Lighting (EcoSlim LED edge lit light box):**
Color temperature: 6500K
Strict LED binning standards assure consistent & high quality illumination
State of the art edgelit technologies provide uniform illumination
for the Luminous SkyTile graphic
Housed in a white powder-coated, extruded (non-ferrous) aluminum frame
Moisture and chemical resistant
Each unit has a four knock-out junction box
Use in MRI, and other RF-free environments

2 **Luminous SkyTile (lens):**
Acrylic, Acrylite, or polycarbonate substrate
Lightweight & durable
High resolution reproduction from proprietary digital image file
Color-calibrated for daylight quality light source
Non-glare matte finish
Fade resistant pigmented inks containing UV inhibitors

3 **Classic Elevator (frame):**
Moisture resistant, light weight aluminum
1.25" (31.8mm) vertical profile
Quick and easy installation
Powder coated, white matte finish to match standard grid
Compatible with standard 15/16" or 24mm grid systems
Precision machined corners, seamless architectural appearance

UL, CSA, and CE compliant:
ES22 Series when used with 24PS HLG Power System,
UL/CSA Listed or CE Compliant power supply
fully certified by Intertek Group plc

Electrical:
24V DC, 1.02 Amps, 24.5 Watts per ES22 Series fixture
Sky Factory 24PS HLG Power System
Converts 90-305V AC to 24V DC
Size and quantity per installation calculated by Sky Factory
Power system aluminum enclosure
Mounted on baseplate with junction box on input and output ends
See 24PS HLG Power System Technical Specifications sheet
Sky Factory provided HLG dimmable power supply (International Only)
Converts 90-305V, 47-63 Hz to 24V DC
Client provided UL/CSA Listed or CE Compliant power supply
Must convert V AC to 24V DC
Items not provided:
AC wiring between fuse/breaker panel and 24V DC power system
DC wiring between 24V DC power system and EcoSlim light box
Dimmer wiring between 24V DC power system and switch/dimmer control box
RFI/EMI filters for MRI installations
See Classic w/ EcoSlim Installation Instructions; and,
Classic w/ EcoSlim Electrical Packet (24PS HLG),Electrical Instructions (HLG) or
Electrical Instructions (Fixture Only)

Ceiling Clearance Dimensions:
Minimum space required above ceiling grid ranges from 5.13" (13cm) – 9" (23cm)
depending on extent of fixture pre-assembly before installation in grid,
and access to adjacent grid sections

Installation:
Elevators, tiles and luminaires easily installed into standard 15/16" or 24mm grid systems.
ES22 Series cannot be grouped with ES24 Series fixtures.
Classic Ecoslim SkyCeilings with perimeter can be recessed into a variety of hard ceilings.

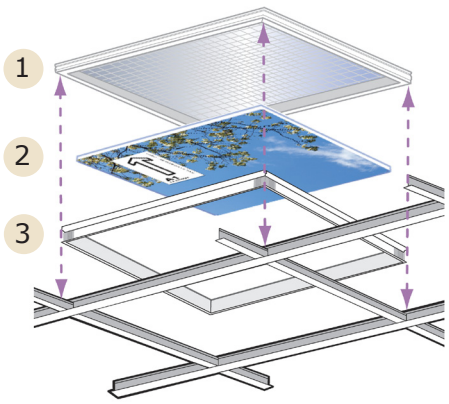
Factory Installed Options:
Seismic

Configurations:
For sample configurations, go to skyfactory.com

US Patent Information:
Our products, systems, and methods may be
protected by one or more of the following US Patents: Pat. 9,164,011, Pat. 8,851,700,
Pat. 7,959,316, and Pat. 7,481,550, as well as other patents pending.

Classic ES22 Series

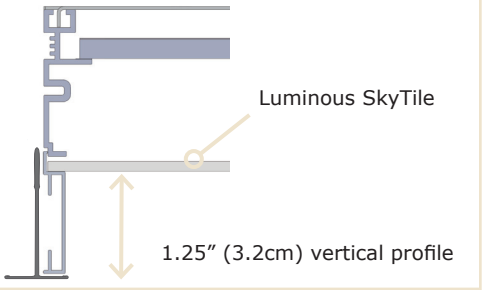
ES22-CLA, ES22M-CLA, ES22G-CLA
Ceiling Grid Mount
Back Illuminated Sky Image Ceiling



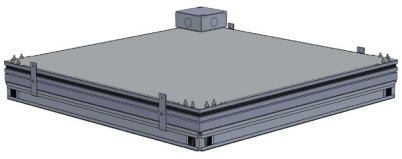
Client-provided standard ceiling grid system

Key Attributes:

15/16" (24mm) ceiling grid mount
Low profile – 5.13" (13cm) high
6500 Kelvin – cool daylight
Non-ferrous, RF-free construction



Dimensions and Weight



23.75" long x 23.75" wide x 5" deep
59.14cm long x 59.14cm wide x 12.7cm deep
61.64cm long x 61.64cm wide x 12.7cm deep
Fully assembled fixture is 14.8 lbs (6.7kg)

Luminous SkyCeilings
Circular BackLit LED

CONFORMS TO:
ANSI/UL STD 2108
CERTIFIED TO:
CAN/CSA STD C22.2 No. 250.0

Intertek
4010304

Specifications

1 **Lighting (EcoPlus LED back lit light box):**
Color temperature: 6500K
Strict LED binning standards assure consistent & high quality illumination
State of the art back lit technologies provide uniform illumination
for the Luminous SkyTile graphic
Housed in a white powder-coated, extruded (non-ferrous) aluminum frame
Moisture and chemical resistant
Each unit has a four knock-out junction box
Use in MRI, and other RF-free environments

2 **Luminous SkyTile (lens):**
Acrylic, Acrylite, or polycarbonate substrate
Lightweight & durable
High resolution reproduction from proprietary digital image file
Color-calibrated for daylight quality light source
Non-glare matte finish
Fade resistant pigmented inks containing UV inhibitors
Designed to fit Luminous SkyTile Standard Elevator

3 **Classic Elevator (frame):**
Moisture resistant, light weight aluminum
1.25" (31.8mm) vertical profile
Quick and easy installation
Powder coated, white matte finish to match standard grid
Compatible with standard 15/16" grid systems
Precision machined corners, seamless architectural appearance

4 **Perimeter and Grid:**
Armstrong Prelude Plus white aluminum 15/16" ceiling grid pre-cut to fit
PVC perimeter pre-molded, cut to length and painted to match grid

UL, CSA, and CE Certified:
EP and EPCST Series when used with 24PS HLG Power System,
UL Listed or CE Compliant power supply fully certified by Intertek Group plc

Electrical:
24V DC, Amps and Watts varies per EP & EPCST Series fixture size
Approx. .25 Amps, 6 Watts per square foot (30cm x 30cm)
Sky Factory 24PS HLG Power System
Converts 90-305V AC to 24V DC
Size and quantity per installation calculated by Sky Factory
Power system aluminum enclosure
Mounted on baseplate with junction box on input and output ends
See 24PS HLG Power System Technical Specifications sheet
Sky Factory provided HLG dimmable power supply (International Only)
Converts 90-305V, 47-63 Hz to 24V DC
Client provided UL Listed or CE Compliant power supply
Must convert V AC to 24V DC
Items not provided:
AC wiring between fuse/breaker panel and 24V DC power system
DC wiring between 24V DC power system and EcoPlus light box
Dimmer wiring between 24V DC power system and switch/dimmer control box
RFI/EMI filters for MRI installations
See Circular w/ EcoPlus Installation Instructions; and
Custom EcoPlus Electrical Packet (24PS HLG), Electrical Instructions (HLG) or
Electrical Instructions (Fixture Only)

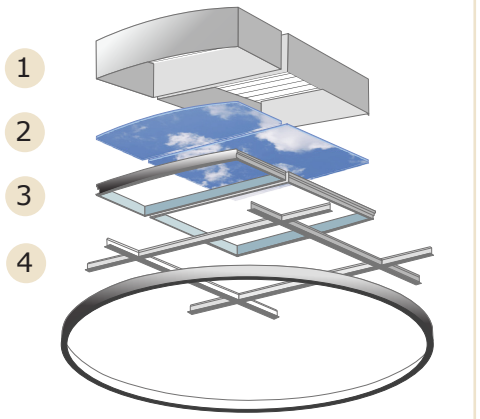
STANDARD CIRCLE (DIAMETER) POWER CONSUMPTION						
	5'	6'	8'-6 5/8"	10'	11'-9"	14'-3"
WATTS	103.5	155.3	304.8	425.5	580.8	891.3

Ceiling Clearance Dimensions:
Minimum space required above ceiling grid: 7.25" (18.5cm) – 11" (28cm) depending on extent of fixture pre-assembly before installation in grid, and access to adjacent grid sections

Installation:
Elevators, tiles and luminaires easily installed into standard 15/16" grid system provided. Circular SkyCeilings are designed to be recessed into a variety of hard ceilings.

Circular EcoPlus

EP-CIR
Ceiling Grid Mount
Back Illuminated Sky Image Ceiling

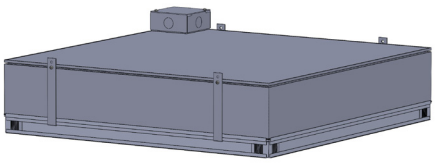


Fixtures, pre-cut ceiling grid and perimeter

Key Attributes:

15/16" (24mm) ceiling grid mount
Low profile – 7.25" (18.5cm) high
6500 Kelvin – cool daylight
Non-ferrous, RF-free construction

Dimensions and Weight



Length and width varies per installation
x 7.25" (18.5cm) deep

Fully assembled fixture approx. 2.8 lbs (1.27kg) per square foot (30cm x 30cm)

Configurations:
For sample configurations, go to skyfactory.com

US Patent Information:
Our products, systems, and methods may be protected by one or more of the following US Patents: Pat. 9,164,011, Pat. 8,851,700, Pat. 7,959,316, and Pat. 7,481,550, as well as other patents pending.

Luminous SkyCeilings
Elliptical BackLit LED

Intertek 4010304

CONFORMS TO: ANSI/UL STD 2108
CERTIFIED TO: CAN/CSA STD C22.2 No. 250.0

Specifications

1 **Lighting (EcoPlus LED back lit light box):**
Color temperature: 6500K
Strict LED binning standards assure consistent & high quality illumination
State of the art back lit technologies provide uniform illumination for the Luminous SkyTile graphic
Housed in a white powder-coated, extruded (non-ferrous) aluminum frame
Moisture and chemical resistant
Each unit has a four knock-out junction box
Use in MRI, and other RF-free environments

2 **Luminous SkyTile (lens):**
Acrylic, Acrylite, or polycarbonate substrate
Lightweight & durable
High resolution reproduction from proprietary digital image file
Color-calibrated for daylight quality light source
Non-glare matte finish
Fade resistant pigmented inks containing UV inhibitors
Designed to fit Luminous SkyTile Standard Elevator

3 **Classic Elevator (frame):**
Moisture resistant, light weight aluminum
1.25" (31.8mm) vertical profile
Quick and easy installation
Powder coated, white matte finish to match standard grid
Compatible with standard 15/16" grid systems
Precision machined corners, seamless architectural appearance

4 **Perimeter and Grid:**
Armstrong Prelude Plus white aluminum 15/16" ceiling grid pre-cut to fit
PVC perimeter pre-molded, cut to length, mounted on a framing plate and painted to match grid

UL, CSA, and CE Certified:
EP and EPCST Series when used with 24PS HLG Power System,
UL Listed or CE Compliant power supply fully certified by Intertek Group plc

Electrical:
24V DC, Amps and Watts varies per EP & EPCST Series fixture size
Approx. .25 Amps, 6 Watts per square foot (30cm x 30cm)
Sky Factory 24PS HLG Power System
Converts 90-305V AC to 24V DC
Size and quantity per installation calculated by Sky Factory
Power system aluminum enclosure
Mounted on baseplate with junction box on input and output ends
See 24PS HLG Power System Technical Specifications sheet
Sky Factory provided HLG dimmable power supply (International Only)
Converts 90-305V, 47-63 Hz to 24V DC
Client provided UL Listed or CE Compliant power supply
Must convert V AC to 24V DC
Items not provided:
AC wiring between fuse/breaker panel and 24V DC power system
DC wiring between 24V DC power system and EcoPlus light box
Dimmer wiring between 24V DC power system and switch/dimmer control box
RFI/EMI filters for MRI installations
See Elliptical w/ EcoPlus Installation Instructions; and
Custom EcoPlus Electrical Packet (24PS HLG), Electrical Instructions (HLG) or Electrical Instructions (Fixture Only)

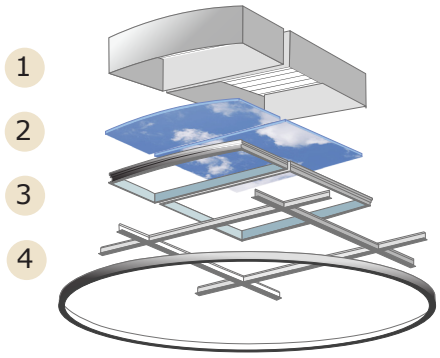
STANDARD ELLIPSE (X AND Y AXES) POWER CONSUMPTION				
	5' x 9'	6' x 8'	6' x 10'	9' x 12'
WATTS	178.3	198.4	247.3	445.6

Ceiling Clearance Dimensions:
Minimum space required above ceiling grid: 7.25" (18.5cm) – 11" (28cm) depending on extent of fixture pre-assembly before installation in grid, and access to adjacent grid sections

Installation:
Elevators, tiles and luminaires easily installed into standard 15/16" grid systems provided. Elliptical SkyCeilings are designed to be recessed into a variety of hard ceilings.

Elliptical EcoPlus

EP-ELP
Ceiling Grid Mount
Back Illuminated Sky Image Ceiling

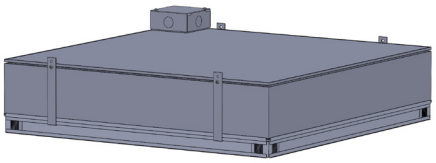


Fixtures, pre-cut ceiling grid and perimeter

Key Attributes:

15/16" (24mm) ceiling grid mount
Low profile – 7.25" (18.5cm) high
6500 Kelvin – cool daylight
Non-ferrous, RF-free construction

Dimensions and Weight



Length and width varies per installation x 7.25" (18.5cm) deep

Fully assembled fixture approx. 2.8 lbs (1.27kg) per square foot (30cm x 30cm)

Configurations:
For sample configurations, go to skyfactory.com

US Patent Information:
Our products, systems, and methods may be protected by one or more of the following US Patents: Pat. 9,164,011, Pat. 8,851,700, Pat. 7,959,316, and Pat. 7,481,550, as well as other patents pending.

Luminous SkyCeilings
Revelation EcoPlus LED

Intertek 4010304

CONFORMS TO:
ANSI/UL STD 2108
CERTIFIED TO:
CAN/CSA STD C22.2 No. 250.0

Sky Factory

Revelation EP Series Specifications

(For specific EP24, EP26, EP33, EP34, EP36, EP44 and EP46 Series details, see page 2)

Revelation EP Series are designed to fit in standard 15/16" or 24mm grid systems or similar hard ceiling finished openings and can be joined together in a variety of configurations.

Drop Ceiling Applications:
EcoPlus light box with attached Luminous SkyTile sits on, and is clipped to, Revelation Elevator

Hard Ceiling Applications:
EcoPlus light box with attached Luminous SkyTile sits on Revelation Elevator

For drop ceiling and hard ceiling application details, see page 2.

1 **Lighting (EcoPlus LED back lit light box):**
Color temperature: 6500K
Strict LED binning standards assure consistent & high quality illumination
State of the art back lit technologies provide uniform illumination for the Luminous SkyTile graphic
Housed in a white powder-coated, extruded (non-ferrous) aluminum frame
Moisture and chemical resistant
Each unit has a four knock-out junction box
Compatible with MRI and other RF-free environments

2 **Luminous SkyTile (lens):**
Acrylic, Acrylite, or polycarbonate substrate
Durable and easy to clean non-glare matte finish
High resolution reproduction from proprietary digital image file
Color-calibrated for daylight quality light source
Fade resistant pigmented inks containing UV inhibitors

3 **Revelation Elevator (frame):**
Durable, moisture resistant and easy to clean
Quick and easy installation
Light weight powder-coated aluminum, white matte finish to match standard grid
2.75" (7cm) vertical profile
Compatible with standard 15/16" or 24mm grid systems or hard ceilings
Precision machined corners, seamless architectural appearance

UL, CSA, and CE compliant:
EP24, EP26, EP33, EP34, EP36, EP44 and EP46 Series when used with 24PS HLG Power System, UL/CSA Listed or CE Compliant power supply fully certified by Intertek Group plc

Electrical:
24V DC
For amperages and watts of specific fixtures, see page 2
Sky Factory 24PS HLG Power System
- Converts 90-305V AC to 24V DC
- Size and quantity per installation calculated by Sky Factory
- Power system aluminum enclosure
  - Mounted on baseplate with junction box on input and output ends
- See 24PS HLG Power System Technical Specifications sheet

Sky Factory provided HLG dimmable power supply (International Only)
- Converts 90-305V, 47-63 Hz to 24V DC

Client provided UL/CSA Listed or CE Compliant power supply
- Must convert V AC to 24V DC

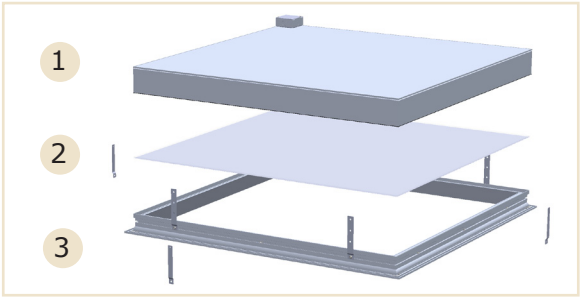
Items not provided:
- AC wiring between fuse/breaker panel and 24V DC power system
- DC wiring between 24V DC power system and EcoPlus light box
- Dimmer wiring between 24V DC power system and switch/dimmer control box
- RFI/EMI filters for MRI installations

See Revelation w/ EcoPlus Installation Instructions; and, Revelation w/ EcoPlus Electrical Packet (24PS HLG), Electrical Instructions (HLG) or Electrical Instructions (Fixture Only)

Ceiling Clearance:
Fixture height from ceiling grid 8.5" (21.6cm)
Recommended minimum space above ceiling grid 10.88" (27.6cm)
Recommended minimum space above soffit 12.5" (31.8cm)
Ceiling height of no less than 9' (2.74m) recommended
For help with ceiling constraints, please contact the Sky Factory

Revelation EP Series

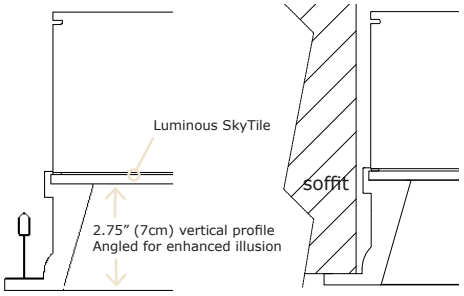
Recessed Ceiling Mount
Back Illuminated Sky Image Ceiling



Key Attributes:

15/16" (24mm) ceiling grid or hard ceiling applications
6500 Kelvin – cool daylight
Non-ferrous, RF-free construction
MRI compatible

Cross Section Details



Weight:
For installed weight of fully assembled Revelation EP Series fixture, see page 2.

Configurations:
Revelation EP Series fixtures can be grouped together in a wide variety of configurations.

Installation:
Elevators, tiles and light box easily installed into standard15/16" or 24mm grid systems and can be recessed into a variety of hard ceilings.

US Patent Information:
Our products, systems, and methods may be protected by one or more of the following US Patents: Pat. 9,164,011, Pat. 8,851,700, Pat. 7,959,316, and Pat. 7,481,550, as well as other patents pending.

Intertek 4010304
CONFORMS TO: ANSI/UL STD 2108
CERTIFIED TO: CAN/CSA STD C22.2 No. 250.0

Model	Amps [A]	Power [W]	Weight	Drop Ceiling Application
EP24-RVN Series	1.86	44.64		
EP24			27.2 lbs	Fits in standard 2' on center, 15/16" grid system
EP24m			12 kg	Fits in standard 60cm on center, 25mm grid system
EP24g			12.9 kg	Fits in standard 62.5cm on center, 25mm grid system
EP26-RVN Series	2.79	66.96		
EP26			44.8 lbs	Fits in standard 2' on center, 15/16" grid system
EP26m			19.8 kg	Fits in standard 60cm on center, 25mm grid system
EP26g			21.1 kg	Fits in standard 62.5cm on center, 25mm grid system
EP33-RVN Series	2.09	50.16		
EP33			33.7 lbs	Fits in standard 2' or 3' on center, 15/16" grid system
EPm			15 kg	Fits in standard 60cm or 90cm on center, 25mm grid system
EPg			15.9 kg	Fits in standard 62.5cm or 93.75cm on center, 25mm grid system
EP34-RVN Series	2.79	66.96		
EP34			42.5 lbs	Fits in standard 2' on center, 15/16" grid system
EPm			19.3 kg	Fits in standard 60cm on center, 25mm grid system
EPg			20 kg	Fits in standard 62.5cm on center, 25mm grid system
EP36-RVN Series	4.19	100.56		
EP36			60 lbs	Fits in standard 2' or 3' on center, 15/16" grid system
EPm			26.5 kg	Fits in standard 60cm or 90cm on center, 25mm grid system
EPg			28.3 kg	Fits in standard 62.5cm or 93.75cm on center, 25mm grid system
EP44-RVN Series	3.72	89.28		
EP44			53.4 lbs	Fits in standard 2' on center, 15/16" grid system
EPm			23.6 kg	Fits in standard 60cm on center, 25mm grid system
EPg			25.2 kg	Fits in standard 62.5cm on center, 25mm grid system
EP46-RVN Series	5.75	138		
EP46			74.6 lbs	Fits in standard 2' on center, 15/16" grid system
EPm			33.0 kg	Fits in standard 60cm on center, 25mm grid system
EPg			35.2 kg	Fits in standard 62.5cm on center, 25mm grid system

Hard Ceiling Application

EPXX-RVN Series fixtures fit in a variety of hard ceiling applications

Contact Sky Factory for specific finished opening dimensions

Luminous SkyCeilings
Revelation EcoSlim LED

Intertek 4010304

CONFORMS TO:
ANSI/UL STD 2108
CERTIFIED TO:
CAN/CSA STD C22.2 No. 250.0

Sky Factory

Revelation ES Series Specifications

(For specific ES24, ES26, ES33, ES34, ES36, ES44 and ES46 Series details, see page 2)

Revelation ES Series are designed to fit in standard 15/16" or 24mm grid systems or similar hard ceiling finished openings and can be joined together in a variety of configurations.

Drop Ceiling Applications:
EcoSlim light box with attached Luminous SkyTile sits on,and is clipped to, Revelation Elevator

Hard Ceiling Applications:
EcoSlim light box with attached Luminous SkyTile sits on Revelation Elevator

For drop ceiling and hard ceiling application details, see page 2.

1 **Lighting (EcoSlim LED edge lit light box):**
Color temperature: 6500K
Strict LED binning standards assure consistent & high quality illumination
State of the art edgelit technologies provide uniform illumination for the Luminous SkyTile graphic
Housed in a white powder-coated, extruded (non-ferrous) aluminum frame
Moisture and chemical resistant
Each unit has a four knock-out junction box
Compatible with MRI and other RF-free environments

2 **Luminous SkyTile (lens):**
Acrylic, Acrylite, or polycarbonate substrate
Durable and easy to clean non-glare matte finish
High resolution reproduction from proprietary digital image file
Color-calibrated for daylight quality light source
Fade resistant pigmented inks containing UV inhibitors

3 **Revelation Elevator (frame):**
Durable, moisture resistant and easy to clean
Quick and easy installation
Light weight powder-coated aluminum, white matte finish to match standard grid
2.75" (7cm) vertical profile
Compatible with standard 15/16" or 24mm grid systems or hard ceilings
Precision machined corners, seamless architectural appearance

UL, CSA, and CE compliant:
ES24, ES26, ES33, ES34, ES36, ES44 and ES46 Series when used with 24PS HLG Power System, UL/CSA Listed or CE Compliant power supply fully certified by Intertek Group plc

Electrical:
24V DC
For amperages and watts of specific fixtures, see page 2
Sky Factory 24PS HLG Power System
- Converts 90-305V AC to 24V DC
- Size and quantity per installation calculated by Sky Factory
- Power system aluminum enclosure
  - Mounted on baseplate with junction box on input and output ends
- See 24PS HLG Power System Technical Specifications sheet

Sky Factory provided HLG dimmable power supply (International Only)
- Converts 90-305V, 47-63 Hz to 24V DC

Client provided UL/CSA Listed or CE Compliant power supply
- Must convert V AC to 24V DC

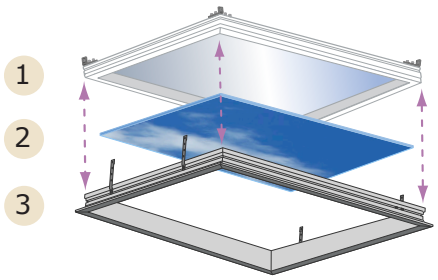
Items not provided:
- AC wiring between fuse/breaker panel and 24V DC power system
- DC wiring between 24V DC power system and EcoSlim light box
- Dimmer wiring between 24V DC power system and switch/dimmer control box
- RFI/EMI filters for MRI installations

See Revelation w/ EcoSlim Installation Instructions; and, Revelation w/ EcoSlim Electrical Packet (24PS HLG), Electrical Instructions (HLG) or Electrical Instructions (Fixture Only)

Ceiling Clearance:
Fixture height from ceiling grid 6.25" (15.9cm)
Recommended minimum space above ceiling grid 8.63" (21.9cm)
Recommended minimum space above soffit 10.25" (26.1cm)
Ceiling height of no less than 9' (2.74m) recommended
For help with space constraints, please contact the Sky Factory.

Revelation ES Series

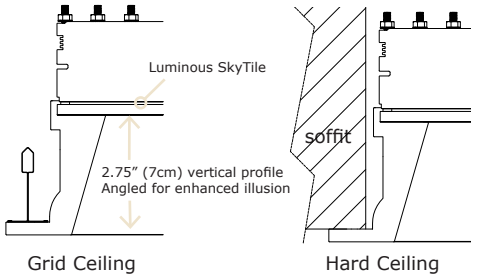
Recessed Ceiling Mount
Back Illuminated Sky Image Ceiling



Key Attributes:

15/16" (24mm) ceiling grid or hard ceiling applications
6500 Kelvin – cool daylight
Non-ferrous, RF-free construction
MRI compatible

Cross Section Details



Weight:
For installed weight of fully assembled Revelation ES Series fixture, see page 2.

Configurations:
Revelation ES Series fixtures can be grouped together in a wide variety of configurations.

Installation:
Elevators, tiles and light box easily installed into standard 15/16" or 24mm grid systems and can be recessed into a variety of hard ceilings.

US Patent Information:
Our products, systems, and methods may be protected by one or more of the following US Patents: Pat. 9,164,011, Pat. 8,851,700, Pat. 7,959,316, and Pat. 7,481,550, as well as other patents pending.

Luminous SkyCeilings
Revelation EcoSlim LED

CONFORMS TO:
ANSI/UL STD 2108
CERTIFIED TO:
CAN/CSA STD C22.2 No. 250.0

Intertek
4010304

Model	Amps [A]	Power [W]	Weight	Drop Ceiling Application
ES24-RVN Series	1.53	36.72		
ES24			35.2 lbs	Fits in standard 2' on center, 15/16" grid system
ES24m			15.6 kg	Fits in standard 60cm on center, 25mm grid system
ES24g			16.6 kg	Fits in standard 62.5cm on center, 25mm grid system
ES26-RVN Series	2.38	57.12		
ES26			55.4 lbs	Fits in standard 2' on center, 15/16" grid system
ES26m			24.5 kg	Fits in standard 60cm on center, 25mm grid system
ES26g			26.1 kg	Fits in standard 62.5cm on center, 25mm grid system
ES33-RVN Series	1.78	42.72		
ES33			43.2 lbs	Fits in standard 2' or 3' on center, 15/16" grid system
ESm			20.1 kg	Fits in standard 60cm or 90cm on center, 25mm grid system
ESg			20.4 kg	Fits in standard 62.5cm or 93.75cm on center, 25mm grid system
ES34-RVN Series	2.19	52.56		
ES34			53.9 lbs	Fits in standard 2' on center, 15/16" grid system
ESm			23.9 kg	Fits in standard 60cm on center, 25mm grid system
ESg			25.4 kg	Fits in standard 62.5cm on center, 25mm grid system
ES36-RVN Series	2.73	65.52		
ES36			80.3 lbs	Fits in standard 2' or 3' on center, 15/16" grid system
ESm			35.5 kg	Fits in standard 60cm or 90cm on center, 25mm grid system
ESg			37.8 kg	Fits in standard 62.5cm or 93.75cm on center, 25mm grid system
ES44-RVN Series	2.46	59.04		
ES44			70.9 lbs	Fits in standard 2' on center, 15/16" grid system
ESm			31.4 kg	Fits in standard 60cm on center, 25mm grid system
ESg			33.4 kg	Fits in standard 62.5cm on center, 25mm grid system
ES46-RVN Series	3.08	73.92		
ES46			95.5 lbs	Fits in standard 2' on center, 15/16" grid system
ESm			42.3 kg	Fits in standard 60cm on center, 25mm grid system
ESg			45.0 kg	Fits in standard 62.5cm on center, 25mm grid system

Hard Ceiling Application

ESXX-RVN Series fixtures fit in a variety of hard ceiling applications

Contact Sky Factory for specific finished opening dimensions

Sky Factory
24PS HLG Power System

Intertek
4010304

CONFORMS TO:
ANSI/UL STD 2108
CERTIFIED TO: CAN/CSA
STD CSS.S No. 250.0

Specifications

Sky Factory 24PS HLG Power System:
Input (Typ) 90 - 305V AC; 47 - 63 Hz; Auto-ranging
Output: 24V DC
Maximum Watts (Useable): 600 Watts
Available sizes are: 40W, 60W, 80W, 100W, 120W, 150W, 185W, 240W, 320W, 480W, 600W
Multiple power systems with single dimmer can be used
Power supply mounted on baseplate with junction box on input and output ends
Junction box wiring access holes limited to 1/2" nominal trade size conduit
AC input wire size:
17 AWG on 40-480W, 18 AWG on 600W for models with upgraded cables
[18 AWG for pre-upgraded models]
DC output wire size:
17 AWG on 40-240W, 480W; 14 AWG on 320W, 600W for models with upgraded cables
[18 AWG on 40-80W; 14 AWG on 100-600W for pre-upgraded models]
Dimmer wire size:
17 AWG on 40-480W; 18 AWG on 600W for models with upgraded cables
[18 AWG on 40-320W,600W; 17 AWG on 480W for pre-upgraded models]
Power system must have 2" (5mm) clearance for air flow
Wall mount recommended.
Power System must be mounted in dry locations.
Power System is specified for Sky Factory EcoSlim ES Series and EcoPlus EP Series fixtures only.

UL/CSA Listed and CE Compliant:
24PS HLG Power System when used with
ES22 Series, ES24 Series, ES26 Series, ES33 Series, ES34 Series,
ES36 Series, ES44 Series, ES46 Series, ESCST Series,
EP22 Series, EP24 Series, EP26 Series, EP33 Series, EP34 Series,
EP36 Series, EP44 Series, EP46 Series and EPCST Series fixtures
fully certified by Intertek Group plc

Dimming:
UL & CSA Listed –
Lutron Diva DVSTV 0-10V sliding dimmer/switch
Input: auto-ranging 120 - 277V AC
Mounts in standard single-gang electrical box
White standard, other colors available upon request
CE Compliant –
Lutron Lyneo preset 0 - 10V sliding dimmer/switch and external relay
Input: 220 - 240V AC
Dimmer mounts in standard UK style single gang backbox
35mm depth recommended
White standard, other colors available on request

For EcoSlim and EcoPlus SkyCeilings:

Number of Fixtures per Power System:
"Classic w/ EcoSlim Electrical Instructions (24PS HLG)" pages 6-7
"Classic w/ EcoPlus Electrical Instructions (24PS HLG)" pages 6-7
"Revelation w/ EcoSlim Electrical Instructions (24PS HLG)" pages 7-9
"Revelation w/ EcoPlus Electrical Instructions (24PS HLG)" pages 7-9

Wiring Diagrams:
"EcoPlus and EcoSlim Drawings and Charts (24PS HLG)"

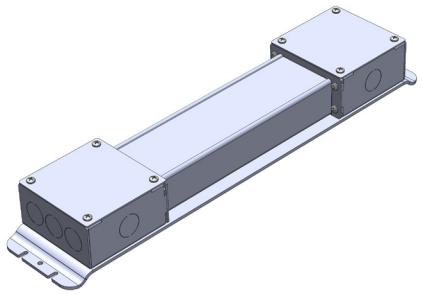
Power System Mounting Dimensions:
"EcoPlus and EcoSlim Drawings and Charts (24PS HLG)"

For Custom EcoPlus SkyCeilings:

Number of Fixtures per Power System and Wiring Diagrams:
"Custom EcoPlus Installation Instructions (24PS HLG)" and installation specific wiring diagrams EL1-2 for number of circuits and number of fixtures per circuit

Power System Mounting Dimensions:
"Sky Factory 24PS HLG Power System Installation" pages 3-4

24PS HLG Power System
LED 24V DC Electrical Power System



240 Watt 24PS HLG Power System shown

DIMENSIONS AND WEIGHTS				
	LENGTH	WIDTH	HEIGHT	WEIGHT
40 WATT 60 WATT	18 IN	3.7 IN	2.4 IN	3 LBS
	45.8 CM	9.4 CM	6.1 CM	1.4 KG
80 WATT 100 WATT 120 WATT 150 WATT 185 WATT 240 WATT	18 IN	3.7 IN	2.4 IN	4 LBS
	45.8 CM	9.4 CM	6.1 CM	1.8 KG
320 WATT	18 IN	3.7 IN	2.4 IN	6 LBS
	45.8 CM	9.4 CM	6.1 CM	2.7 KG
480 WATT	19.1 IN	5.8 IN	2.5 IN	8 LBS
	48.5 CM	14.8 CM	6.4 CM	3.6KG
600 WATT	19.1 IN	5.8 IN	2.5 IN	10 LBS
	48.5 CM	14.8 CM	6.4 CM	4.6 KG

Millwork

2019

TECHNICAL DATA
Wilsonart® High Wear Laminate

2501 Wilsonart Drive
P.O. Box 6110
Temple, TX 76503-6110

1. Manufacturer

Wilsonart LLC
2501 Wilsonart Drive
P.O. Box 6110
Temple, Texas 76503-6110
Phone: (254) 207-7000; (800) 433-3222
Fax: (254) 207-2384
Web Site: www.wilsonart.com

2. Product Description

Recommended Uses
Wilsonart® High Wear Laminate offers five times the abrasion and scuff resistance of conventional laminate. It is produced for commercial, contract and institutional applications where a decorative surface must withstand more than normal wear. Typical applications of High Wear Laminate include checkout counters in retail stores; restaurant and fast food fixtures and casework; tabletops; change counters; bank deal plates and tellers' desks; wall panels, wainscoting and institutional furniture.

High Wear Laminate is manufactured in three extra-high wear (HW) types:

- **General Purpose (HGS) Type 107HW** is produced for both horizontal and vertical interior applications such as commercial interior doors, walls and wainscoting, which must combine a pleasing appearance with enhanced resistance to both impact and abrasion.
- **Vertical Surface (VGS) Type 335HW** is intended for vertical applications where a functional, durable, decorative surface must absorb somewhat less impact than a comparable horizontal surface.
- **Postforming (HGP) Type 350HW** is intended for use on vertical and horizontal interior surfaces where it is necessary or desirable to roll the laminate on a simple radius over the edge of a substrate. This eliminates seams and leaves an attractive surface.

Product Composition
High Wear surface papers impregnated with melamine resin are pressed over core sheets impregnated with phenolic resin. These sheets then are bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 300°F (149°C). Finished sheets are trimmed and the backs sanded to facilitate bonding.

Basic Limitations
Wilsonart High Wear Laminates are interior surfacing, not structural materials. They must be bonded to suitable substrates.

Do not subject these laminates to extremes in humidity or to temperatures over 275°F (135°C) for sustained periods of time.

They should not be exposed to flame, molten metal, metallic sparks or intense, continuous direct sunlight. They should not be used as cutting surfaces.

Wilsonart High Wear Laminate is for interior use only and should not be subjected to extremes in humidity or to temperatures over 275°F (135°C) for sustained periods of time. It also should not be exposed to intense, continuous, direct sunlight.

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Pattern and Color Availability
Wilsonart High Wear Laminate is available in most **Standard Line (DG1)** patterns.

Wilsonart® WxY and Wilsonart VDL Laminate NOT available in High Wear
Non-Standard Line (DG2) patterns are NOT available in High Wear

Please verify pattern, size and finish availability by checking the Laminate Pattern Availability Search at www.wilsonart.com.

Finishes

- #60 Matte ONLY
  A textured finish with a moderate reflective quality. Glossometer reading: MD and CD 10 ± 2.
  NOTE: Glossometer readings are made at a 60° angle of incidence. MD means the machine direction of a laminate sheet, and CD refers to the cross direction.

Standard Sheet Widths

48”	60”
1219mm	1524mm

Standard Sheet Lengths

96”	120”	144”
2438mm	3048mm	3658mm

Thickness and Weight

Description	General Purpose Type 107HW (HGS)	Vertical Surface Type 335HW (VGP & VGS)	Postforming Type 350HW (HGP & HGL)
Thickness	0.048" ± 0.005" (1.22mm± 0.13mm)	0.028" + 0.001” - 0.004" (0.71mm + 0.03 - 0.10mm)	0.039" ± 0.005" (0.99mm ± 0.13mm)
Weight per square foot	0.322#	0.186#	0.260#

3. Technical Data

Physical Properties of High Wear Laminate

NEMA Test	Wilsonart High Wear Laminate	Typical Wilsonart High Wear Laminate Value	NEMA Standard*	ISO 4586-3
Wear Resistance (cycles)	**All types**	3,200	3,000	1,000 (min.)
Boiling Water Resistance	**All types**	No effect	No effect	No effect
High Temperature Resistance	**All types**	Slight effect	Slight effect	No effect
Radiant Heat Resistance **HGS** **VGS** **HGP**	 **107HW** **335HW** **350HW**	 210 seconds 200 seconds 205 seconds	 125 seconds 80 seconds 100 seconds	 ≥ 200 seconds ≥ 200 seconds ≥ 200 seconds
Stain Resistance Reagents **1-10** **11-15**	 **All types** **All types**	 No effect Moderate effect	 No effect Moderate effect	 No effect Moderate effect
Light Resistance	**All types**	Slight effect	Slight effect	Slight effect
Impact Resistance **HGS** **VGS** **HGP**	 **107HW** **335HW** **350HW**	 60" (1524mm) 24" (609mm) 50" (1270mm)	 50" (1270mm) 20" (508mm) 30" (762mm)	 31.5" (800mm) 23.5" (600mm) 31.5" (800mm)
Cleanability (cycles)	**All types**	10	20 (max.)	20 (max.)
Appearance	**All types**	No ABC defects	No ABC defects	N/A

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Formability**	**350HW**	9/16" face (14mm) 3/16" back (5mm)	5/8" face (16mm)	*9/16" face (14.27mm) *3/4" back (19.05mm)

*NEMA Standards given are for standard high-pressure decorative laminates.
**Radius listed for face is actually the radius of the form around which the laminate is postformed.
The radius for back is actually the radius to which the decorative face is postformed.

Dimensional Stability: Gross Dimensional Change

Wilsonart High Wear Laminate	Direction of Change	Typical Wilsonart High Wear Laminate Value	NEMA Standard*	ISO 4586-3
HGS General Purpose (107HW)	Machine Direction Cross Direction	0.3% 0.7%	0.5% 0.9%	1.1% (max.) 1.4% (max.)
VGS Vertical Surface (335HW)	Machine Direction Cross Direction	0.5% 0.8%	0.7% 1.2%	1.1% (max.) 1.4% (max.)
HGP Postforming (350HW)	Machine Direction Cross Direction	0.5% 0.8%	1.1% 1.4%	1.1% (max.) 1.4% (max.)

*NEMA Standards given are for standard high-pressure decorative laminates.

Typical Fire Test Data
High Pressure Laminates are subject to Flame Spread and Smoke Developed standards in structures where codes establish such conditions.

Test data to determine compliance with these codes are obtained by the Steiner Tunnel Test method of the American Society for Testing Materials (ASTM-E-84, Standard Test Method for Surface Burning Characteristics of Building Materials). Tests were conducted in accordance with test method and mounting procedure as described in paragraph X1.7.2 of the test method. This procedure is cataloged by Underwriters Laboratories, Inc. as UL 723.

Here is typical data for Wilsonart High Wear Laminates:
Typical Flame Spread and Smoke Developed Properties

Product Type	Test Condition	Flame Spread	Smoke Developed
General Purpose Type 107HW	Unbonded	55	55
Vertical Surface Type 335HW	Unbonded	40	40
Postforming Type 350HW	Unbonded	45	55

When you wish to specify decorative laminate for a Class I or A fire rating, please refer to the Fire-Rated Laminate Tech Data.

Model Code Designations used to determine flame spread classification

Flame Spread Classification (Maximum Rating)	International (IBC)	Life Safety (NFPA 101)
25	A	A
75	B	B
200	C	C

Reference: Architectural Woodwork Quality Standard, 8th Edition, Version 1.0 - 2003

All Model Codes regulate the generation of smoke by interior finish material. In all cases they specify a maximum smoke development rating of 450.

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Codes and Certifications
Wilsonart® Laminate Types 107, 335 and 350 conform to the voluntary standards of the American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA) LD3-2005, for thickness, performance properties and appearance. Wilsonart Laminate Types 107,335 and 350 meet or exceed the International Standards Organization specifications as found in ISO 4586, titled "High-Pressure Decorative Laminate (HPDL) – Sheets Based on Thermosetting Resins – Part I: specifications."

The UL GREENGUARD Environmental Institute has awarded its UL GREENGUARD Indoor Air Quality Certification to Wilsonart Laminate. All Wilsonart Laminate product types were tested under the stringent UL GREENGUARD Standards for low-emitting products. All UL GREENGUARD Indoor Air Quality Certified products ensure minimal impact on the indoor environment. For a copy of the certificate, visit www.greenguard.org.

All Wilsonart Laminate products are tested regularly for code compliance for building construction and other applications. Here are some examples of frequently encountered regulations:

Basic Construction
U.S. Federal Specification L-P 508H, April 9, 1977, "Plastic Sheets, Laminated, Decorative and Nondecorative" spells out criteria for general purpose, vertical and postforming types, as well as backing sheets for federal installation. High Wear Laminate types in compliance include 107HW General Purpose, 335HW Vertical Surface and 350HW Postforming.

NSF International (NSF) #35 "Laminated Plastic for Surfacing for Food Service Equipment." All solid colors and printed patterns in Basic Types 107, 335 and 350, with #60 finish comply.

Mobile Homes
U.S. Federal Register August 9, 1984, Housing and Urban Development Mobile Home Construction and Safety Standard, (24CFR), Part 3280.203. High Wear Laminate Type 107HW General Purpose complies with paragraphs 1, 4 and 6.

Motor Vehicles/Interiors
U.S. Federal Motor Vehicle Safety Standard (FMVSS) 302, "Flammability of Interior Materials." High Wear Laminate types in compliance include patterns in 107HW General Purpose, 335HW Vertical Surface and 350HW Postforming types.

4. Installation: Fabrication and Assembly Recommendations

Fabrication should follow approved methods. Assembled pieces should meet the specifications of KCMA (Kitchen Cabinetmakers Manufacturers Association), ANSI A-161.2-1998 (revised), and "Architectural Woodwork Quality Standards Guide Specification and Quality Certification Program" guidelines of the Architectural Woodwork Institute where applicable.

Wilsonart Laminates must be bonded to a substrate of reliable quality, such as particleboard, medium density fiberboard or plywood with one A-face. High-pressure laminate, plaster, concrete and gypsum board should not be considered suitable substrates. High Wear laminate may not be used as structural members.

Bond with adhesives and follow the techniques recommended by the adhesive manufacturer. Recommended adhesives are permanent types, such as urea and polyvinyl acetate (PVA), and contact types. Wilsonart adhesives are recommended for most bonding conditions.

To avoid stress cracking, do not use square-cut inside corners. All inside corners should have a minimum of 1/8" (3.18mm) radius, and all edges should be routed smooth.

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Drill oversized holes for screws or bolts. Screws or bolts should be slightly countersunk into the face side of a laminate-clad substrate.

Take care to ensure an appropriate acclimation between the laminate and the substrate prior to fabrication. The face and backing laminates and the substrate should be conditioned in the same environment for 48 hours before fabrication.

Recommended conditioning temperature is approximately 75°F (24°C). Laminates should be conditioned at 45% to 55% relative humidity.

With postforming machinery, Wilsonart 335HW and 350HW will postform at a nominal sheet temperature range of 325°F to 338°F (163°C to 170°C) in 20 ± 5 seconds.

Carbide-tipped saw and router blades should be used for cutting. High tool speed and low feed speed are advisable. Cutting blades should be kept sharp. Use a hold-down to prevent any vibration.

5. **Warranty**

6. **Maintenance**

7. **Technical Services**
For samples, literature, questions or technical assistance, please contact our toll-free Hotline at (800) 433-3222, Monday through Friday, 8 am –5 pm, CST.

Specification Form:

Surface shall be Wilsonart Laminate, produced by Wilsonart LLC, Temple, Texas 76503-6110.

Type: 107HW, 335HW or 350HW

Surface Color Number:	_____	Color Name:	_____
Finish Number:	_____	Name:	_____
Edge Trim Color Number:	_____	Color Name:	_____
Adhesive Name:	_____	Grade/Type:	_____
Brand:	Wilsonart® Adhesive		

Material shall equal or exceed performance standards set by the American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA) LD3-2005 for high-pressure laminate. Fabrication shall comply with "Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program" guidelines of the Architectural Woodwork Institute.

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TECHNICAL DATA & PERFORMANCE PROPERTIES

SS-1,5,7

Standard Sheet Thickness:	1/2" (12mm), 1/4" (6mm)	
Standard Sheet Dimensions:	1/2" (12mm)	30" x 144" (762mm x 3,658mm)
Standard Wall Panel Dimensions:	1/4" (6mm) Thickness	36" x 96" (914mm x 2,438mm) 48" x 96" (1214mm x 2,438mm) 60" x 96" (1,518mm x 2,438mm)

Standard Sheet Thickness:	1/2" (12mm)	
Standard Sheet Dimensions:	1/2" (12mm)	36" x 120" (914mm x 3,048mm)

	Acrylic Solid Surface Class I		Studio Class I		Studio Class III	
NEMA LD 3 2000 Staining Reagent	Cleanability Rating	Stain Rating	Cleanability Rating	Stain Rating	Cleanability Rating	Stain Rating
Distilled Water	0	■	0	■	0	■
Tap Water	0	■	0	■	0	■
Ethyl Alcohol, 50% Solution	0	■	0	■	0	■
Isopropyl Alcohol, 70% Solution	0	■	0	■	0	■
VM&P Naphtha/Ethyl Alcohol, 50/50 Solution	0	■	0	■	0	■
Nail Polish Remover	0	■	0	■	0	■
Acetone	0	■	0	■	0	■
Bar Soap Solution, 5% In Water	0	■	0	■	0	■
Household Detergent, 5% In Water	0	■	0	■	0	■
Household Ammonia	0	■	0	■	0	■
Tomato Catsup	0	■	0	■	0	■
Vegetable Oil	0	■	0	■	0	■
Trisodium Phosphate, 1% Solution	0	■	0	■	0	■
Coffee	0	■	0	■	0	■
Tea	0	■	0	■	0	■
Whole Milk	0	■	0	■	0	■
Citric Acid, 10% Solution	0	■	0	■	0	■
Yellow Mustard	0	■	0	■	0	■
10% Povidone Iodine	3	■	1	■	0	■
Distilled Vinegar	0	■	0	■	0	■
Lipstick (Red)	1	■	1	■	2	■
Washable Ink (blue)	1	■	1	■	2	■
Grape Juice	0	■	0	■	0	■
Red Food Dye	1	■	1	■	2	■
Beet Juice	0	■	0	■	0	■
Merthiolate	1	■	1	■	2	■
Wax Crayon	1	■	1	■	2	■
Shoe Polish (Black Paste)	3	■	1	■	2	■
Ball Pen Ink	3	■	1	■	3	■
Felt Pen Ink	3	■	1	■	2	■
Black Permanent Marker	3	■	1	■	3	■
#2 Pencil	3	■	1	■	2	■
Supermarket Stamp Ink (Purple)	1	■	1	■	2	■

0 Rating – Staining reagent removed with a cellulose sponge moistened with water.
1 Rating – Staining reagent removed with a cellulose sponge moistened with water and commercial cleanser.
2 Rating – Staining reagent removed with a stiff nylon bristle brush with a commercial cleanser and baking soda.
3 Rating – Staining reagent removed with a cotton ball saturated with acetone.
4 Rating – Staining reagent removed with a cotton ball saturated with hypochlorite bleach.
5 Rating – Stains remaining after the previous cleaning steps are rated 5.

■ *= No Effect*

Property	Typical Results Acrylic Solid Surface	Typical Results Studio Collection Class I	Typical Results Studio Collection Class III	Test Method
General				
Thickness Tested	0.500"	0.500"	0.500"	–
Specific Gravity	1.6	1.6	1.3	ASTM D-792
Water Absorption (24hrs.)	0.04%	0.03%	0.04%	ASTM D-570
Mechanical				
Tensile Strength	4,000 psi	3,700 psi	2,300 psi	ASTM D-638
Tensile Modulus	1,100,000 psi	1,200,000 psi	730,000 psi	ASTM D-638
Tensile Elongation	2.1%	0.38%	0.34%	ASTM D-638
Flexural Strength	8000 psi	6500 psi	4100 psi	ASTM D-790
Flexural Modulus	1,100,000 psi	1,200,000 psi	720,000 psi	ASTM D-790
Barcol Hardness	60	60	45	ASTM D-2583
Rockwell Hardness	86	99	105	ASTM D-785
Un-notched Izod Impact	1.40 ft.lbs./inch	0.67 ft.lbs./inch	0.42 ft.lbs./inch	ASTM D-4812
Notched Izod Impact	0.14 ft.lbs./inch	0.15 ft.lbs./inch	0.15 ft.lbs./inch	ASTM D-256
Ball Impact (1/2 lb. ball)	>150 Inches	>150 Inches	>150 Inches	NEMA LD3-3.8
Total Volatile Organic Compound	6.91 µg/m²/hr	3.9 µg/m²/hr	13.9 µg/m²/hr	ASTM-D5116
Thermal				
DTUL @ 264 psi	200 °F	180 °F	175 °F	ASTM D-648
Coefficient of Thermal Expansion	2.3 X 10^{-5} in./in.°F	2.1 X 10^{-5} in./in.°F	2.9 X 10^{-5} in./in.°F	ASTM D-696
Boiling Water Resistance	No Effect	No Effect	No Effect	ISSFA SST 8.1-00
High Temperature Resistance	No Effect	No Effect	No Effect	ISSFA SST 9.1-00
Flame Spread	<25	<25	>75	ASTM E 84
Smoke Generation	<25	<25	>450	ASTM E 84
Combustion Toxicity	96 (solid colors) 67 (patterns)	62.25	19.33	Pittsburgh Protocol (LC_{50} Test)
New York City Adm. Code 27-131*				
Flame Spread	20	20	180	MEA 64-96-M
Smoke Density	155	155	>450	MEA-142-96-M
Surface				
Cleanability / Stain Resistance	Pass	Pass	Pass	NEMA LD3-3.4
Stain Resistance	Pass	Pass	Pass	ANSI Z 124.3
Consistency of Color (same sheet)	Pass	Pass	Pass	ISSFA SST 2.1-00
Light Resistance	No Effect	No Effect	No Effect	ISSFA SST 7.1-00
Food Zone Use	NSF 51 Approved	NSF 51 Approved	NSF 51 Approved	NSF
Fungal/Bacterial Resistance	Does not support microbial growth	Does not support microbial growth	Does not support microbial growth	ASTM G-21
HIV-Resistance	Disinfected surface does not support HIV	Disinfected surface does not support HIV	Disinfected surface does not support HIV	Protocol 61-074-1
Aircraft: FAA Part 23 or 25	Acceptable	Acceptable	Acceptable	FAR 25.853
Federal Motor Vehicle Safety Stnd.	Pass	Pass	Pass	
Canadian Motor Vehicle Safety Stnd.	Pass	Pass	Pass	

* For specific part numbers, go to www.avonitesurfaces.com

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SS-2,3,6

DUPONT™ CORIAN® PRODUCT OVERVIEW

PRODUCT NAME

DuPont™ Corian® Solid Surface

MANUFACTURER

DuPont Building Innovations
Chestnut Run Plaza 735/2175-1
974 Centre Road
PO Box 2915
Wilmington, DE 19805
Toll free 1-800-4-CORIAN (1-800-426-7426)
corian.na.dupont.com

PRODUCT DESCRIPTION

Basic use

DuPont™ Corian® solid surface is an advanced composite product used as an architectural and design material in a variety of residential and commercial applications. Corian® solid surface offers design versatility, functionality and durability. Supplied in sheets and shapes, it can be fabricated with conventional woodworking tools into virtually any design. It is the original solid surface material made only by DuPont. It is widely accepted as a material for countertops, vanity tops, tub/shower walls, kitchen sinks, vanity basins and laboratory bench tops in numerous markets including lodging, healthcare, banks, boutiques, restaurants.

Composition

DuPont™ Corian® solid surface is a solid, nonporous, homogeneous surfacing material, composed of ≈1/3 acrylic resin (also known as polymethyl methacrylate or PMMA), and ≈2/3 natural minerals. These minerals are composed of aluminum trihydrate (ATH) derived from bauxite, an ore from which aluminum is extracted. For more information on the composition of the material, please consult the Corian® solid surface Material Safety Data Sheets (MSDS) available via the msds.dupont.com website or via your local supplier.

STANDARD PRODUCTS

DuPont™ Corian® Sheets

Available in various standard thicknesses, easily cut to size by professional fabricators.

All colors in the standard color palette are available in 1/2" x 30" x 144" (12 x 760 x 3658 mm) sheets. Selected colors may include additional dimensional options: 36.6" (930 mm) width; 72", 98", or 120" (1829 mm, 2490 mm, or 3050 mm) length; 1/4" and 3/4" (6 and 19 mm) thickness. Please consult the DuPont™ Corian® website, corian.na.dupont.com, for more details.

DuPont™ Corian® Sinks and Lavatories

A wide range of DuPont™ Corian® sinks and lavatories is available in 5 solid colors for custom integration with Corian® sheets to create a continuous surface. This includes vanity basins in solid colors for bathrooms, and single and double sinks for kitchens, bars and small wash-up areas, hospitals and laboratories. Seamed undermounting eliminates rims that trap dirt and water, minimizing cleaning and maintenance and providing improved hygiene. Care, maintenance and installation instructions are included in the packaging. Appropriate accessory products, including installation hardware, are available and recommended for residential kitchens only.

The Colors of Corian® Solid Surface

A broad palette of colors allows for an almost unlimited working palette. You can choose a single color; a neutral basis for design; or experiment with eye-catching harmonies. DuPont™ Corian® solid surface can also be used as inlays, accents, or as a versatile complement to other materials like metal, wood, stone, etc.

For complete information on colors, refer to the latest Corian® colors leaflet or to corian.na.dupont.com. Hues, patterns and textures are related by style and character. Dark, heavily pigmented Corian® colors will show scratches, dust and ordinary wear and tear more readily than lighter, textured colors. As a result, these colors are recommended for applications where surface contact is light or for use as inlays and accent colors. However, the DeepColor™ series incorporates an innovative, proprietary technology that delivers greater depth of color and increased durability compared to other dark Corian® colors.

Custom Sheets

DuPont can manufacture Corian® sheets in custom colors, patterns and dimensions, within manufacturing capability limits and based on a minimum order quantity.

Limitations

Although DuPont™ Corian® solid surface can withstand high temperatures, it should be protected against direct heat with hot pads or heat shields.

Use of 1/4" (6 mm) sheets should be restricted to vertical applications or certain furniture applications only. The choice between 1/2" and 3/4" (12 mm and 19 mm) is generally based on performance and cost considerations.

Due to the complex blending of natural minerals and man-made acrylics, slight color variations may be found within a sheet or from sheet to sheet of same color. Therefore, checking for color matching is an essential element of sheet inspection before starting fabrication.

DuPont™ Corian® solid surface is nonporous so spills and stains remain on the surface. However, some chemicals can stain, discolor or damage the surface of Corian® solid surface. These chemicals include strong acids (like concentrated sulfuric acid), ketones (like acetone), chlorinated solvents (like chloroform) or strong solvent combinations (like paint remover). The extent of the damage will depend on the length of contact. Except for strong solvents such as paint remover, short periods of contact will not usually cause severe damage to Corian® solid surface. Acid drain cleaners should not be used as they can damage both Corian® solid surface and any plastic plumbing beneath. Corian® solid surface is not recommended for use in photographic processing laboratories. More information can be found in *DuPont™ Corian® Chemical Resistance* (K-27406). In some hospitals and laboratories where strong disinfectants come in contact with DuPont™ Corian® applications, the recommendation is to use solid colors and avoid extended contact.

PERFORMANCE PROPERTIES AND CHARACTERISTICS

Since its introduction in 1967, DuPont™ Corian® solid surface has proven itself to be remarkably durable, versatile and easy to live with in both the home and commercial environments.

Typical performance properties of DuPont™ Corian® products are shown in *DuPont™ Corian® Performance Properties* (K-26829). The performance of Corian® sheets may vary according to the thickness of the material, its aesthetics and surface finish.

Colors and patterns run through the entire thickness of the material and cannot wear away or delaminate. Joints can be glued inconspicuously, making virtually unlimited surfaces possible.

Corian® surfaces are restorable, meaning they can be fully restored with ordinary mild abrasive cleansers and a scouring pad. Cigarette burns, for example, can be easily removed in this way. Damage caused by abuse can usually be repaired on site without having to completely replace the material.

Corian® solid surface is nonporous with a smooth, seamless appearance. With proper cleaning, the material does not promote the growth of mold, mildew and bacteria.

Corian® solid surface is nontoxic and nonallergenic to humans. Corian® solid surface meets or exceeds emissions guidelines for volatile organic compounds (VOCs), hazardous air pollutants (HAPs) and has achieved GREENGUARD GOLD Certification.

When burned, it releases mainly carbon oxides and the smoke generated is optically light and does not contain toxic halogenated gases. Because of these properties, Corian® solid surface is used in public spaces and delicate applications such as airport check-in counters, wall and work surfaces in hospitals and hotels.

DuPont™ Corian® sheets can be thermoformed in wooden or metal molds at controlled temperatures in order to create various 2D and 3D design objects. Embossing effects can also be created.

The translucency of DuPont™ Corian® sheet is especially striking in the lighter colors as well as in thinner sheets. As a result, many designers are using it to create lamps or lighting effects in various applications.

Inlaying DuPont™ Corian® with different materials or with different colors of Corian® is possible and can enhance the inherent beauty of the material. Inlays and logos can also be created on Corian® using dye sublimation or direct printing techniques.

FABRICATION AND INSTALLATION

DuPont trains and certifies fabricators and installers who are provided detailed information regarding proper procedures; the following is a general overview, not a comprehensive guide to proper use.

Seams

To minimize material usage and facilitate installation, a corner block of Corian® should be made square (butt) rather than mitered. The edges to be joined should be straight, smooth and clean. Some seams need to be reinforced (see fabrication manual for details). Joints should only be made with DuPont™ Joint Adhesive. Cutouts should be made with a router equipped with a sharp carbide bit, with a minimum diameter of 3/8" (10 mm). All corners of a cutout must be rounded to 5 mm radius and the edges smoothed, both on top and bottom, all around a cutout. "L" and "U" shaped corners need smooth, 3/16" (5 mm) radius inside corners. For hob cutouts, corners should be reinforced with a Corian® corner block. See fabrication manual for more details.

Some Corian® colors that feature random veins and irregular patterns require special considerations regarding the seams. Please refer to the related technical bulletin for best practices in fabrication of these colors.

Sealants and Adhesives

Corian® solid surface is compatible with many commercially available caulks and sealants. 100% silicone products are recommended. Vertical panels of Corian® may be installed over suitable substrates, including water-resistant gypsum board, marine-grade plywood and ceramic tiles. In case a support is needed, apply perimeter frame or full support direct to Corian® using large beads of flexible adhesive leaving a space with a minimum thickness of 1/16" (1.5 mm).

For making seams in countertops, repairs and custom edges, color-coordinated DuPont™ Joint Adhesive should be used. When used in accordance with manufacturer's instructions, it provides a smooth and inconspicuous joint. DuPont™ Joint Adhesive is available from DuPont or its distributors.

Clearances

The minimum expansion clearance in inches for Corian® solid surface is 2.2 x 10^{-5} in./in.°F x (length of the piece of Corian® solid surface in inches) x (biggest temperature range expected in °F) In mm the minimum expansion clearance is 3.9 x 10^{-5} mm/mm °C x (length of the piece of Corian® solid surface in mm) x (biggest temperature range expected in °C). Joints to be caulked should be a minimum of 1/16" (1.5 mm) wide to allow satisfactory sealant penetration and expansion.

Precautions

Product dimensions are nominal. If tolerances are critical, review your needs with a Corian® specialist.

AVAILABILITY AND COST

Availability

DuPont™ Corian® sheet, shape, and accessory products are readily available through a worldwide network of Distributors and certified Fabricators/Installers.

Cost

Cost varies with color, thickness, and width as well as custom fabrication and installation details.

WARRANTY

DuPont offers limited *commercial* and *residential* warranties.

MAINTENANCE

Preventing Damage to Corian® Solid Surface

Avoid prolonged exposure to strong chemicals such as acids, bases, and organic solvents. Spills should be cleaned up promptly. Refer to *DuPont™ Corian® Chemical Resistance* (K-27406) for additional details regarding chemical exposures, clean up, and general maintenance. In case of exposure outside the specifications listed in the Class I Reagents section, the 10-year limited product warranty will be void and handled as a case of abuse. While unaffected by minor impacts, Corian® solid surface can be damaged by heavy impacts, especially from pointed objects. It can also be damaged by excessive heat. A local Corian® specialist can help you include appropriate heat management into your designs.

Repairing Corian® Solid Surface

DuPont™ Corian® solid surface provides superior value by being inconspicuously repairable in most cases. Minor cuts, scratches, and stains can be removed by owners using fine sandpaper and Scotch-Brite™ pads. Deeper cuts or impact damage such as cracks may require an authorized Corian® fabricator/installer to make inconspicuous repairs.

ADDITIONAL INFORMATION

For additional information or support *please contact your local distributor*, visit *corian.na.dupont.com* or call 1-800-4-CORIAN (800-426-7426).

REFERENCED DOCUMENTS

DuPont™ Corian® Performance Properties (K-26829)

DuPont™ Corian® Chemical Resistance (K-27406)

DuPont™ Corian® Commercial (Product Only) 10-Year Limited Warranty For North America

DuPont™ Corian® 10-Year Limited Residential Warranty For North America

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QZP-1,2,3,4

CAMBRIA®

PRODUCT SPECIFICATION SHEET

PRODUCT DESCRIPTION

Cambria® is a unique pure natural quartz surface that is ideal for residential and commercial applications.

PRODUCT PERFORMANCE DATA

TEST	TYPICAL RESULT	METHOD
Gloss, % incident light reflected at 60° - polished finish	≥47% minimum	Glossmeter
Gloss, % incident light reflected at 60° - Cambria Matte™ finish	11-22%	Glossmeter
Density	2.4 g/cm^3	Hydrostatic scale
Moisture Absorption	Negligible	ASTM C-97
Modulus of Rupture	6,800 psi (46884kPa)	ASTM C-99
Compressive Strength	24,750 psi (170000kPa)	ASTM C-170
Abrasion Resistance	223	ASTM C-501
Bond Strength	205 psi (1.4kPa)	ASTM C-482
Thermal Shock	Passes–5 cycles	ASTM C-484
Coefficient of Thermal Expansion	1.2x10^{-5} inch/°F (2.16 x 10^{-5} m/°C)	ASTM C-531
Breaking Strength of Tile	3,661 lbf (16.28 kN)	ASTM C-648
Resistance to Freeze Thaw Cycling	Unaffected–15 cycles	ASTM C-1026
Wet Dynamic Coefficient of Friction	0.34	ANSI A137.1
Dry Dynamic Coefficient of Friction	0.72	ANSI A137.1
Surface Burning Characteristics	17 (Class A/1 Rating)	ASTM E-84
Smoke Density	Flaming-196 / Non-flaming-69	ASTM E-662
Cigarette Burn	Unaffected	ANSI Z-124.6
Stain Resistance	Unaffected	ANSI Z-124.6

DESIGN AND FINISH INFORMATION

Cambria slabs are available in many designs. Cambria can develop custom designs. Cambria slabs are available in polished finish and Cambria Matte™ finish for all designs. Some designs may be available by request in semi-polished finish (1cm) for floor and cladding surfaces.

PRODUCT SIZE INFORMATION FOR SLABS, COUNTERTOPS, AND TILE

Cambria standard-size slabs are approximately 55½″ (141 cm) x 122″ (310 cm) and jumbo-size slabs are 65 ½″ (166 cm) x 132″ (335 cm). Please check with your local business partner/installer/fabricator for slab size availability per design, including the largest size for fabrication versus listed slab size. Cambria slabs can be ordered in 1cm, 2cm, or 3cm nominal thicknesses. Cambria countertops are available in 2cm or 3cm material with availability of 2cm, 3cm, or 4cm edge thicknesses. Cambria tile can be cut from 1cm or 2cm slabs. Cambria tile may be cut to nominal or true dimensions, ±1⁄16″(±1.6 mm), with beveled edges, from 8″ (20 cm) - 24″ (61 cm). Custom dimensions are available upon request, ±1⁄16″(±1.6 mm). Cambria slab thicknesses are nominal 1cm, 2cm, and 3cm, ±0.5mm. 1cm thickness is typically 1.2-1.3cm. Cambria slabs weigh approximately 6 lbs/ft^2 (29.29 kg/sq-m) for 1cm, 10 lbs/ft^2 (48.82 kg/sq-m) for 2cm, and 15 lbs/ft^2 (73.23 kg/sq-m) for 3cm.

PRODUCT INFORMATION

Samples are a small select cut from a slab; they do not fully exhibit all the design characteristics of the final installed product. Cambria is pure natural quartz. Variation in the natural quartz stone color, pattern, size, shape, and shade are unique and inherent characteristics of this product. Cambria is not a seamless product; seams are visible. Where there are seams the product pattern and shade will change. Color blotches are intended and created into many designs to enhance the natural beauty. Surface markings are more visible on monotone colors than multi-colored surfaces. These variations do not affect performance and do not qualify for product replacement. Cambria is durable and more resistant to surface damage than other stone. However, all stone can be damaged by force and no stone is chip proof. Objects hitting edges, particularly at sinks or dishwashers, may cause chips. Though a minor knife slip will dull the knife and not harm Cambria, no stone surface is scratch proof. Cambria Matte™ finish will show surface markings caused during normal use, which are easily removed with an all-purpose cleaner such as concentrated Simple Green® cleaner.

Natural stone surfaces can be damaged by sudden and/or rapid change of temperature, especially near the edges, as well as direct and/or sustained heating of the top. Cambria may not withstand the direct transfer of heat from pots and pans and other cooking units such as electric frying pans, griddles, slow cookers, roaster ovens, and heat lamps. Therefore, the use of a closed-weave hot pad or solid trivet like a bread board is always recommended to prevent heating the product. Cambria is not a structural support material and must be supported in every application. 2cm and 3cm thicknesses are for countertops; 1cm thicknesses are for horizontal and vertical surface finishes such as walls, tub and shower surrounds, fireplaces, and tub decks. Semi-polished finishes (1cm) will not shine, and will soil and appear to stain from soiling. Cambria is not approved for outdoor use.

Solid Surface Systems

2019

SSM-1,2,3

portfolio
seventy-one

Innovative line of semi-custom, ready-to-install bath products

Made with 100% Corian® Solid Surface

Effective 10-19-17
NET

distributed by Parksite

INFORMATION

PLACING AN ORDER

Customers can place an order using the following methods:

- Call 800-237-0229 ext. 1
- Fax 630-761-9491
- Email: psorder@parksite.com

A fax confirmation will be sent to you confirming the order. All sales are final

Prices are subject to change without notice. All orders will be invoiced at prices prevailing at time of order.

DELIVERIES

A deliver fee will apply, contact customer service for charge to your location. All orders must be inspected and signed for. **Any concealed damage to boxed products must be reported within 24 hours to receive credit or replacement product.**

CARING FOR AND MAINTAINING YOUR CORIAN®

Corian® was created for a lifetime of easy care. Just follow the simple guidelines listed here to keep your Corian® surfaces looking as fresh as the day they were installed.

Start With Common Household Cleaners

For most residues, all you need is warm soapy water or ammonia-based household cleaner. Commercially available solid surface cleaners will also work as well. It is also recommended to occasionally wipe your surface with diluted house bleach.

Keep Your Surfaces Dry

Even though Corian® is non-porous, film will build up if water is left to dry on the surface. To prevent film build-up, it is very important to wipe the surface completely dry immediately after spills and cleaning. If hard water marks begin to form, use a cleaner formulated for removing hard water marks, such as CLR® or Lime-A-Way®

Preventing Other Damage

In most cases, surfaces made with Corian® can be repaired if damaged. For light scratches, a gentle touch with an abrasive pad should do the trick. For deep cuts, it is recommended that you seek professional help before attempting to buff out yourself. Avoid exposing Corian® to strong chemicals, such as paint removers, oven cleaners, etc.

Contact your Parksite Sales Representative for cleaning best practices

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Bold indicates 2017 color *(T) Terra Collection* *(I) Illumination Collection* *(M) Metallic*

Colors

Group A

Abalone
Bisque
Bone
Cameo White
Glacier White
Linen
Maui
Sahara (T)
Sandstone
Silver Gray
Vanilla

Group B

Antarctica (T)
Aurora
Blue Pebble (T)
Canyon
Cocoa Brown
Designer White
Elegant Grey
Everest
Modern White
Mojave (T)
Moss (T)
Night Fall (T)
Platinum (T)
Pearl Gray
Sand
Savannah
Silt
Sparkling White

Group C

Anthracite
Arctic Ice (I)
Ash Concrete
Blue Spice
Bronzite
Canvas (T)
Carbon Concrete
Cilantro
Cobalt
Concrete
Cottage Lane (T)
Deep Anthracite
Deep Bedrock
Deep Black Quartz
Deep Caviar
Deep Cloud
Deep Espresso
Deep Mink
Deep Night Sky
Deep Nocturne
Deep Sable
Deep Space
Deep Storm
Deep Titanium
Doeskin (T)
Dove (T)
Fawn (T)
Flint
Fossil
Glacier Ice (I)
Granola (T)
Matterhorn (T)
Neutral Concrete
Oat (T)
Pine (T)
Raffia (T)
Rice Paper (T)
Royal Red
Seafoam
Serene Sage (T)
Silver Birch (T)
Silverite (M)
Suede (T)
Venaro White
Weathered Concrete
Whipped Cream
Whisper (T)
White Jasmine (T)
Willow (T)

Group D

Allspice
Aqualite (T) (M)
Arrowroot
Basil
Burled Beach
Cosmos Prima
Clam Shell
Cocoa Prima
Deep Inkwell
Deep Lapis
Deep Smoky Pearl
Deep Terrain
Dune Prima
Earth
Ecru
Elderberry
Evening Prima
Gray Onyx
Graylite (T) (M)
Hazelnut
Hickory Smoke
Jasmine
Juniper
Lava Rock
Limestone Prima
Milky Way
Mineral
Natural Gray
Nimbus Prima
Rain Cloud
Riverbed
Rosemary
Saffron
Sagebrush
Sandalwood
Sand Storm
Smokedrift Prima
Sonora
Sorrel (M)
Stardust
Tumbleweed
White Onyx
Windswept Prima
Witch Hazel

portfolio
seventy-one

CORIAN® VANITY **PROGRAM**

Manufactured with 100% DuPont™ Corian® Solid Surface | Available in all colors of Corian® | Standard/Custom sizes | Single and double bowl configurations | Color matching sink options | Optional side splashes | Optional pre-drilled faucet holes | Ten Year Limited Warranty

portfolio
seventy-one

22-1/4" Depth | Loose 4" Backsplash | 1-1/2" Eased Edge

TOPS

Width	Group A	Group B	Group C	Group D
W ≤ 25"	$460	$495	$530	$605
25" < W ≤ 31"	$465	$500	$540	$620
31" < W ≤ 37"	$470	$505	$550	$635
37" < W ≤ 43"	$475	$510	$570	$660
43" < W ≤ 49"	$480	$515	$590	$685
49" < W ≤ 55"	$495	$530	$625	$740
55" < W ≤ 61"	$555	$590	$660	$775
61" < W ≤ 73"	$615	$710	$790	$920

Custom Widths are available - please specify when placing your order. (Max 73")

SPLASH OPTIONS

None	---
Loose - Left Only	$16.00
Loose - Right Only	$16.00
Loose Left & Right	$32.00

FAUCET HOLES

Single hole, on center | 3-hole, 4" on center | 3-hole, 8" on center |

BOWL

810

Colors: Bisque, Bone, Vanilla, Cameo White, Glacier White, Designer White

Sizes: 22 1/4: 16 1/2 x 13

Edge: Eased

PLACEMENT & CONFIGURATIONS

Single Bowl Tops

- Center Placement
- Custom Offset from Left

Double Bowl Tops

- 61" Double Bowl (add $180)
  15 1/2" – LR – 15 1/2"
- 73" Double Bowl (add $180)
  18" – LR – 18"

WIRELESS CHARGING

$250 (Per Unit)

Includes 1 charging unit and 1 pack of charging rings

Placement Options

Front Left | Front Right | Back Left | Back Right

For Powermat & Qi enabled devices only

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Instructions

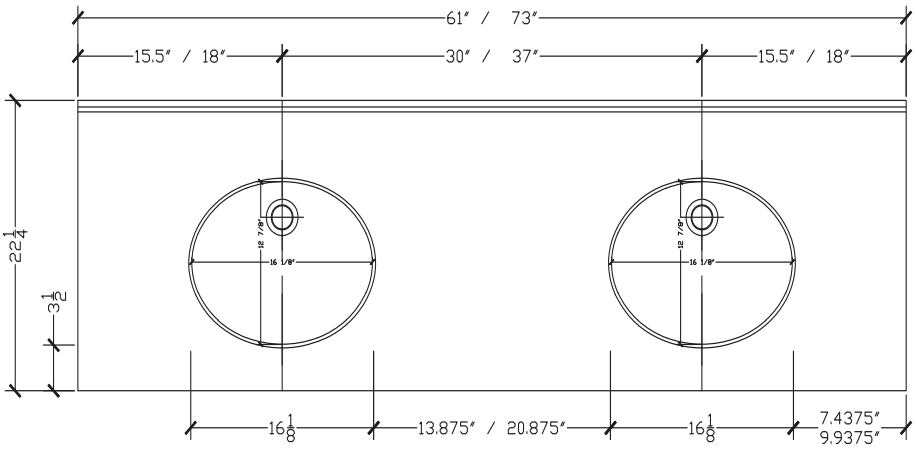
1. The Parksite Vanity program has a 22 ¼" depth standard. Although standard cabinets are 18" and 21" in depth, modern drawer and door faces combined with cushioned stoppers typically require an extra ¼" countertop overhang.
2. For Single Bowl vanities, center bowl placement is standard. For custom placement, provide measurement from the left edge to the center drain, noted as "B1".
3. For Double Bowl vanities, specify the desired measurement from the edge to the drain center or select the standard placement as follows:

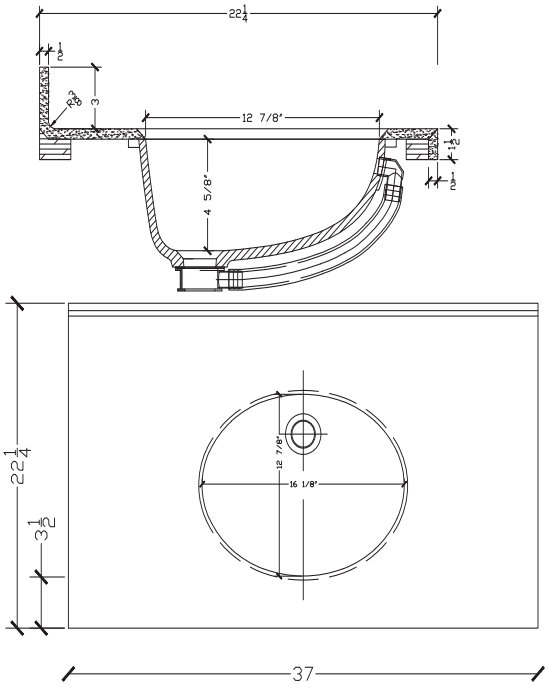
Size	B1 from Left	B2 from Right
61" Double Bowl	15.5"	15.5"
73" Double Bowl	18.0"	18.0"

5. Double check the bowl placement relative to the supporting cabinet walls to ensure sufficient clearance is available.
6. Check for electrical outlets and other possible obstructions on the wall behind the counter, which may be obstructed by the integral backsplash and side splashes.
7. Specify faucet hole placement.

Installation *(as written in the DuPont™ Corian® Fabrication Manual)*

1. The tops of the cabinets must be flat and true to within 1/8" over a 10' run. Do not use shims to level the countertop.
2. Provide only perimeter support
   a. Add front-to-back support for spans greater than 36" in length
   b. Support overhangs exceeding 6" using L-brackets, corbels, legs, or other support methods
3. Allow 1/16" minimum clearance between the countertop and adjacent walls, to allow for expansion
4. Adhere with dabs of 100% silicone adhesive no less than 12" apart, along the perimeter support
5. Dry-fit the optional loose side-splashes. Confirm there are no obstructions present. Adhere with a continuous bead of silicone sealant. Color matched silicone sealant is available from Parksite.
6. Never install mechanical fasteners directly into Corian®.
7. The optimal tools for scribing include the belt-sander, electrical plane, and/or router with straight edge cutter. Sand all cuts to remove burrs and tool marks. Ease the edge of all exposed cuts to prevent chipping.
8. When installing plumbing fixtures and drain assemblies, DuPont recommends only silicone sealant. If plumbers putty is preferred, use only stain-free putty and test in an inconspicuous area.





Parksite

Tel. (800) 237-0229 ext 1
Fax (630) 761-9491
Email: psorder@parksite.com

PURCHASE ORDER _____

Company Name _____ Contact _____
Company Address _____ Phone _____
Company Address _____ Email _____
City _____ ST _____ ZIP _____

STEP 1 - SIZE & CONFIGURATION

Depth (front-to-back)
- (●) 22-1/4" (fits 21" cabinet)

Width (side-to-side)
- ( ) 25" (fits 24" cabinet)
- ( ) 31" (fits 30" cabinet)
- ( ) 37" (fits 36" cabinet)
- ( ) 43" (fits 42" cabinet)
- ( ) 49" (fits 48" cabinet)
- ( ) 55" (fits 54" cabinet)
- ( ) 61" (fits 60" cabinet)
- ( ) 73" (fits 72" cabinet)
- ( ) Custom Width (specify):

_____ inches
Max 73"

Edge Profiles
- (●) 1-1/2" Edge, Eased

Backsplash Options
- (●) Loose 4" h

Side Splash Options
- ( ) None
- ( ) Loose - Left only (add $16)
- ( ) Loose - Right only (add $16)
- ( ) Loose Left & Right (add $32)

Unfinished Sides
- [ ] Unfinished Left Side
- [ ] Unfinished Right Side
- [ ] Finished Front, Left, & Right

Faucet Holes
- ( ) None
- ( ) Single hole, on center
- ( ) 3-hole, 4" on center

Bowl Options
- ( ) Single Bowl, center placement
- ( ) Single Bowl, offset from Left
  Specify from Left _____
- ( ) 61" Double Bowl (add $180)
  15-1/2" -LR- 15-1/2"
- ( ) 73" Double Bowl (add $180)
  18" -LR- 18"
- ( ) Custom Double (add $180)
- ( ) No Cutout (deduct $115)

Wireless Charging
- [ ] Front Left (add $250)
- [ ] Front Right (add $250)
- [ ] Back Left (add $250)
- [ ] Back Right (add $250)

for Powermat & Qi enabled devices

STEP 2 - CORIAN® COLOR OPTIONS

Countertop Color:

_____

Bowl Options

WHITE (810) with eased bowl edge

- [ ] Bisque
- [ ] Bone
- [ ] Vanilla
- [ ] Cameo White
- [ ] Glacier White
- [ ] Designer White

Bowl Size

22-1/4, White: 16-1/2 x 13 Oval (#810)

STEP 3 - PRICING

Width	*Group A*	*Group B*	*Group C*	*Group D*
W ≤ 25"	$ 460.00	$ 495.00	$ 530.00	$ 605.00
25" < W ≤ 31"	$ 465.00	$ 500.00	$ 540.00	$ 620.00
31" < W ≤ 37"	$ 470.00	$ 505.00	$ 550.00	$ 635.00
37" < W ≤ 43"	$ 475.00	$ 510.00	$ 570.00	$ 660.00
43" < W ≤ 49"	$ 480.00	$ 515.00	$ 590.00	$ 685.00
49" < W ≤ 55"	$ 495.00	$ 530.00	$ 625.00	$ 740.00
55" < W ≤ 61"	$ 555.00	$ 590.00	$ 660.00	$ 775.00
61" < W ≤ 73"	$ 615.00	$ 710.00	$ 790.00	$ 920.00

START: Price from table above $ -
Add: Side Splash -
Add: Wireless Charging -
TOTAL $ $ -

All items ship from Bolingbrook, IL 60490 - Delivery not included.

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SHOWER SURROUNDS AND BASINS

Wet Wall Surrounds

Manufactured with 100% DuPont™ Corian ® Solid Surface | Available in all Corian® colors | Pre-cut Panels for easy installation | Available in most popular sizes | No grout lines & no sealing required | Five Year Limited Warranty

Shower Basins

Manufactured with 100% DuPont™ Corian ® Solid Surface | Available in all colors of Corian® and 2 configurations | Easy DIY installation | Custom drain placement | Color matching Corian® walls | Compatible with porcelain, tile, and natural stone surrounds | Five Year Limited manufacturer's Warranty

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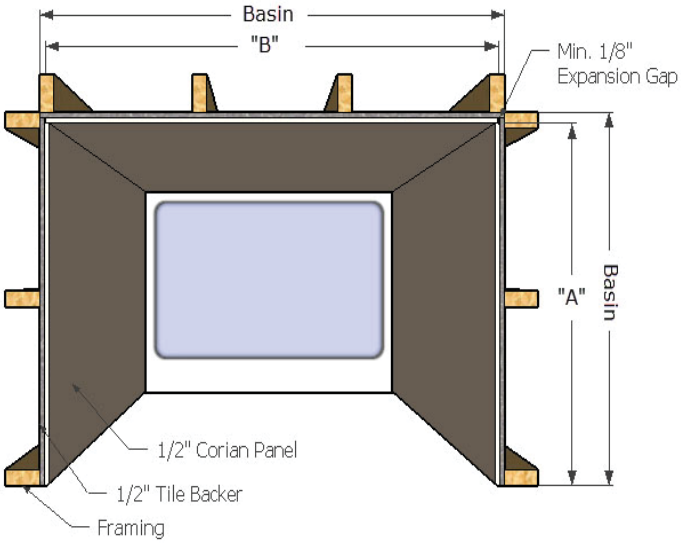
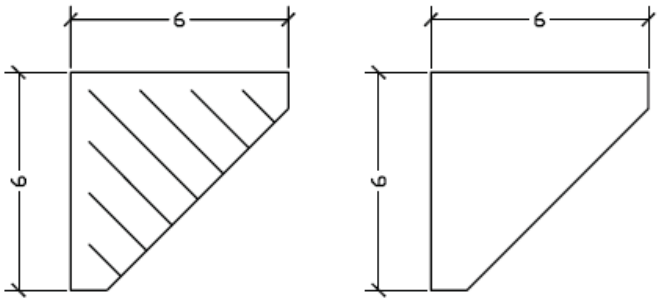
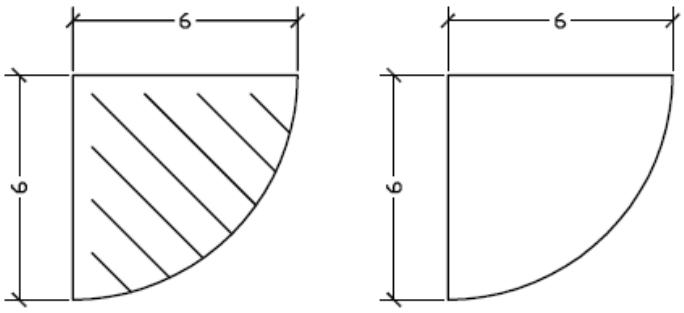
1/2" WET WALL SURROUNDS

Surround Configuration



Surface Mount Corner Shelves

ST6 Walls with square corners Triangular shape One grooved soap shelf One smooth shampoo shelf Universal – Left or Right	
SP6 Walls with square corners Pie shape design One grooved soap shelf One smooth shampoo shelf Universal – Left or Right	

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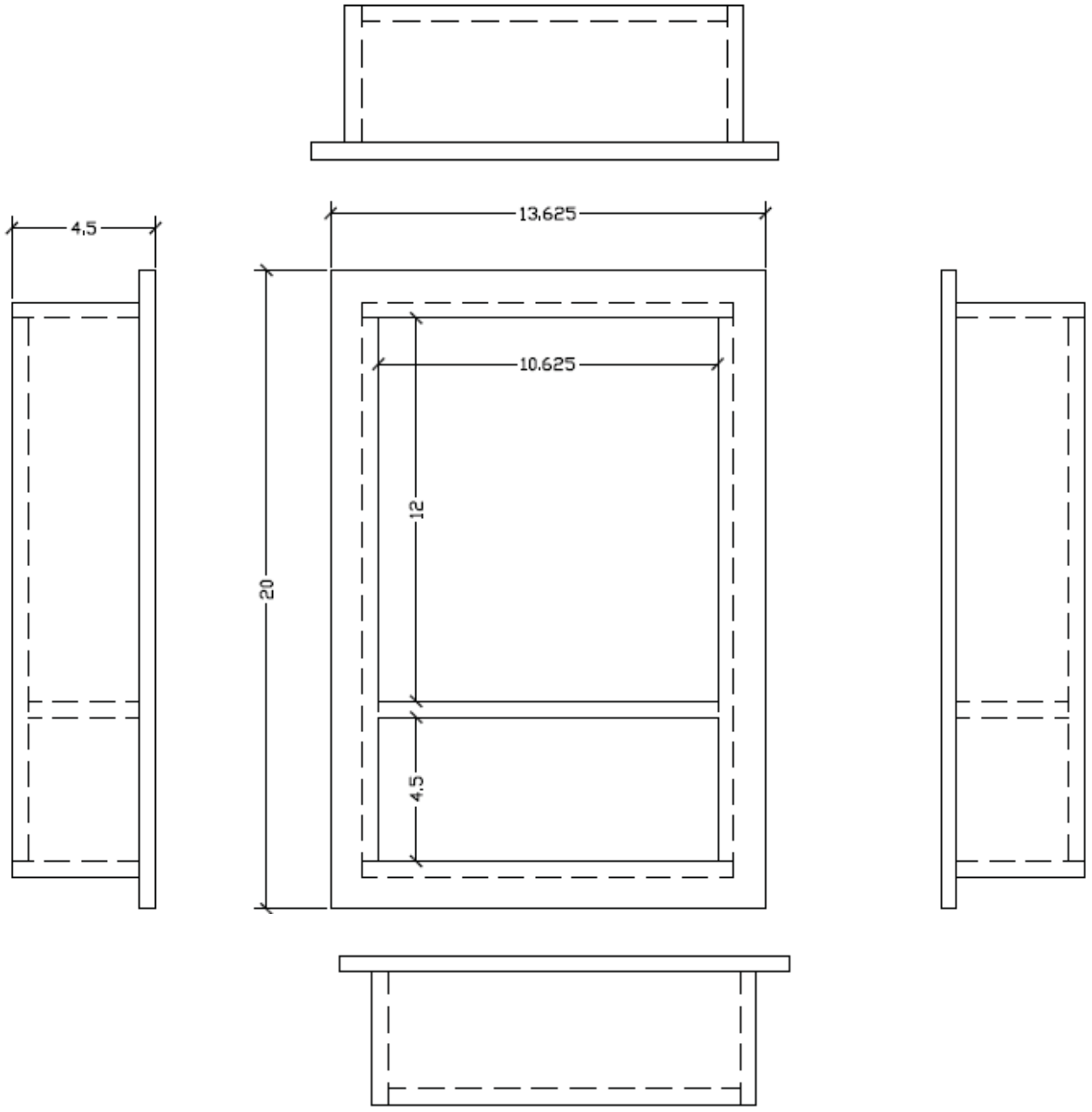
Recessed Wall Caddy



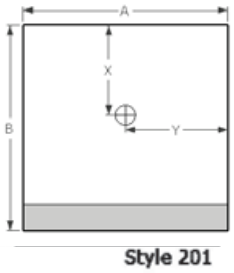
Requires on-site cutout and installation

COLOR GROUP

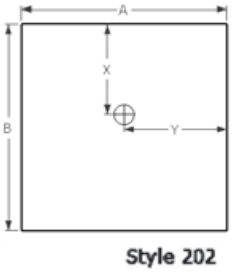
2-Wall	Panel Width	A	B	C	D
36" x 36" x 72"	Side: 35" Back: 35-3/8"	$866.00	$875.00	$1,000.00	$1,211.00
36" x 36" x 84"		$877.00	$897.00	$1,023.00	$2,077.00
36" x 36" x 96"		$889.00	$1,071.00	$1,241.00	$2,105.00
38" x 38" x 72"	Side: 37" Back: 37-3/8"	$881.50	$898.00	$1,023.00	$1,234.00
38" x 38" x 84"		$893.00	$1,090.00	$1,258.00	$2,101.00
38" x 38" x 96"		$905.00	$1,095.00	$1,265.00	$2,129.00
3-Wall, 3-Panel					
32" x 32" x 72"	Side: 31" Back: 30-3/4"	$1,125.00	$1,149.00	$1,309.00	$1,614.00
32" x 32" x 84"		$1,196.00	$1,328.00	$1,531.00	$2,702.00
32" x 32" x 96"		$1,211.00	$1,355.00	$1,561.00	$2,737.00
32" x 36" x 72"	Side: 31" Back: 34-3/4"	$1,162.00	$1,183.00	$1,348.00	$1,661.00
32" x 36" x 84"		$1,219.00	$1,378.00	$1,587.00	$2,783.00
32" x 36" x 96"		$1,235.00	$1,396.00	$1,608.00	$2,820.00
32" x 48" x 72"	Side: 31" Back: 46-3/4"	$1,178.00	$1,202.00	$1,367.00	$1,949.00
32" x 48" x 84"		$1,237.00	$1,397.00	$1,604.00	$3,344.00
32" x 48" x 96"		$1,253.00	$1,586.00	$1,839.00	$3,389.00
34" x 36" x 72"	Side: 33" Back: 34-3/4"	$1,179.00	$1,203.00	$1,370.00	$1,965.00
34" x 36" x 84"		$1,239.00	$1,401.00	$1,613.00	$2,829.00
34" x 36" x 96"		$1,255.00	$1,420.00	$1,635.00	$2,868.00
34" x 48" x 72"	Side: 33" Back: 46-3/4"	$1,202.00	$1,222.00	$1,389.00	$1,981.00
34" x 48" x 84"		$1,287.00	$1,420.00	$1,631.00	$3,401.00
34" x 48" x 96"		$1,305.00	$1,613.00	$1,870.00	$3,447.00
36" x 36" x 72"	Side: 35" Back: 34-3/4"	$1,183.00	$1,207.00	$1,375.00	$1,971.00
36" x 36" x 84"		$1,243.00	$1,406.00	$1,619.00	$3,400.00
36" x 36" x 96"		$1,260.00	$1,425.00	$1,641.00	$3,446.00
36" x 48" x 72"	Side: 35" Back: 46-3/4"	$1,218.00	$1,230.00	$1,398.00	$1,995.00
36" x 48" x 84"		$1,296.00	$1,430.00	$1,642.00	$3,424.00
36" x 48" x 96"		$1,314.00	$1,624.00	$1,883.00	$3,470.00
3-Wall, 4-Panel					
30" x 60" x 60"	Side: 29" Back: 58-3/4"	$1,062.00	$1,150.00	$1,314.00	$1,567.00
30" x 60" x 72"		$1,076.00	$1,165.00	$1,331.00	$1,587.00
30" x 60" x 84"		$1,091.00	$1,361.00	$1,572.00	$2,719.00
30" x 60" x 96"		$1,106.00	$1,553.00	$1,809.00	$2,756.00
32" x 60" x 60"	Side: 31" Back: 58-3/4"	$1,323.00	$1,340.00	$1,546.00	$1,903.00
32" x 60" x 72"		$1,336.00	$1,358.00	$1,566.00	$1,928.00
32" x 60" x 84"		$1,381.00	$1,557.00	$1,811.00	$3,346.00
32" x 60" x 96"		$1,400.00	$1,579.00	$1,836.00	$3,392.00
34" x 60" x 60"	Side: 33" Back: 58-3/4"	$1,328.00	$1,344.00	$1,551.00	$1,909.00
34" x 60" x 72"		$1,347.00	$1,362.00	$1,572.00	$1,934.00
34" x 60" x 84"		$1,390.00	$1,563.00	$1,817.00	$3,358.00
34" x 60" x 96"		$1,409.00	$1,584.00	$1,842.00	$3,403.00
36" x 60" x 60"	Side: 35" Back: 58-3/4"	$1,334.00	$1,349.00	$1,556.00	$1,915.00
36" x 60" x 72"		$1,349.00	$1,367.00	$1,577.00	$1,941.00
36" x 60" x 84"		$1,400.00	$1,568.00	$1,823.00	$3,369.00
36" x 60" x 96"		$1,418.00	$1,589.00	$1,848.00	$3,415.00
Accessories*					
"Pie" Corner Shelves, set/2 SP6		$60.00	$60.00	$60.00	$60.00
"Triangle" Corner Shelves, set/2 ST6		$60.00	$60.00	$60.00	$60.00
Recessed Caddy		$225.00	$225.00	$225.00	$225.00

Accessories are available only with purchase of a shower or tub surround and are not offered separately.

Shower BASINS



Style 201



Style 202

Side Wall	Back Wall	A	B	C	D
#201, #202					
0 ≤ Side ≤ 34"	Max 60"	$1,050.00	$1,117.00	$1,201.00	$1,330.00
34 < Side ≤ 36"	Max 60"	$1,183.00	$1,250.00	$1,334.00	$1,464.00
36 < Side ≤ 48"	Max 60"	$1,320.00	$1,420.00	$1,546.00	$1,740.00

Please Specify

Style:_____

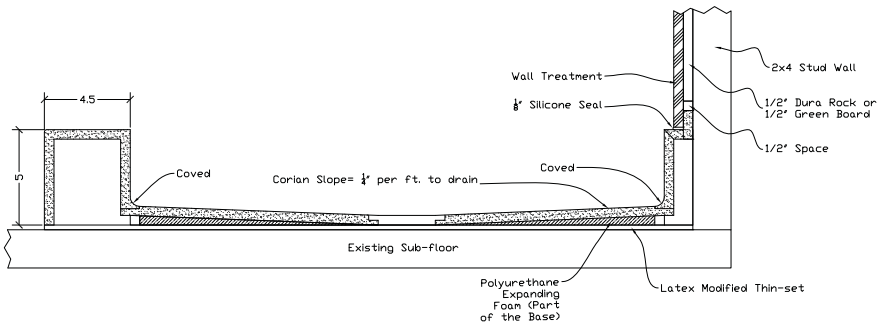
X=_____

Y=_____

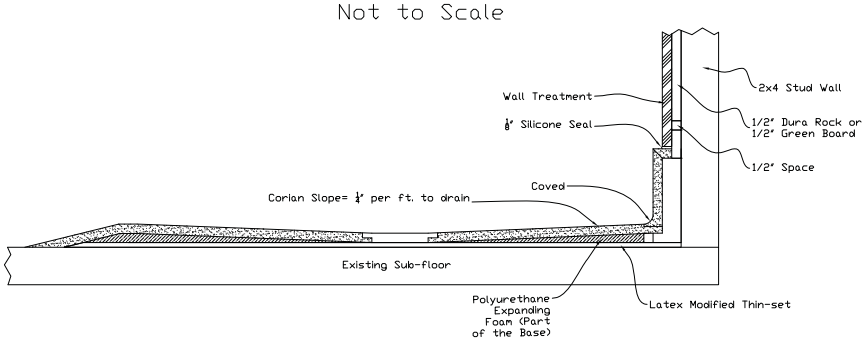
A=_____

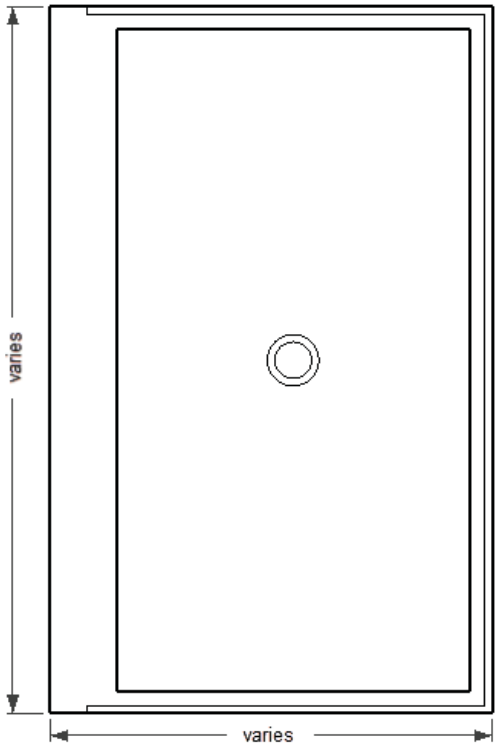
B=_____

1. Upon delivery, check the shower base for any damage that may have occurred during shipment. Report any visible damage to the driver upon delivery. Parksite will not be held liable for any damages that occur after delivery.
2. Attach the brass shower drain fitting (supplied with the base) to the opening. Tighten the large nut on the bottom of the base securely. Do not over tighten the nut. If using an alternative drain requiring a water seal, DuPont recommends only 100% silicone sealant with Corian®. If using a plumbers putty, use only stain-free putty and test in an inconspicuous area.
3. The floor where the base is to be installed must be flat and level. If the floor is not, skim or refloat the floor. Apply an even bed of latex modified leveling material to a clean sub floor using a ¼" notched trowel. It is important that the base is evenly supported in all areas. Do not shim the base.
4. The hole in the sub floor around the drain must be large enough for the nut on the bottom of the base to be recessed below the surface of the sub floor. If the nut is not recessed, excessive pressure will be placed on the drain and may result in cracking.
5. Place the base over the drain pipe and lower into position.
6. The base must not be wedged tightly in between studs. Be sure there is a 1/8" gap between the side of the base and the studs. Do not use any mechanical fasteners.
7. Be sure that the base sits solidly on the floor. Place a level on top of the side walls of the base and check that it is level in all directions. If the base is not level, please refer back to step 3.
8. Complete the drain connection.
9. Cure time for the leveling material is approximately 24 hours. (Cure times vary, please read the instructions that came with the leveling material.)
10. Water resistant drywall is now applied to the studs leaving a ½" air gap between the top of the base and the bottom of the drywall.



Not to Scale





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BOWLS

Manufactured with 100% DuPont™ Corian® Solid Surface | ADA compliant installation options | Made in the USA

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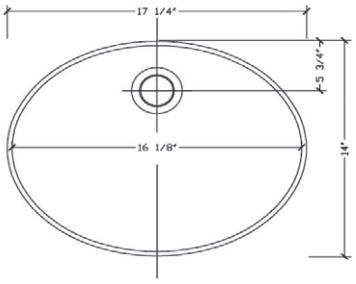
PS1714 Oval Lavatory Bowl

Optional center (standard) or offset drain location | Optional front (standard), offset, or side overflow | Ten Year Limited Warranty

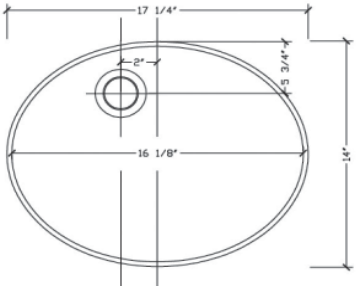
Outside: 17 ¼" x 14" x 6 ½"
Inside: 16 1/8" x 12 7/8" x 4 5/8"
Installed: 16 1/8" x 12 7/8" x 5 1/8"

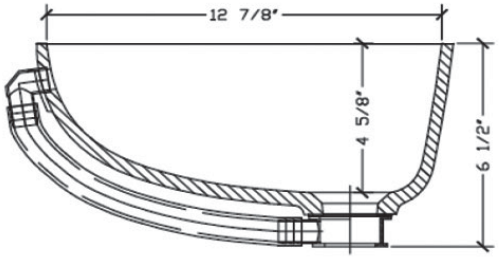
Description / Part#	Group	1 unit	2 units	3+ units
PS1714 Oval Center Drain	A	n/a	n/a	n/a
	B	$225.00	$150.00	$135.00
	C	$266.00	$172.00	$150.00
	D	$330.00	$207.00	$195.00
PS1714 Oval, Offset Offset Left Drain	A	$205.00	$145.00	$115.00
	B	$235.00	$160.00	$145.00
	C	$276.00	$182.00	$160.00
	D	$340.00	$217.00	$205.00

Standard Center Drain #PS1714



Optional Offset Drain #PS1714-Offset



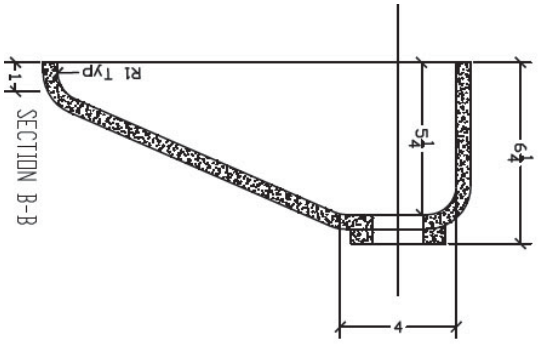


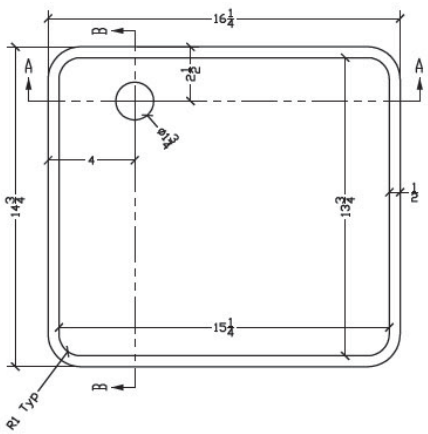
PS1514 Rectangular Lavatory Bowl

Optional Left Rear Overflow | Meets FGI guidelines for hand-washing sinks | One Year Limited Warranty

Outside: 16 1/4" x 14 ¾" x 6
Inside: 16 1/8" x 12 7/8" x 4 5/8"
Installed: 16 1/8" x 12 7/8" x 5 1/8"

Description / Part#	Group	1 unit	2 units	3+ units
PS1514 Rectangle Left Rear Drain	A	$285.00	$240.00	$230.00
	B	$320.00	$260.00	$250.00
	C	$360.00	$285.00	$275.00
	D	n/a	n/a	n/a





PARKSITE STANDARD TERMS AND CONDITIONS

The customer ("Buyer") agrees that the relationship between Buyer and any division or subsidiary of Parksite, Inc. (collectively referred to as "Seller"), including all quotations and sales of products by the Seller to the Buyer are subject to the terms and conditions contained herein ("Standard Terms and Conditions"). These Standard Terms and Conditions are incorporated into each purchase order submitted by Buyer and every order acknowledgement and invoice issued by Seller.

1. **Quotes**. Seller may from time to time issue quotes that contain pricing, certain terms, project information, and other information. Seller may decide in its sole discretion whether or not to provide quotes to Buyer, including without limitation the decision not to provide any quotes to Buyer or to limit quotes to certain products or sites. While quotes will lock in specific prices, all individual purchase orders issued by Buyer are subject to acceptance in Seller's sole and absolute discretion. Once accepted by Seller, orders issued by Buyer are non-cancelable.

2. **Entire Agreement/Exclusion of Other Terms**. All purchases made by Buyer from Seller shall be governed by these Standard Terms and Conditions, regardless of whether the purchase is subject to any attached quote. Except for specific prices, quantities and delivery terms contained in order acknowledgements issued by Seller, these Standard Terms and Conditions shall supersede in their entirety any additional or contrary terms and conditions which may be contained in Buyer's purchase order, proposal, request for quotation, confirmation, acknowledgment or other form or instrument that may be delivered or signed by either party in connection with any of the transactions contemplated hereunder. Such form or instrument shall be for the convenience of the parties only and shall not affect, modify, limit or negate these Standard Terms and Conditions, except as provided for herein. Any additional or different contrary terms proposed by Buyer are deemed to materially alter the Standard Terms and Conditions and are hereby objected to and rejected by Seller. Any such additional and/or different terms and conditions submitted by the Buyer shall not become part of any agreement unless an authorized representative of Seller consents in writing to such additional and/or different terms and conditions by making specific reference to the additional and/or different terms and conditions and only for the specific order as to which the consent is made.

3. **Taxes**. Unless indicated otherwise on the face of a quote, quote prices shall be exclusive of all local, state, and federal sales or excise taxes, Buyer shall pay any local, state or federal sales, use, excise, value added and similar taxes, whether separately invoiced or added to the invoice for products sold hereunder, if applicable or shall provide satisfactory evidence of exemption from such taxes.

4. **Delivery**. Products shall be delivered F.O.B. Seller's warehouse unless otherwise specified on the face of the quote. Any delivery dates are estimates only.

5. **Delays, Allocations**. Seller will not be liable for any delay in the performance of orders, or in the delivery of products, delay or interference with placement of products, or for damages suffered by Buyer by reason of such delay when such delay is, directly or indirectly, caused by, or in any manner arises from fires, floods, accidents, civil unrest, acts of God, war, governmental interference or embargoes, strikes, labor difficulties, union regulations, shortage of labor, fuel, power, materials or supplies, transportation delays, damage to products in transit, Buyer's conduct or any other cause or causes beyond Seller's reasonable control. In the event of any delay or failure by Seller to deliver all or any part of the products in accordance with the terms hereof, as a result of any of the aforesaid causes, the date of delivery for such products will be extended for a period equal to the time lost by reason of the delay, as determined by Seller. However, if in the opinion of Seller, the delay will exceed ninety (90) days, Seller may, at its option, terminate its obligations to deliver such products. In the event that manufacturing or selling capacity of Seller is curtailed by reason of any such cause, Seller reserves the right to allocate, in its business judgment, such products as may be available among its customers, including customers not then under contract.

6. **Unavailability of Products**. In the event any orders accepted hereunder for products that are discontinued or are otherwise unavailable to Seller at the time of delivery, Seller may notify Buyer and may, in its sole discretion and without liability to Buyer terminate the quote as to the unavailable products.

7. **Damaged Goods/Return Policy**. Buyer agrees to notify Seller in writing within five (5) business days after delivery of any products that do not conform to manufacturer specification or that are delivered in a damaged condition. All products except those as to which such notice is given will be deemed to have been delivered in satisfactory condition. Buyer's sole right as to damaged product shall be repair or replacement, at Seller's discretion. All returns are subject to inspection by Seller.

8. **Exclusion of Warranties and Release of Liability**. Buyer acknowledges that Seller is a distributor and not the manufacturer of any products and that Buyer has selected the products based upon specifications issued by the manufacturer. Buyer also acknowledges that Seller has no responsibility for any installation or servicing of products. Accordingly, Buyer releases from and covenants not to sue Seller for any claims arising from any alleged defects in the design or manufacture of the products purchased from Seller and shall indemnify Seller against any negligent acts or omissions of Buyer or its employees, agents or representatives in connection with the installation, demonstration, display, sale or servicing of any of products purchased by Buyer from Seller. All statements made on or in goods, labels, brochures, advertising and specifications are made solely by the product manufacturers, and not by Seller, and Seller does not endorse or approve of those statements. Seller makes no warranties regarding the products. **ALL WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING THE WARRANTIES OF MERCHANTABILITY, FREEDOM FROM INFRINGEMENT OR FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. SELLER SHALL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES**, whether or not caused by negligence and however caused and whether or not the parties had been notified of the likelihood of such damages. Seller will provide all reasonable assistance to Buyer in obtaining the benefits of warranties issued by product manufacturers. In no event shall Seller's liability to Buyer in connection with any sale of goods exceed the amount paid by Buyer to Parksite for the goods.

9. **No Agency**. The relationship between Seller and Buyer shall be that of vendor and vendee. Buyer and its agents and employees are not partners, joint venturers, franchises, agents, employees or representatives of Seller. Buyer may not enter any promise, warranty, contract or other commitment for Seller or obligate Seller to third parties.

10. **Assignment**. Buyer may not assign any of its rights under the Agreement without the written consent of Seller. Seller may refuse consent with or without cause.

11. **Severability**. It is agreed that if any provision of the Agreement be held unenforceable or otherwise void by any tribunal of competent jurisdiction, such provision will be deemed deleted, and the remainder of the document(s) will continue to be binding upon the parties as if such provision had never been a part hereof.

12. **Credit Terms and Terms of Payment**. Seller may establish an aggregate maximum amount ("**Maximum Credit Amount**") for the amount of credit to be extended to Buyer at any point in time and may, in its sole discretion, reduce or otherwise modify such amount, without prior notice to Buyer. All quotes shall constitute a single extension of credit to Buyer by Seller. The establishment of any aggregate maximum shall not in any way affect the discretion of Seller to stop giving quotes or to fix the terms of payment in any quote. Buyer acknowledges that the exercise of Seller's discretion may result in the failure of Seller to issue a quote, accept an order, or extend credit that Buyer may believe is necessary to accomplish its business goals; however, Buyer understands and agrees that it is necessary for Seller to have complete and total discretion over the extension of credit to Buyer. Buyer agrees to provide from time to time at Seller's request, such financial information as Seller may request in connection with Seller's extension of credit, all of which information Buyer represents will be true and correct.

Unless otherwise set forth on the face of a quote or an invoice, payment shall be due for each delivery of goods to Buyer on the 30th day from date of invoice. If payment is not received by the due date, a late charge shall begin accruing on the due date at a rate equal to 1.5% per month, or if less, the maximum rate permitted by law. In the event that Buyer is in default of any payment due, Seller may withhold delivery on or cancel any undelivered order. Buyer waives any right of set off against amounts due on any invoice any claims it may have against Seller

13. **Security Interest**. Buyer hereby grants to Seller a security interest in all of the Collateral as security for the Obligations "**Collateral**" means the following property and interests in property of the Buyer, whether now owned or hereafter arising or acquired, and wheresoever located: (i) all products sold by Seller to Buyer; and (ii) all proceeds of the foregoing, including but not limited to insurance proceeds payable by reason of loss or damage to the foregoing. "**Obligations**" means all present and future liabilities, obligations of payment and performance, and indebtedness of Buyer to Seller, of whatever kind, now due or to become due, absolute or contingent, and whether joint, several, or joint and several. Buyer authorizes Seller to file one or more UCC financings statement in perfection of this security interest.

14. **Default**. The occurrence of one or more of the following events shall constitute a default by Buyer under this Agreement (a "Default"). a) Buyer shall fail to perform when due any Obligation b) Any representation made to Seller by Buyer or by any guarantor, surety, issuer of a letter of credit, or any person other than Buyer primarily or secondarily liable with respect to any Obligation (each a "Guarantor") shall not be true when made, c) Buyer or any Guarantor shall i) die, become insolvent or unable to pay its debts as they become due, or ii)if a business, cease to do business as a going concern, or iii)terminate or attempt to terminate any guaranty or other obligations to Seller or iv)make an assignment for the benefit of creditors, apply to or petition any tribunal for the appointment of a custodian, receiver or trustee for itself or any substantial part of its assets, or commence any proceeding with respect to itself under any bankruptcy, reorganization, readjustment of debt, insolvency, receivership, dissolution or liquidation law or statute of any jurisdiction, or if there shall have been filed any such application or petition, or any such proceeding shall have been commenced against Buyer or any Guarantor; d)Fraudulent Transfer or Concealment. Buyer or any Guarantor shall conceal, remove, transfer, or permit to be concealed, removed, or transferred any part of its assets so as to hinder, delay, or defraud any of its creditors or so as to constitute a fraudulent act under any bankruptcy, insolvency, fraudulent conveyance or similar law; and, e) Any material adverse change in Buyer's or any Guarantor's business, operations, or condition (financial or otherwise).

15. **Remedies Upon Default**. Upon the occurrence of a Default, Seller shall have the following rights and remedies, which shall be in addition to any and all rights and remedies under the Uniform Commercial Code of Illinois and other applicable law, all of which rights and remedies shall be cumulative and not exclusive to the extent permitted by law. a) Without prior notice to Buyer, Seller may immediately suspend any previously established Maximum Credit Amount. b) Seller shall have the option to terminate any order or quote immediately and/or to declare any and all Obligations immediately due and payable without notice or demand. Buyer waives notice of intent to accelerate, and of acceleration of, Obligations. Seller shall specifically have the right to take immediate and exclusive possession of the Collateral or any part thereof wherever it may be found and also may enter any of the premises of Buyer, with or without process of law, without force, and search for the same, and, if found, to take possession of, and remove such Collateral, or any part thereof. Seller may take possession of the Collateral or any part thereof on Buyer's premises and cause it to remain there at Buyer's expense, pending sale or other disposition. Buyer waives any right to judicial proceedings prior to Seller's exercise of such right of repossession. Buyer shall at Seller's request assemble the Collateral and make it available to Seller, at Buyer's expense, at a place designated by Seller. Seller may sell, transfer, and dispose of the Collateral or any part thereof at public auction or private sale, as Seller may elect at its option. Seller reserves the right to bid and become the purchaser at any such sale. Any notice of disposition shall be deemed reasonably and properly given if given to Buyer at least 10 days prior thereto. d) Any payments or proceeds of Collateral may be applied by Seller to the payment of the reasonable expenses of retaking, holding, preparing for sale, and selling the Collateral, including reasonable attorneys' fees and legal expenses, and any balance of such proceeds may be applied by Seller toward the satisfaction of Obligations under this Agreement or any other agreement with Seller in such order of application as Seller may in its sole discretion determine. Any surplus may be paid first to the holder of any subordinate security interest if Seller has received timely and satisfactory written notice of such subordinate security interest, and then to Buyer. Buyer agrees to pay any deficiency immediately upon demand.

16. **Attorneys' Fees, Expenses**. In the event an action is commenced by either party against the other to enforce any of the provisions hereof, the prevailing party shall be entitled to recover from the other party reasonable attorneys' fees, court costs, and necessary disbursements incurred in connection with such action.

17. **Governing Law.** All sales transactions between Buyer and Seller shall be governed by the substantive laws of the State of Illinois.

AVONITE SURFACES
A Brand of Aristech Surfaces LLC

SSM-4,5,6

AVONITE® SHOWER SYSTEMS

YOUR SHOWER. YOUR WAY.

Avonite® Shower Systems give you the perfect solution for your bathroom design projects. When you choose our highly customizable shower bases paired with our Wet Wall panel system, you get the flexibility and performance you expect from Avonite Surfaces®.

WWW.AVONITE.COM

Shower Bases

Avonite Surfaces® shower bases can be designed to have the drain placed in the location you need and are available in 8 different colors to match our solid surface shower wall panels. Our durable, impact resistant shower bases are stain resistant and easy to clean. They feature a non-slip pebbled floor with a built-in slope and water channels for easy drainage, eliminating standing water.

Features and Benefits

- Available in standard and custom sizes
- Standard or customized drain location
- Front/rear or center trench with specified drain location
- Single back wall up to 60" x 96" (1524 mm x 2438 mm)
- Inside corner trim pieces
- Matching accessories available
  - Recessed soap/shampoo holder
  - Grab bars, fold-down shower seats and shower curtain rods available upon request

Standard Selection, Non-ADA Shower Bases

Full Curb Center Drain[1]	36" x 36"	914 mm x 914 mm
Neo Angle[1]	42"	1067 mm

ADA Style Shower Bases

ADA Front Trench[2]	30" x 60"	762 mm x 1524 mm
ADA Front Trench[2]	36" x 60"	914 mm x 1524 mm
ADA Low Curb Center Drain[1]	36" x 36"	914 mm x 914 mm
ADA Front Trench Drain[1]	36" x 36"	914 mm x 914 mm

[1] *One Piece Cast Model*
[2] *Fabricated Model*

Sizes listed are standard offering. Other sizes available in both ADA and NON-ADA.

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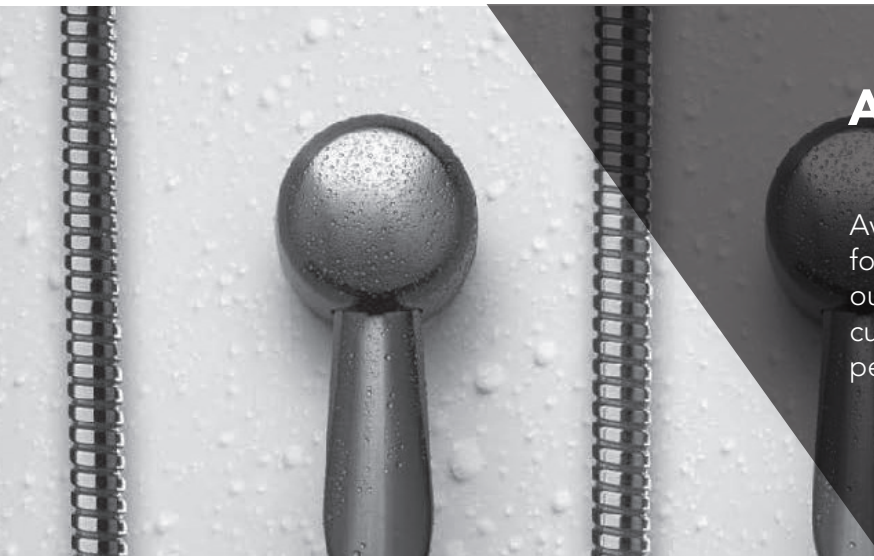
A Brand of Aristech Surfaces LLC



AVONITE® SHOWER SYSTEMS

YOUR SHOWER. YOUR WAY.

Avonite Shower Systems give you the perfect solution for your bathroom design projects. When you choose our Wet Wall panel system paired with our highly customizable shower bases, you get the flexibility and performance you expect from Avonite.

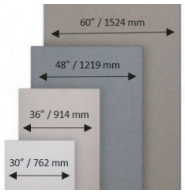
WWW.AVONITE.COM

Wet Wall Panel System

The Avonite® Wet Wall panel system is ideal when used with our shower bases. Our acrylic solid surface panel system keeps water in and gives pathogens no place to grow. Whether you need to make the whole room water-protected or are installing traditional shower or stall units, using our panels and optional components are the perfect choice.

Features and Benefits

- Preferred choice for wet wall applications
- Affordable, low cost of ownership
- Easy, seamless installation thanks to panels up to 60"x 96" (1524 mm x 2438 mm)
- Continuous nonporous surface is the ideal material for infection control
- Easy maintenance and long life cycle



Wet Wall panel systems are the preferred choice for the challenging environments found in today's healthcare, military and education facilities requiring optimal performance in wet conditions. With our **Right Size™ program** and the availability of 60-inch panel widths, you can now have the premium performance of solid surface in a custom size. (Minimum Order Required).

Panels up to 60"x 96" (1524 mm x 2438 mm)

Available Colors

Bone 8010	Creme 8024	Stormy Gray 9010	Sand Storm 9036	High Desert 9037	Ivory 8106	Malt 7810	White 8016

ARISTECH SURFACES

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ML100007.5 06/17

SSM-7

Lavatory Systems

A complete handwashing package with innovative style and durability.

Verge LVL-Series

Advocate® Lavatory Systems

Verge® Lavatory Systems

Express® Lavatory Systems

Frequency® Lavatory Systems

BRADLEYCORP.COM

Bradley®

Advocate AV-Series

Lavatory Systems

Bradley introduced the first Lavatory System over 20 years ago to provide a unique, convenient, long-lasting handwashing solution for the public restroom. A single specification plus fewer rough-ins to reduce installation time and cost.

Advocate® Lavatory Systems AV-Series

The first lavatory system to provide completely touchless soap, water and hand drying all in one space. Everything's within reach! The all-in-one Advocate® delivers hi-tech convenience, comfort and safety.

- Soap, water and hand drying in one location creates a safer environment by keeping water off the floor
- Large capacity, top-fill, touchless soap dispenser, with low level indicator
- Hygienic hands-free touchless, .38gpm (1.44 lpm) faucet, that reduces water usage by 24%
- Touchless, high efficiency, dual-sided hand dryer at each hand washing station

U.S. Patent Numbers D663016; D674967; D68020; other patents pending.

NEW Verge LVS-Series

Verge® Lavatory Systems

Characterized by its sleek and modern design, as well as its durability and low-maintenance features. The Verge® Lavatory system incorporates a beautifully sculpted basin made from natural quartz, conveying upscale sophistication. Choose from LVR-Series, LVG-Series, LVL-Series or the **NEW** LVS-Series.

U.S. Patent Numbers: D001205496-0001-0004; D625792; D629877; D633922; D640778; D642664; D649232; other patents pending.

Model LVRD2

Model LVGD2

Model LVLD2

Model LVSD2

NEW Express ELX-Series

Express® Lavatory Systems

Express® Lavatory Systems install in half the time than a bank of china sinks and require fewer connections for lower installation costs. With one continuous bowl to clean, maintenance is made easy.

U.S. Patent Numbers: 2121886; 5369818; 5611093; 7952233; 8113483; 8113483; D398969; D398969; D433109; D447224; D447224; D511821; D527085; D539400; D539400.

Model ELX-3

NEW ELX-Series

The perfect alternative to china sinks and laminate countertops

Model MG-3

MG-Series

One-piece solid surface basin with integral sprayhead body

Model SS-3N

SS-Series

Removable sprayhead for easy maintenance and shelf space

Model CRS-2

Crescent® CRS-Series

Integral spayhead and unique, low profile design to save space

Frequency® Lavatory Systems

These patented multi-height fixtures allow adults, children and those with disabilities to easily access the fixture at the same time.

U.S. Patent Numbers: 1651819; 2435228; 60200402 4406.6; 7039963; D477060; D484958; D496450; D507634; D527809; D537927; D561315; other patents pending.

Model FL-3L

Model FL-2H

Model FL-1L

	Number of stations	ADA-compliant models	Vandal resistance	Materials		Sprayhead	Faucet	Trap Covers		Applications
				Evero	Terreon & TerreonRE			Stainless Steel	High Impact Polymer	
ADVOCATE LAVATORY SYSTEMS										
Advocate AV-Series	1,2,3	•	Low–Medium		•		•		•	convenient stores, restaurants, healthcare
VERGE LAVATORY SYSTEMS										
Verge LVR-, LVG-, LVL-, LVS-Series	1,2,3	•	Low–Medium	•			•	•		higher education, office, hospitality
EXPRESS LAVATORY SYSTEMS										
Express ELX-Series	2,3	•	Medium		•		•		•	schools, retail, transit stations
Express MG-Series	2,3	•	Medium–High		•	•			•	schools, stadiums, parks
Express SS-Series	1,2,3	•	Medium		•	•	⊙		•	schools, department stores
Express Crescent CRS-Series	2,3	•	Medium		•	•			•	schools, distribution centers
FREQUENCY LAVATORY SYSTEMS										
Frequency FL-Series	1,2,3	•	Low–Medium		•		•	•	•	museums, theme parks, airports

*Evero® A blend of natural quartz, granite, exotic materials and bio-based resin

**Terreon® & Terreon®RE Solid surface material and Recycled solid surface material

⊙ = SS-1N Only

Visit bradleycorp.com for colors and technical documents

+1 262 251 6000
800 BRADLEY bradleycorp.com
W142 N9101 Fountain Boulevard
Menomonee Falls, WI USA 53051

3926-5-0116

Stunning, seamless designs with the beauty of natural quartz.

BRADLEYCORP.COM

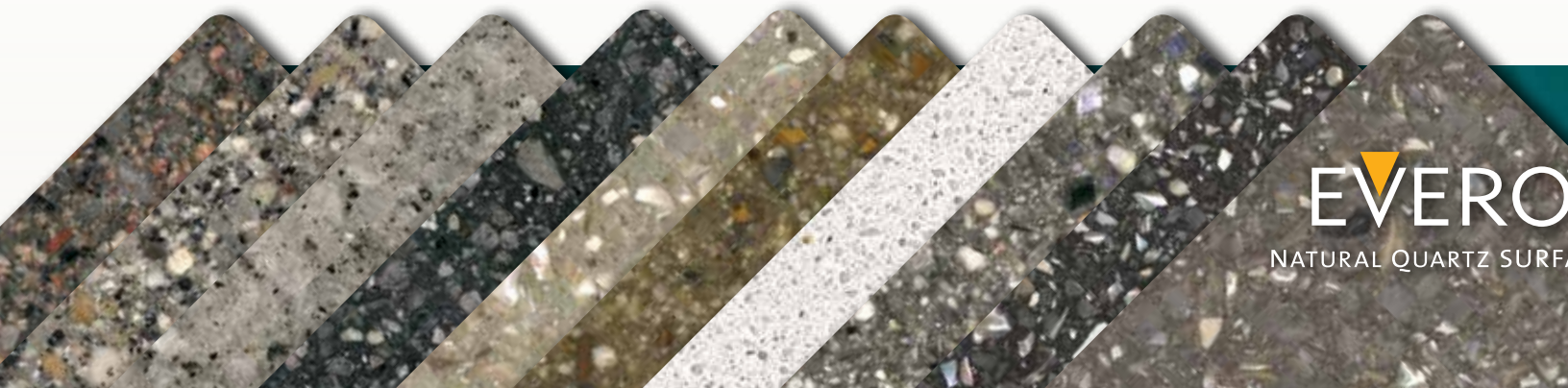
Bradley®

VERGE®
LAVATORY SYSTEMS

SLEEK.

LVS-Series Lavatory System NEW

Linear, open concept design with gentle curves
that creates personal hand washing space.



E L E G A N T . R E F I N E D .

LVR-Series Lavatory System

Clean, angular design creates exciting energy.

GREENGUARD GOLD

Evero is the first and only natural quartz material that can be molded into sophisticated shapes giving you not only stunning design options but a high performance product that is as beautiful as it is long lasting.

LVL-Series Lavatory System

Sleek, rimless design with a minimal profile.

GEO SERIES COLORS

Blends natural quartz, granite, recycled glass and other exotic materials in a bio-based resin. **25% RECYCLED CONTENT.**

PEARL SERIES COLORS

Blends natural quartz, seashells, and recycled glass in a bio-based resin. **75% RECYCLED CONTENT.**

LVG-Series Lavatory System

Organic, graceful design with gentle curves
and soft radii for a relaxing atmosphere.

A Bradley Exclusive

Verge® Lavatory Systems bring sophisticated forms to the commercial restroom in a beautiful, durable, natural quartz surface.

Verge is characterized by clean and simple designs, as well as durable, low maintenance features. Stainless steel enclosures complete the design aesthetic to conceal plumbing and provide easy accessibility.

As with all Bradley lavatory systems, Verge provides the total package. One specification. One manufacturer. A complete turn-key solution ready to install with no additional fabrication required on site.

All Verge models are ADA-compliant and available in 1, 2, or 3 station models.

Visit bradleycorp.com/verge for colors and technical documents

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4212-1115

EVERO®

CAST-FORMED NATURAL QUARTZ

Bradley®

BRADLEYCORP.COM

EVERO®

CAST-FORMED NATURAL QUARTZ

Distinctive Beauty, Extraordinary Performance

Inspired by nature, Evero is the first and only quartz material that is cast into round and curved shapes with no fabrication or seams. Imagine graceful curves, distinctive shapes and effortless beauty that will last a lifetime.

Virtually maintenance-free, Evero provides a refined look for commercial washroom spaces.

VERGE®

Stunning, Seamless, One-Piece Designs with the Beauty of Natural Quartz

Verge® Wash Basins bring sophisticated designs in Evero cast-formed material to the restroom. Verge basins are artistically sculpted, elongated sinks featuring cast, one-piece construction – no unsightly caulk lines or discolored seams. Verge hand washing solutions are available in a variety of designer-inspired shapes to complement any public, hand washing experience.

LVS

Smart, understated elevations create personal space in a linear design.

LVR

Bold, balanced design that exudes confidence and energy.

NEW

Verge with WashBar™

Another breakthrough from the inventor of all-in-one technology. Verge with WashBar™ – a harmony of contemporary form with clean - rinse - dry functionality.

LVQ

LVL

Clean lines with a rimless, minimal profile.

LVG

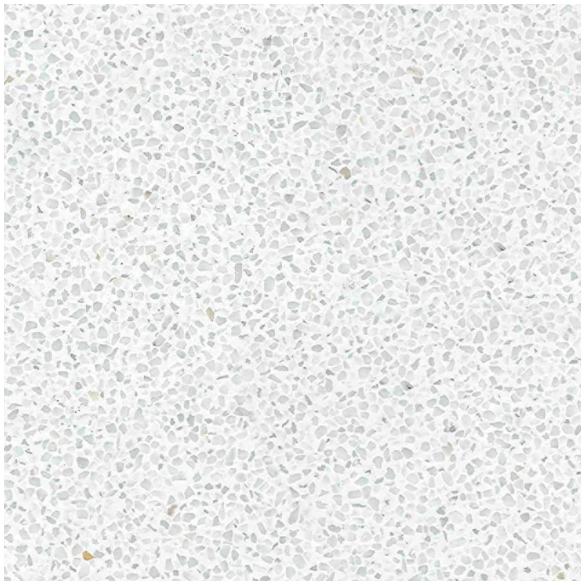
Organic, graceful welcoming design.

A Backdrop of Sophistication

Evero **Geo Series**

Designers take inspiration from around the world and so did we – from the mountains of Nepal to the deserts of Africa to the islands of Greece. The Geo Series fuses the beauty of quartz with the durability of granite and the allure of exotic materials and semi-precious stones. Evero Geo Series is a striking material that performs as magnificently as it looks.

Mykonos



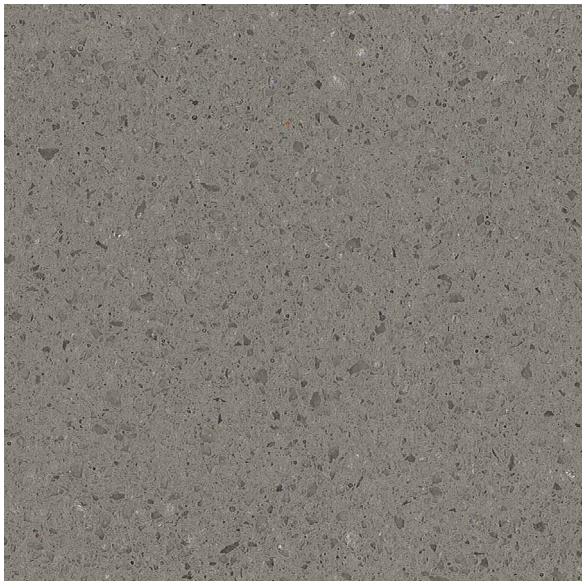
Everest

Antarctica

Andorra

Kalahari

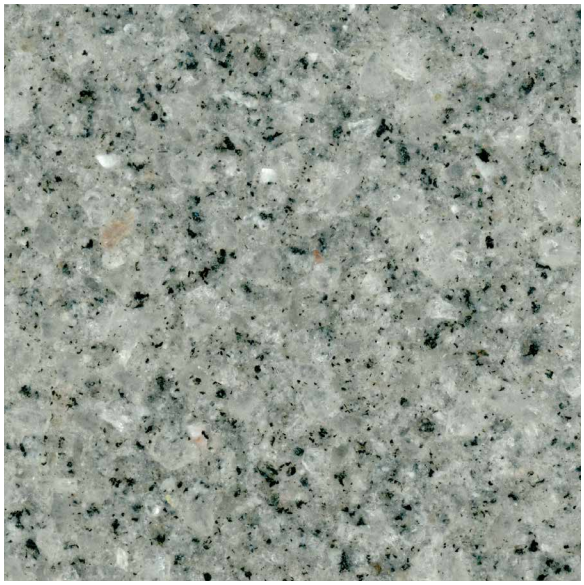
Mojave



Denali

Sierra Madre

Patagonia



Glacier Bay

Yukon

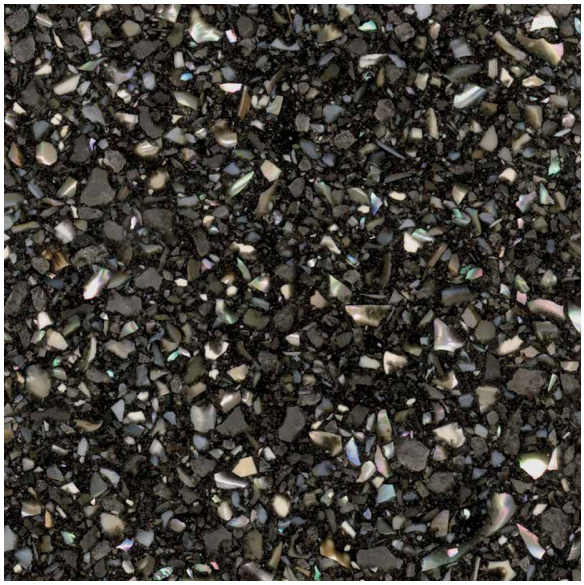
Black Sea

A Backdrop of Luminosity

Evero **Pearl Series**

The ancient Japanese believed pearls were created from the tears of mermaids. The Chinese believed dragons carried pearls between their teeth. No matter how they came to be, the Pearl Series mesmerizes with a luminous blend of quartz, opalescent sea shells and recycled glass. Evero Pearl Series is an impressive material that performs as brilliantly as it looks.

Akoya



Black Moon

Black Moon

The Elegance of Quartz with the Durability of Granite

Evero is a durable long-lasting material featuring a 15-year warranty. It is non-porous, completely seamless, and easy to clean and maintain. The absence of cracks or crevices prevent bacteria from accumulating. Evero contains natural material components and is GREENGUARD® certified as a low-emitting material. Evero: The natural solution for your commercial hand washing design journey.

Black Sea

	Evero	Granite	Laminate
Smooth, Non-Porous Surface	✓		
Durable, Long-Lasting	✓		
Low Maintenance	✓		✓
Scratch Resistant	✓	✓	
Resistant to Household Cleaners	✓		
Heat Resistant	✓	✓	
Stain Resistant	✓		✓
Mold and Mildew Resistant	✓		
UV Light Resistant, Colorfast	✓	✓	

Both Geo and Pearl Series are GREENGUARD and GREENGUARD for Children and Schools certified.

Note: Due to printing variances, actual color and sheen of the material may differ. Contact your Bradley representative for material samples.

MADE in the USA
OF U.S. AND IMPORTED MATERIALS

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4240-3-0218

Bradley®

Window Treatments

2019

WT-1,3

EcoVeil®

Naturally inspired shadecloths

MechoSystems
Design with light.®

EcoVeil® Screens

The first environmentally certified product of its kind

Beyond PVC-free

These non-PVC shadecloths are woven of an extruded proprietary fiber whose thermoplastic olefin (TPO) jacket covers a polyolefin core.

Features

- Reclaimable and fully recyclable.
- Flame retardant.
- Washable.
- UV-resistant.
- Antifungal.
- Low emission of volatile organic compounds (VOCs).

Certifications

The GREENGUARD® Certification Program:

Industry-independent, 3rd-party testing that ensures products and materials designed for use in indoor spaces meet strict chemical emissions limits, which contribute to the creation of healthier interiors.

Cradle to Cradle Certified™ Program for products:

An innovative approach to sustainability, which models manufacturing processes on the biological metabolism found in natural ecosystems.

Version 3.1

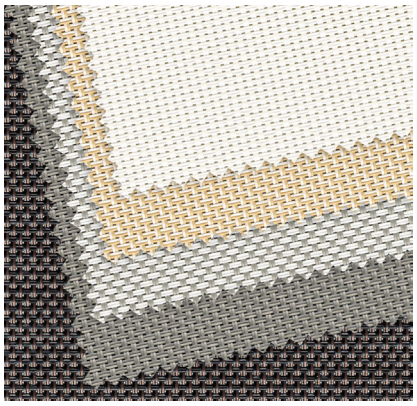
EcoVeil Screens

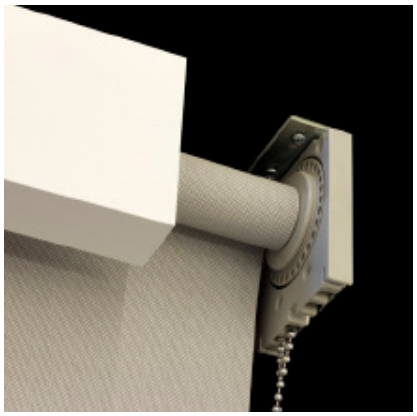
The idea was inspired by William McDonough's and Dr. Michael Braungart's book, *Cradle to Cradle: Remaking the Way We Make Things.* Extensive time and funds were committed toward research and development.

The result is a truly eco-effective sunscreen material. As an integral element of MechoSystems' manual, UrbanShade® or Mecho®/5 systems, the products represent the first complete window treatments to be recognized as Cradle to Cradle Certified™ Bronze products.

Versatile application

The lightweight material—weighing about a third less than traditional PVC/polyester screen cloths—makes it possible to easily lift larger shades.

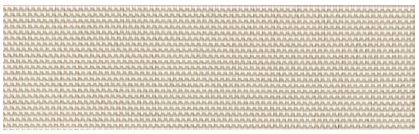




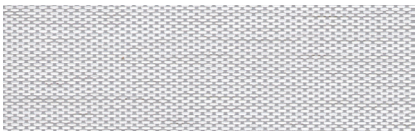
EcoVeil® Screens 0950 Series
1% open

- Seven colors
- 100% TPO
- 96 in. (244cm) wide
- Pass NFPA 701-2004

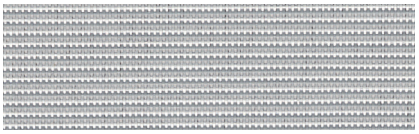
0951 White



0952 Beige

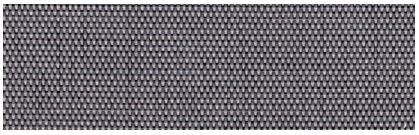


0969 Silver Birch

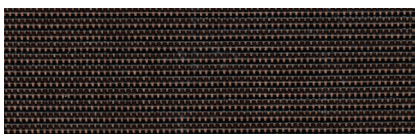


0963 Grey

0966 Eggshell



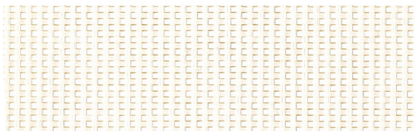
0970 Shadow Grey



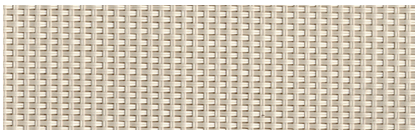
0954 Black/Brown

EcoVeil Screens 1350 Series
5% open

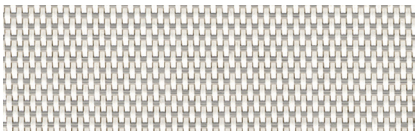
- Seven colors
- 100% TPO
- 96 in. (244cm) wide
- Pass NFPA 701-2004



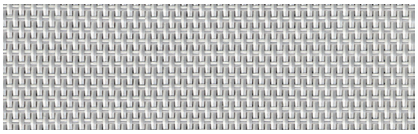
1351 White



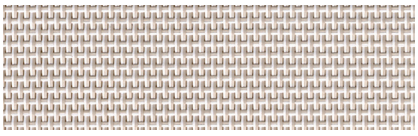
1352 Beige



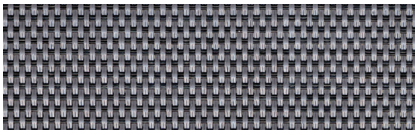
1369 Silver Birch



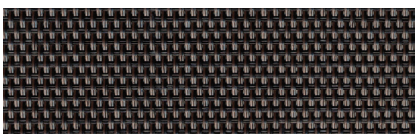
1363 Grey



1366 Eggshell



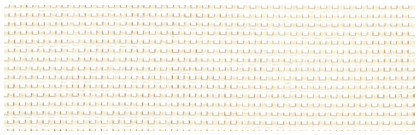
1370 Shadow Grey



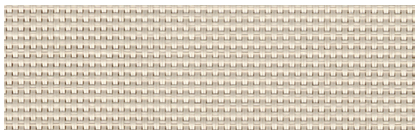
1354 Black/Brown

EcoVeil Screens 1550 Series
3% open

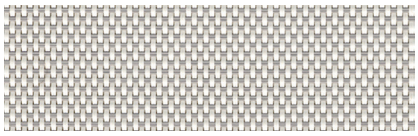
- Seven colors
- 100% TPO
- 96 in. (244cm) wide
- Pass NFPA 701-2004



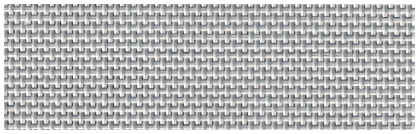
1551 White



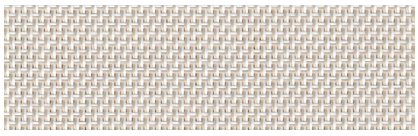
1552 Beige



1569 Silver Birch



1563 Grey



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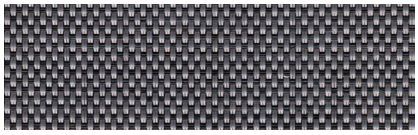
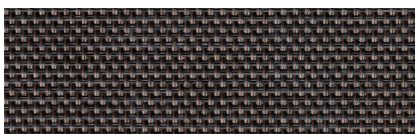


1570 Shadow Grey



1554 Black/Brown

LEED® Innovation in Design

Because EcoVeil is Cradle to Cradle Certified™ Bronze, architects, building developers, owners, and renovators can use a manual Mecho®/5 solar-shading system, a manual UrbanShade® System, or a motorized ElectroShade® System with EcoVeil shadecloth to contribute toward a LEED Innovation in Design credit.

To receive the credit, the percentage of Cradle to Cradle Certified materials must be at least 2.5% of the total materials costs. The credit can help a building achieve LEED Certification under the guidelines of U.S. Green Building Council's (USGBC) LEED Green Building Rating System.

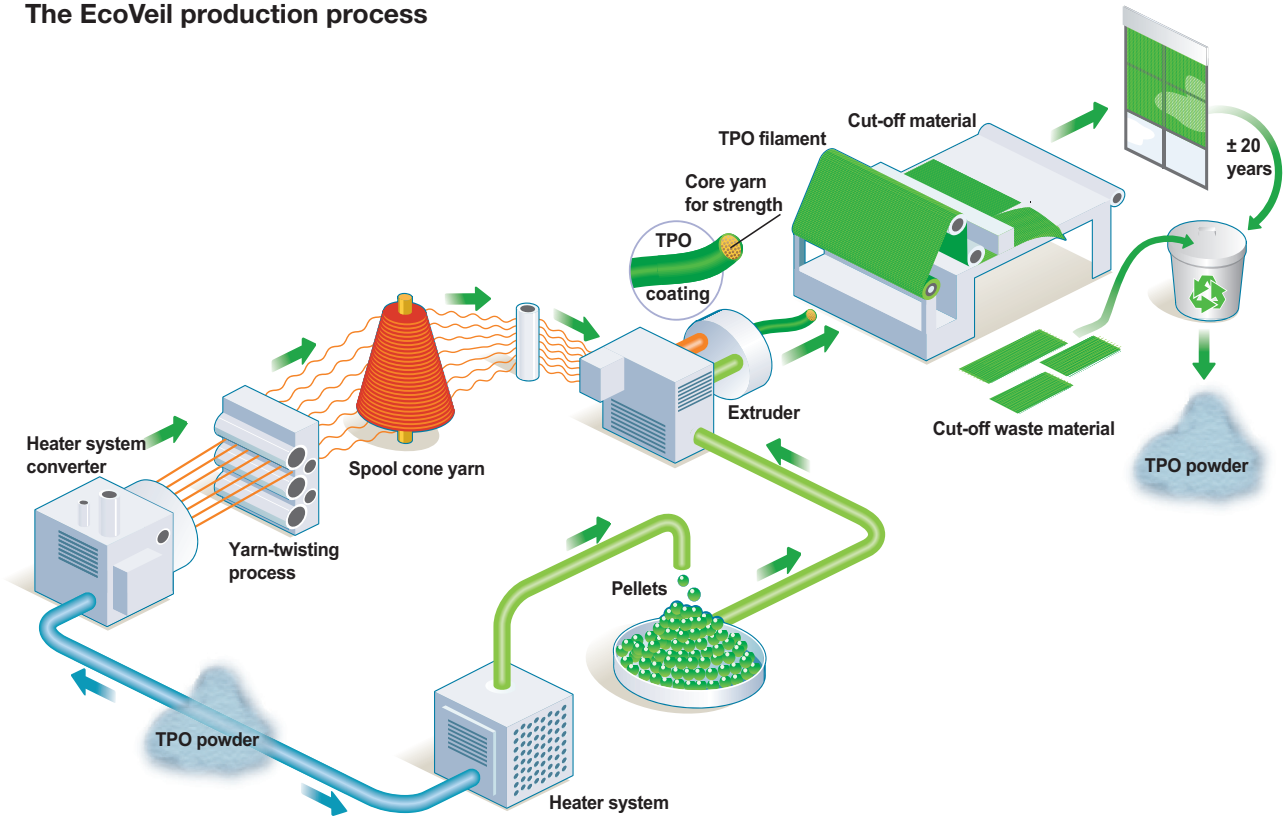
Citations granted to EcoVeil

- 2009: *Interior Design* magazine's Best of Year Merit award winner for EcoVeil® Naturals
- 2009: Best of NeoCon® Silver award in two categories: Window Treatments and Healthcare Textiles
- 2007: Certificate for Excellence, Materials ConneXion
- 2006: Design & Sustainability award, *insideout* magazine
- 2006: *Interior Design* magazine's ROSCOE/Best of Year Merit award winner for the Mecho®/5 with EcoVeil® Screens
- 2004: Top-10 Green Building Product, GreenSpec® listed, a BuildingGreen.com citation

Version 3.1

Recyclable PVC-Free FR

The EcoVeil production process



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Note: Specifications (including colors) subject to change without notice. Other widths might be available on special order. Minimums and lead times apply.

L10007.0416

WT-2,4

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Shadecloth

Automation
SolarTrac®
SunDialer®
Daylight Control

Manual shades
Motorized shades
MagnaShade®
ShadeLoc®
UrbanShade®
WhisperShade® IQ2®
Control systems
Room Darkening
Speciality Shades
WhisperTrac®
Shadecloth
Accessories
Download binder
News
Literature
GSA information
Sustainability
For dealers only
Warranty

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Introduction - The Research Behind Our Fabrics
Light vs. Dark Colors
Polyester vs. Fiberglass
Why shades?

Collections
Blackout
SoHo ThermoVeil Basket Weaves
EcoVeil
EcoVeil Sheer
AcoustiVeil
EuroVeil, EuroTwill
ThermoVeil Vertical, Satin/Diamond

Resources
Shadecloth Features Selector
Shadecloth Specifications
Test Reports
Shadecloth Selection Guide
Shadecloth Cleaning Instructions

Blackout Shadecloth Collection

Equinox | Midnite | MirroFilm | Classic Blackout | Distinctive Blackout | Chelsea

Equinox Blackout

0100 Series (opaque)

This series is composed of a PVC-free fiberglass material with an opaque acrylic backing that is appropriate for multimedia areas. The fabrication provides thermal insulation, offers opacity at the window wall, is flame retardant and fade resistant. The window-facing side of the textile is white.

Content: 66% acrylic (coating), 34% fiberglass (yarn)
Openness factor: 0% (opaque)
Stocked: 98 in. (249cm) wide
NFPA 701-2004: pass

To request a sample, send an e-mail to samples@mechosystems.com

- quarter-memo samples, 4 1/4 x 5 1/2 in. (11 x 14cm)
- memo samples, 8 1/2 x 11 in. (22 x 28cm)
- large samples, 24 x 24 in. (61 x 61cm)

Winter 0118

Interior Doors

2019

VWP-3,4,5
DOORS

Acrovyn® Doors
Tech Data Manual

Construction Specialties®

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Overview of Acrovyn Door Systems

Features & Benefits

- Acrovyn Doors will not tear, chip, or crack. Key to the doors durability is the rugged Acrovyn face and edge material.
- Acrovyn is 5 times as abrasion resistant as wood and twice as resistant as HPL.
- Integrated Acrovyn or stainless steel radiused edge guards wrap around both door stiles to provide the ultimate damage protection
- If ever damaged, the Acrovyn Door's edge guards & stiles can be easily replaced in the field for a longer door life.*
- Contains no PBT's & is completely free of PVC
- Standard line of Acrovyn Doors are C2C certified at the Silver level

Acrovyn Face & Edge Finish Options

- 20 standard woodgrain & 2 metal Chameleon Acrovyn finishes available in a smooth suede texture
- 67 standard Acrovyn solid colors
- Stainless steel edges available in 20Ga type 304, #4 finish

Technical Data

- Standards: WDMA I.S.1-A Extra Heavy Duty Door
- Lites & Louvers: Cutouts, vision kits, glazing, and louvers available*
- Pre-machining available for all mortise hardware from manufacturer's templates & approved shop drawings
- Warranty: Limited Lifetime
- Top & bottom rails are factory sealed with an approved sealant.

*As noted on the individual product data sheets

Standard Construction

U.S. Patents:
7,621,102; 7,587,876; 7,775,013-B2; 7,886,501-B2.

U.S. Design Patents:
D512 785S; D515 713S; D517 224S; D517 701S; D518 185S

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Performance Attributes

All Door Products*

- **Cycle Slam:** Extra Heavy Duty per WDMA TM-7, -2,000,000 cycles *(2x the WDMA requirement)*
- **Hinge Loading:** Extra Heavy Duty per WDMA TM-8
- **Screw Holding:** Extra Heavy Duty per WDMA TM-10
- **Door Finish Wear Index:** ASTM D4060-90 *(Abrasion Resistance Testing)*
- **Door Finish Chemical Resistance Testing:** ASTM D1308-93
- **Door Finish Impact Resistance:** ASTM D-4226
- **Warp Tolerance:** WDMA TM-2
- **Stain Resistance/Cleanability:** ASTM D1308-93 *(Common Stains Easily Removed)*
- **Resistance to Fungi:** ASTM G-21-96 – Zero Fungal Growth *(On Acrovyn Sheet)*
- **Resistance to Bacteria:** ASTM G-22-96 – Zero Bacterial Growth *(On Acrovyn Sheet)*
- **Resistance to Fungi:** ASTM G-21-2013 – Zero Fungal Growth *(At Replaceable Edge Seam)*
- **Resistance to Bacteria:** ASTM G-22-2013 – Zero Bacterial Growth *(At Replaceable Edge Seam)*

WDMA I.S.1A Flush Wood Door Minimum Performance Standards

Performance Attribute	Performance Duty Level		
	Extra Heavy Duty	**Heavy Duty**	**Standard Duty**
Adhesive Bond Durability, WDMA TM-6	Type I or Type II	Type I or Type II	Type I or Type II
Cycle Slam, WDMA TM-7	1,000,000 cycles	500,000 cycles	250,000 cycles
Hinge-Loading, WDMA TM-8	550 lbs. (2440 N)	475 lbs. (4110 N)	400 lbs. (1780 N)
Door Finishes Various ASTM test methods	TR-6/OP-6 or equal **	TR-4/OP-4 or equal **	TR-2/OP-2 or equal **
Screwholding, WDMA TM-10 Door Face (Blocked or unblocked) Vertical Door Edge Horizontal Door Edge	 550 lbs. (2440 N) 550 lbs. (2440 N) 300 lbs. (1330 N)	 475 lbs. (2110 N) 475 lbs. (2110 N) 240 lbs. (1060 N)	 400 lbs. (1780 N)*** 400 lbs. (1780 N) 180 lbs. (810 N)
Telegraph, Section T-1	Maximum 0.010 inch in any 3 inch span (0.25 mm in any 76 mm span)		
Warp Tolerance, Section T-2	Maximum 0.25 inch in any 3'-6" x 7'-0" (6.4 mm in any 1050 mm x 2100 mm) door section		
Squareness, Section T-3	Diagonal variance 1/8 inch (3.2 mm)		

* Acrovyn Door model FC5-NR, meets Extra Heavy Duty for all sections above with the exception of "Screwholding WDMA TM-10 (unblocked)"

** Other formulations may exhibit similar performance characteristics, but must meet or exceed the performance levels for the systems specified to be considered as equal.

*** If screw holding power is less than 400 lbs. (1780 N) in a Standard Duty door, blocking or thru-bolts are recommended for operable hardware.

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LEED® v4 Contributions

	Building Product Disclosure and Optimization Credits				Indoor Environmental Quality Credits	
	Environmental Product Declarations	Raw Materials FSC/POST/PRE Recycled Content	Material Ingredients (3rd party certification)	Regional Priority (manuf <100 miles away)	Low Emitting Materials (ULEF & NAF)	Emissions And Content (non-emitting)
Non-Rated – Agrifiber	C2C Silver	NO/0%/56%	C2C Silver	NO	YES	YES
Non-Rated – SCL	C2C Silver	NO/0%/0%	C2C Silver	NO	YES	YES
Non-Rated – FSC-PB	C2C Silver	YES/0%/100%	C2C Silver	NO	YES	YES
Non-Rated – PB	C2C Silver	NO/0%/58%	C2C Silver	NO	YES	YES
Non-Rated – SCL-STC30	C2C Silver	NO/0%/0%	C2C Silver	NO	YES	YES
Non-Rated – SCL-STC43-46	C2C Silver	NO/0%/0%	C2C Silver	NO	YES	YES
20min – Agrifiber	C2C Silver	NO/0%/0%	C2C Silver	NO	YES	YES
20min – SCL	C2C Silver	NO/0%/36%	C2C Silver	NO	YES	YES
20min – FSC-PB	C2C Silver	Yes/0%/0%	C2C Silver	NO	YES	YES
20min – PB	C2C Silver	No/0%/36%	C2C Silver	NO	YES	YES
45min – Mineral	C2C Silver	NO/0%/36%	C2C Silver	NO	YES	YES
60min – Mineral	C2C Silver	NO/0%/36%	C2C Silver	NO	YES	YES
90min – Mineral	C2C Silver	NO/0%/36%	C2C Silver	NO	YES	YES
Lead Lined – NR – Agrifiber	N/A	NO/0%/0%	N/A	NO	YES	YES
Lead Lined – NR – SCL	N/A	NO/0%/0%	N/A	NO	YES	YES
Lead Lined – NR – FSC-PB	N/A	YES/0%/56%	N/A	NO	YES	YES
Lead Lined – NR – PB	N/A	NO/0%/0%	N/A	NO	YES	YES
Lead Lined – 20min – FSC-PB	N/A	YES/0%/56%	N/A	NO	YES	YES
Lead Lined – 20min – PB	N/A	NO/0%/56%	N/A	NO	YES	YES

The U.S. Green Building Council's LEED® green building program is the preeminent program for the design, construction, maintenance and operations of high-performance green buildings. Learn more at usgbc.org/ LEED.

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LEED® 2009 v3.0 Contributions

	Materials & Resources Credits			Indoor Environmental Quality Credits
	MR 4 Recycled Content	**MR6 Rapidly Renewable**	**MR 7 Certified Wood**	**IEQ 4.4 No added Urea Formaldehyde**
Non-Rated – Agrifiber	X	X	X	X
Non-Rated – SCL			X	X
Non-Rated – FSC-PB	X		X	X
Non-Rated – PB	X			X
Non-Rated – SCL-STC30			X	X
Non-Rated – SCL-STC43-46				
20min – Agrifiber	X	X	X	X
20min – SCL			X	X
20min – FSC-PB	X		X	X
20min – PB	X			X
45min – Mineral				X
60min – Mineral				X
90min – Mineral				X
Lead Lined – NR – Agrifiber	X	X	X	X
Lead Lined – NR – SCL	X			X
Lead Lined – NR – FSC-PB	X		X	X
Lead Lined – NR – PB	X			X
Lead Lined – 20min – FSC-PB	X		X	X
Lead Lined – 20min – PB	X			X

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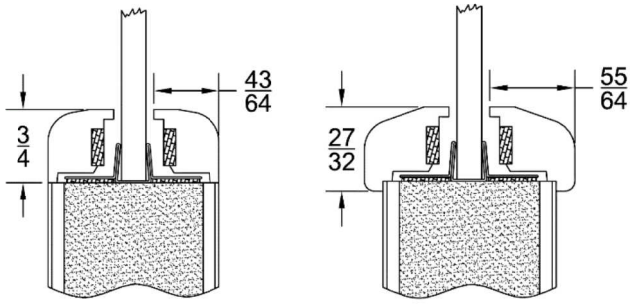
Lite Kit Options

Fire-Rated Wood Bead

Flush Lipped

*Max Glass Thickness = 5/16”

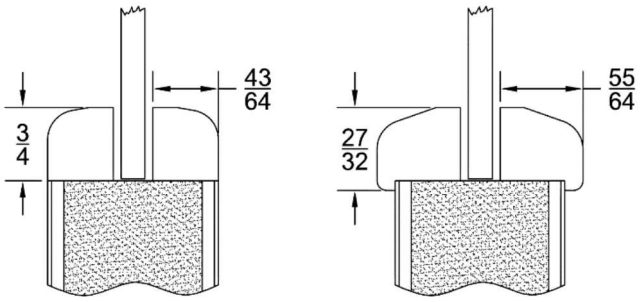


Installation of metal channel, mitering and installation of wood bead must be done at the time of glass installation

Non-Rated Wood Bead

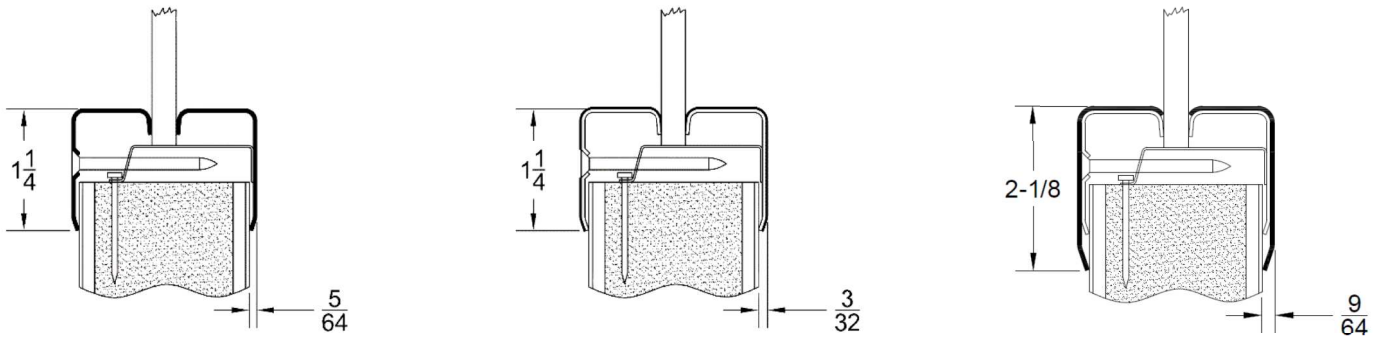
Flush Lipped

*Max Glass Thickness = 5/16”



Standard Metal Lite Kit (NR – 90min)

Painted Wood Veneered Acrovyn Wrapped



ALL DIMENSIONS NOTED ARE NOMINAL

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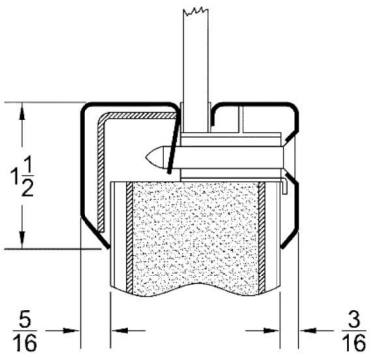
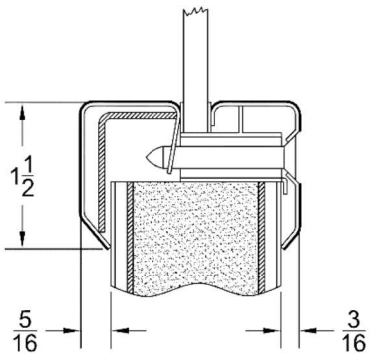
Lite Kit Options (Cont.)

Lead-Lined Metal Lite Kit (NON RATED)

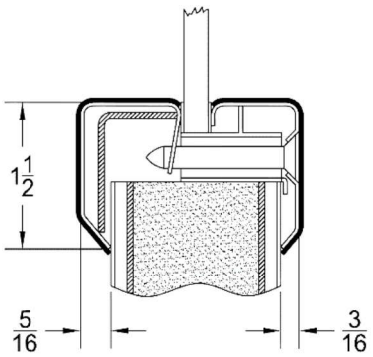
Painted



Wood Veneered

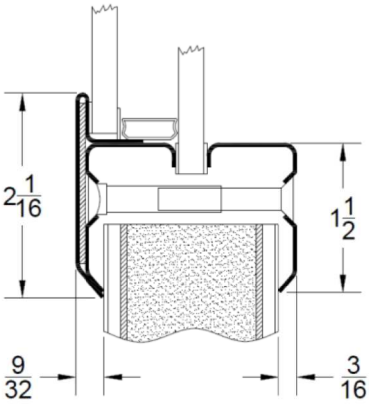


Acrovyn Wrapped

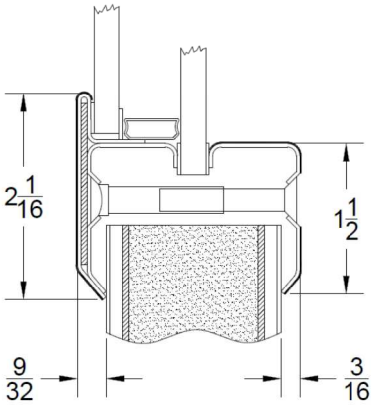


Lead-Lined Metal Lite Kit (FIRE RATED)

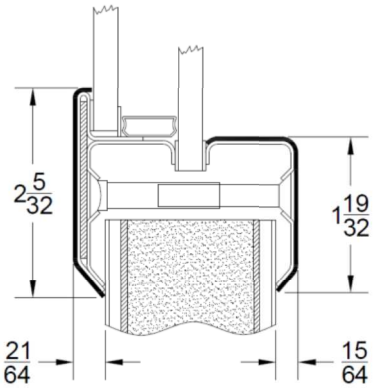
Painted



Wood Veneered



Acrovyn Wrapped



***Inner Pane** = Fire Rated Glass

***Outer Pane** = Lead Glass

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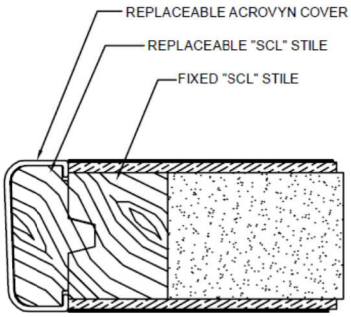
Door Edge Options

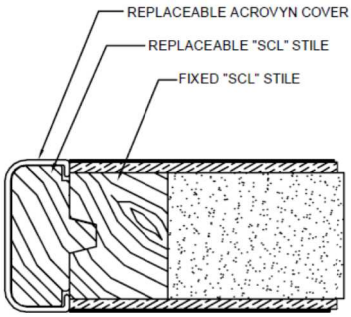
REPLACEABLE ACROVYN EDGE

STANDARD ON NR THRU 90 MINUTE DOORS*
REPLACEABLE IN FIELD

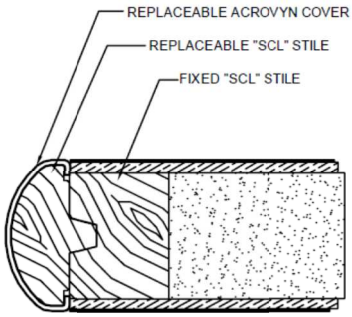
*Available in either Acrovyn (or) Stainless Steel
(Stainless Steel not available on Radius edge)
(Radius edge not available for fire rated doors)



BEVELED EDGE



SQUARE EDGE

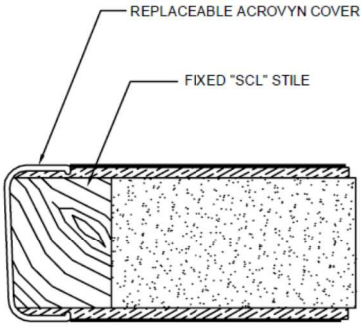


RADIUS EDGE

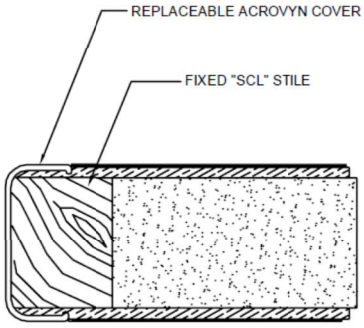
WRAPPED ACROVYN EDGE

STANDARD ON LL DOORS
REPLACEABLE IN FIELD

*Available in either Acrovyn (or) Stainless Steel



WRAPPED BEVELED EDGE

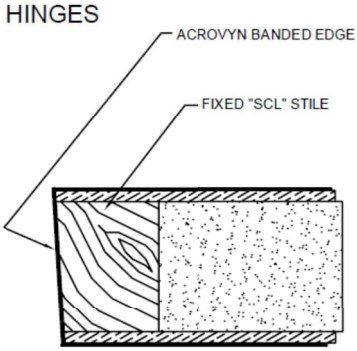


WRAPPED SQUARE EDGE

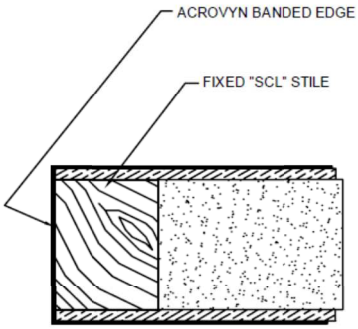
BANDED EDGE

AVAILABLE FOR SPECIAL REQUESTS ONLY
TYPICALLY USED ON HINGE EDGE WITH
EDGE GUARD TYPE HINGES

*Available only in Acrovyn



BANDED BEVELED EDGE



BANDED SQUARE EDGE

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Astragal Options

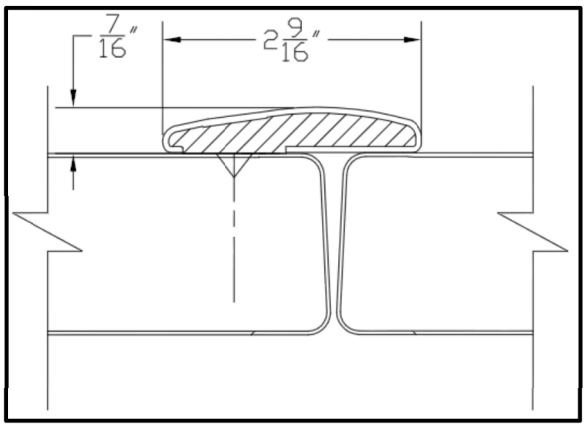
Features:

- Field replaceable Acrovyn cover
- Made with the same durable Acrovyn sheet as the rest of the door
- Perfect color match to the door
- Offers a low profile “airfoil” design to deflect hard impacts
- Can be through bolted or attached using standard fasteners
- Offers a concealed fastener design (Unless through bolted)

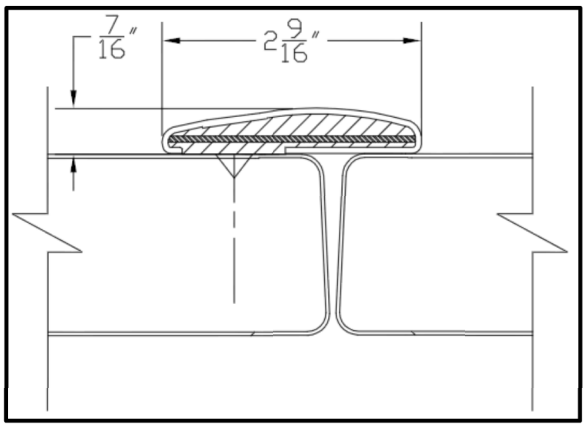
Applications:

- Acrovyn Door pairs do not require the usage of Astragals to maintain fire rating
- To be used as a sight seal
- Lead lined option available for use on lead lined doors.

Acrovyn Wrapped



Acrovyn Wrapped (Lead)



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Standard Panel Door Designs

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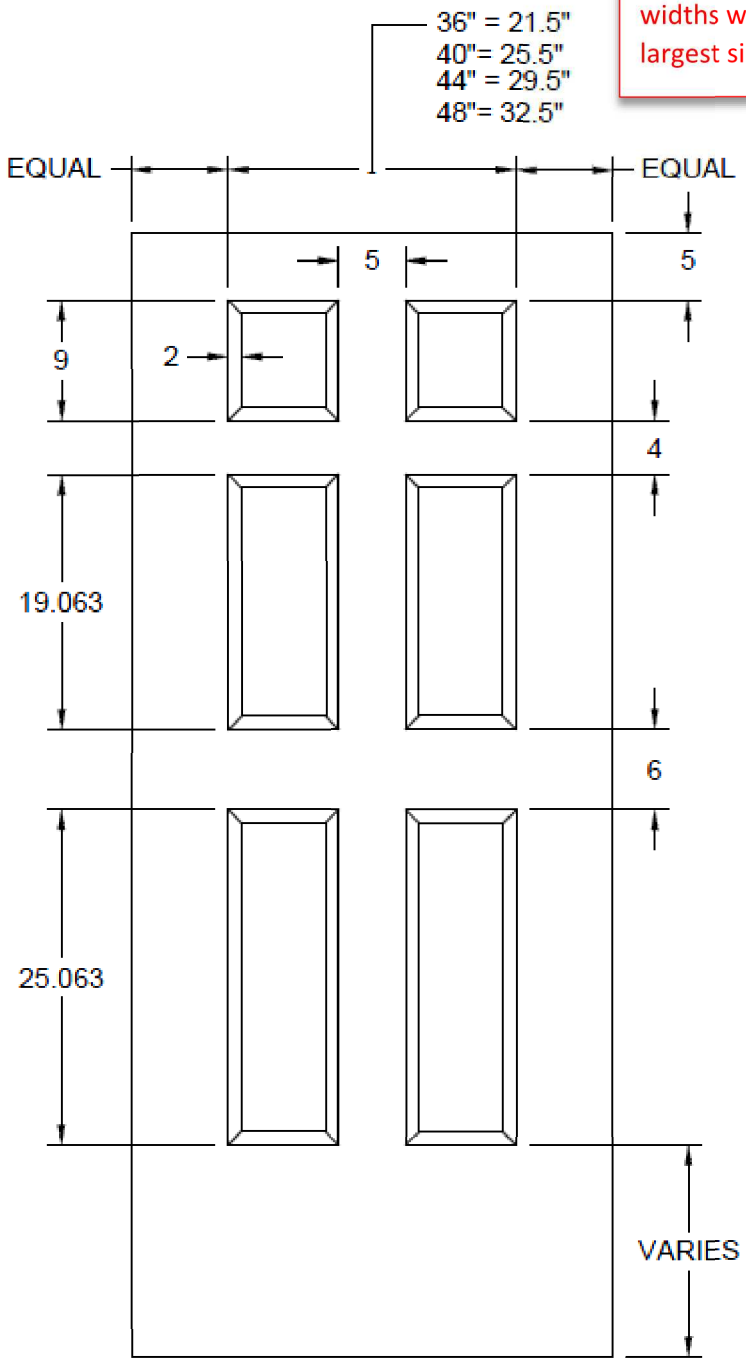
Montclair Panel Door Details

NOTE: If detailing door widths between the sizes noted, panel widths will be used from the next largest size



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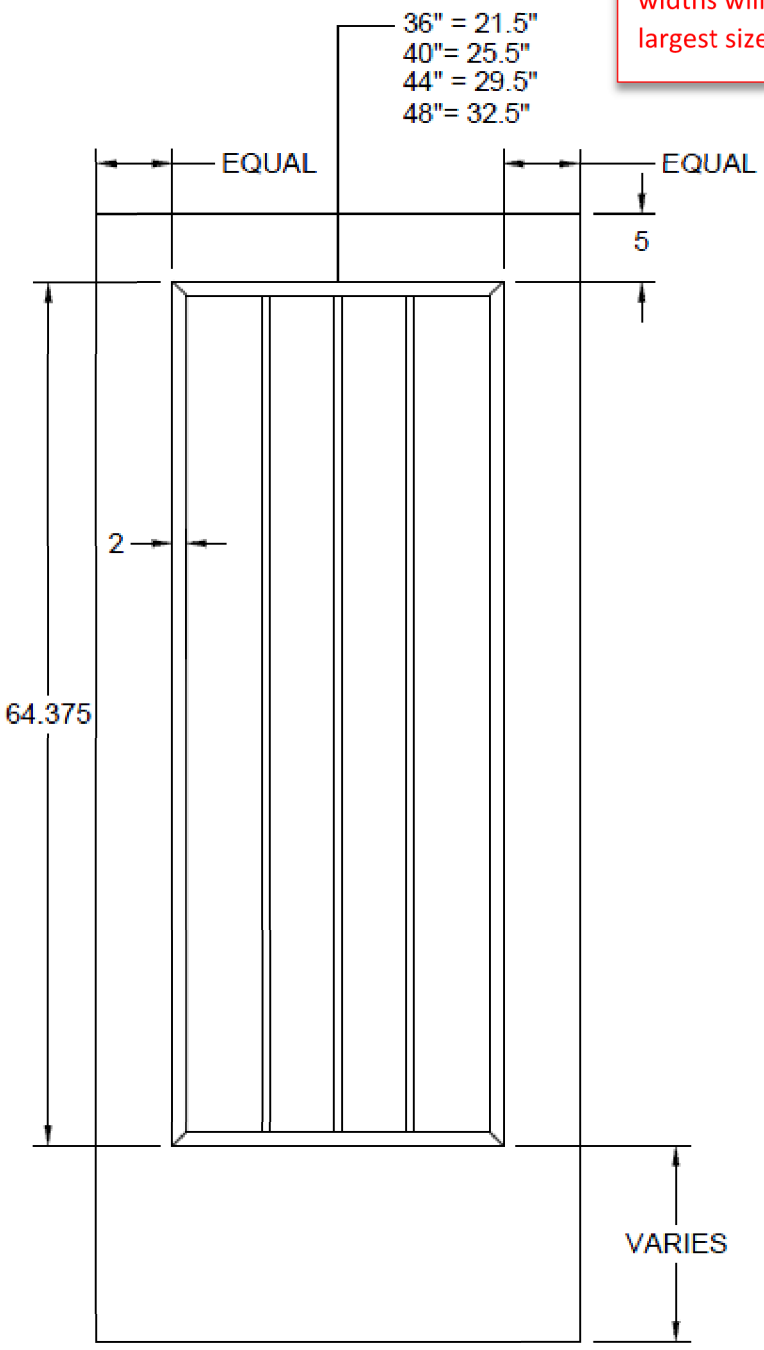
Somerset Panel Door Details

NOTE: If detailing door widths between the sizes noted, panel widths will be used from the next largest size



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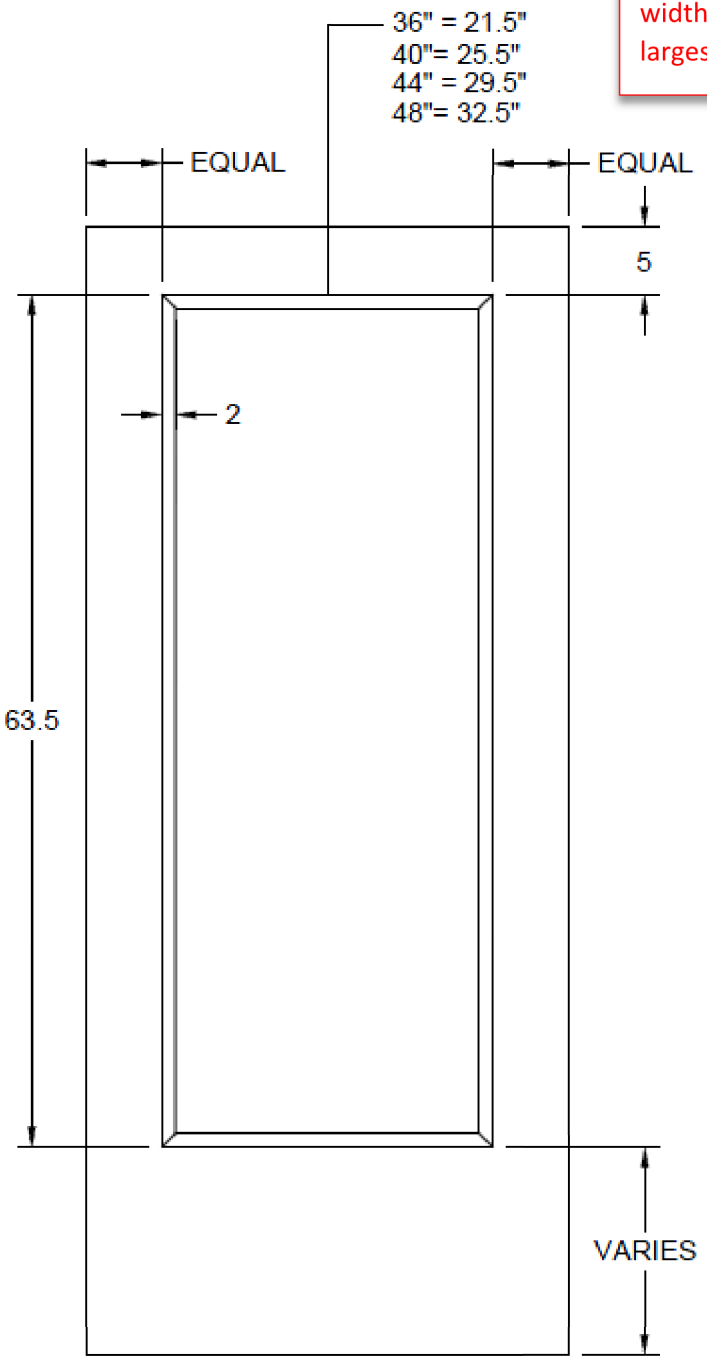
Madison Panel Door Details

NOTE: If detailing door widths between the sizes noted, panel widths will be used from the next largest size



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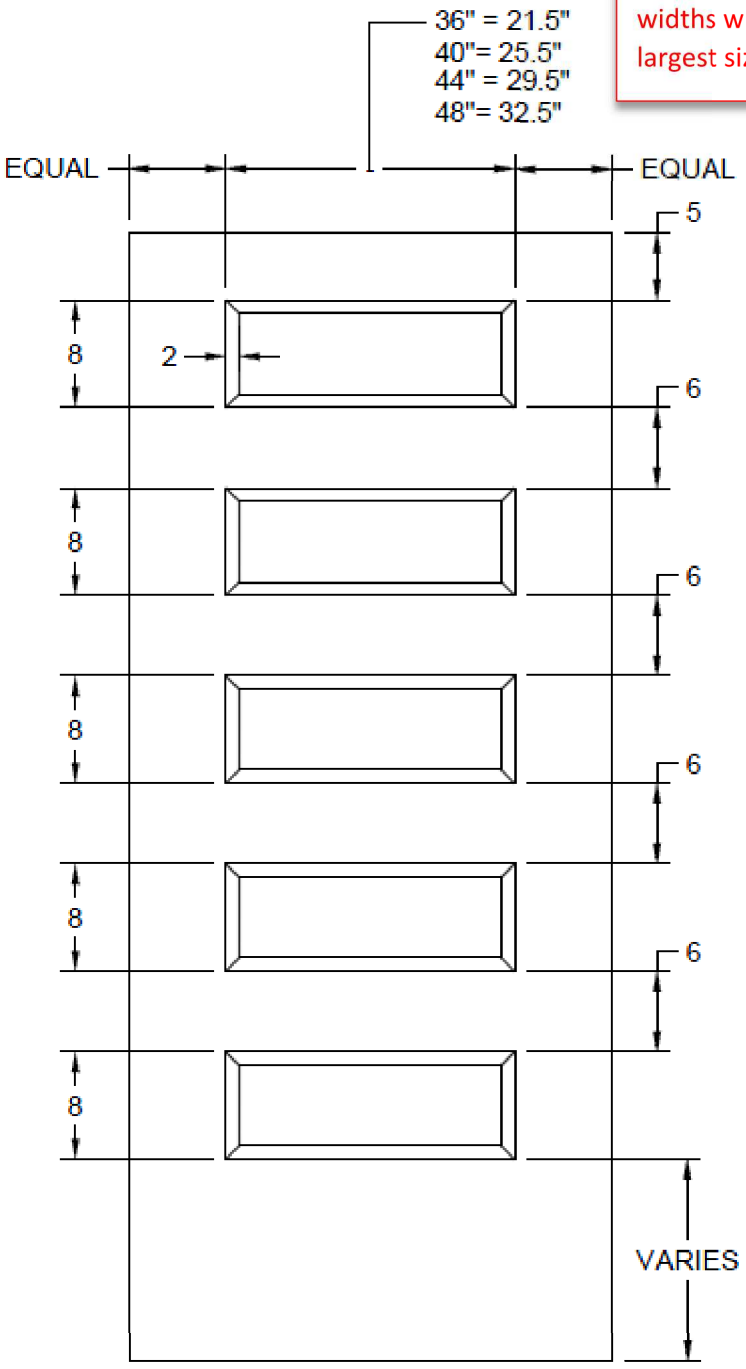
Summit Panel Door Details

NOTE: If detailing door widths between the sizes noted, panel widths will be used from the next largest size



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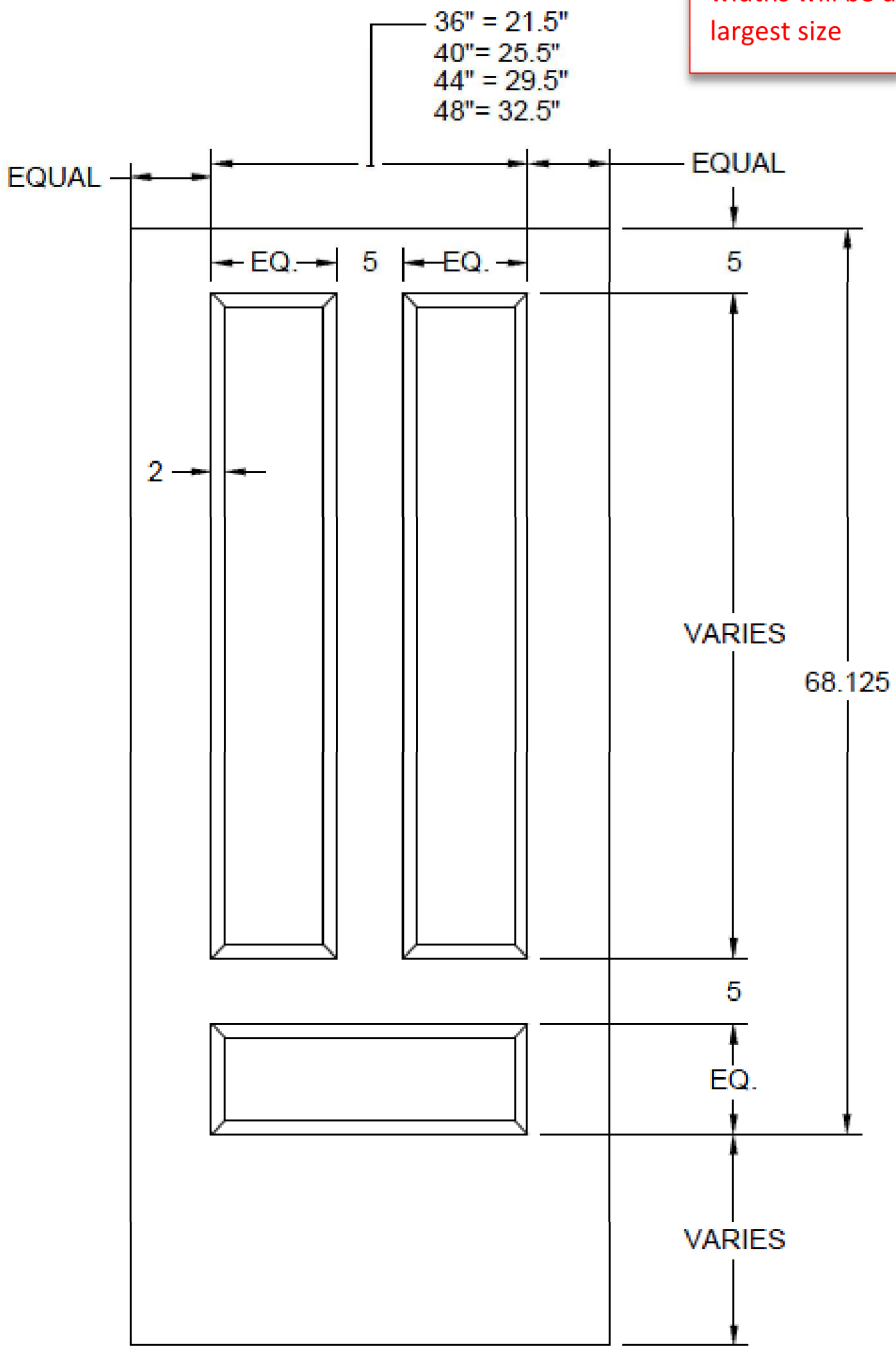
Berkeley Panel Door Details

NOTE: If detailing door widths between the sizes noted, panel widths will be used from the next largest size



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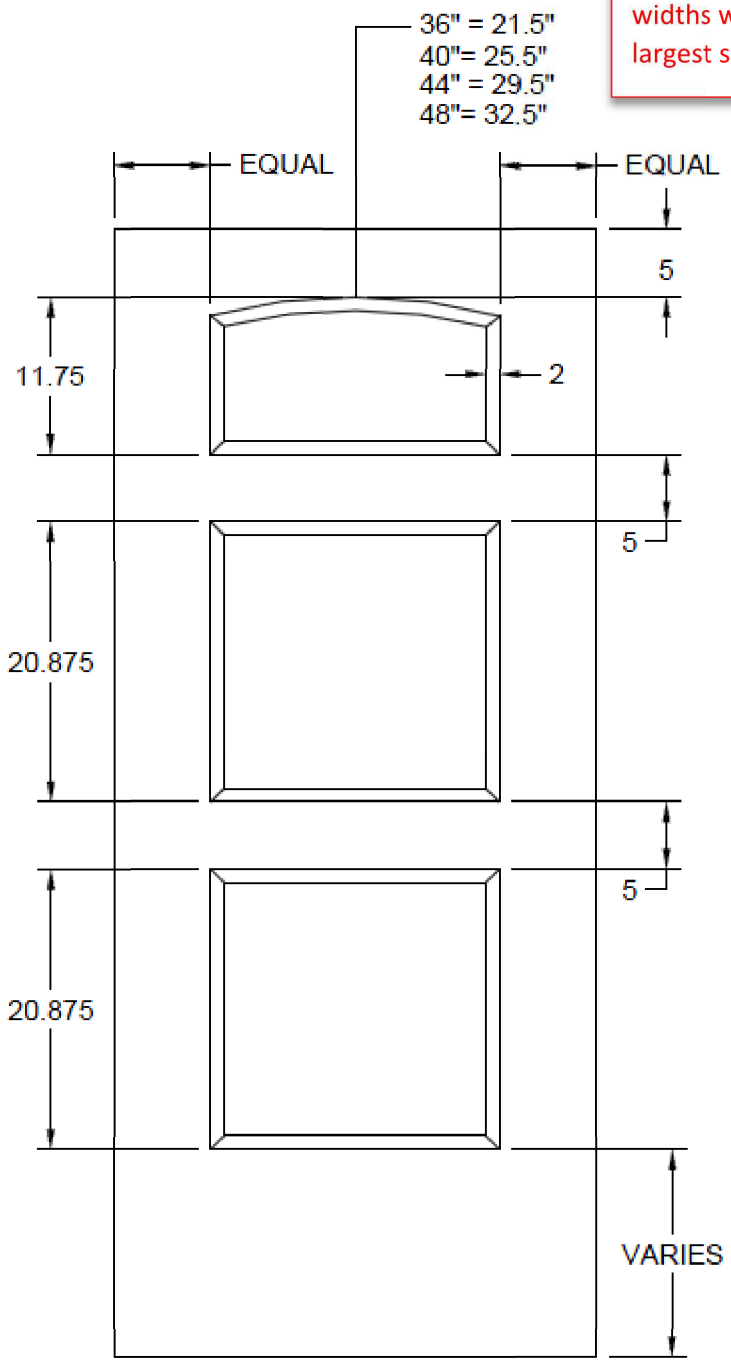
Chatham Panel Door Details

NOTE: If detailing door widths between the sizes noted, panel widths will be used from the next largest size



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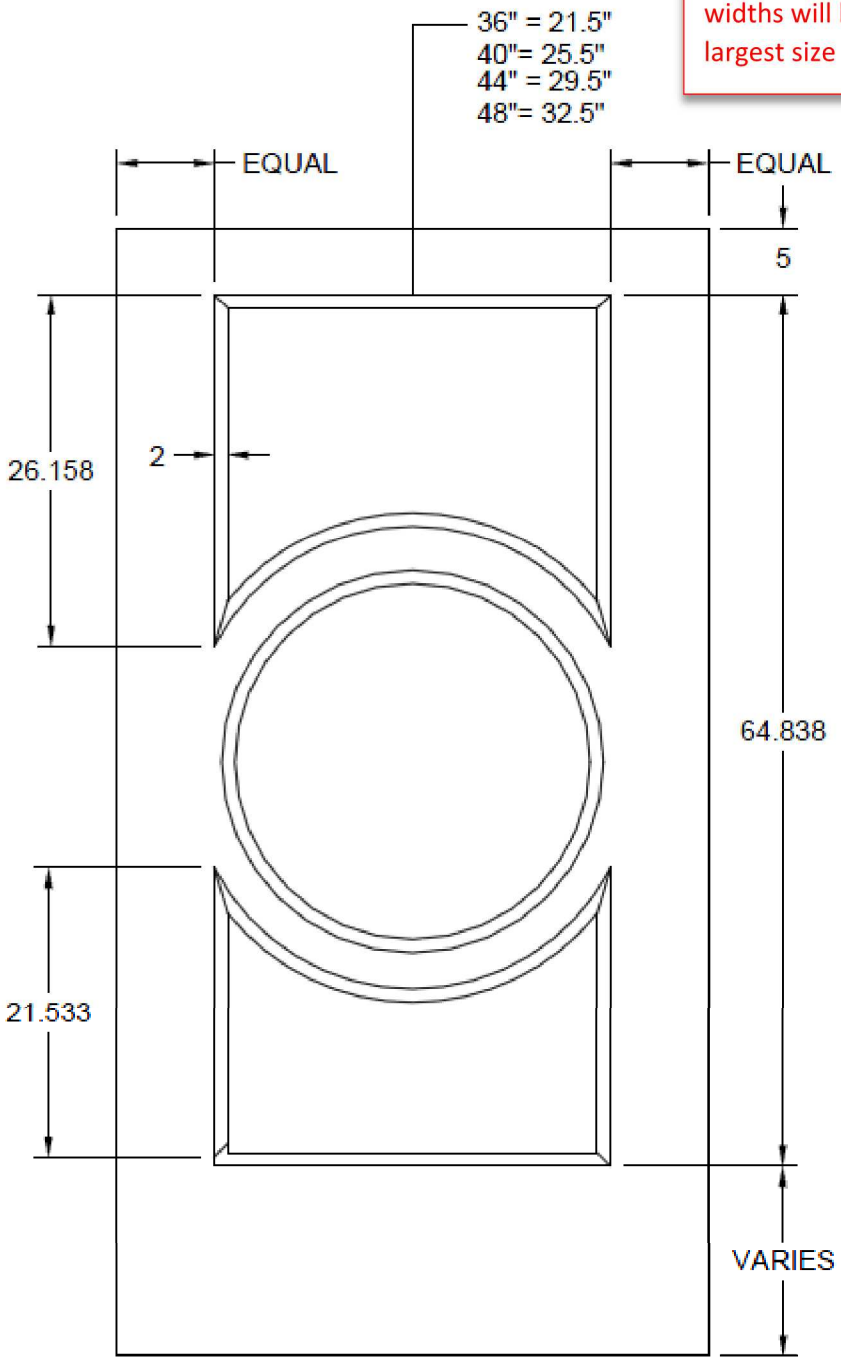
Montgomery Panel Door Details

NOTE: If detailing door widths between the sizes noted, panel widths will be used from the next largest size



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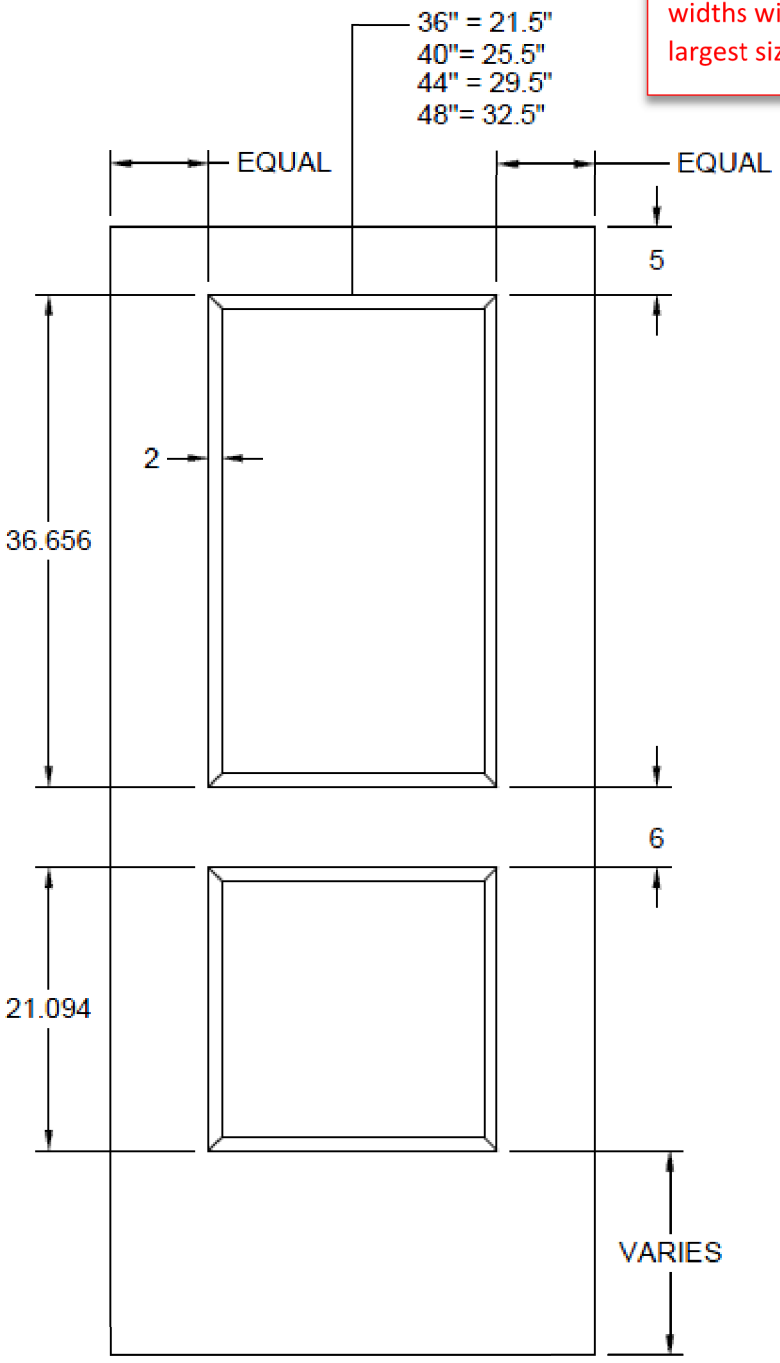
Plymouth Panel Door Details

NOTE: If detailing door widths between the sizes noted, panel widths will be used from the next largest size



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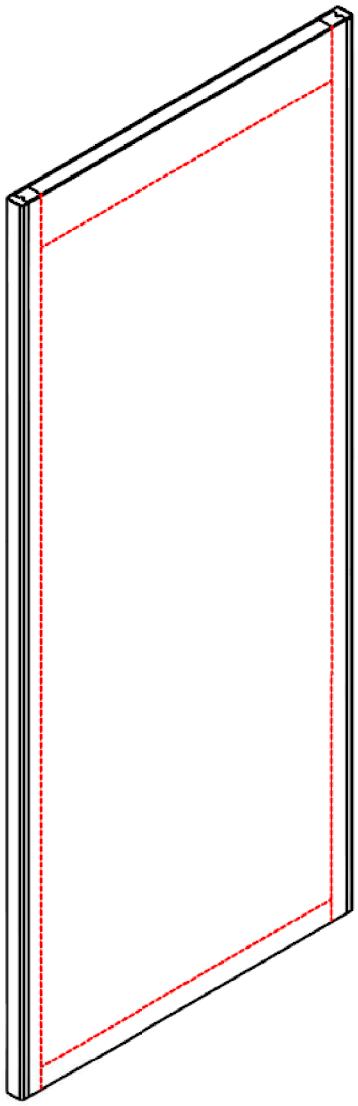
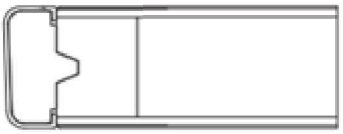
Non-Rated Lightweight Core (FC5-NR)

Bonded Lightweight Core, 5-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Composite: WDMA "Standard Duty" **Meets WDMA "Extra Heavy Duty" for TM-6, TM-7, TM-8*	
Complies with CARB Phase I & II Emission Standards		
Maximum Sizes	4'3" x 8'0"	8'6" x 8'0"
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	2.30lb/ft^2 (3070 Door = 48lbs) (4070 Door = 61lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles; Lock Blocks (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square, Radius	
Lites	5" from edges, 1-1/2" from hardware or additional cutouts	
Max Lite Cutout Area	Up to 40% of door area. (If exceeded, SCL core required)	
Lite Frames	Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	No restrictions	
Louvers	Up to 24" x 24"; 10" From Bottom of Door & 1-1/2" From Hardware or Additional Cutout	
Electronic Options	Not Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Not Available	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available	





(Surface mounted hardware shall be through-bolted)

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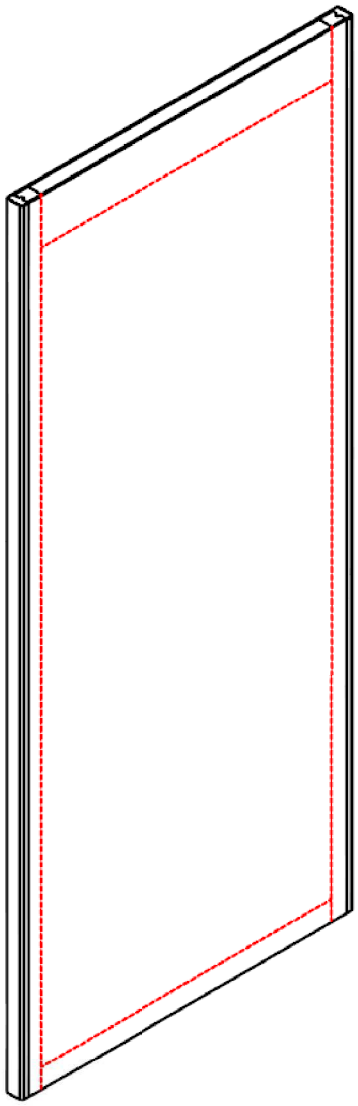
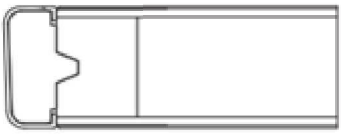
Non-Rated Agrifiber (AF5-NR)

Bonded Agrifiber Core, 5-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Agrifiber: ANSI A208.1.2009 grade LD-1 (26-28 lb/ft^3)	
Complies with CARB Phase I & II Emission Standards		
Maximum Sizes	4’3” x 9’0”	8’6” x 9’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” OR 1-3/8” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	5.08lb/ft^2 (3070 Door = 107lbs) (4070 Door = 142lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5” top rail; 1” Bottom Rail; 1” Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square, Radius	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Lite Cutout Area	Up to 40% of door area. (If exceeded, SCL core required)	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	No restrictions	
Louvers	Up to 24” x 24”; 10“ From Bottom of Door & 1-1/2” From Hardware or Additional Cutout	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available	





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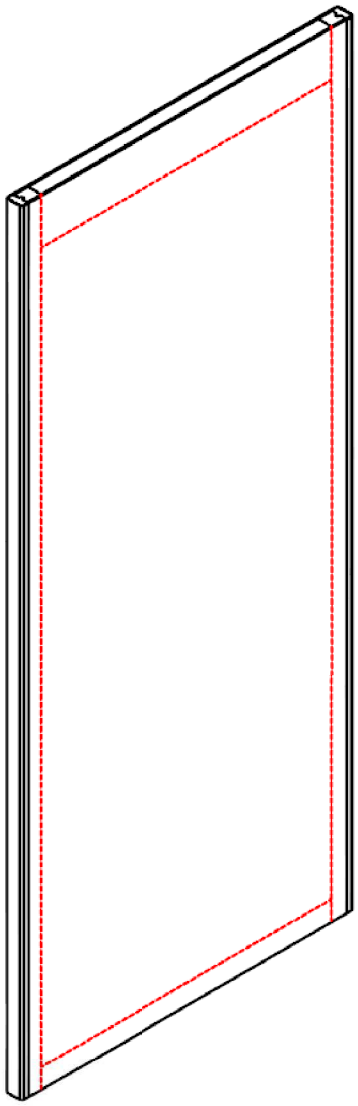
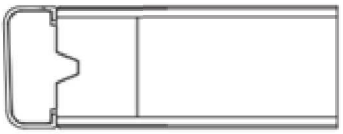
Non-Rated FSC Particleboard (FSC-PC5-NR)

Bonded FSC Particleboard Core, 5-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	FSC Certified Particleboard: ANSI A208.1.2009 grade LD-1 (32 lb/ft^3)	
Complies with CARB Phase I & II Emission Standards		
Maximum Sizes	4’3” x 9’0”	8’6” x 9’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” OR 1-3/8” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	5.22lb/ft^2 (3070 Door = 110lbs) (4070 Door = 147lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5” top rail; 1” Bottom Rail; 1” Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square, Radius	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Lite Cutout Area	Up to 40% of door area. (If exceeded, SCL core required)	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	No restrictions	
Louvers	Up to 24” x 24”; 10“ From Bottom of Door & 1-1/2” From Hardware or Additional Cutout	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available	





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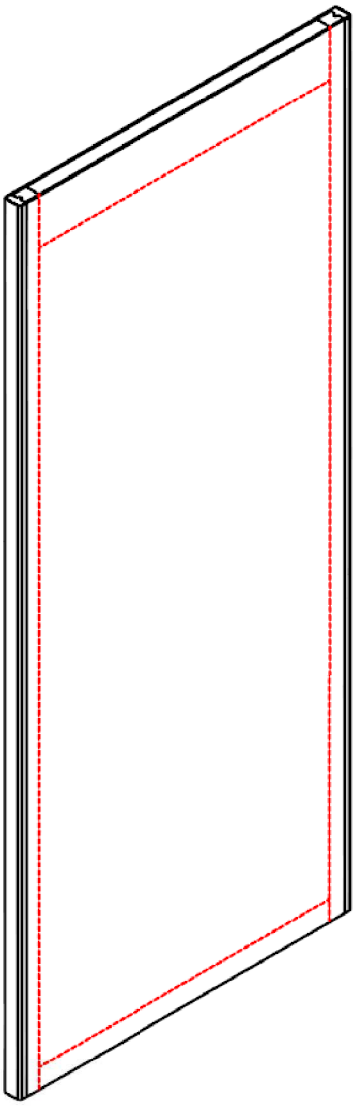
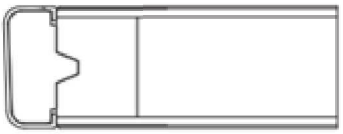
Non-Rated Particleboard (PC5-NR)

Bonded Particleboard Core, 5-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Particleboard: ANSI A208.1.2009 grade LD-1(32 lb/ft^3)	
Maximum Sizes	4’3” x 9’0”	8’6” x 9’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” OR 1-3/8” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	5.27lb/ft^2 (3070 Door = 111lbs) (4070 Door = 148lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5” top rail; 1” Bottom Rail; 1” Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square, Radius	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Lite Cutout Area	Up to 40% of door area. (If exceeded, SCL core required)	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	No restrictions	
Louvers	Up to 24” x 24”; 10“ From Bottom of Door & 1-1/2” From Hardware or Additional Cutout	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available	





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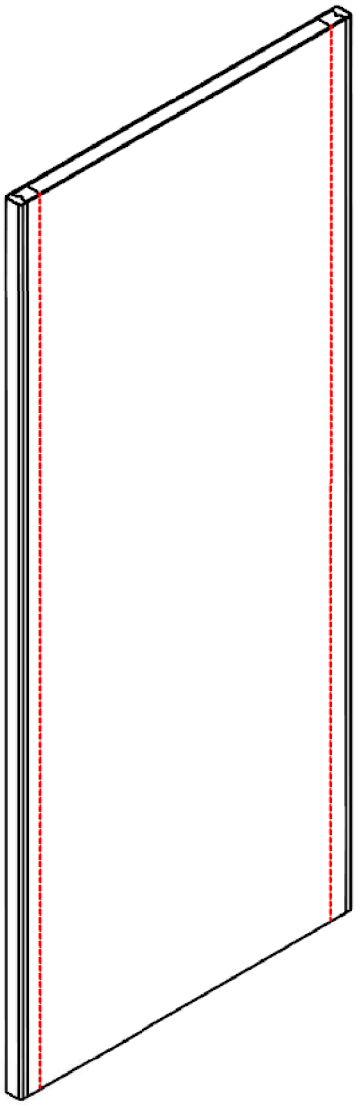
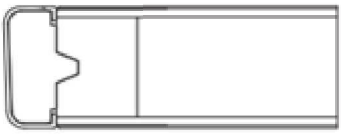
Non-Rated SCL (SCL5-NR)

Bonded SCL Core, 5-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Structural Composite Lumber: (38 lb/ft^3)	
Maximum Sizes	4’3” x 10’0”	8’6” x 10’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” OR 1-3/8” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	6.87lb/ft^2 (3070 Door = 144lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) Full Core Blocking; 1” Fixed Internal Stiles	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square, Radius	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Lite Cutout Area	No restrictions	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	No restrictions	
Louvers	Up to 24” x 24”; 10“ From Bottom of Door & 1-1/2” From Hardware or Additional Cutout	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Available (Includes LBR)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available	





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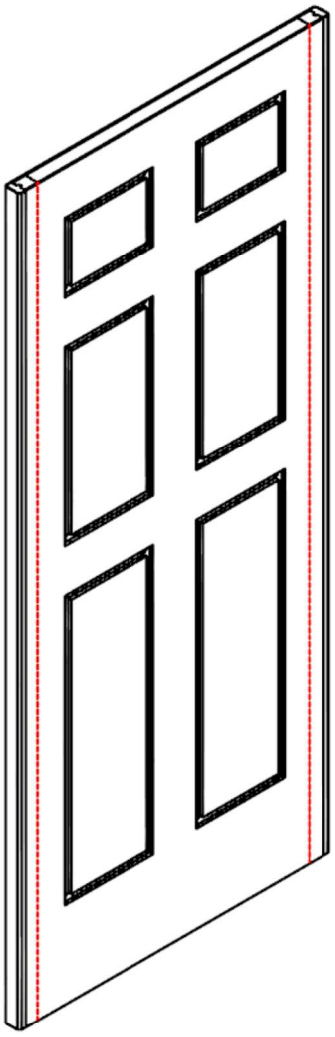
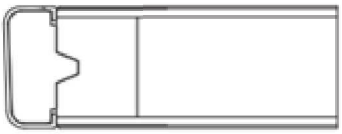
Non-Rated Panel Door (PN SCL5-NR)

Bonded SCL Core, 5-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Structural Composite Lumber: (38 lb/ft^3)	
Maximum Sizes	4’3” x 10’0”	8’6” x 10’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	6.87lb/ft^2 (3070 Door = 144lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) Full Core Blocking; 1” Fixed Internal Stiles	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square, Radius	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Lite Cutout Area	Lite cutout must replace one entire panel	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	No restrictions	
Louvers	Up to 24” x 24”; 10“ From Bottom of Door & 1-1/2” From Hardware or Additional Cutout	
Electronic Options	Electronic Hardware & Raceways Available, Except Behind Recessed Portions of the Panels	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available	
Panel Design Options	8 standard options (See Pages 10 - 18)	





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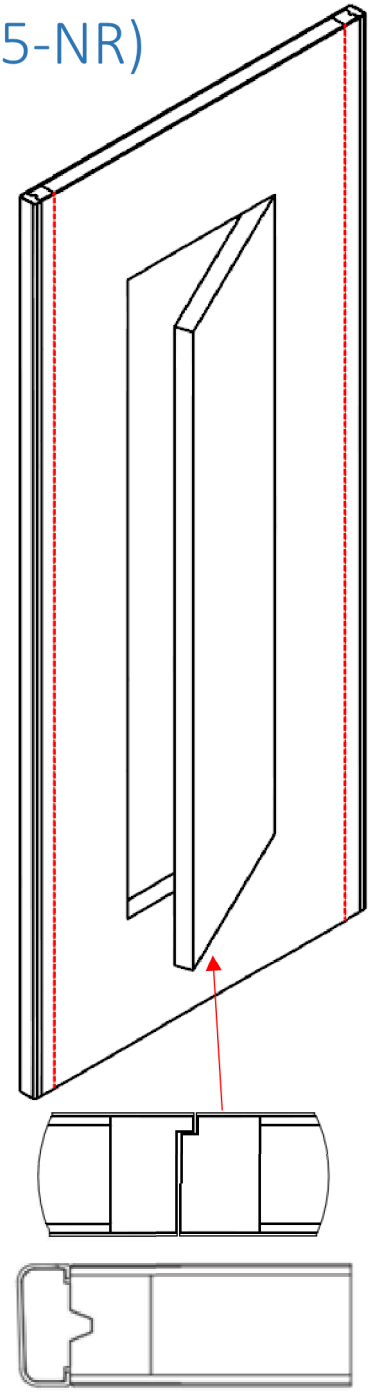
Non-Rated Barrier Resistant (BR SCL5-NR)

Bonded SCL Core, 5-Ply Construction

	Single Swing ONLY	
Core Type & Standards	Structural Composite Lumber: (38 Lb/Ft^3)	
Maximum Sizes	4’3” X 10’0”	**Minimum Width:** 2’8”
Wicket Door Size	**Standard:** 16” X 60”, **Max Width:** 14” LESS main door	
Wicket Door Location	Centered in width; 10” From Bottom of Door	
Protection Plates	Up To 48” (Above Bottom Of Door)	
Door Thickness	1-3/4” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	6.87lb/Ft^2 (3070 Door = 144lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) Full Core Blocking; 1” Fixed Internal Stiles	
Assembly Adhesive	Face: Type I (Waterproof); Core: Type II (Water-Resistant)	
Face Matching	Continuous Grain Match Not Available	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square, Radius	
Wicket Door Edge	Beveled Rabbeted Design	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Lite Cutout Area	Lite cutout **Max width = 6” ; Max Height = 35”**	
Lite Frames	Wood Beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	No restrictions	
Louvers	Not Available	
Electronic Options	Electronic Hardware & Raceways Available	
Hinges (Main Door)	Mortised, Surface & Continuous	
Hinges (Wicket Door)	(2) Tectus TE-340-3d, Included By CS	
Pivots (Main Door)	Offset w/Intermediate	
Locks (Main Door)	Mortise & Cylindrical	
Locks (Wicket Door)	Recommended: Circular drive-in latch, single sided deadbolt	
Exit Devices	Not Available	
Concealed Vertical Rod	Not Available	
Flushbolts	Not Available	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Not Available	



(Not Tested For Detention Application)

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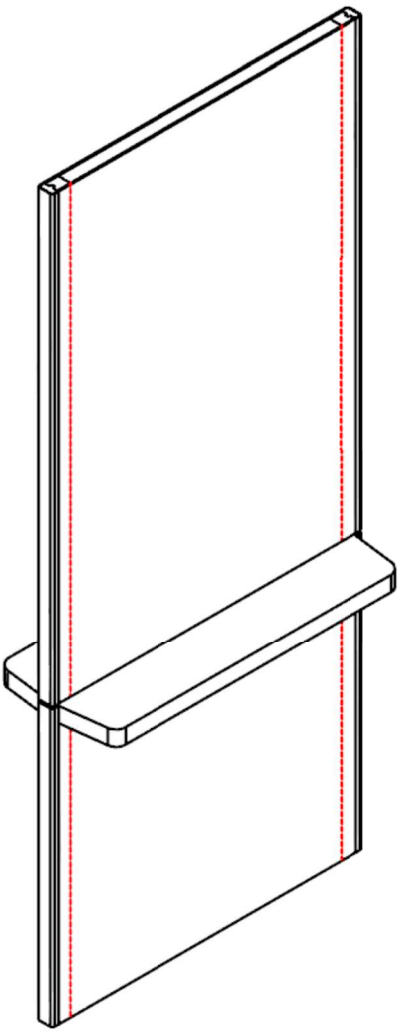
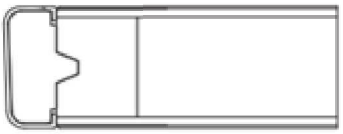
Non-Rated Dutch Door (DD SCL5-NR)

Bonded SCL Core, 5-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Structural Composite Lumber: (38 lb/ft^3)	
Maximum Sizes	4’3” x 10’0”	8’6” x 10’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	6.87lb/ft^2 (3070 Door = 144lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) Full Core Blocking; 1” Fixed Internal Stiles	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square, Radius	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Lite Cutout Area	No restrictions	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	No restrictions	
Louvers	Up to 24” x 24”; 10“ From Bottom of Door & 1-1/2” From Hardware or Additional Cutout	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Available (Includes LBR)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available	
Shelf Options	Optional – Single or Double sided, with or without gussets Max shelf overhang – 6 inches.	





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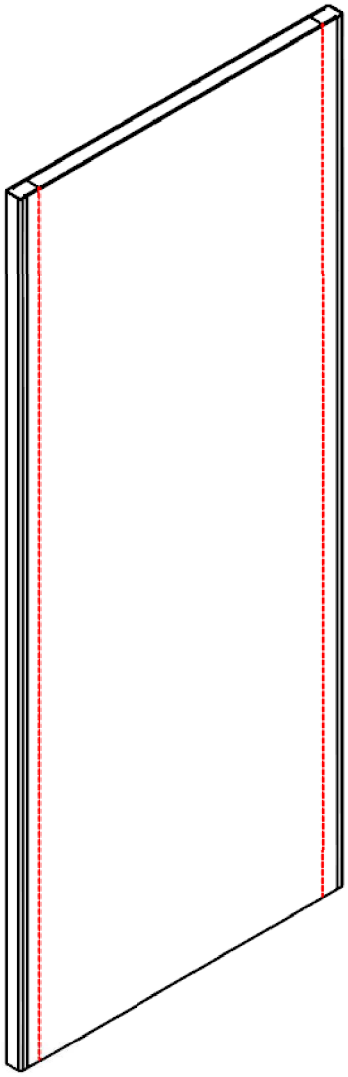
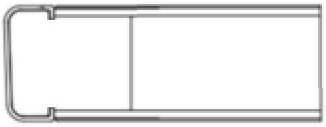
Non-Rated STC30 (SCL5-NR STC 30)

Bonded SCL Core, 5-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Structural Composite Lumber: (38 lb/ft^3)	
Maximum Sizes	4'0" x 8'0"	N/A
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.87lb/ft^2 (3070 Door = 144lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) Full Core Blocking; 1" Fixed Internal Stiles	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	Not Available	
Lite Frames	Not Available	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available	
STC-30 Operable (Required Gasketing)	Top & Edge of Door: NGP 107NA; Bottom: NGP 420N	





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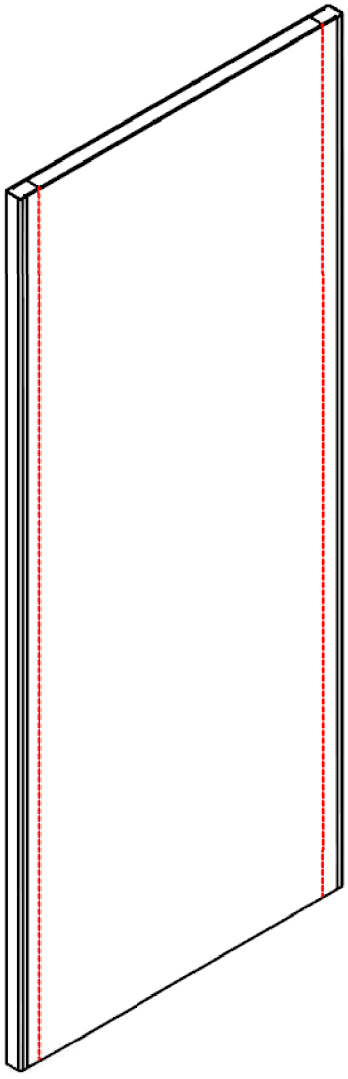
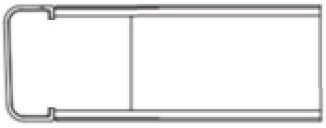
Non-Rated STC43-46 (SCL5-NR STC 43-46)

Bonded SCL Core, 5-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Structural Composite Lumber: (38 lb/ft^3)	
Maximum Sizes	4'0" x 8'0"	N/A
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.87lb/ft^2 (3070 Door = 144lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) Full Core Blocking; 1" Fixed Internal Stiles	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	Not Available	
Lite Frames	Not Available	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available	
STC-43 Operable (Required Gasketing)	Top & Edge of Door: Pemko Model S88, S773 & S771; Bottom: Zero 367	
STC-44 Operable (Required Gasketing)	Top & Edge of Door: Pemko Model 188 & 119; Bottom: Zero 367	
STC-45 Operable (Required Gasketing)	Top & Edge of Door: Pemko Model 475 & 119; Bottom: Zero 367	
STC-46 Operable (Required Gasketing)	Top & Edge of Door: Pemko Model 475 & 119; Bottom: Zero 367, Zero 328 door sweep, & Zero 63A door Threshold	





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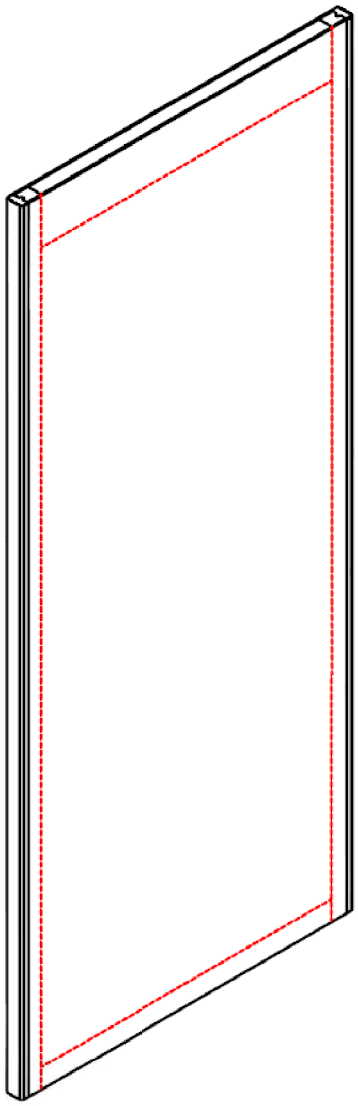
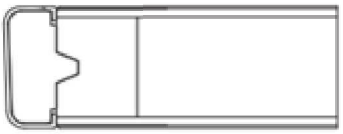
20 Minute Rated Agrifiber (AF5-20PP)

Bonded Agrifiber Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	Agrifiber: ANSI A208.1.2009 grade LD-1 (26-28 lb/ft^3)	
Complies with CARB Phase I & II Emission Standards		
Maximum Sizes	4’3” x 9’0”	8’0” x 9’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	5.11lb/ft^2 (3070 Door = 107lbs) (4070 Door = 143lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5” top rail; 1” Bottom Rail; 1” Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Visible Glass Area	1296 in^2	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any listed & labeled (20min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 “Table 6.4.3.1”	
Points of Latching	Singles = 1pt	Pairs & DE w/ No Hose Stream = 2pts Double Egress w/ Hose Stream = 4pts
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5” Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available (Must use SCL core)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available – Max opening size 4’ x 9’	





(Alternate)

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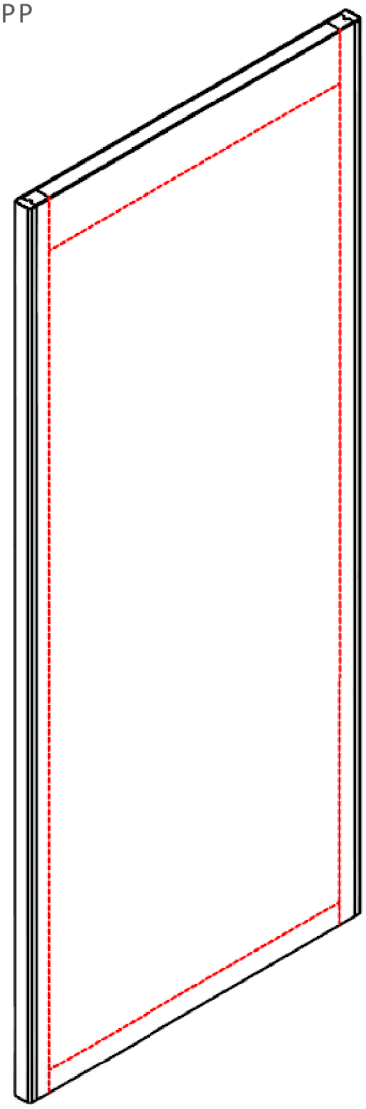
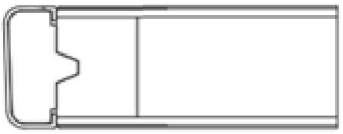
20 Minute Rated FSC Particleboard (FSC PC5-20PP)

Bonded FSC Particleboard Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	FSC Certified Particleboard : ANSI A208.1.2009 grade LD-1 (32 lb/ft^3)	
Complies with CARB Phase I & II Emission Standards		
Maximum Sizes	4’3” x 9’0”	8’0” x 9’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	5.26lb/ft^2 (3070 Door = 110lbs) (4070 Door = 147lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5” top rail; 1” Bottom Rail; 1” Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Visible Glass Area	1296 in^2	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any listed & labeled (20min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 “Table 6.4.3.1”	
Points of Latching	Singles = 1pt	Pairs & DE w/ No Hose Stream = 2pts Double Egress w/ Hose Stream = 4pts
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5” Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available (Must use SCL core)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available – Max opening size 4’ x 9’	





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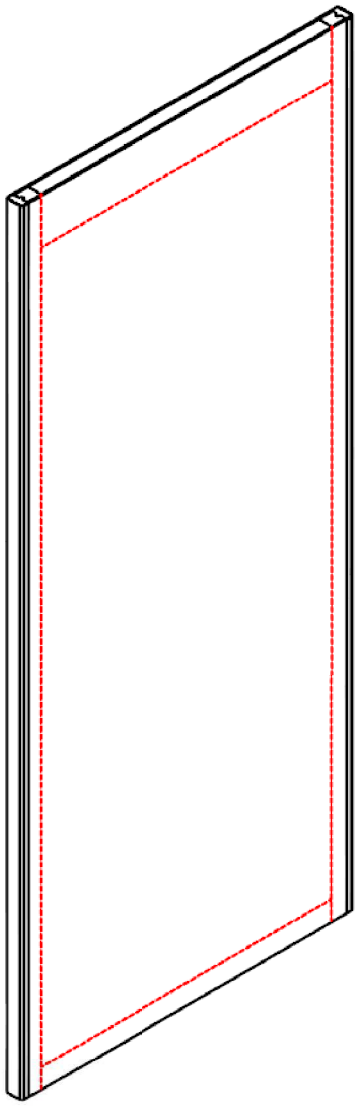
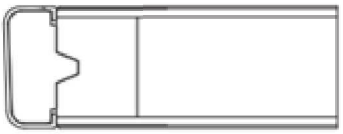
20 Minute Rated Particleboard (PC5-20PP)

Bonded Particleboard Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	Particleboard : ANSI A208.1.2009 grade LD-1 (32 lb/ft^3)	
Complies with CARB Phase I & II Emission Standards		
Maximum Sizes	4’3” x 9’0”	8’0” x 9’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	5.30lb/ft^2 (3070 Door = 111lbs) (4070 Door = 148lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5” top rail; 1” Bottom Rail; 1” Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Visible Glass Area	1296 in^2	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any listed & labeled (20min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 “Table 6.4.3.1”	
Points of Latching	Singles = 1pt	Pairs & DE w/ No Hose Stream = 2pts Double Egress w/ Hose Stream = 4pts
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5” Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available (Must use SCL core)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available – Max opening size 4’ x 9’	





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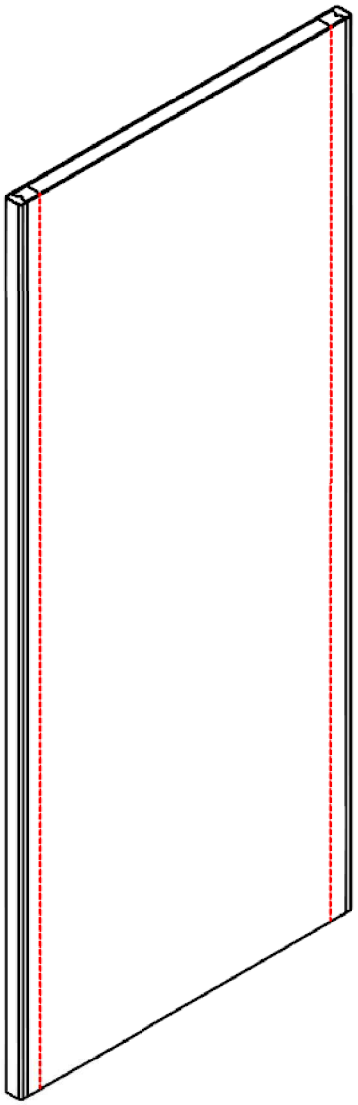
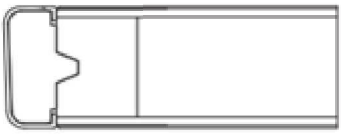
20 Minute Rated SCL (SCL5-20PP)

Bonded SCL Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	Structural Composite Lumber: (38 lb/ft^3)	
Maximum Sizes	4’3” x 10’0”	8’0” x 10’0”
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	6.92lb/ft^2 (3070 Door = 145lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5” top rail; 1” Bottom Rail; 1” Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Max Visible Glass Area	1296 in^2 w/ Hose Stream; 2814in^2 w/ No Hose Stream	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any listed & labeled (20min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 “Table 6.4.3.1”	
Points of Latching	Singles = 1pt	Pairs & DE w/ No Hose Stream = 2pts Double Egress w/ Hose Stream = 4pts
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5” Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Available (With concealed 5” metal channel at latch edge)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available – Max opening size 4’ x 9’	





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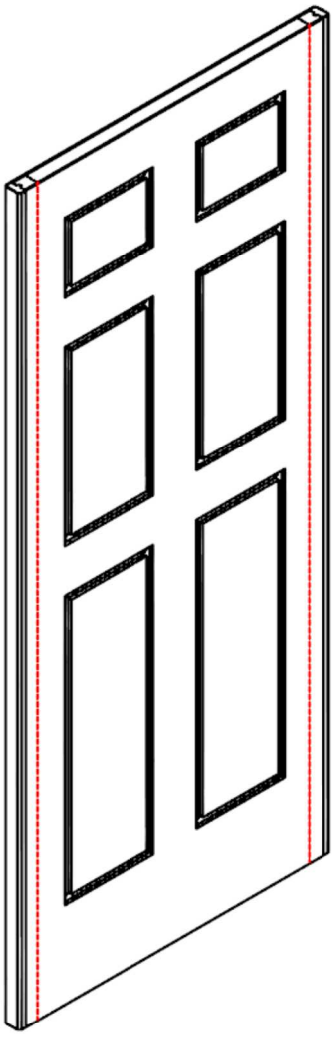
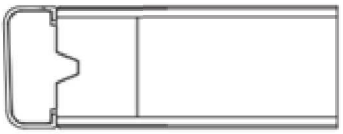
20 Minute Rated Panel Door (PN SCL5-20PP)

Bonded SCL Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	Structural Composite Lumber: (38 lb/ft^3)	
Maximum Sizes	4'0" x 10'0"	8'0" x 10'0"
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.92lb/ft^2 (3070 Door = 145lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5" from edges, 1-1/2" from hardware or additional cutouts	
Max Visible Glass Area	1296 in^2 w/ Hose Stream; 2814in^2 w/ No Hose Stream	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any listed & labeled (20min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs & DE w/ No Hose Stream = 2pts Double Egress w/ Hose Stream = 4pts
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5" Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Available (With concealed 5" metal channel at latch edge)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Available – Max opening size 4' x 9'	
Panel Design Options	8 standard options (See Pages 10 - 18)	
Max Recess of Panel	3/8"	





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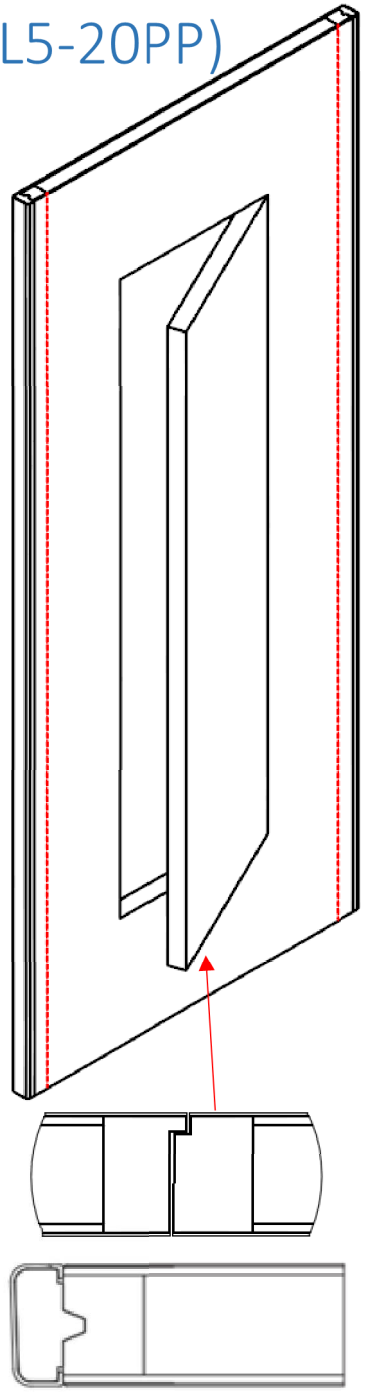
20 Minute Rated Barrier Resistant (BR SCL5-20PP)

Bonded SCL Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)



Single Swing ONLY		
Core Type & Standards	Structural Composite Lumber: (38 Lb/Ft^3)	
Maximum Sizes	4’3” X 10’0”	**Minimum Width:** 2’8”
Wicket Door Size	**Standard:** 16” X 60”, **Max Width:** 14” LESS main door (Up to 31-3/4”), **Max Height:** 75-3/4”	
Wicket Door Location	Centered in width; 10” From Bottom of Door	
Protection Plates	Up To 48” (Above Bottom Of Door)	
Door Thickness	1-3/4” (+/- 1/16”)	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	6.92lb/Ft^2 (3070 Door = 145lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) Full Core Blocking; 1” Fixed Internal Stiles	
Assembly Adhesive	Face: Type I (Waterproof); Core: Type II (Water-Resistant)	
Face Matching	Continuous Grain Match Not Available	
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Wicket Door Edge	Beveled Rabbeted Design	
Lites	5” From Edges, 1-1/2” From Hardware Or Additional Cutouts	
Max Visible Glass Area	100 in^2 **(Max width = 4” ; Max Height = 33”)**	
Lite Frames	Wood Beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any listed & labeled (20min or greater)	
Louvers	Not Available	
Electronic Options	Electronic Hardware & Raceways Available	
Hinges (Main Door)	Per NFPA 80 “Table 6.4.3.1”	
Hinges (Wicket Door)	(2) Tectus TE-340-3d, Included By CS	
Pivots (Main Door)	Offset w/Intermediate	
Locks (Main Door)	Mortise & Cylindrical	
Locks (Wicket Door)	Recommended: Circular drive-in latch, single sided deadbolt	
Exit Devices	Not Available	
Concealed Vertical Rod	Not Available	
Flushbolts	Not Available	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Not Available	

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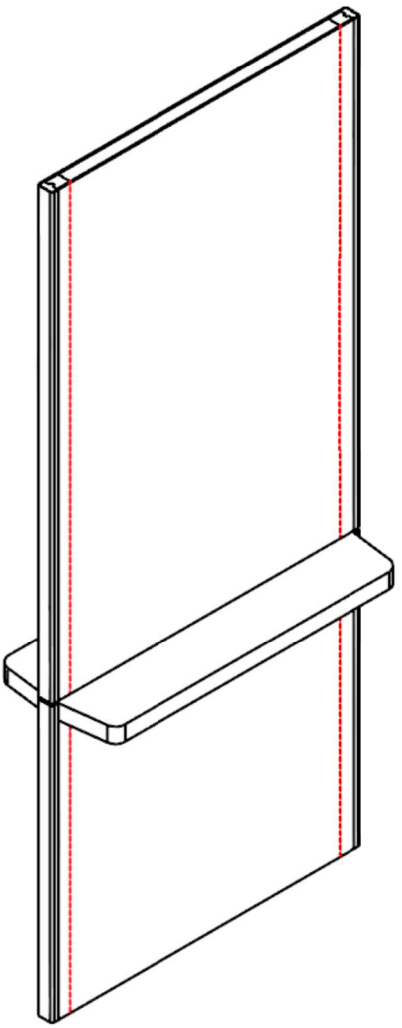
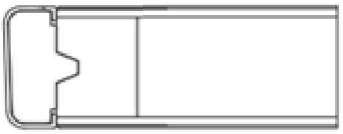
20 Minute Rated Dutch Door (DD SCL5-20PP)

Bonded SCL Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing
Core Type & Standards	Structural Composite Lumber: (38 lb/ft^3)
Maximum Sizes	4'0" x 8'0"
Protection Plates	Up to 48" (above bottom of door)
Door Thickness	1-3/4" (+/- 1/16")
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")
Weight	6.92lb/ft^2 (3070 Door = 145lbs) (4070 Door = 193lbs)
Crossband	High Density FSC Fiberboard
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)
Replaceable Edge Stiles & Covers	Field Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers
Replaceable Edge Profile	Beveled, Square
Lites	5" from edges, 1-1/2" from hardware or additional cutouts
Max Visible Glass Area	1296 in^2 (Top leaf only) Max Visible Glass width = 36"
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped
Glazing	Any listed & labeled (20min or greater)
Louvers	Not Available
Electronic Options	Electronic hardware & raceways Available
Hinges	Per NFPA 80 "Table 6.4.3.1"
Points of Latching	Singles = 2pts Each leaf must latch into the frame
Pivots	Offset w/intermediate (Center hung not allowed)
Locks	Mortise & Cylindrical (Max 5" Backset)
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised
Concealed Vertical Rod	Available (With concealed 5" metal channel at latch edge)
Flushbolts	Must Be Extension Type (Metal Door)
Closing Devices	Mortised or Surface Mounted
Door Bottoms	Mortised or Surface Mounted
Transoms	Available – Max opening size 4' x 9'
Shelf Options	Optional – Single or Double sided, with or without gussets Max shelf overhang – 6 inches.





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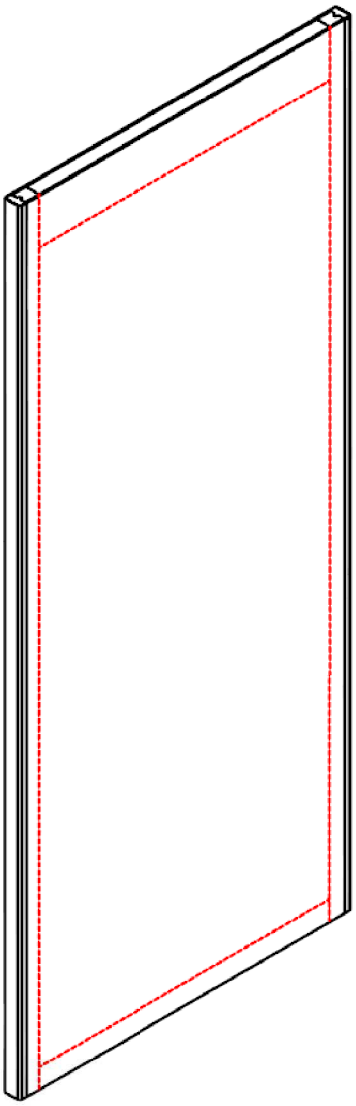
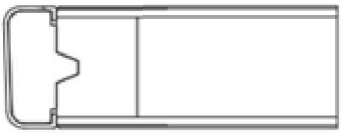
45 Minute Rated Mineral (FD5-45PP)

Bonded Mineral Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	Mineral Composite: (28-35 lb/ft^3)	
Maximum Sizes	4'0" x 9'0"	8'0" x 9'0"
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.20lb/ft^2 (3070 Door = 130lbs) (4070 Door = 173lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable Mineral/SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	6" from edges, 5" from hardware or additional cutouts	
Max Visible Glass Area	1296 in^2	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any listed & labeled (45min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs = 3pts (2pts w/ Blue Core) DE Pairs = 4pts (2pts w/ Blue Core)
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5" Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Available (With concealed 5" metal channel at latch edge)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Not Available	





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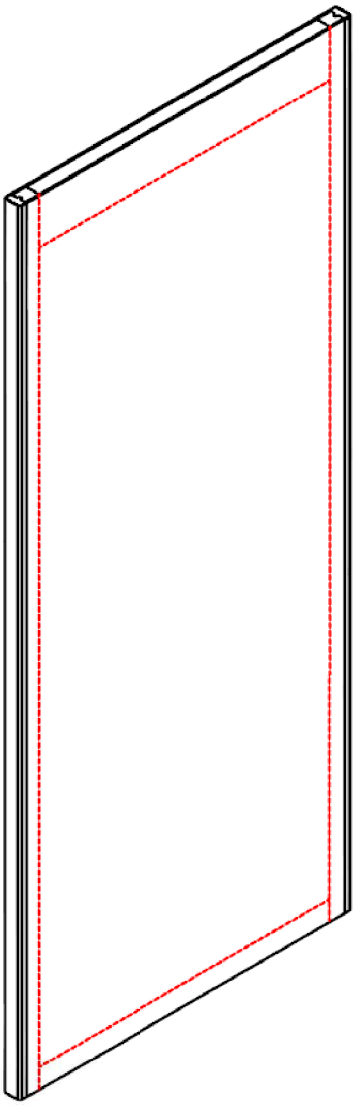
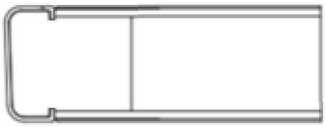
45 Minute Rated Mineral STC35/34 *(FD5-45PP STC 35/34)*

Bonded Mineral Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing (STC35)	Pair or Double Egress (STC34)
Core Type & Standards	Mineral Composite: (28-35 lb/ft^3)	
Maximum Sizes	4'0" x 9'0"	8'0" x 9'0"
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.20lb/ft^2 (3070 Door = 130lbs) (4070 Door = 173lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable Mineral/SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	Not Available	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs = 3pts (2pts w/ Blue Core) DE Pairs = 4pts (2pts w/ Blue Core)
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5" Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
STC-35 Operable (Singles) (Required Gaskets Option 1)	Pemko: S773 on head & jambs at stop face. S44 at head and jambs at outside rabbet, and 3692APK773	
STC-35 Operable (Singles) (Required Gaskets Option 2)	Pemko: S773 on head & jambs at stop face. S44 at head and jambs at outside rabbet. S771 lock stile at edge of leaf, and 3692APK773	
STC-34 Operable (Pairs) (Required Gasketing)	Pemko: S773 on head, jambs, strike stile & bottom rail. S44 on head & jambs. S1125 on lock & strike stile, 357 astragal, PDB411, and ACP112	





Standard

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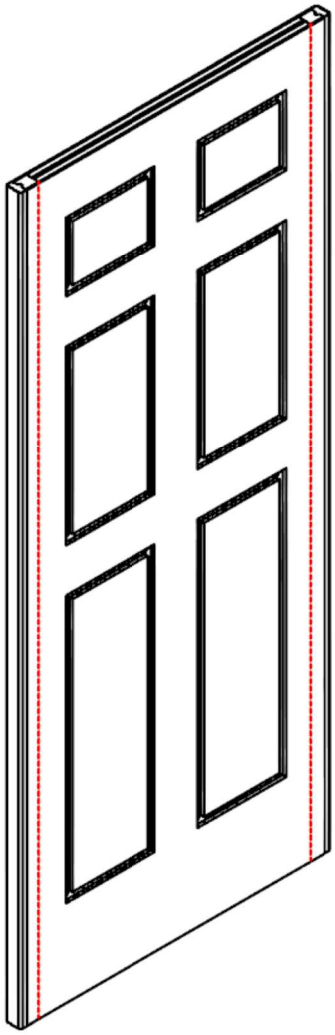
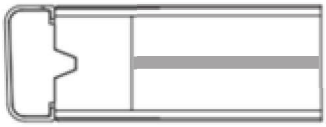
45 Minute Rated Panel Door (PN FD7-45PP)

Bonded SCL Hybrid Core, 7-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	SCL Hybrid: (60 lb/ft^3)	
Maximum Sizes	4'0" x 9'0"	8'0" x 9'0"
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.92lb/ft^2 (3070 Door = 145lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 2" Bottom Rail; 5" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable Mineral/SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	Not Available	
Max Visible Glass Area	Not Available	
Lite Frames	Not Available	
Louvers	Not Available	
Electronic Options	Not Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs = 2pts DE Pairs = 3pts
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5" Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Not Available	
Panel Design Options	8 standard options (See Pages 10 - 18)	
Max Recess of Panel	3/8"	





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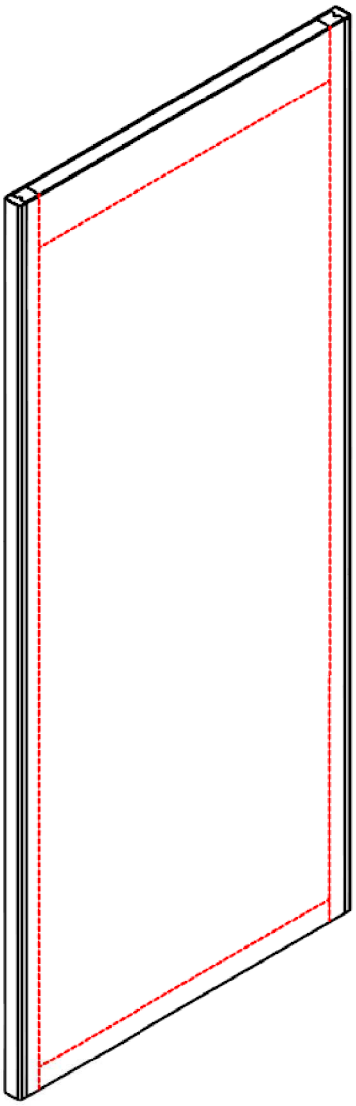
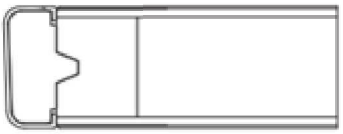
60 Minute Rated Mineral (FD5-60PP)

Bonded Mineral Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	Mineral Composite: (28-35 lb/ft^3)	
Maximum Sizes	4'0" x 9'0"	8'0" x 9'0"
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.20lb/ft^2 (3070 Door = 130lbs) (4070 Door = 173lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable Mineral/SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	6" from edges, 5" from hardware or additional cutouts	
Max Visible Glass Area	100 in^2	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any listed & labeled (60min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs = 4pts (2pts w/ GP Blue Core) DE Pairs = 4pts (2pts w/ GP Blue Core)
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5" Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Available (With concealed 5" metal channel at latch edge)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Not Available	





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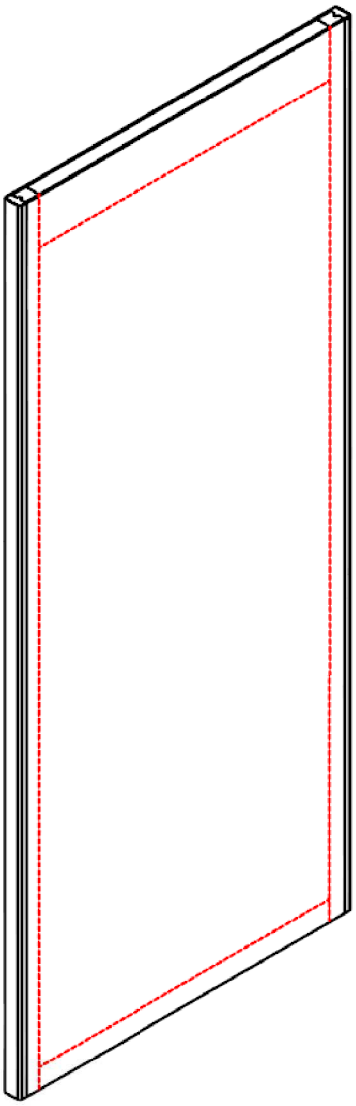
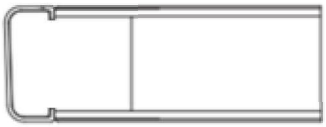
60 Minute Rated Mineral STC35/34 *(FD5-60PP STC 35/34)*

Bonded Mineral Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing (STC35)	Pair or Double Egress (STC34)
Core Type & Standards	Mineral Composite: (28-35 lb/ft^3)	
Maximum Sizes	4'0" x 9'0"	8'0" x 9'0"
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.20lb/ft^2 (3070 Door = 130lbs) (4070 Door = 173lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable Mineral/SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	Not Available	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs = 3pts (2pts w/ Blue Core) DE Pairs = 4pts (2pts w/ Blue Core)
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5" Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
STC-35 Operable (Singles) (Required Gaskets Option 1)	Pemko: S773 on head & jambs at stop face. S44 at head and jambs at outside rabbet, and 3692APK773	
STC-35 Operable (Singles) (Required Gaskets Option 2)	Pemko: S773 on head & jambs at stop face. S44 at head and jambs at outside rabbet. S771 lock stile at edge of leaf, and 3692APK773	
STC-34 Operable (Pairs) (Required Gasketing)	Pemko: S773 on head, jambs, strike stile & bottom rail. S44 on head & jambs. S1125 on lock & strike stile, 357 astragal, PDB411, and ACP112	





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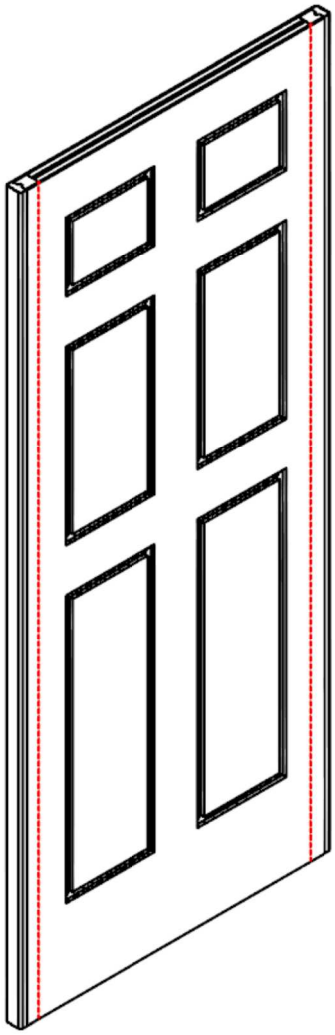
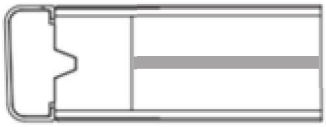
60 Minute Rated Panel Door (PN FD7-60PP)

Bonded SCL Hybrid Core, 7-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	SCL Hybrid: (60 lb/ft^3)	
Maximum Sizes	4'0" x 9'0"	8'0" x 9'0"
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.92lb/ft^2 (3070 Door = 145lbs) (4070 Door = 193lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 2" Bottom Rail; 5" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable Mineral/SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	Not Available	
Max Visible Glass Area	Not Available	
Lite Frames	Not Available	
Louvers	Not Available	
Electronic Options	Not Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs = 3pts DE Pairs = 2pts
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5" Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Not Available	
Panel Design Options	8 standard options (See Pages 10 - 18)	
Max Recess of Panel	3/8"	





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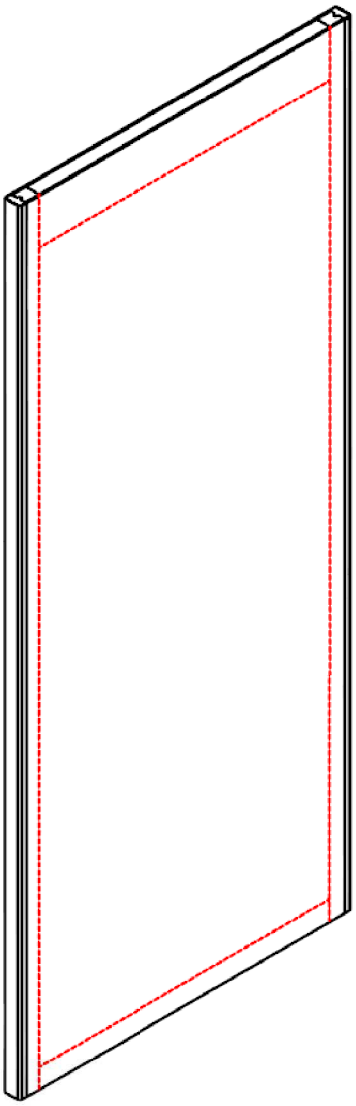
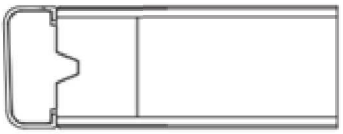
90 Minute Rated Mineral (FD5-90PP)

Bonded Mineral Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing	Pair or Double Egress
Core Type & Standards	GP Blue Core: (28-35 lb/ft^3)	
Maximum Sizes	4'0" x 9'0"	8'0" x 9'0"
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	6.58lb/ft^2 (3070 Door = 137lbs) (4070 Door = 184lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 2" Bottom Rail; 5" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Field Replaceable Mineral/SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	6" from edges, 5" from hardware or additional cutouts	
Max Visible Glass Area	100 in^2	
Lite Frames	Wood beads; Metal – Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any listed & labeled (90min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs = 2pts DE Pairs = 2pts
Pivots	Offset w/intermediate (Center hung not allowed)	
Locks	Mortise & Cylindrical (Max 5" Backset)	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Available (With concealed 5" metal channel at latch edge)	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted	
Door Bottoms	Mortised or Surface Mounted	
Transoms	Not Available	





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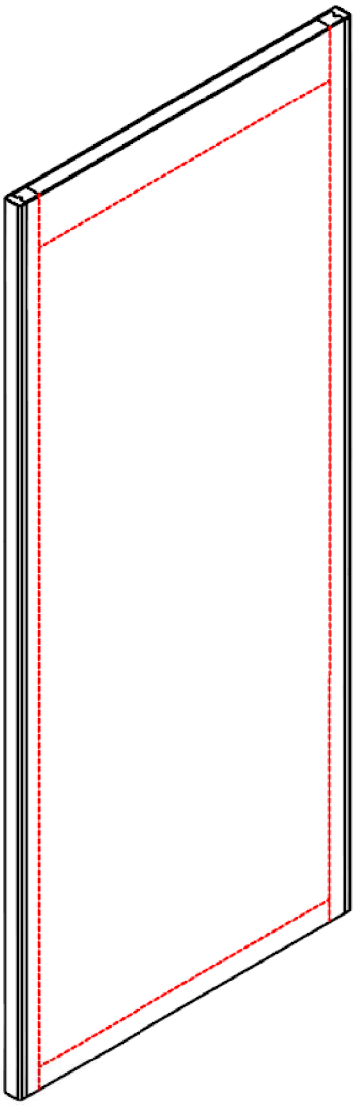
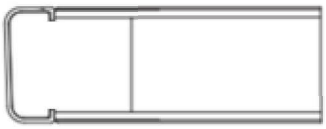
90 Minute Rated Mineral STC36 *(FD5-90PP STC 36)*

Bonded Mineral Core, 5-Ply Construction, Cat. A, PP

(Fire Test Standards – IBC, UL-10C, CAN/ULC S104, & NFPA 252)

	Single Swing
Core Type & Standards	GP Blue Core: (28-35 lb/ft^3)
Maximum Sizes	4'0" x 9'0"
Protection Plates	Up to 48" (above bottom of door)
Door Thickness	1-3/4" (+/- 1/16")
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")
Weight	6.58lb/ft^2 (3070 Door = 137lbs) (4070 Door = 184lbs)
Crossband	High Density FSC Fiberboard
Blocking	(Standard) 5" top rail; 2" Bottom Rail; 5" Fixed Internal Stiles (Additional blocking upon request)
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)
Replaceable Edge Stiles & Covers	Non-Replaceable Mineral/SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers
Replaceable Edge Profile	Beveled, Square
Lites	Not Available
Louvers	Not Available
Electronic Options	Electronic hardware & raceways Available
Hinges	Per NFPA 80 "Table 6.4.3.1"
Points of Latching	Singles = 1pt
Pivots	Offset w/intermediate (Center hung not allowed)
Locks	Mortise & Cylindrical (Max 5" Backset)
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised
Concealed Vertical Rod	Not Available
Flushbolts	Must Be Extension Type (Metal Door)
Closing Devices	Surface Mounted
Door Bottoms	Mortised or Surface Mounted
Transoms	Not Available
STC-36 Operable (Required Gaskets Option 1)	Pemko: S773 on head & jambs at stop face. S44 at head and jambs at outside rabbet, and 3692APK773
STC-36 Operable (Required Gaskets Option 2)	Pemko: S773 on head & jambs at stop face. S44 at head and jambs at outside rabbet. S771 lock stile at edge of leaf, and 3692APK773
STC-36 Operable (Required Gaskets Option 3)	Pemko: S44 on head & jambs at stop face. S44 at head & jambs at outside rabbet. S771 lock stile at edge of leaf, and 3692APK773





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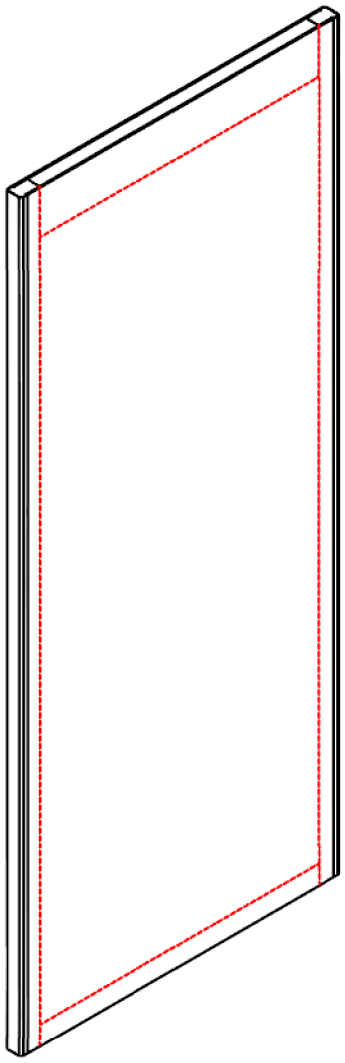
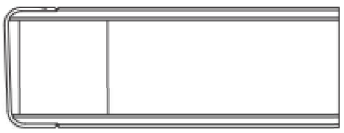
Lead Lined, Non-Rated Agrifiber (LL AF7-NR)

Bonded Agrifiber Core, 7-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Agrifiber: ANSI A208.1.2009 grade LD-1 (26-28 lb/ft^3)	
Complies with CARB Phase I & II Emission Standards		
Maximum Sizes	4’0” x 8’0”	8’0” x 8’0” (Requires Lead Astragal)
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” (+/- 1/16”)	
Lead Thickness	1/16” (4lb) or 1/8” (8lb), Balanced Construction	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	1/16” Lead – 9.01lb/ft^2 (3070 = 187lbs) (4070 = 252lbs) 1/8” Lead – 12.84lb/ft^2 (3070 = 267lbs) (4070 = 360lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5” top rail; 1” Bottom Rail; 1” Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Lite Frames	Metal Lead Lined– Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any appropriate lead equivalency	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted (Mortised will affect lead)	
Door Bottoms	Mortised or Surface Mounted (Mortised will affect lead)	
Transoms	Not Available	





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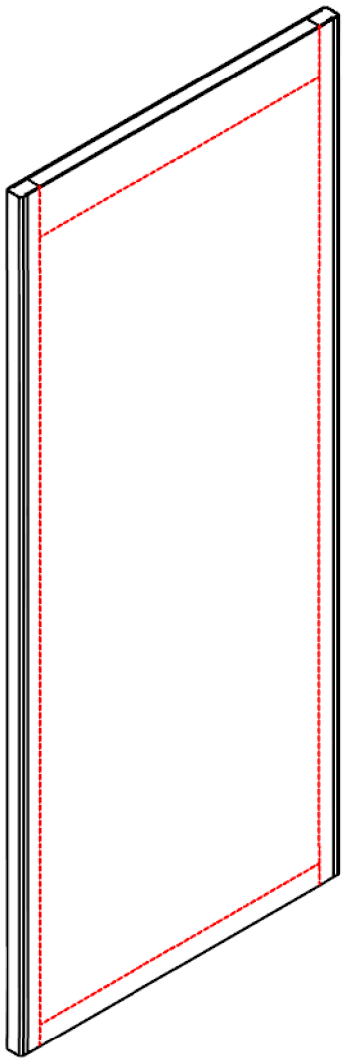
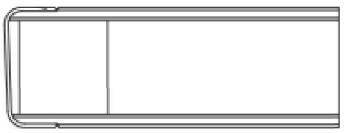
Lead Lined, Non-Rated FSC Particleboard (LL FSC7-NR)

Bonded FSC Particleboard Core, 7-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	FSC Particleboard: ANSI A208.1.2009 grade LD-1 (32 lb/ft^3)	
Complies with CARB Phase I & II Emission Standards		
Maximum Sizes	4'0" x 8'0"	8'0" x 8'0" (Requires Lead Astragal)
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
Lead Thickness	1/16" (4lb) or 1/8" (8lb), Balanced Construction	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	1/16" Lead – 8.96lb/ft^2 (3070 = 186lbs) (4070 = 251lbs) 1/8" Lead – 12.79lb/ft^2 (3070 = 265lbs) (4070 = 358lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5" from edges, 1-1/2" from hardware or additional cutouts	
Lite Frames	Metal Lead Lined– Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any appropriate lead equivalency	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted (Mortised will affect lead)	
Door Bottoms	Mortised or Surface Mounted (Mortised will affect lead)	
Transoms	Not Available	





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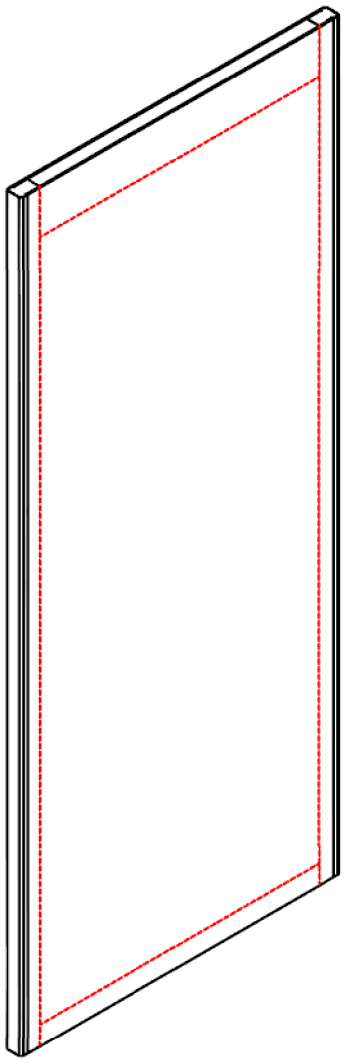
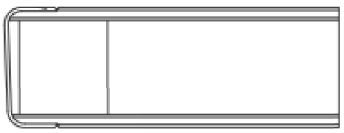
Lead Lined, Non-Rated Particleboard (LL PC7-NR)

Bonded Particleboard Core, 7-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Particleboard: ANSI A208.1.2009 grade LD-1 (32 lb/ft^3)	
Maximum Sizes	4'0" x 8'0"	8'0" x 8'0" (Requires Lead Astragal)
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
Lead Thickness	1/16" (4lb) or 1/8" (8lb), Balanced Construction	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	1/16" Lead – 9.01lb/ft^2 (3070 = 187lbs) (4070 = 252lbs) 1/8" Lead – 12.84lb/ft^2 (3070 = 267lbs) (4070 = 360lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5" from edges, 1-1/2" from hardware or additional cutouts	
Lite Frames	Metal Lead Lined– Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any appropriate lead equivalency	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted (Mortised will affect lead)	
Door Bottoms	Mortised or Surface Mounted (Mortised will affect lead)	
Transoms	Not Available	





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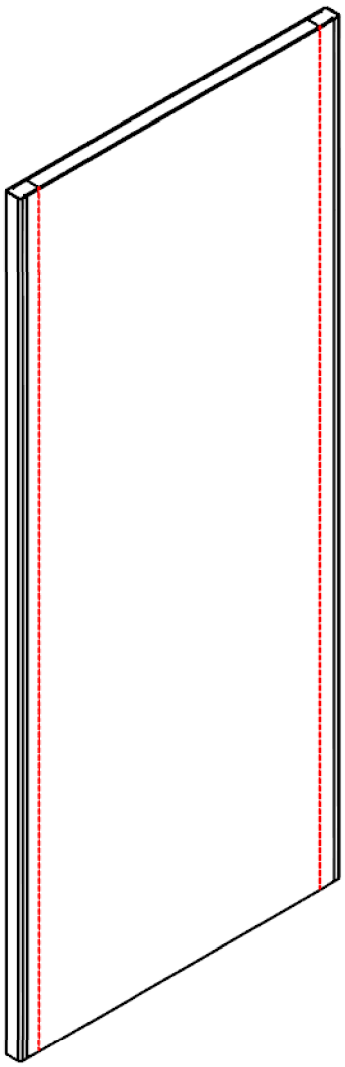
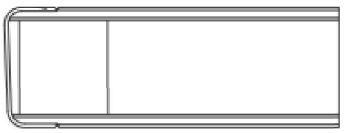
Lead Lined, Non-Rated SCL (LL SCL7-NR)

Bonded SCL Core, 7-Ply Construction

	Single Swing	Pair or Double Egress
Core Type & Standards	Structural Composite Lumber: (39 Lb/Ft^3)	
Maximum Sizes	4'0" x 8'0"	8'0" x 8'0" (Requires Lead Astragal)
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
Lead Thickness	1/16" (4lb) or 1/8" (8lb), Balanced Construction	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	1/16" Lead – 10.63lb/ft^2 (3070 = 221lbs) (4070 = 298lbs) 1/8" Lead – 14.46lb/ft^2 (3070 = 300lbs) (4070 = 405lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5" from edges, 1-1/2" from hardware or additional cutouts	
Lite Frames	Metal Lead Lined– Painted, Wood Veneered, Acrovyn Wrapped	
Glazing	Any appropriate lead equivalency	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Mortised, Surface & Continuous	
Pivots	Center hung & Offset w/intermediate	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted (Mortised will affect lead)	
Door Bottoms	Mortised or Surface Mounted (Mortised will affect lead)	
Transoms	Not Available	





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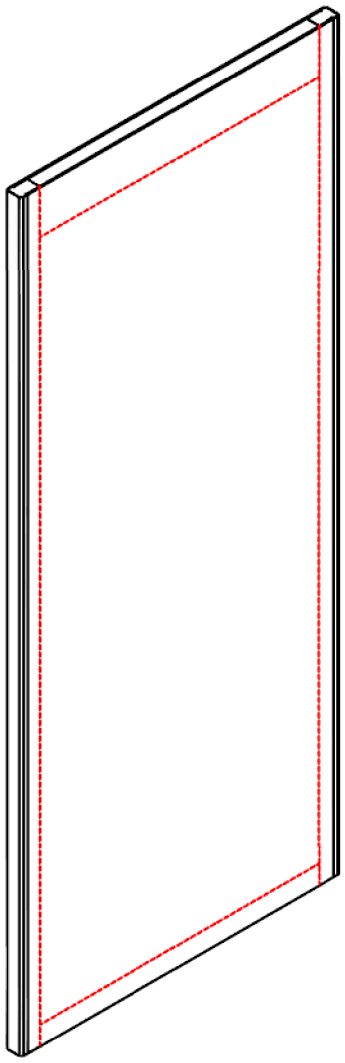
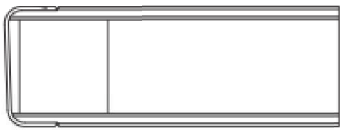
Lead Lined, 20 Minute Rated FSC Particleboard (LL FSC7-20PP)

Bonded FSC Particleboard Core, 7-Ply Construction, Cat. A, PP

	Single Swing	Pair or Double Egress
Core Type & Standards	FSC Particleboard: ANSI A208.1.2009 grade LD-1 (32 lb/ft^3)	
Complies with CARB Phase I & II Emission Standards		
Maximum Sizes	4’0” x 8’0”	8’0” x 8’0” (Requires Lead Astragal)
Protection Plates	Up to 48” (above bottom of door)	
Door Thickness	1-3/4” (+/- 1/16”)	
Lead Thickness	1/16” (4lb), Balanced Construction	
WDMA Prefit Tolerance	Width: (+/- 1/32”) Height & Thickness: (+/- 1/16”)	
Weight	1/16” Lead – 8.96lb/ft^2 (3070 = 186lbs) (4070 = 251lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5” top rail; 1” Bottom Rail; 1” Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5” from edges, 1-1/2” from hardware or additional cutouts	
Lite Frames	Metal Lead Lined– Painted, Wood Veneered	
Glazing	Any appropriate lead equivalency Any listed & labeled (20min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 “Table 6.4.3.1”	
Pivots	Offset w/intermediate (Center hung – Not Available)	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted (Mortised will affect lead)	
Door Bottoms	Mortised or Surface Mounted (Mortised will affect lead)	
Transoms	Not Available	





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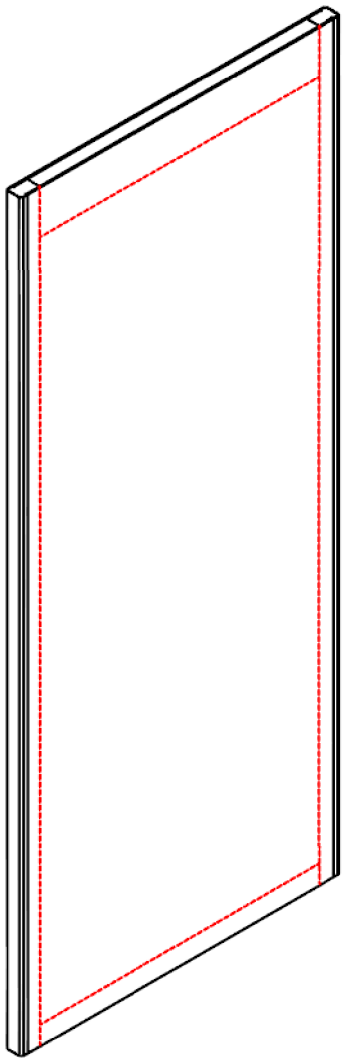
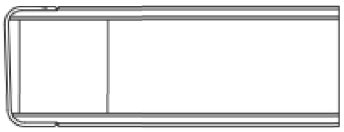
Lead Lined, 20 Minute Rated Particleboard (LL PC7-20PP)

Bonded Particleboard Core, 7-Ply Construction, Cat. A, PP

	Single Swing	Pair or Double Egress
Core Type & Standards	Particleboard: ANSI A208.1.2009 grade LD-1 (32 lb/ft^3)	
Maximum Sizes	4'0" x 8'0"	8'0" x 8'0" (Requires Lead Astragal)
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
Lead Thickness	1/16" (4lb), Balanced Construction	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	1/16" Lead – 8.96lb/ft^2 (3070 = 186lbs) (4070 = 251lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	5" from edges, 1-1/2" from hardware or additional cutouts	
Lite Frames	Metal Lead Lined– Painted, Wood Veneered	
Glazing	Any appropriate lead equivalency Any listed & labeled (20min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Pivots	Offset w/intermediate (Center hung – Not Available)	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted (Mortised will affect lead)	
Door Bottoms	Mortised or Surface Mounted (Mortised will affect lead)	
Transoms	Not Available	





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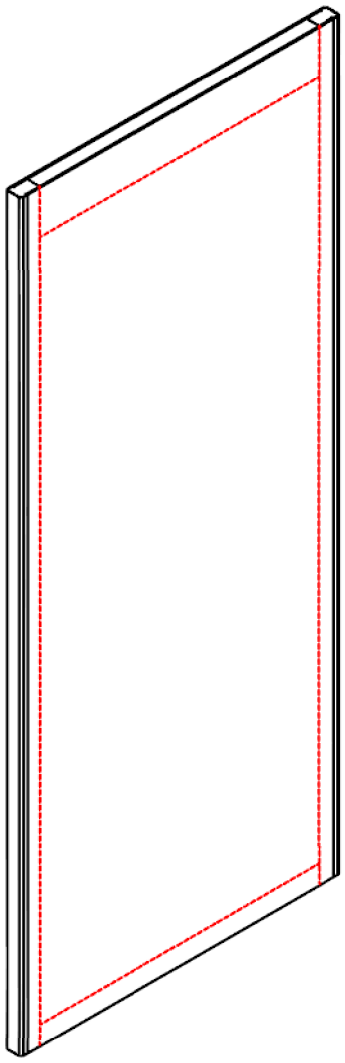
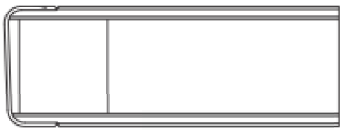
Lead Lined, 45 Minute Rated Mineral (LL FD7-45PP)

Bonded Mineral Core, 7-Ply Construction, Cat. A, PP

	Single Swing	Pair or Double Egress
Core Type & Standards	Mineral Composite: (28-35 lb/ft^3)	
Maximum Sizes	4'0" x 9'0"	8'0" x 9'0" (Requires Lead Astragal)
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
Lead Thickness	1/16" (4lb) or 1/8" (8lb), Balanced Construction	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	1/16" Lead – 10.63lb/ft^2 (3070 = 206lbs) (4070 = 277lbs) 1/8" Lead – 14.46lb/ft^2 (3070 = 286lbs) (4070 = 385lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	6" from edges, 5" from hardware or additional cutouts	
Max Visible Glass Area	1296 in^2	
Lite Frames	Metal Lead Lined– Painted, Wood Veneered	
Glazing	Any appropriate lead equivalency Any listed & labeled (45min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs = 3pts (2pts w/ GP Blue Core) DE Pairs = 4pts (2pts w/ GP Blue Core)
Pivots	Offset w/intermediate (Center hung – Not Available)	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted (Mortised will affect lead)	
Door Bottoms	Mortised or Surface Mounted (Mortised will affect lead)	
Transoms	Not Available	





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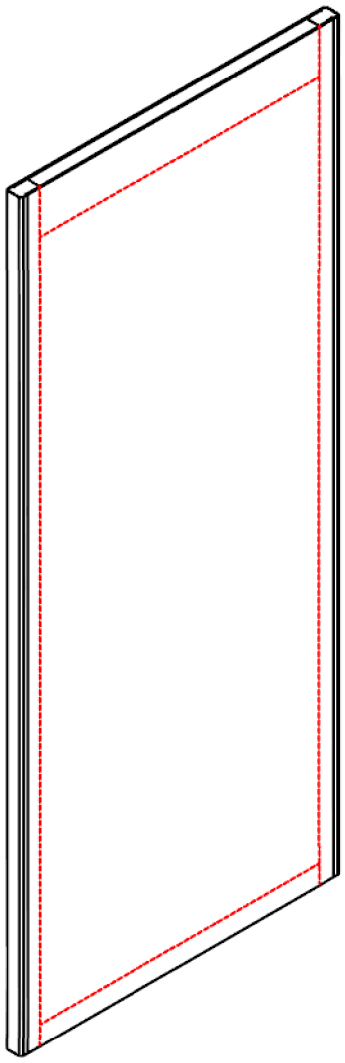
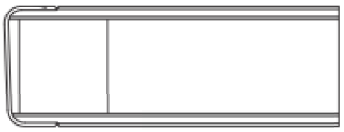
Lead Lined, 60 Minute Rated Mineral (LL FD7-60PP)

Bonded Mineral Core, 7-Ply Construction, Cat. A, PP

	Single Swing	Pair or Double Egress
Core Type & Standards	Mineral Composite: (28-35 lb/ft^3)	
Maximum Sizes	4'0" x 9'0"	8'0" x 9'0" (Requires Lead Astragal)
Protection Plates	Up to 48" (above bottom of door)	
Door Thickness	1-3/4" (+/- 1/16")	
Lead Thickness	1/16" (4lb) or 1/8" (8lb), Balanced Construction	
WDMA Prefit Tolerance	Width: (+/- 1/32") Height & Thickness: (+/- 1/16")	
Weight	1/16" Lead – 10.63lb/ft^2 (3070 = 206lbs) (4070 = 277lbs) 1/8" Lead – 14.46lb/ft^2 (3070 = 286lbs) (4070 = 385lbs)	
Crossband	High Density FSC Fiberboard	
Blocking	(Standard) 5" top rail; 1" Bottom Rail; 1" Fixed Internal Stiles (Additional blocking upon request)	
Assembly Adhesive	Face: Type I (waterproof); Core: Type II (water-resistant)	
Replaceable Edge Stiles & Covers	Non-Replaceable SCL Stiles. Acrovyn and/or 20GA #4 finish Stainless Steel Replaceable Covers	
Replaceable Edge Profile	Beveled, Square	
Lites	6" from edges, 5" from hardware or additional cutouts	
Max Visible Glass Area	100 in^2	
Lite Frames	Metal Lead Lined– Painted, Wood Veneered	
Glazing	Any appropriate lead equivalency Any listed & labeled (60min or greater)	
Louvers	Not Available	
Electronic Options	Electronic hardware & raceways Available	
Hinges	Per NFPA 80 "Table 6.4.3.1"	
Points of Latching	Singles = 1pt	Pairs = 4pts (2pts w/ GP Blue Core) DE Pairs = 4pts (2pts w/ GP Blue Core)
Pivots	Offset w/intermediate (Center hung – Not Available)	
Locks	Mortise & Cylindrical	
Exit Devices	Surface Vertical Rod (Includes LBR), RIM & Mortised	
Concealed Vertical Rod	Not Available	
Flushbolts	Must Be Extension Type (Metal Door)	
Closing Devices	Mortised or Surface Mounted (Mortised will affect lead)	
Door Bottoms	Mortised or Surface Mounted (Mortised will affect lead)	
Transoms	Not Available	





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Bulletin: Concealed Closers/Stops

CS Acrovyn Doors has approval to machine for listed and approved concealed overhead closers and/or stops in doors rated 20 through 90-minutes. Concealed holders are not allowed in labeled doors unless they include an automatic release function when fire is detected. The specific approvals include:

- **Track in Door: WHI / Guardian (20 through 90-minute labeled doors) the cutout dimension cannot exceed 1-1/2" in depth, 1-5/16" in width or 23-5/8" in length.**

CS Acrovyn Doors will not warranty doors that exceed the following:

Doors with concealed closers deeper than 2" or wider than 1-1/4" or machined pockets that leave less than 1/4" thick cavity walls.

Due to the large cutouts required for this hardware, a frame (header) applied intumescent will be required to be installed above the cutout *(Such as Technofire 2000/2006).* By definition, this makes the opening Category B from a code perspective. Whereas the door is constructed (as Category A) with intumescent stiles and rail, the only additional field-applied intumescent required will be over the hardware cutout. This rule applies to 20 through 90 minute applications.

(See intumescent installation instructions on following page)

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Concealed Closers/Stops Intumescent Installation Instructions

Due to the large cutouts required for this hardware, a frame (header) applied intumescent will be required to be installed above the cutout *(Such as Technofire 2000/2006).*

Installation of the frame applied intumescent:

1. Locate the intumescent CS Acrovyn Doors has supplied with your doors for your convenience. If Technofire Intumescent has become damaged or lost, it is your responsibility to replace it.
2. Thoroughly clean the frame surface where intumescent will be applied. Ensure surface is clean and dry before continuing.
3. Technofire Intumescent may need trimmed to fit the frame opening. If it does, the product may be cut with scissors. Notching or trimming for hardware in the frame header may also need to be completed.
4. Remove the adhesive backer from the backside of the Technofire Intumescent strip and firmly attach it to the header of the frame directly above the door.
5. At this point installation of the Technofire Intumescent is complete.
    a. If you would like to paint over the surface of the Technofire Intumescent, you may do so.

(Failure to apply the intumescent will compromise the fire rating)

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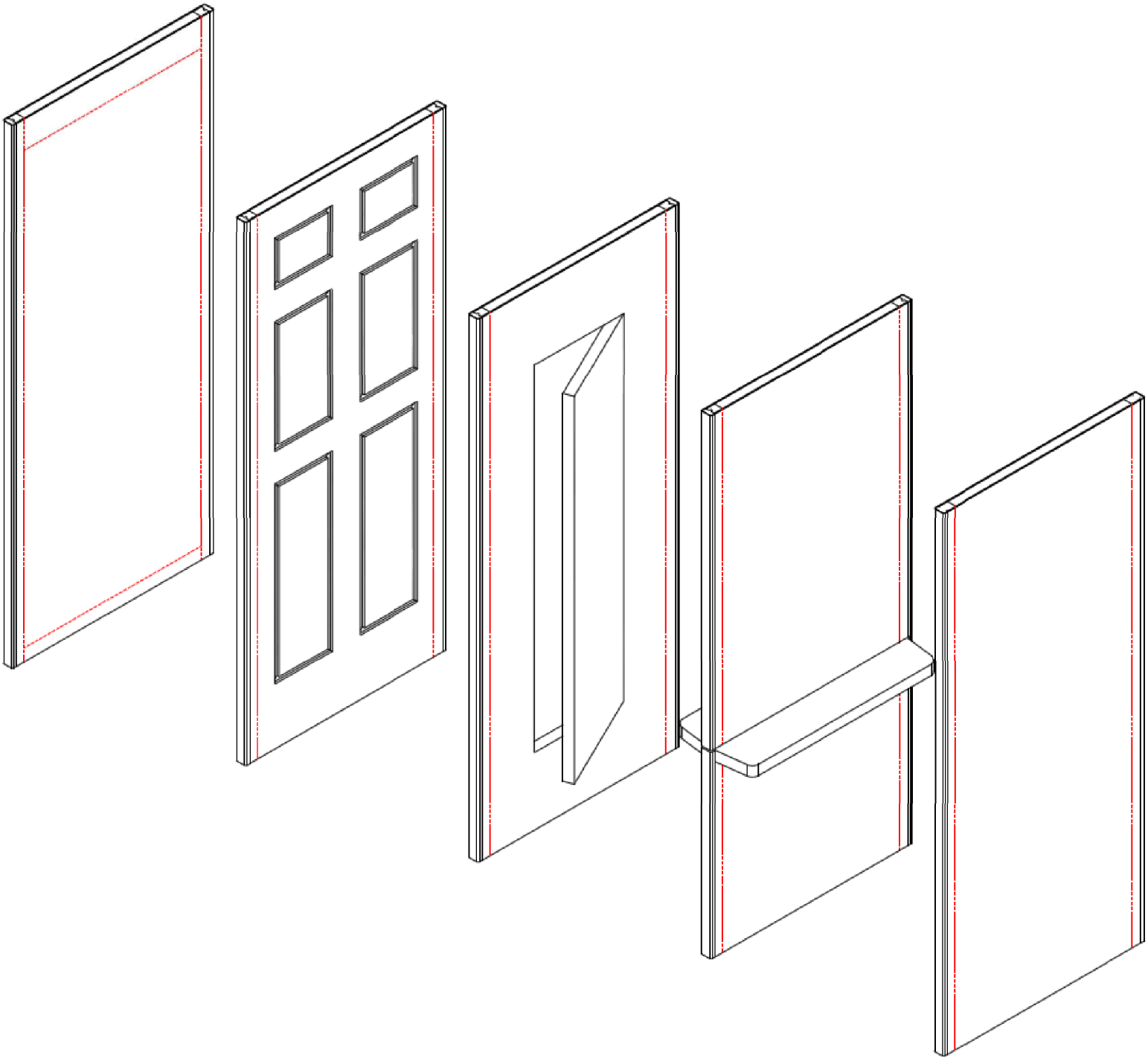

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Models DEPL-40N, DEPL-60N, DEPU-40N and DEPU-60N
(Acrovyn Door Edge Protector)

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Door Protection

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Corner Guards, Bumper Guards, Crash Rails, Accent Rails, Wall Covering, Wall Panels; refer to section 10 26 00 “Wall and Door Protection”

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)
B. American Society for Testing and Materials (ASTM)
C. National Fire Protection Association (NFPA 252 fire test)
D. Underwriters Laboratories (UL-10C positive pressure fire test)

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 “Submittal Procedures”:

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of door protection products.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and thickness:
  1. Sample of each product specified.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for door protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of door protection products similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code Compliance: Door protection products should conform to all applicable codes including IBC, UBC, SBCCI, BOCA and Life Safety.
D. Fire performance characteristics: Provide engineered PETG door protection products with an Intertek/Warnock Hersey label indicating that they are identical to those tested in accordance with UL-10C Positive Pressure and NFPA 252.
E. Chemical and stain resistance: Provide door protection products with chemical and stain resistance in accordance with ASTM D543.
F. Color Match: Provide door protection products that are color matched in accordance with the following:
  1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)
G. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

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1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a clean, dry place out of direct sunlight and exposure to the elements. A room temperature of 40-100ºF (4-38ºC) should be maintained.

C. Materials must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65-75ºF (18-24ºC) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and installed on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Material should be high-impact Acrovyn 4000 with Suede texture in nominal .040" (1.02mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

2.03 Door Protection

A. Door Edge Protectors to be CS Acrovyn: Manufactured in rigid Acrovyn 4000 nominal .040" (1.02mm) or .060" (1.52mm) thick high-impact sheet.

1. **Model DEPL-40N Factory-formed L-shaped door edge protector in .040" (1.02mm) thickness with 1" (25.4mm) leg and supplied to specified height 32-114" (0.8-2.9m). Material to be supplied with adhesive or factory applied double-faced tape as appropriate for the intended application. Specify DEPL-60N for .060" (1.52mm) thickness. Specify angle if other than 90°. Select from one of Acrovyn solid colors or Chameleon simulated patterns.** [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver for Acrovyn door protection (exception: adhesive). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]
2. **Model DEPU-40N Factory-formed U-shaped door edge protector in .040" (1.02mm) thickness with 1" (25.4mm) leg and supplied to specified height 32-114" (0.8-2.9m). Material to be supplied with adhesive or factory applied double-faced tape as appropriate for the intended application. Specify DEPL-60N for .060" (1.52mm) thickness. Specify angle if other than 90°. Select from one of Acrovyn solid colors or Chameleon simulated patterns.** [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver for Acrovyn door protection (exception: adhesive). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]

2.04 Fabrication

A. General: Fabricate door protection products to comply with requirements indicated for design, dimensions, detail, finish and sizes.

2.05 Accessories

A. Adhesive: Acrovyn door edge protection shall be furnished as a complete packaged system, including appropriate standard adhesive or optional double-faced tape.

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Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations using approved adhesive or optional double-faced tape and locating all components firmly into position, level and plumb.

B. Temperature at the time of installation must be between 65-75ºF (18-24ºC) and be maintained for at least 48 hours after the installation, to allow for proper adhesive set up.

C. Relative humidity shall not exceed 80%.

D. Do not expose door protection to direct sunlight during or after installation. This will cause the surface temperature to rise, which in turn will cause bubbles and delamination.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean door protection products and accessories in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Models A1-DFPN and A2-DFPN

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Door Protection

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Corner Guards, Bumper Guards, Crash Rails, Corner Guards, Accent Rails, Wall Covering, Wall Panels; refer to section 10 26 00 “Wall and Door Protection”

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)
B. American Society for Testing and Materials (ASTM)
C. National Fire Protection Association (NFPA 252 fire test)
D. Underwriters Laboratories (UL-10C positive pressure fire test)

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 “Submittal Procedures”:

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of door protection products.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and thickness:
  1. Sample of each product specified.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for wall protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of door protection products similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code Compliance: Door protection products should conform to all applicable codes including IBC, UBC, SBCCI, BOCA and Life Safety.
D. Fire performance characteristics: Provide engineered PETG door protection products with an Intertek/Warnock Hersey label indicating that they are identical to those tested in accordance with UL-10C Positive Pressure and NFPA 252.
E. Chemical and stain resistance: Provide door protection products with chemical and stain resistance in accordance with ASTM D543.
F. Color Match: Provide door protection products that are color matched in accordance with the following:
  1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)
G. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

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1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a clean, dry place out of direct sunlight and exposure to the elements. A room temperature of 40-100ºF (4-38ºC) should be maintained.

C. Materials must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65-75ºF (18-24ºC) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Material should be high-impact Acrovyn 4000 with Suede texture and nominal .040" (1.02mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

2.03 Door Protection

A. Engineered PETG Door Frame Protection to be CS Acrovyn: To be formed and supplied with standard adhesive or optional factory-applied double-faced tape.

1. **Model A1-DFPN Two-piece custom formed door frame protector manufactured from nominal .040" (1.02mm) thick Acrovyn 4000 sheet. Supplied in 32-114" (0.8-2.9m) heights for frames with unequal door stop dimensions for 1 3/8" (34.9mm) doors. Select from one of Acrovyn solid colors or Chameleon™ simulated patterns.** [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver (exception: adhesive). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]
2. **Model A2-DFPN Two-piece custom formed door frame protector manufactured from nominal .040" (1.02mm) thick Acrovyn 4000 sheet. Supplied in 32-114" (0.8-2.9m) heights for frames with unequal door stop dimensions for 1 3/4" (44.5mm) doors. Select from one of Acrovyn solid colors or Chameleon™ simulated patterns.** [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver (exception: adhesive). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]

2.04 Fabrication

A. General: Fabricate door protection products to comply with requirements indicated for design, dimensions, detail, finish and sizes.

2.05 Accessories

A. Adhesive: Acrovyn door frame protection shall be furnished as a complete packaged system, including appropriate adhesive.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

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3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations, using approved adhesive.

B. Temperature at the time of installation must be between 65-75ºF (18-24ºC) and be maintained for at least 48 hours after the installation, to allow for proper adhesive set up.

C. Relative humidity shall not exceed 80%.

D. Do not expose door protection to direct sunlight during or after installation. This will cause the surface temperature to rise, which in turn will cause bubbles and delamination.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean door protection products and accessories in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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SUGGESTED SPECIFICATIONS
SECTION 10 26 00
CS Acrovyn 4000 Models KP-40, PP-40N, KP-60N and PP-60N
(.040" and .060" Kick/Push Plate)

Part 1 - General

1.01 Summary

A. This section includes the following types of wall protection systems:
  1. Door Protection

B. Related sections: The following sections contain requirements related to this section:
  1. Handrails, Corner Guards, Bumper Guards, Crash Rails, Accent Rails, Wall Covering, Wall Panels; refer to section 10 26 00 “Wall and Door Protection”

1.02 References

A. National codes (IBC, UBC, SBCCI, BOCA and Life Safety)
B. American Society for Testing and Materials (ASTM)
C. National Fire Protection Association (NFPA 252 fire test)
D. Underwriters Laboratories (UL-10C positive pressure fire test)

1.03 Submittals

General: Submit the following in accordance with conditions of contract and Division 1 specification section 01 33 00 “Submittal Procedures”:

A. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.
B. Shop drawings showing locations, extent and installation details of door protection products.
C. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and thickness:
  1. Sample of each product specified.
D. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.
E. Maintenance data for door protection system components for inclusion in the operating and maintenance manuals specified in Division 1.

1.04 Quality Assurance

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of door protection products similar in complexity to those required for this project.
B. Manufacturer's qualifications: Not less than 5 years experience in the production of specified products and a record of successful in-service performance.
C. Code compliance: Door protection products should conform to all applicable codes including IBC, UBC, SBCCI, BOCA and Life Safety.
D. Fire performance characteristics: Provide engineered PETG door protection products with an Intertek/Warnock Hersey label indicating that they are identical to those tested in accordance with UL-10C Positive Pressure and NFPA 252.
E. Chemical and stain resistance: Provide engineered PETG door protection products with chemical and stain resistance in accordance with ASTM D543.
F. Color match: Provide door protection products that are color matched in accordance with the following:
  1. Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present.)
G. Single source responsibility: Provide all components of the door protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

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1.05 Delivery, Storage and Handling

A. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

B. Store materials in original, undamaged packaging in a clean, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40ºF (4ºC) and a maximum of 100ºF (38ºC) should be maintained.

C. Materials must be stored flat.

1.06 Project Conditions

A. Materials must be acclimated in an environment of 65-75ºF (18-24ºC) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

Part 2 - Products

2.01 Manufacturers

A. Interior surface protection products specified herein and included on the submittal drawings shall be manufactured by Construction Specialties, Inc.

2.02 Materials

A. Engineered PETG: Material should be high-impact Acrovyn 4000 with Suede texture in nominal .040" (1.02mm) or nominal .060" (1.52mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's available colors and patterns.

2.03 Door Protection

A. Engineered PETG Kick/Push Plates to be CS Acrovyn: To be manufactured in nominal .040" (1.02mm) or nominal .060" (1.52mm) thick high-impact sheet with Suede texture.

1. **Material shall be supplied precut to size with beveled edges. Material to be supplied with adhesive or factory applied double-faced tape as appropriate for the intended application. For kick plate, specify KP-40N (.040" thickness) or KP-60N (.060" thickness). For push plate, specify PP-40N (.040" thickness) or PP-60N (.060" thickness). Select from one of Acrovyn solid colors or Chameleon™ simulated patterns.** [Specifier note: refer to the Acrovyn Cradle to Cradle Product Summary at www.acrovyn.com/c2c to determine which model variations, colors and patterns are *Cradle to Cradle Certified*™ Gold or Silver (exception: adhesive). *Cradle to Cradle Certified*™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.]

2.04 Fabrication

A. General: Fabricate door protection products to comply with requirements indicated for design, dimensions, detail, finish and sizes.

2.05 Accessories

A. Adhesive: Acrovyn door protection shall be furnished as a complete packaged system, including appropriate standard adhesive or optional double-faced tape.

Part 3 - Execution

3.01 Examination

A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.02 Preparation

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

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3.03 Installation

A. Install the work of this section in strict accordance with the manufacturer's recommendations, using approved adhesive or tape and locating all components firmly into position, level and plumb.

B. Temperature at the time of installation must be between 65-75ºF (18-24ºC) and be maintained for at least 48 hours after the installation to allow for proper adhesive set-up.

C. Relative humidity shall not exceed 80%.

D. Do not expose door protection to direct sunlight during or after installation. This will cause the surface temperature to rise, which in turn will cause bubbles and delamination.

3.04 Cleaning

A. General: Immediately upon completion of installation, clean material in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 Protection

A. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

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Toilet Partitions

2019

Ceiling-Hung Restroom Partitions

Stainless Steel — Series 600

This style is mounted to the ceiling and is recommended where complete floor access is desired. This system requires pre-installed structural ceiling support and is not recommended for ceiling heights over 8'.

Series 600

Construction

Doors, panels and pilasters consist of two sheet metal faces insulated with a moisture resistant honeycomb core that is adhered to the inner surface and set under pressure to cure. All are manufactured from 300 Series stainless steel with a #4 satin brushed finish.

Permaseal™ Edge

Mills is the only manufacturer to offer the Permaseal Edge. Edges are formed to interlock together to provide a tight fit without crown molding.

Panels

Panels are 1" thick, constructed from 22 gauge stainless steel. Corners are welded underneath a clip that is affixed to all corners.

Doors

Doors are 1" thick, constructed from 22 gauge stainless steel. Corners are welded underneath a clip that is affixed to all corners. Each door includes internal 16 and 14 gauge welded reinforcements at the top and bottom hinge locations with a factory installed concealed true gravity cam. The closing position of each hinge is fully adjustable. A pre-punched hole permits field installation of the ADA-compliant concealed slide latch.

Pilasters

Pilasters are 1¼" thick, constructed from 18 gauge stainless steel. The ceiling end of the pilaster shall be provided with an integrally welded 12 gauge leveling bar. Pilasters shall be attached to the ceiling using ⅜"-16 threaded rod(s), hex nuts and washers (included or shipped in advance upon request). Structural support and drilling provided by others.

Hardware

Mills standard hardware is constructed from heavy-duty grade chromed Zamac. Compartments are provided with all hardware and zinc-plated torx-head fasteners to complete installation for applications with masonry block walls.

Door Hardware

Wraparound hinges are thru-bolted to the pilasters and the surface-mounted slide latch includes an emergency egress feature. The slide latch does not require a twisting motion and complies with all Federal ADA guidelines. The strike/keeper is wraparound and thru-bolted. Doors 32" wide or less are provided with a combination coat hook/bumper. Doors 34" wide or 36" wide are provided with an individual coat hook, door bumper and door pulls. Torx-head fasteners are supplied with all hardware.

Brackets

Stirrup-type, single-ear, double-ear and U-brackets are provided with torx-head fasteners.

Shoes

Shoes are 1-piece, 4" high, 304 Series stainless steel with #4 satin brushed finish and are secured to the inside face of the pilaster using stainless steel Torx-head fasteners.

Optional Selections

Finish
- ☐ Satin Brushed (STD)

Texture
- ☐ 5WL (Requires particle board core pilasters)
- ☐ Leather Grain

Door Hardware
- ☐ Zamac Surface-Mounted Slide Latch and Keeper
- ☐ Stainless Steel Surface-Mounted Slide Latch and Keeper

Hinges
- ☐ Chromed Zamac Wraparound Gravity Hinge (STD)
- ☐ Stainless Steel Wraparound Gravity Hinge
- ☐ Continuous Aluminum Spring-Loaded Hinge
- ☐ Continuous Stainless Steel Spring-Loaded Hinge

Brackets
- ☐ Chromed Zamac Stirrup Brackets (STD)
- ☐ Stainless Steel Stirrup Brackets
- ☐ Continuous Stainless Steel Brackets
- ☐ Continuous Aluminum Brackets

Miscellaneous
- ☐ Grab Bar Reinforcements
- ☐ Cutouts
- ☐ Solid Particle Board Core (must select for Satin Brushed)
  - ☐ Pilasters

Corners
- ☐ Welded Corners

Verify all rough-in dimensions prior to installation.

Consult local and national codes. Conformity and compliance to local and national codes is the responsibility of the installer.

This information is subject to change without notice.

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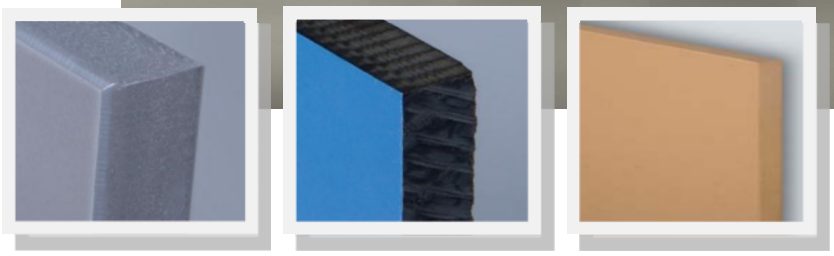
TP-2,3

SCRANTON PRODUCTS
DESIGNED TO BE WORRY-FREE



HDPE vs. Phenolic vs. SCRC

Bathroom Partitions

Understanding material differences available for commercial bathrooms

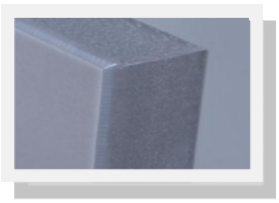
HINY HIDERS
SANTANA-COMTEC

Scranton Products™ Hiny Hiders® High Density Polyethylene (HDPE) bathroom partitions provide one of the longest life cycles in the industry. Constructed from premium American-made 1" solid HDPE with a homogenous color throughout, Scranton Products™ HDPE plastic resist dents, scratches, corrosion, graffiti & mildew and will absolutely never rust.

Two competing materials in the marketplace today are Solid Color Reinforced Composite (SCRC) and Phenolic bathroom partitions. Scranton Products™ has performed laboratory testing that compares HDPE, SCRC and Phenolic to validate certain features & benefits and provide the industry with a clear understanding of the differences in materials.

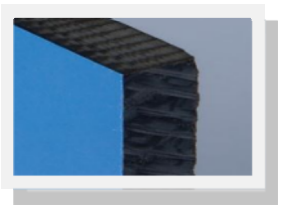
Commercial bathroom partitions are placed into harsh high traffic environments. These environments tend to be damp making the materials within them susceptible to mold, mildew and rust. It is also not uncommon to encounter graffiti and vandalism in these public spaces, therefore it is important to invest in a worry-free product that will save you time and money.

MATERIAL COMPARISONS



Weight: 165lbs*

HDPE
Solid Plastic color throughout



Weight: 167lbs*

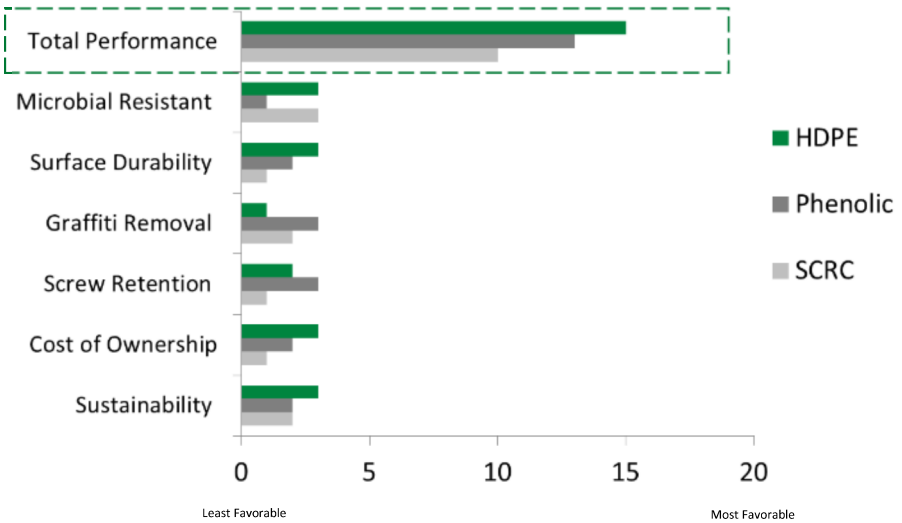
Phenolic
Resin impregnated kraft paper

Weight: 207lbs*

SCRC
Fibers, dyes & resins with color throughout

MYTH: HDPE, Phenolic and SCRC bathroom partitions are manufactured from the same material.

FACT: High Density Polyethylene (HDPE) bathroom partitions are comprised of high density polyethylene resin & pigments. Phenolic bathroom partitions are comprised of a melamine sheet then multiple layers of resin impregnated kraft paper. Solid color reinforced composite (SCRC) bathroom partitions are made from a homogenous composite of cellulose fibers, dyes & resins with a GraffitiOff™ surface coating. Independent testing reveals Scranton Products™ HDPE is a better material choice to withstand the harsh environments of commercial bathroom partitions.



Comparing the numerous laboratory test throughout this document HDPE, Phenolic and SCRC were graded on a scale of 1—3, 1 being the least favorable and 3 the most. Testing shows that Scranton Products HDPE is the best material choice with a score of 15 out of 18 and then Phenolic with 13 out of 18 and SCRC with 10 out of 18.

**Weights are based upon a standard partition configuration. HDPE and SCRC panels and pilasters are 1" thick, Phenolic is comprised of 3/4" and 1/2" panels and pilasters.*

MICROBIAL RESISTANCE

MYTH: HDPE, Phenolic and SCRC are all resistant to mold and mildew.

FACT: HDPE exhibited no microbial growth during the testing period. In just 21 days Phenolic had mold and mildew growth and a additional amount of growth within 28 days. Bathroom partitions are placed in environments where materials are susceptible to mold & mildew, therefore it is important to choose a material that is microbial resistant.

Material	14 days	21 days	28 days
HDPE	10	10	10
Phenolic	10	9	6
SCRC	10	10	10

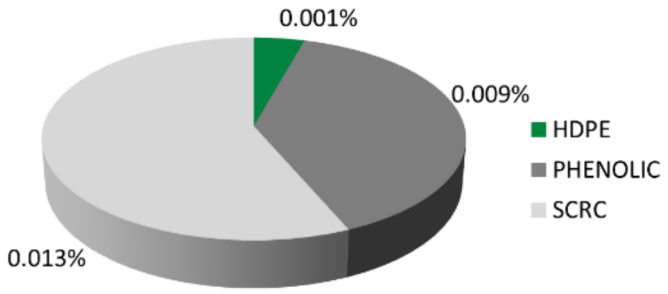
Testing conducted in accordance with ASTM D3293. The results are shown in above. Samples were scored on a 0-10 scales, where 10 is the best microbial resistance. Test performed in 2013.

SURFACE DURABILITY

MYTH: Phenolic and SCRC bathroom partitions have a more durable surface than HDPE bathroom partitions.

FACT: HDPE has the best abrasion resistance with the lowest surface wear. Phenolic and SCRC have a higher surface wear indicating a lower abrasion resistance than HDPE. The test performed mimics the surface abrasion that would result from normal handling, cleaning or polishing. Once the surface of Phenolic or SCRC have been scratched or worn, stains may be more difficult to remove and some may leave a ghosting effect.[1]

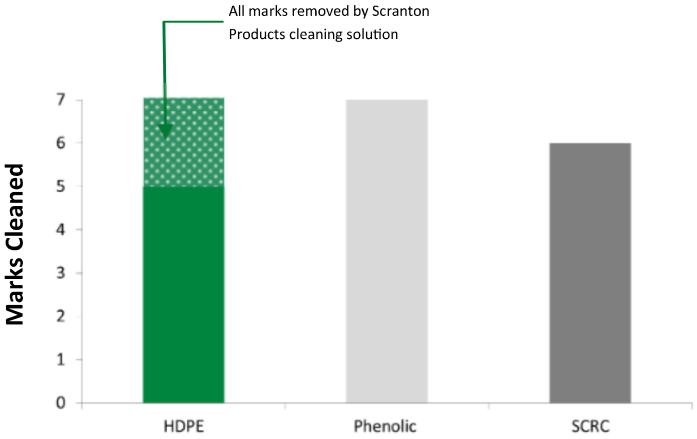
HDPE has the highest abrasion resistance



The abrasion resistance of various bathroom partition materials was measured in accordance with ASTM G195 using the CS-10 abrasion wheel. This wheel was selected for this test because of its mild to medium abrading action, like that of normal handling, cleaning or polishing. Testing performed in 2013

[1] *Referenced from Bobrick Advisory Bulletin TB-60 Toilet Partition Cleaning & Maintenance*

GRAFFITI RESISTANCE

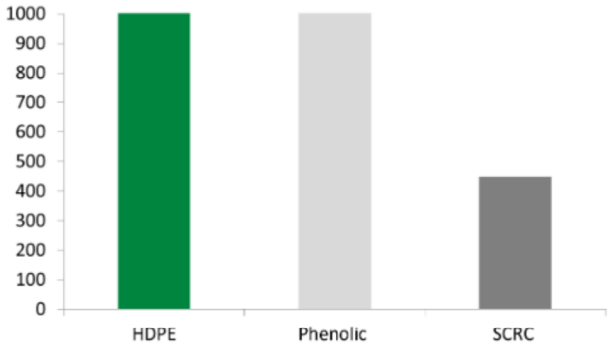


Testing was conducted in accordance with ASTM D6578 . The test provides a standard set of conditions that can be used to evaluate the graffiti resistance of a surface. Seven marking agents and six cleaning products were used in the evaluation. Testing performed in 2013

MYTH: Phenolic and SCRC bathroom partitions have better graffiti resistance under all circumstances than HDPE bathroom partitions.

FACT: Using Scranton Products™ recommended environmentally friendly cleaning solutions graffiti was removed in all instances from HDPE. It should be noted that both Phenolic and SCRC have an exterior coating to prevent graffiti that may deteriorate over time and may require specialized maintenance such as waxing. HDPE, on the other hand does not have an additional coating and no specialized maintenance procedures are necessary.

SCREW RETENTION

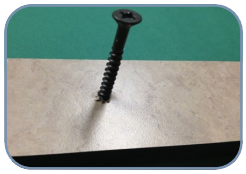


Using a tensile tester, the force required to pull a (9" x 2.5") screw fastener from the bathroom partition material was measured. Test performed in 2013

MYTH: HDPE, Phenolic and SCRC bathroom partitions have the same screw retention capabilities.

FACT: Test results show that HDPE performed with very high screw retention. SCRC testing failed at less than half the pull force to remove the same fastener. A portion of the SCRC surface broke free during the test (see photo below right), exposing the inner layers of the material. This could negatively impact the durability of the hardware mounted on the bathroom partitions.

HDPE



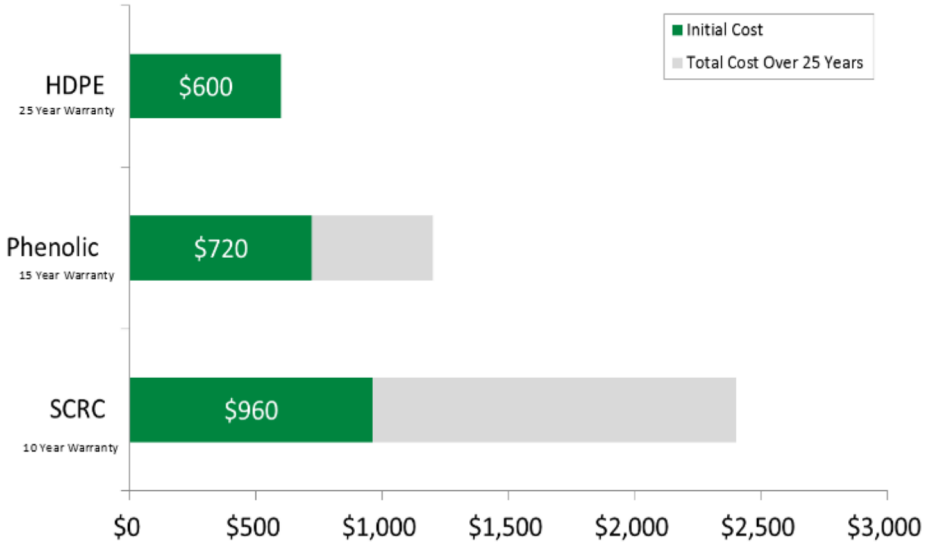
Phenolic

SCRC

TOTAL PRODUCT COST VS. LENGTH OF WARRANTY

MYTH: Phenolic and SCRC bathroom partitions are only slightly more expensive than HDPE bathroom partitions.

FACT: Scranton Products™ HDPE has the lowest initial cost and provides the lowest cost of ownership due to its performance, durability and long warranty. HDPE costs significantly less than the other two materials over a 25 year period.



The total cost over 25 years is based on replacing partitions at the end of their warranty period.

SUSTAINABILITY

MYTH: Phenolic and SCRC bathroom partitions are as sustainable as HDPE bathroom partitions.

FACT: HDPE is 100% recyclable and is available with up to 100% post-consumer content. Scranton Products™ HDPE material has 25-100% pre-consumer content. Phenolic and SCRC are not available as 100% post-consumer and are not recyclable. SCRC does not contain any pre-consumer content.
HDPE does not contain any added Urea-Formaldehyde resins.

Category	HDPE	Phenolic	SCRC
Recyclable	Yes	No	No
Post-Consumer Recycled Content	0%, 100%	0%	0%
Pre-Consumer/Post Industrial Recycled Content	25-100%	22%	0%
Low Emitting Materials	Yes	No	Yes
Free of Added Urea-Formaldehyde Resins	Yes	No	Yes

THE COMPLETE LINE OF
SCRANTON PRODUCTS

BATHROOM PARTITIONS
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TUFFTEC LOCKERS

RESISTALL PARTITIONS

DURALIFE LOCKERS

Signage

2019

Sometimes the smallest step in the right direction ends up being the biggest step.

Starting college life... the new people, the courses, the multiple buildings, classrooms and more can be daunting. A turnkey wayfinding solution from 2/90 Sign Systems makes it easy to navigate a new environment, making college life just a little bit easier. Wherever wayfinding products are needed, there is a 2/90 Sign Systems solution that is **helping people find their way.**

2/90® Sign Systems

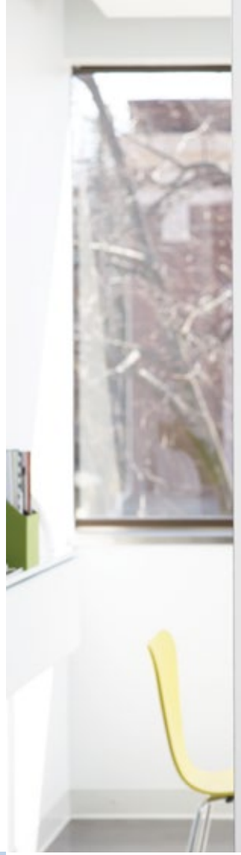
Helping people find their way™

Arc®

modular sign system

The Arc modular sign system is a simple yet powerful solution for facilities such as schools, universities, and libraries that require frequent changes. Like all 2/90 Sign Systems products, Arc inserts can be fabricated from almost any one of our numerous insert materials and copy options. To create a seamless look and end-user flexibility, Arc is designed to accommodate standard paper sizes. With Arc, changing names, titles, departments and messages is easy. Choose Arc when you're looking to create a clean, three-dimensional look with a curved profile .

Our modular sign systems include a collection of wall, cubicle, ceiling and freestanding mounts, including this Arc table top mount sign.



Accent strips separate multiple inserts and add additional detail.

Signs for every need; identification, regulation, information and direction.

SmartStrip™

Hold a variety of messages by adding our SmartStrip to any of our modular sign systems. When purchased separately, they can be installed next to a sign or used alone to hold messages or postings.

Arc modular sign with SmartStrip accessory in satin natural aluminum finish with black caps.

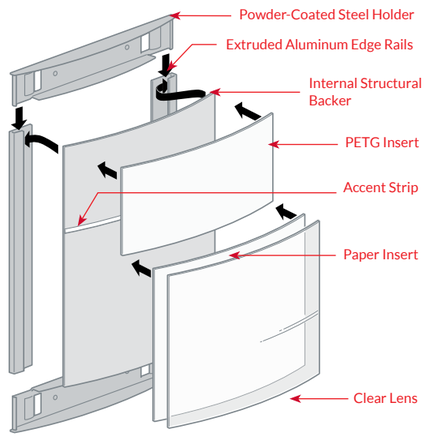
2/90® Sign Systems

Helping people find their way™

Arc®

modular sign system

The Arc modular sign system can be paired with accessories such as our SmartInsert™, SmartStrip™ or pen holder, to create an effect as unique as your company or space. Sturdy and tamper-resistant, Arc is compliant with ADA regulations when used with ADA-compliant graphics/copy options.



As your facility grows, our modular sign systems can accommodate change. Combine Arc signs with a design element for a seamless update.

2/90® Sign Systems

Remove the clear, non-glare lens using the provided suction tool. Then simply insert the paper and replace the protective, tamper-resistant lens.

Easily update information with your own printed paper inserts.

Like all of our modular sign systems, Arc modular signs accept any document, photograph or graphic image printed on standard paper sizes. Die-cut perforated paper is available from 2/90 Sign Systems in a variety of sizes, colors and textures for easy in-house maintenance.

Arc signs are available with either a horizontal or vertical curve.

Horizontal Arc

Vertical Arc

DIGITAL

Directories

Bulletin Boards

Meeting Room Displays

Queuing Systems

OVERVIEW

2/90 Sign Systems is excited to offer a complete line of digital signage to support our modular sign systems. Digital signage is a great addition to dynamically communicate with staff and visitors. From interactive directories assisting people with wayfinding to communicating your message and identity, digital messaging is an effective way to communicate information and differentiate your facility.

Digital Signage is interactive and non-interactive. Our digital products include directories, bulletin boards, meeting room displays and queuing systems. Ensure people find their destination quickly using interactive wayfinding directories. Broadcast multiple messages efficiently and effectively with digital bulletin boards. Use digital meeting room displays to identify destinations and display scheduling information. Customer Flow Management (CFM) Systems provide queuing while capturing valuable information for optimizing your organization.

Whether your need is wayfinding, visitor processing, or communicating current events and information, 2/90 Digital Signage will inform your staff and visitors more efficiently while enhancing their impression of your facility. Our turnkey digital solution includes planning, design, software, hardware, decorative framing or kiosks, and technical support. Learn more about incorporating digital messaging with your facility signage for a more effective wayfinding program at 290signs.com.

2/90 Sign Systems

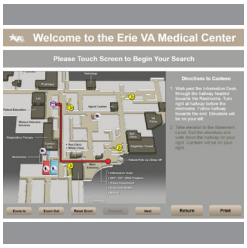
Powered by:

JANUS DISPLAYS

QMATIC Valuing Time

SO MANY APPLICATIONS!

- Welcome Messaging
- Directories and Directions
- General Facility Information
- Advertising and Promotions
- Queuing
- Real-time Messaging
- Meeting Room Names
- Event Listings and Schedules
- Workforce Communications
- Weather and News Feeds
- Sense of Community
- Differentiate your Facility
- Reinforce Brand
- Room Scheduling
- Employee Recognition
- Educational Messaging
- Enhance Customer Experience
- Menus
- Donor Recognition
- Emergency Procedures



WAYFINDING

Directories help occupants and visitors navigate easily through your facility. Interactive touch screens instantly provide users with directions that enhance your facility signage. Searchable by name, department or room number, everyone is certain to find their destination quickly on a pre-determined path, allowing you to route visitors away from sensitive areas. Enrich the user's experience by adding printer and phone capabilities.

INFORMATION

Bulletin Boards organize your messages on an unlimited canvas while eliminating cluttered walls. Scrolling text, flash animation and video is instantly updated system-wide to save staff hours of time posting flyers. Maximize your investment by incorporating digital signage into your emergency preparedness plan using pre-programmed messages, alerts and evacuation maps to broadcast safety procedures.

IDENTIFICATION

Meeting Room Displays provide identification and scheduling information. Change meeting times, presentation titles or any message from one central location using content management software. When rooms are not in use, display important announcements, motivational quotes, news or weather feeds. Combine an event directory with room displays to make it simple for users to quickly reach their destination.

MANAGEMENT

Queuing and Customer Flow Management (CFM) Systems create an orderly flow to high traffic environments and capture a high level of operational information to effectively service your customer. Customizable solutions improve operational efficiency, customer satisfaction, reduce wait-times and provide you with valuable tools for optimizing your organization.

2/90 Sign Systems
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GRAND RAPIDS, MI 49512 | REV. 6.12
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ES
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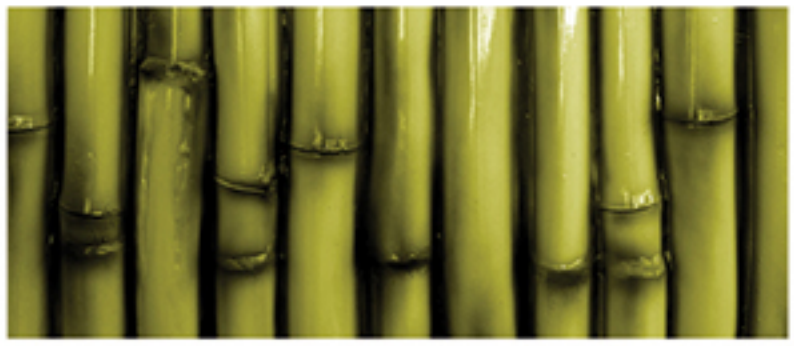
TIALS

2/90
Sign Systems

101
SATIN

L.2
LINEAR

309
SELECT CHERRY

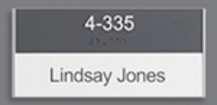


N.1
NATURAL

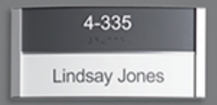
ALL THE ESSENTIALS YOUR FACILITY REQUIRES. ALL THE AESTHETICS YOUR HEART DESIRES. DELIVERED IN THE LEAD TIME YOU NEED.

At 2/90 Sign Systems, we've made designing and ordering signs as simple as it could be. It starts with Essentials, a collection of signs needed for a typical facility. Satisfy your aesthetic style with one of three sign systems: Modular, Arc or Klik. We've chosen our most popular sizes, insert configurations, and options. All you have to do is choose your sign system and your colors. It's that easy!

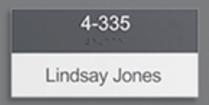
Or, for a more distinctive look, enhance your signs with Essentials Plus. Add a unique collection of backers in an array of shapes, colors, textures, and patterns to complement your environment, all made in-house to fit



MODULAR



ARC



KLIK

THE PERFECT STARTER SET

THE ESSENTIALS COLLECTION
Everything you need to identify, inform, regulate, and direct people in, through and out of your facility. The Essentials Collection comes in three versatile styles:

- **Modular** is a flat panel sign system consisting of a structural rail with removable sliding copy inserts secured by end caps. Shown below.
- **Arc** is a curved panel sign system featuring a metal frame with removable copy inserts secured by edge rails.
- **Klik** is a frameless flat panel sign system with changeable inserts. The frameless baseplate holds front-loading, removable copy inserts.

Each system is sustainable and economical. When the message changes, you simply replace the insert (not the entire sign). You can also enrich your signs with infinite colors, textures, and materials.

IDENTIFICATION

M.1
ADA Room ID
3" x 4"

M.2B
Name ID
2" x 8.5"

M.2C
ADA Name ID
2" x 8.5"

M.3
Name ID
4" x 6"

M.4
ADA Room/Name ID
3" x 11"
Arc sign style consists of solid insert.

M.5
ADA Room/Name ID
4" x 8.5"

M.6
ADA Room/Name ID
6" x 6"

M.7
ADA Room/Name ID
6" x 8.5"

SmartStrip
An optional accessory lets you post messages on any ID or Slider sign.
- Available in Aluminum finish only.
- Adds 1 inch to overall sign height.
- Ships separately from sign.

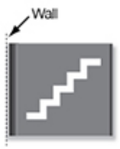
REGULATORY

M.8
Symbol
6" x 6"

M.9
ADA Symbol
8" x 6"

M.10
ADA Symbol
9" x 8.5"

M.11
ADA Stairwell
19" x 14"



M.8B
Symbol
Perpendicular Mount
6" x 6"

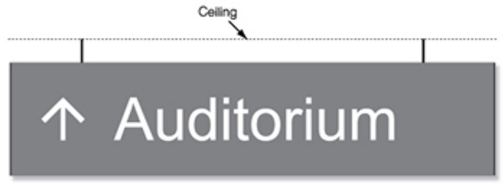
M.12
Symbol
Perpendicular Mount
6" x 14"

M.13
Life-Safety
Insert Area: 3" x 11"

OTHER SYMBOLS AVAILABLE View a list of common symbols at 290signs/literature_downloads.

DIRECTIONAL

M.15
Wayfinding Wall Mount
8" x 17"
Arc signs have edge rails on the top and bottom.



M.16
Wayfinding Ceiling Mount
8" x 34"
Arc signs have edge rails on the top and bottom.

INFORMATION

M.18
ADA Slider
4" x 8.5"

M.19
ADA Slider
6" x 8.5"

M.20
Window
12" x 8.5"
Paper Insert: 11" x 8.5"

M.21
Window
15" x 8.5"
Paper Insert: 11" x 8.5"

M.22
Window
15" x 17"
Paper Insert: 11" x 17"

DIRECTORIES

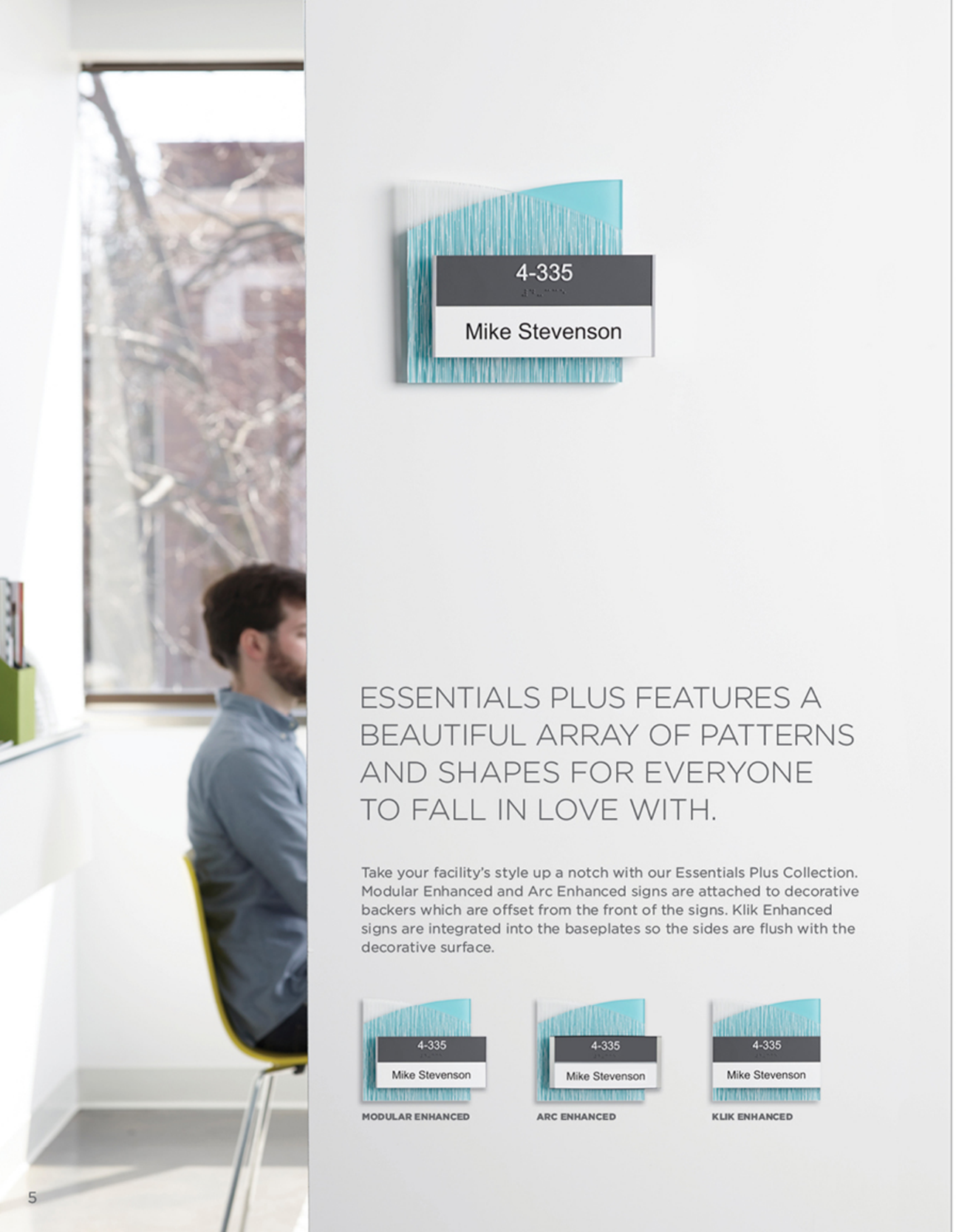
M.25
Directory
12" x 11"

M.27
Directory
16" x 17"

M.28
Directory
30" x 17"

DETAILS

- Essentials profile for Modular signs is Thin (9/32") for one-sided signs under 400 square inches and Standard (9/16") for larger and two-sided signs. Perpendicular and ceiling mount signs are two-sided; for Klik only, inserts are permanent.
- Standard wall mount for Essentials includes tape for signs under 100 square inches and screw for larger signs. Other mounts are available for cubicle, wall, and ceiling applications.
- Sign dimensions represent insert area. For Arc only, accent strips between inserts add an additional 1/8" each to sign height.



ESSENTIALS PLUS FEATURES A BEAUTIFUL ARRAY OF PATTERNS AND SHAPES FOR EVERYONE TO FALL IN LOVE WITH.

Take your facility's style up a notch with our Essentials Plus Collection. Modular Enhanced and Arc Enhanced signs are attached to decorative backers which are offset from the front of the signs. Klik Enhanced signs are integrated into the baseplates so the sides are flush with the decorative surface.

MODULAR ENHANCED

ARC ENHANCED

KLIK ENHANCED

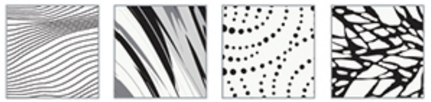
DELICIOUS HUES

OVER 100 STANDARD FINISHES
View our entire color offering at **290signs.com/colorchart.pdf**. Select from over 60 painted prism/designer hues, 15 painted metallics, 5 window insert papers, and 20 wood and aluminum laminates. Need more? Custom colors and materials are available.

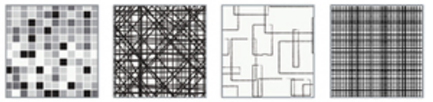
PATTERNS GALORE

20 INTRIGUING OPTIONS, ALL YOURS TO EXPLORE.
Patterns are available in black or white.

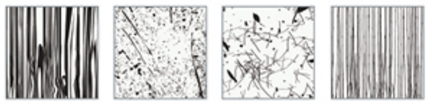
ABSTRACT


A.1 A.2 A.3 A.4

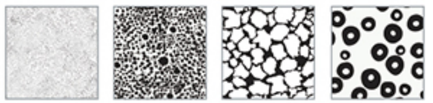
LINEAR


L.1 L.2 L.3 L.4

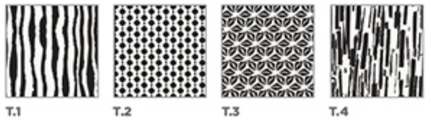
NATURAL


N.1 N.2 N.3 N.4

ORGANIC


O.1 O.2 O.3 O.4

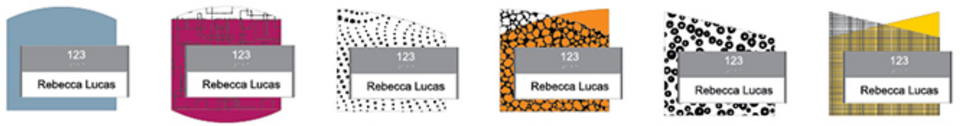
TEXTURAL


T.1 T.2 T.3 T.4

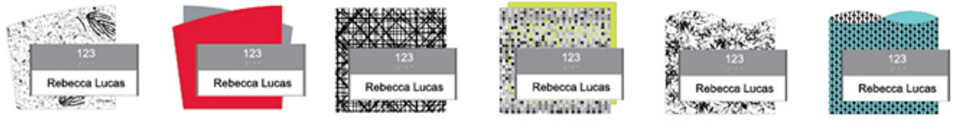
START BROWSING
We're always adding more patterns. Find the whole collection at **290signs.com/sign/design**.

LAYERS YOU'LL LOVE

SINGLE OR DOUBLE BACKERS



ARCH DOUBLE ARCH CURVE DOUBLE CURVE DIAGONAL DOUBLE DIAGONAL



FLARE DOUBLE FLARE QUAD DOUBLE QUAD WAVE DOUBLE WAVE

LET'S MAKE THINGS INTERESTING

THE ESSENTIALS PLUS COLLECTION
Enhance our Essentials offering of Modular, Arc and Klik signs with select shapes, colors, and patterns. Shown below: Essentials Plus Modular (M) with Double Curve (CC) backer.

DETAILS
- Standard material for Enhanced backers is 1/4" thick, clear acrylic with subsurface pattern or solid color. Other materials are available, including aluminum and wood laminates, first-surface painted and custom.
- Standard colors for patterns are black and white. Other colors for patterns are available.
- All Enhanced signs are screw mounted, except for 2B desk mount in select shapes. Other mounts not available.

IDENTIFICATION

M.1.CC
ADA Room ID
Insert Area: 3" x 4"
Overall Size: 5.75" x 5.5"

M.2B.CC
Name ID
Insert Area: 2" x 8.5"
Overall Size: 5" x 10"

M.2C.CC
ADA Name ID
Insert Area: 2" x 8.5"
Overall Size: 5" x 10"

M.3.CC
Name ID
Insert Area: 4" x 6"
Overall Size: 7.5" x 7.5"

M.4.CC
ADA Room/Name ID
Insert Area: 3" x 11"
Overall Size: 7.5" x 12.5"
Arc sign style consists of solid insert.

M.5.CC
ADA Room/Name ID
Insert Area: 4" x 8.5"
Overall Size: 8" x 10"

M.6.CC
ADA Room/Name ID
Insert Area: 6" x 6"
Overall Size: 9.5" x 7.5"

M.7.CC
ADA Room/Name ID
Insert Area: 6" x 8.5"
Overall Size: 10" x 10"

SmartStrip
An optional accessory lets you post messages on any ID or Slider sign.
- Available in 101 Satin Aluminum finish only.
- Adds 1 inch to overall sign height.
- Ships separately from sign.

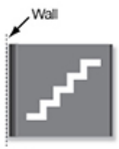
REGULATORY

M.8.CC
Symbol
Insert Area: 6" x 6"
Overall Size: 9.5" x 7.5"

M.9.CC
ADA Symbol
Insert Area: 8" x 6"
Overall Size: 11.5" x 7.5"

M.10.CC
ADA Symbol
Insert Area: 9" x 8.5"
Overall Size: 13" x 10"

M.11.CC
ADA Stairwell
Insert Area: 18" x 14"
Overall Size: 25" x 15.5"



M.8B
Symbol
Perpendicular Mount
6" x 6"

M.12
Symbol
Perpendicular Mount
6" x 14"

M.13
Life Safety
Insert Area: 3" x 11"
Overall Size: 8" x 13"

OTHER SYMBOLS AVAILABLE View a list of common symbols at 290signs/literature_downloads.

DIRECTIONAL

M.15
Wayfinding Wall Mount
8" x 17"
Arc signs have edge rails on the top and bottom.

M.16
Wayfinding Ceiling Mount
8" x 34"
Arc signs have edge rails on the top and bottom.

INFORMATION

M.18.CC
ADA Slider
Insert Area: 4" x 8.5"
Overall Size: 8" x 10"

M.19.CC
ADA Slider
Insert Area: 6" x 8.5"
Overall Size: 10" x 10"

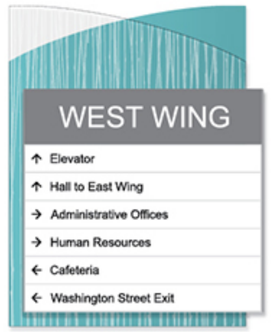
M.20.CC
Window
Insert Area: 12" x 8.5"
Paper Insert: 11" x 8.5"
Overall Size: 16" x 10"

M.21.CC
Window
Insert Area: 15" x 8.5"
Paper Insert: 11" x 8.5"
Overall Size: 19" x 10"

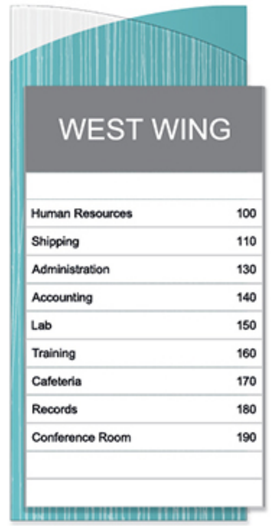
M.22.CC
Window
Insert Area: 15" x 18"
Paper Insert: 11" x 17"
Overall Size: 22" x 19.5"

DIRECTORIES

M.25.CC
Directory
Insert Area: 12" x 11"
Overall Size: 17" x 12.5"



M.27.CC
Directory
Insert Area: 16" x 17"
Overall Size: 23" x 18.5"



M.28.CC
Directory
Insert Area: 30" x 17"
Overall Size: 37" x 18.5"

START WITH THE ESSENTIALS

STEP 1 LOG IN TO OUR DESIGN CENTER
Get started by creating an account at **290signs.com/sign/design**. Our easy online process will walk you through the steps below.

STEP 2 SELECT SIGN TYPE
Choose a Modular (framed flat), Arc (curved) or Klik (frameless flat) sign system.

STEP 3 SELECT SIGN SPECS

INSERT MATERIALS
Choose from painted, aluminum and wood laminates, window inserts with paper (up to 4" high) or specify your custom color.

For Modular only: exposed channels on window inserts are black. Additional colors available, including satin natural aluminum finish. For Klik only: aluminum and wood laminates not available.

END CAP/EDGE RAIL COLOR/BASEPLATE
Available in 60 painted prism/designer hues, 15 painted metallics, and satin natural aluminum finish or specify your custom color.

For Arc only: accent strips between inserts are black. Additional colors available, including satin natural aluminum finish. For Klik only: baseplate matches top insert color. Additional colors available.

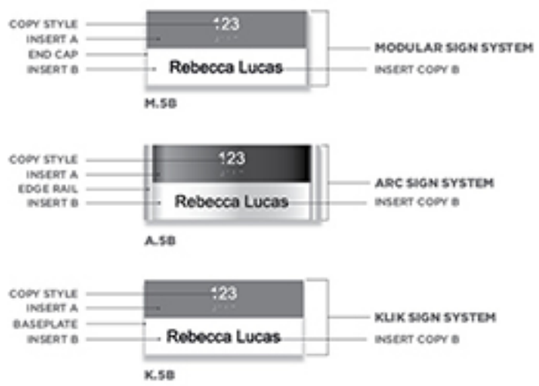
COPY STYLE
Selections represent ADA-compliant fonts. Additional styles available.

COPY COLOR
Choose from 60 prism/design hues and 15 metallics or specify your custom color.

Copy option for ADA is Integral Photopolymer for painted inserts and Applied Tactile/Raster Braille for laminate inserts. Non-ADA copy for paint and laminate inserts is Direct Print and Laser Print for window inserts with paper.

SIGN SPECS
For Essentials: Modular, Arc or Klik

SIGN SYSTEM : ESSENTIALS
INSERT A FINISH : PRISM 734 DARK GREY
INSERT B FINISH : PRISM 708 SOFT WHITE
END CAP/EDGE RAIL COLOR : 101 SATIN NATURAL
COPY STYLE : ARIAL
INSERT A COPY COLOR : 708 SOFT WHITE
INSERT B COPY COLOR : 704 BLACK

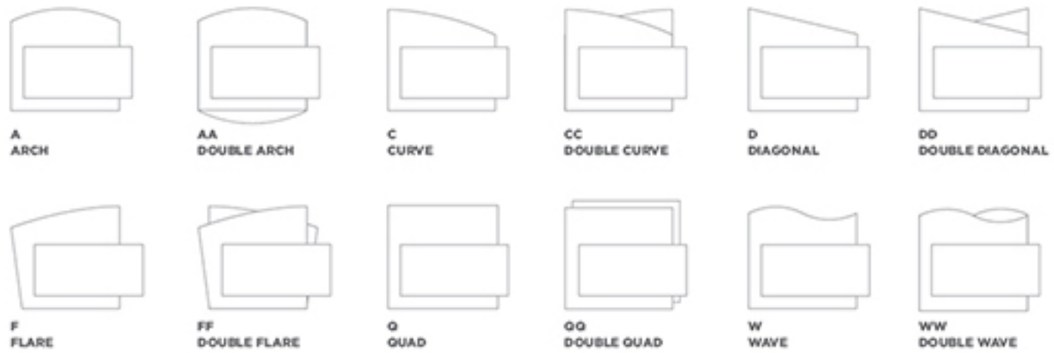


SATISFIED WITH YOUR SIGNS?

SKIP AHEAD TO STEP 6. OR TO ENHANCE YOUR SIGN WITH ESSENTIALS PLUS, READ ON.

GO FARTHER WITH ESSENTIALS PLUS

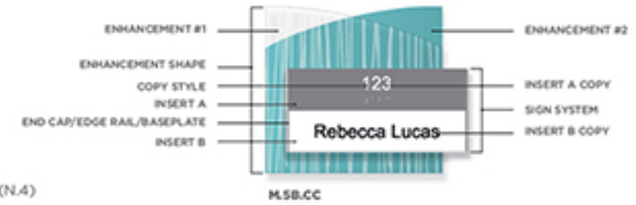
STEP 4 SELECT SHAPE
Pick from six different shapes, available with a Single (C) or Double Backer (CC). For Klik only: Inserts are flush with baseplate. Flare is not available.



STEP 5 SELECT PATTERNS OR SOLID COLORS FOR BACKER(S)
Choose any pattern, color, finish or custom material for your backer(s). Patterns are available in black and white (shown on page 6). View our entire color offering at **290signs.com/colorchart.pdf**.

SIGN SPECS
For Essentials Plus: Modular, Arc or Klik with Enhanced backers.

SIGN SYSTEM : MODULAR (M)
INSERT A FINISH : PRISM 734 DARK GREY
INSERT B FINISH : PRISM 708 SOFT WHITE
END CAP/EDGE RAIL COLOR : 101 SATIN NATURAL
COPY STYLE : ARIAL
INSERT A COPY COLOR : 708 SOFT WHITE
INSERT B COPY COLOR : 704 BLACK
ENHANCEMENT SHAPE : DOUBLE CURVE (CC)
ENHANCEMENT 1 : PATTERNS NATURAL #4 (N.4)
ENHANCEMENT 2 : DESIGNER 804 AQUA



STEP 6 CREATE A READY-MADE PRESENTATION
Select "View a Family" to choose from a collection of 25 sign types, all populated from your specs.

STEP 7 SUBMIT YOUR ORDER
Finished playing in the Design Center? Enter quantities to populate list pricing. For budgetary goals, contact Client Services to learn about Plaques and Plaques Plus cost-saving solutions for non-changeable signs and reduced pricing for blank paper inserts, you can print in-house. Your products will ship within 2-4 weeks from date of order entry.

WE'VE GOT YOUR BACK

PERFECT YOUR PLAN
We've been serving healthcare, commercial, educational, hospitality and government clients for over 35 years. Let us help you design, plan, install, and maintain a sign system that works for you.

SHOW YOUR STUFF
Log in to our Design Center to select your options and create presentation-ready sketches **290signs.com/sign/design**.

QUESTIONS?
Don't be shy. The complete offering of products and options is available through customer service. Give us a ring or visit us online!

2/90 Sign Systems
5350 CORPORATE GROVE BLVD SE
GRAND RAPIDS, MI 49512 | REV. 6.16
800.777.4310 | 290SIGNS.COM

Hospital visitors and patients often have a lot on their minds. Navigating through a facility should not be one of them. 2/90 Sign Systems provides turnkey wayfinding solutions that are designed with people in mind. Wherever wayfinding products are needed, there is a 2/90 Sign Systems solution that is **helping people find their way.**

2/90® Sign Systems

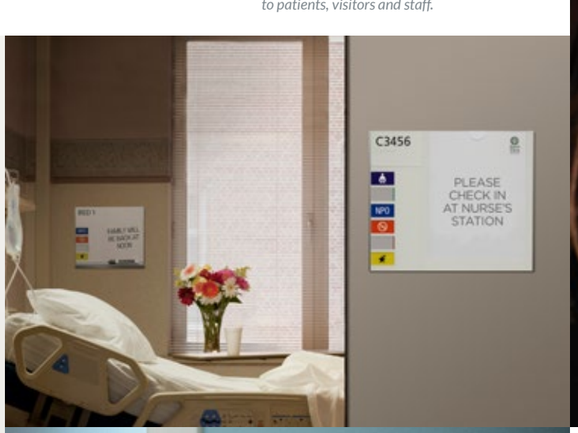
Helping people find their way™

Slide™

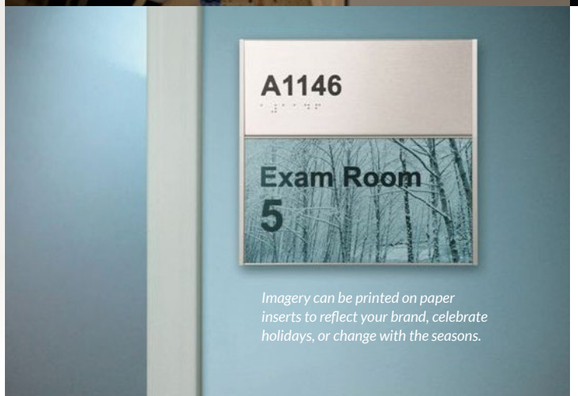
modular sign system

Almost 40 years ago, we created Slide modular signs – a revolutionary wayfinding solution. With its open-ended functionality, Slide system users can create, or update their look from an infinite combinations of three basic components. A personalized Slide wayfinding system sends the right message about you and your facility, engaging visitors and directing them to their intended location. Choose Slide when you're looking for eye-catching detail elements such as end caps, various thicknesses and more.

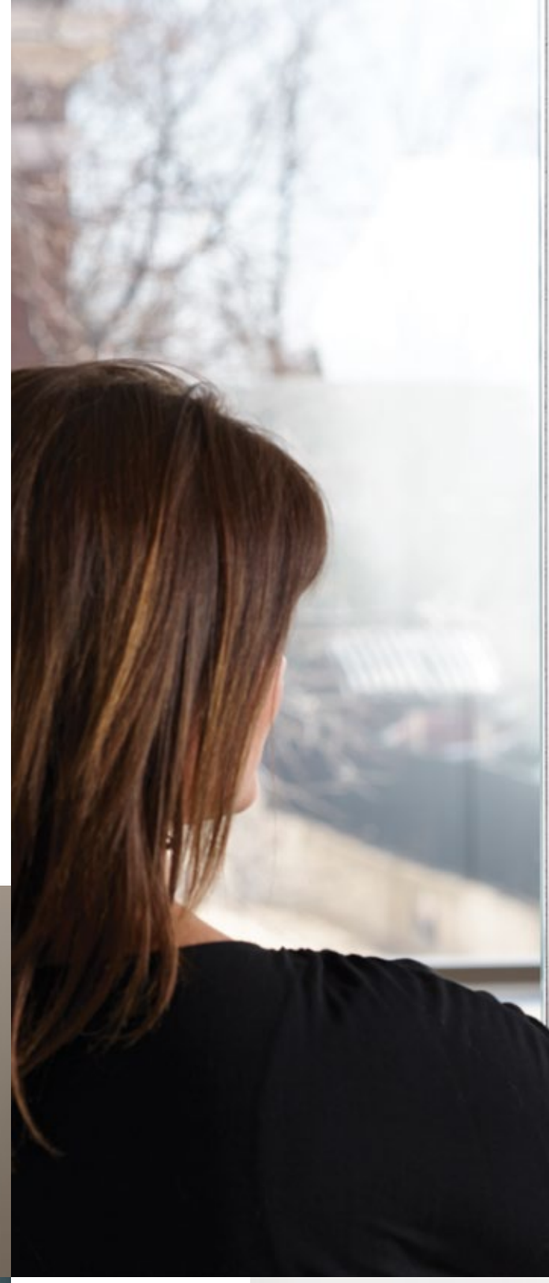
Add detail and additional functionality by designing an enhanced backer that showcases your brand.



A VitalSign medical alert system allows you to communicate valuable information to patients, visitors and staff.



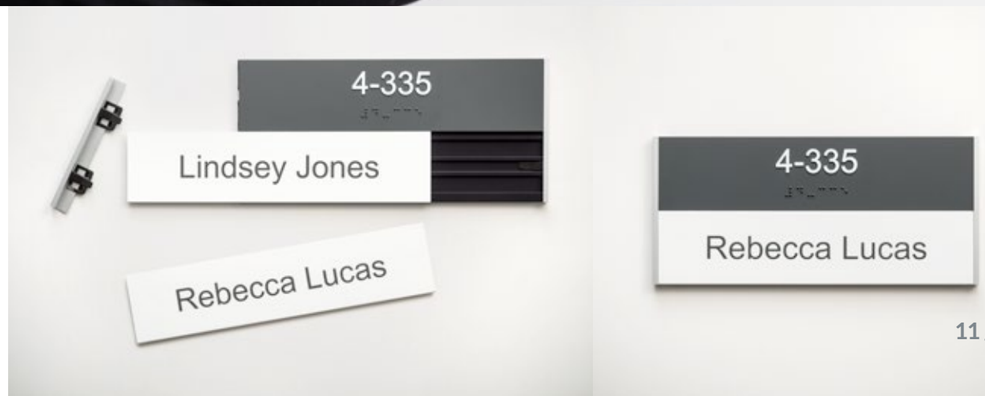
Imagery can be printed on paper inserts to reflect your brand, celebrate holidays, or change with the seasons.



SmartInsert™

Display different messages, revealing or concealing them when needed. Any sign with an insert ranging from 1" to 4" high can accommodate a SmartInsert accessory.

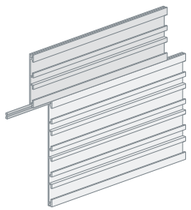
Like all of our modular sign systems, Slide modular signs are easily updated to meet the needs of changing environments and office layouts.



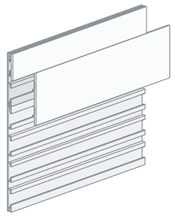
Slide™

modular sign system

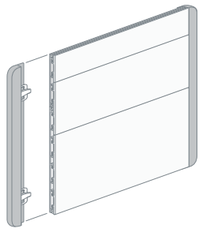
The extensive variety of three basic components (Rails, Inserts and End Caps) allows the Slide modular sign system to be customized into a near infinite variety of sizes, finishes and configurations. When changes occur, simply replace the copy insert rather than the entire sign with your own printed inserts, or use replacement inserts from 2/90 Sign Systems.



Rails



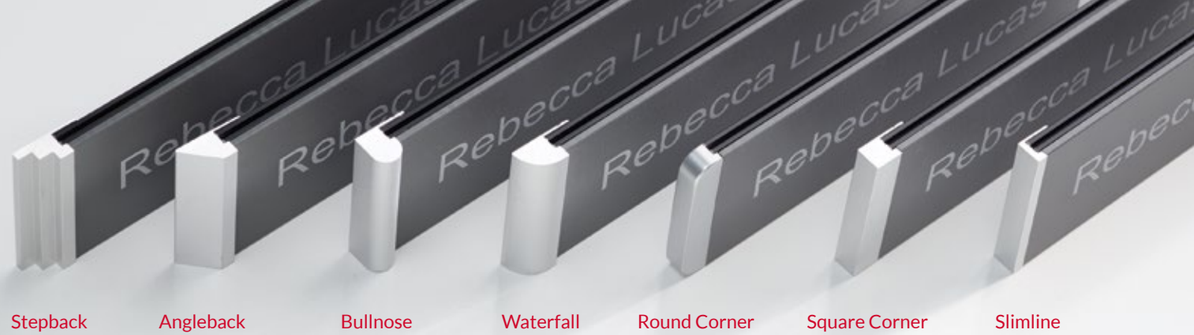
Inserts



End Caps

You can create a family of signs using colored inserts to designate specific areas or sign functions.

Our team of experts take the worry out of ADA compliance by making sure your signs meet all government regulations.



Stepback Angleback Bullnose Waterfall Round Corner Square Corner Slimline

Slide End Caps

Seven styles are offered in natural anodized aluminum, and any standard or color-match paint.

Add additional detail to your design with top or bottom trim and accent strips. Available painted or in satin natural aluminum finish.

Structural Rails

Thin, Standard and Box rails allow you to customize your Slide modular sign system for one or two-sided applications as well as situations where heavy duty construction is required.

Box

Standard

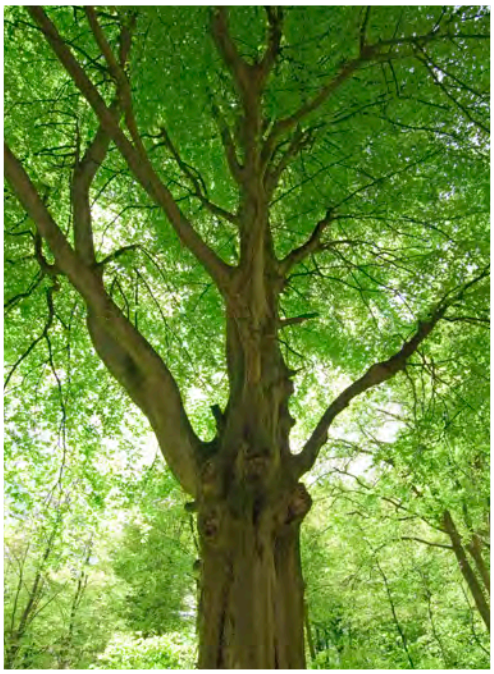
Thin

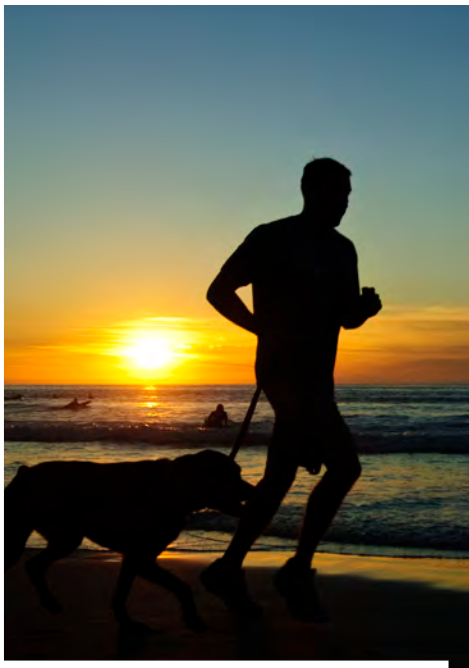
2/90 Sign Systems

VITAL SIGN

PREMIER
CONTRACTED SUPPLIER

808
CHARTREUSE





813
GUACAMOLE

763
STEEL BLUE

814
EDAMAME

FUNCTION MEETS AESTHETICS WITH OUR NEW VITALSIGN™ SYSTEM. **ACCURATE, CLEAN & EFFECTIVE** COMMUNICATION WHERE IT MATTERS THE MOST.

VitalSign™ enhances the health of your facility.

C3456
Forest View
NPO
Latex
PLEASE CHECK IN AT NURSE'S STATION

COMMUNICATION SOLUTIONS

VITALSIGN™ ADDRESSES HEALTHCARE SIGNAGE FROM EVERY ANGLE.

CLEANABILITY
We eliminated extending message tabs to make the sign easy to wipe down. The clean design helps prevent the spread of infectious diseases.

AESTHETICS
Clean lines and coordinated finish options help VitalSign™ integrate with the architectural aesthetics of 2/90's entire sign system. And retrofitting existing 2/90 signage is easy.

CUSTOMIZATION
Options galore include alert messages for one or two patients, room numbers, window inserts for paper messages, dry erase boards, pin boards, marker holders, and a SmartStrip™ for laminated messages.

SECURITY
VitalSign™ alerts staff and visitors about critical patient information, while concealing the changeable messages for security, durability, and ease of maintenance.

BRANDING
VitalSign™ offers two easy ways to incorporate your brand. Display your logo on an insert, or print a temporary message on paper and slide it into the insert window.

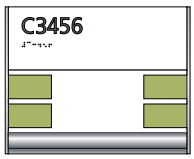
FUNCTIONALITY
Alert messages are self-contained and can be changed with a magnetic tool. Install it once and update it anytime, extending the lifecycle of the sign.

POPULAR TREATMENTS

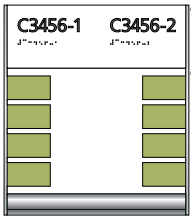
EIGHT UNIQUE CONFIGURATIONS LET YOU TAILOR SOLUTIONS TO EVERY NEED.

HALLWAY SIGNS

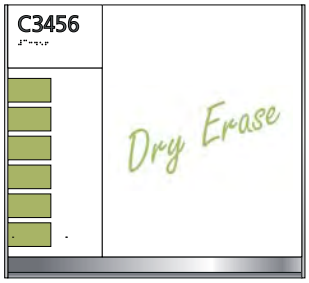
DE = Dry Erase
SS = SmartStrip™
MH = Marker Holder



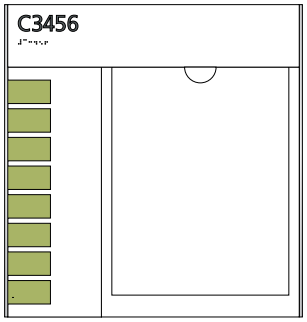
VH.**1**
2 Double & SS
7" x 8.5"



VH.**2**
4 Double & SS
10" x 8.5"

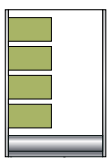


VH.**3**
6 Single, DE & MH
13" x 14"



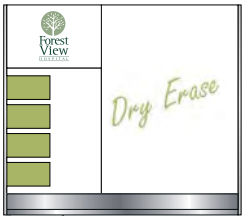
VH.**4**
8 Single & Window
15" x 14"

BEDSIDE SIGNS

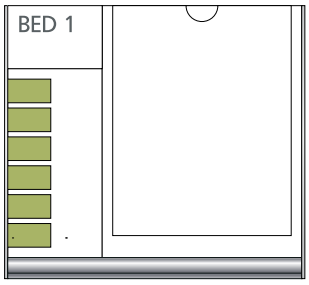


VB.**1**
4 Single & SS
7" x 4.5"

VB.**2**
2 Double, DE, Emoticon & MH
10" x 8.5"



VB.**3**
4 Single, Branding, DE & MH
10" x 11"

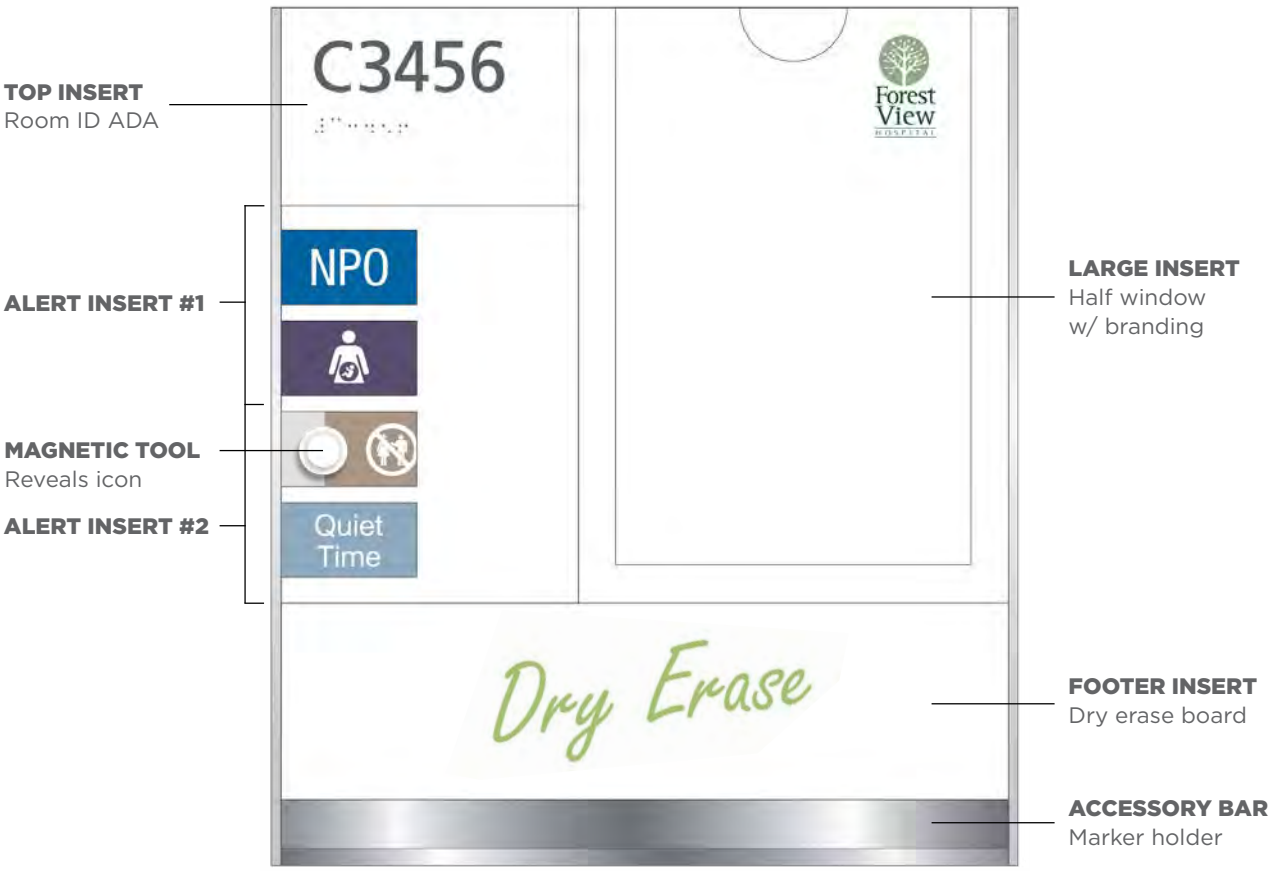


VB.**4**
6 Single, Window & SS
13" x 14"

CUSTOMIZATION MADE EASY

A MODULAR DESIGN ALLOWS YOU TO ADAPT EACH SECTION TO MEET YOUR NEEDS.

Choose a standard template or integrate your brand in a custom design.



TOP INSERT
Choose room ID ADA, standard insert with digital print, window insert for nurse/ patient name, or dry erase board.

ALERT INSERT
Choose standard color-coded medical alert messages or customized sliders in any color, symbol or configuration. Sign size is determined by the number of messages, and alert modules can be added in two-message increments.

MAGNETIC TOOL
Slide the magnetic tool to reveal the patient care icons. For a complete list of icons visit **290signs.com/vitalicons** or reference price list.

LARGE INSERT
Add a window insert for changeable printed messages or dry erase board for written notes.

FOOTER INSERT
Add a dry erase board, magnetic window insert, or standard insert with digital printing to display brand, emoticons or infectious disease control messages.

ACCESSORY BAR
Attach a SmartStrip™ to post paper or laminated messages, or a convenient marker holder.

LET'S GET TOGETHER.

So many choices. Where to begin? No worries, we'll make it easy for you. Give us a ring or visit us online. We'd love to hear your ideas.

WHY VITALSIGN™?

Architectural communication solutions positively impact patients' perceptions of their hospital experience. VitalSign™ can communicate critical care information to staff and visitors to increase patient satisfaction. Use it next to the bedside to keep critical care information in sight, or in the corridor with ADA-compliant graphics to identify rooms. You can also add window inserts with changeable laser-print graphics to promote your brand or communicate additional information.

OUR ENTIRE LINE OF HEALTHCARE PRODUCTS AND SERVICES, INCLUDE:

Digital Wayfinding
Directories
Dry Erase Boards
Evacuation Signage
Installation
Modular Wayfinding Signage
Pin Boards
Recognition Signage
Sign Planning
SmartCare+ Maintenance Program

QUESTIONS?

DON'T BE SHY. GIVE US A RING OR VISIT US ONLINE!

2/90 Sign Systems
5350 CORPORATE GROVE BLVD SE
GRAND RAPIDS, MI 49512 | REV. 10.13
800.777.4310 | 290SIGNS.COM

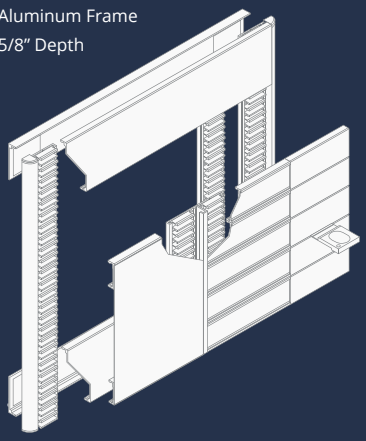
Accord®15

The award-winning Accord 15 system is comprised of modular aluminum bands that snap onto precisely engineered clips within either an aluminum or injection molded frame. Accord 15 is aesthetically compatible with APCO's FullView and Arcadia systems and can be a perfect solution for directional signs and directories within FullView or Arcadia sign programs.

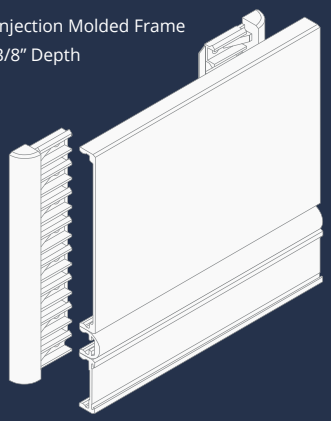
'00 INDUSTRIAL DESIGN EXCELLENCE AWARDS
I D E A
G O L D

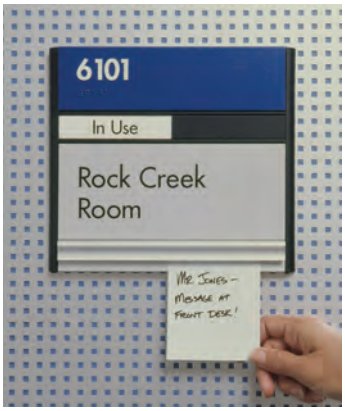
- Modular
- Several Edge Profile Options
- Inserts are Front-Loading
- Tamper-Resistant
- Create Concepts Using APCO's Design Studio
- User-Updatable, Paper Insert Solutions

Aluminum Frame
5/8" Depth



Injection Molded Frame
3/8" Depth





AlivePromo®

Digital Signage Solutions

DIRECTORIES

Top: 46" portrait touch with tenant and people pages (Minneapolis)
Middle Left: A dialer directory (Golden Valley, MN)
Middle Right: 46" touch directory (Minneapolis)
Bottom: A sample map and keyboard touch and search interface

Digital Building Directories

Once merely a place to list tenants and their employees, AlivePromo has taken the building directory beyond the box with the help of a variety of high tech features.

These features include **live weather, traffic and news feeds, animated "you are here" buttons, and dynamic wayfinding artwork** that visually direct visitors to their destinations. Directories equipped with touch screens **allow tenants and their employees to update their own pages** with pictures and biographies, showcasing their talent.

Management of tenant and employee listings is also more advanced. AlivePromo **web-based or desktop directory management software** allows for tenant and people information to be updated electronically within minutes, eliminating the plastic inserts that often take 4 weeks to order and are a hassle to replace.

Standard directory options include small and large format **display directories**, small and large format **interactive touch directories**, **dialer directories** and more. Talk to an AlivePromo sales representative about how to make your directory unique.

Beyond the Box

You get our people, not a box. AlivePromo **professional designers** deliver high quality creative that you can't get with a boxed software solution. **Staff programmers** ensure you get a solution that works for you, not everyone else. **Marketing experts** make sure your directory is on-brand and speaking to your target audience.

AlivePromo provides complete Design-to-Sign™ services

Visit www.alivepromo.com for details

Alive Promo did an excellent job designing the content for our directory boards. They offered creative solutions to our unique challenges and provided excellent customer service to us. I would recommend them highly.

- Beth Anderson,
Property Manager, Hines

2401 Edgewood Ave S., Minneapolis, MN 55426
www.alivepromo.com | 866-297-3877

AlivePromo®
Digital Signage Solutions

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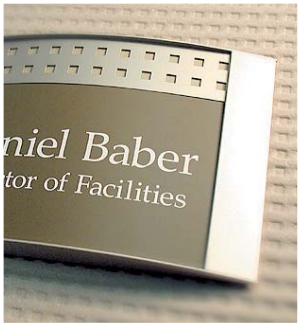
APCO
apcosigns.com

Award Winning Modular Sign Systems Since 1966.
Authorized AlivePromo Partner.

apco**signs**.com

1966-2006
40th
ANNIVERSARY

Simple, elegant, and functional. Arcadia offers a range of sign solutions, from a single module to a comprehensive system.



arcadia®

Curved Face Sign System

APCO

apco**signs**.com

Series 1000
Arcadia® Vertical

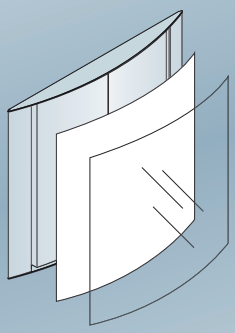
Arcadia Series 1000 features a durable extruded aluminum base designed to hold a variety of modular inserts, including printed paper, injected molded message strips, ADA plaques, and more... Arcadia's unique, patented contour edge profiles and decorative design options set it apart from the rest, offering a well-designed, yet clean and simple curved-face signage solution.

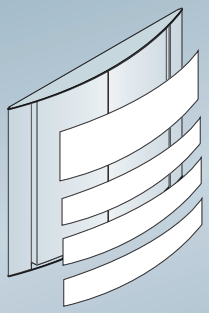
Features & Benefits

- Standard and Custom Sizes Available
- Broad Range of Colors and Finishes
- Extruded Aluminum Base
- ADA Compatible
- User Lettering Options
  Compatible with APCO's SignWord Pro Software and supplies, as well as numerous standard paper sizes
- Concealed Fasteners

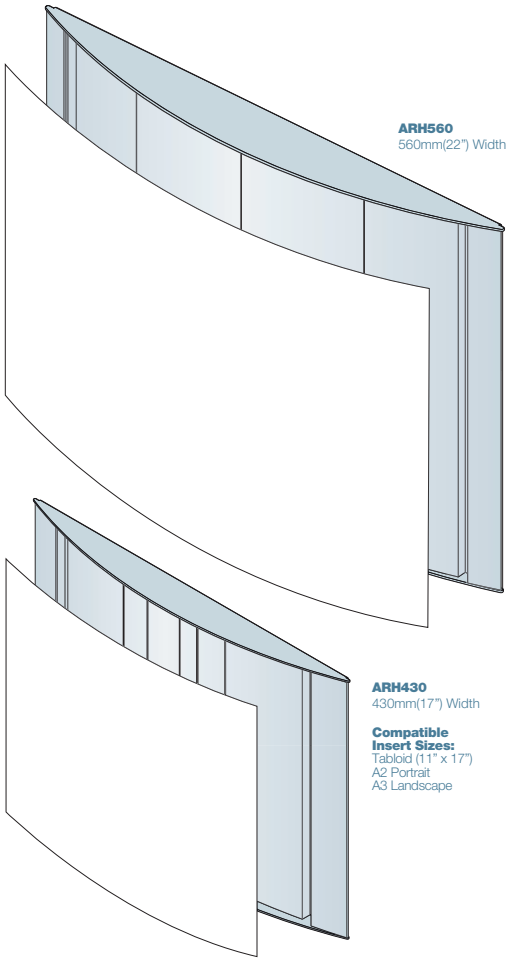
Ideal for:

- Personnel Signs
- Room and Suite Identification
- Ceiling and Wall Projecting Signs
- Directional and Directory Modules





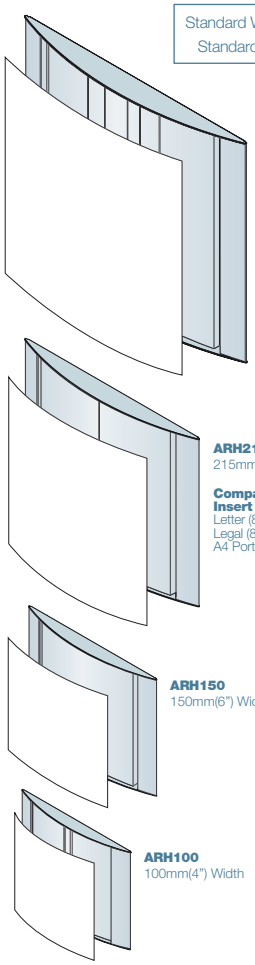
Standard Widths displayed below
Standard Heights are Variable



ARH560
560mm(22") Width

ARH430
430mm(17") Width

Compatible Insert Sizes:
Tabloid (11" x 17")
A2 Portrait
A3 Landscape



ARH280
280mm(11") Width

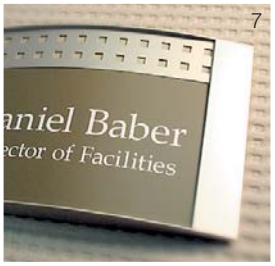
Compatible Insert Sizes:
Letter (8-1/2" x 11")
Tabloid (11" x 17")

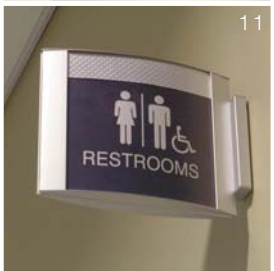
ARH215
215mm(8-1/2") Width

Compatible Insert Sizes:
Letter (8-1/2" x 11")
Legal (8-1/2" x 14")
A4 Portrait

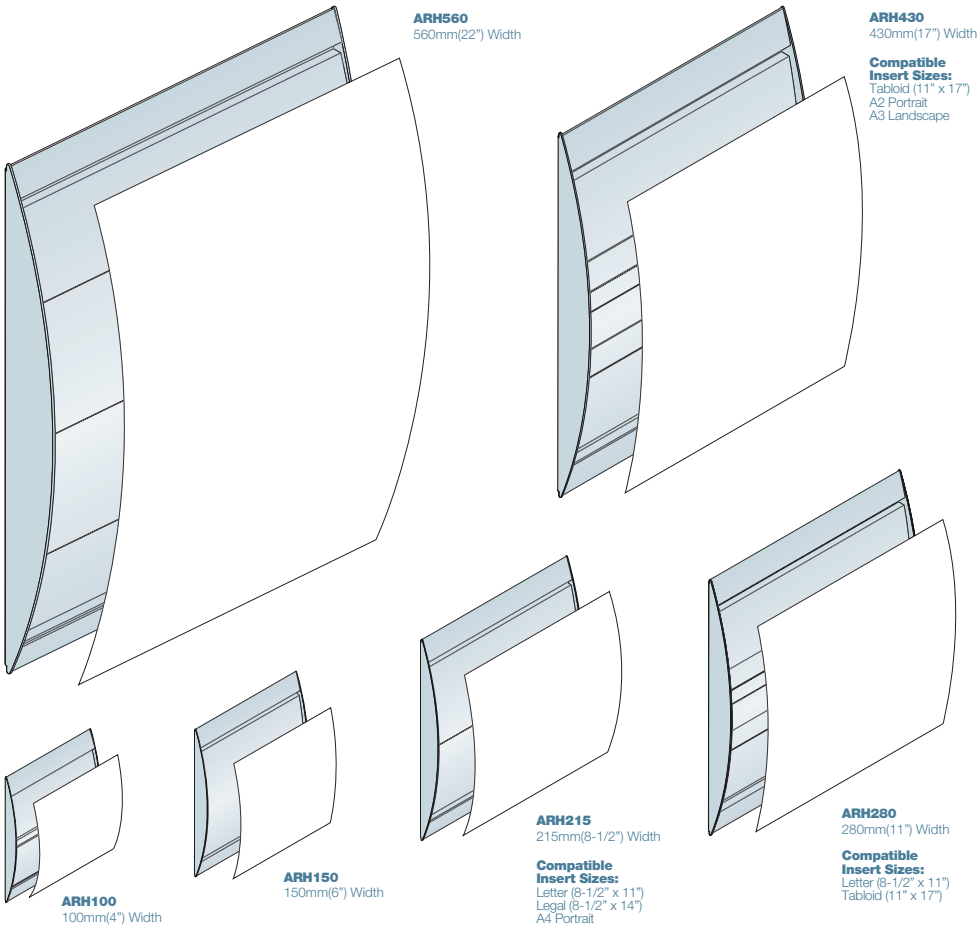
ARH150
150mm(6") Width

ARH100
100mm(4") Width





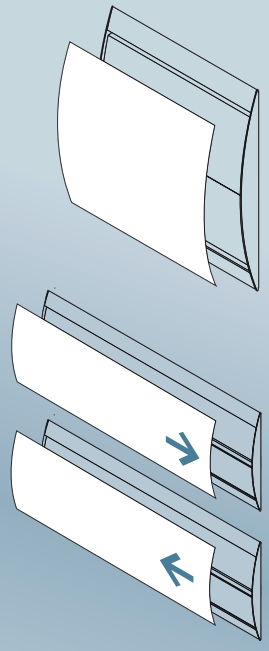
Series 2000
Arcadia® Horizontal



Perhaps the primary benefit of the Arcadia system is its design flexibility. Utilizing the same simple components as Series 1000, Arcadia's Series 2000 features an entirely different look. With the contour edge profiles at top and bottom, a new range of design options is made possible.

Ideal for:

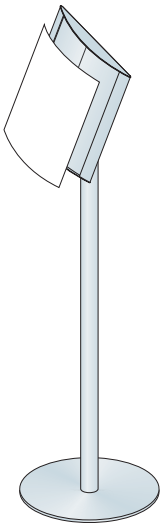
- Personnel Signs
- Room and Suite Identification
- Ceiling and Wall Projecting Signs
- Directional and Directory Modules



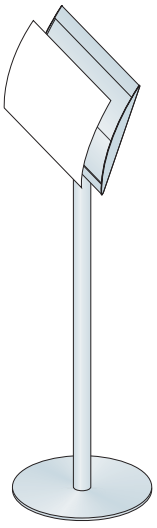
Series 3100

Arcadia® Freestanding Pedestal

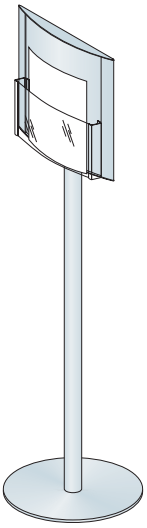
When displaying information, directing traffic in open areas, or when temporary displays need to be moved frequently, Arcadia Series 3100 is the perfect solution. Featuring curved-face displays mounted to APCO's FS300 single pedestal system, Series 3100 is a lightweight, cost-effective solution for a variety of environments.



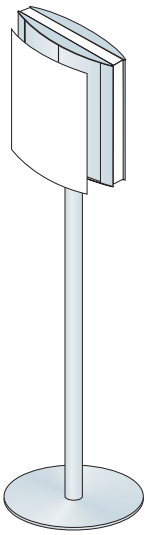
FS300
Inclined Display
w/ Arcadia 1000



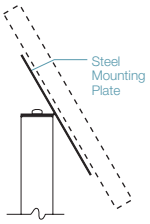
FS300
Inclined Display
w/ Arcadia 2000



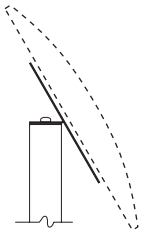
FS301
Vertical Display
Single-sided
w/ Optional Literature Holder



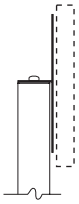
FS301.2
Vertical Display
Double-sided



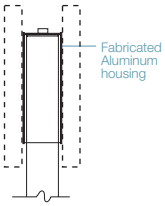
FS300
60 Degree Inclined



FS300
60 Degree Inclined



FS301
Vertical Single Sided



FS301.2
Vertical Double Sided

Post Specifications

- 1-12" Diameter Extruded Aluminum
- 42" Height (to middle of display)
- Standard Finishes

  Anozided: Natural Satin, Black

  Painted: 44+ Standard Colors, Custom

Base Plate Specifications

- 12" Diameter Steel
- Standard Finishes

  Base

  - Powder Coated: Black, Silver

  Optional Base Cover Plate

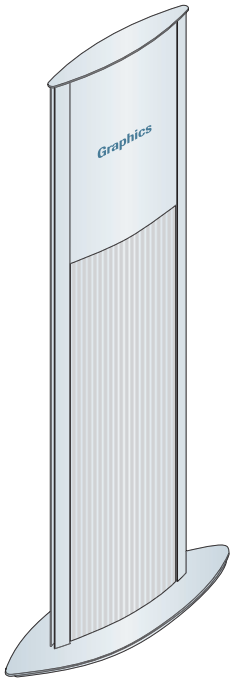
  - Satin Anodized
  - Painted: 44+ Standard Colors

Compatible Arcadia Display Sizes

8-1/2" x 11"
11" x 8-1/2"
11" x 11"
11" x 17"
17" x 11"

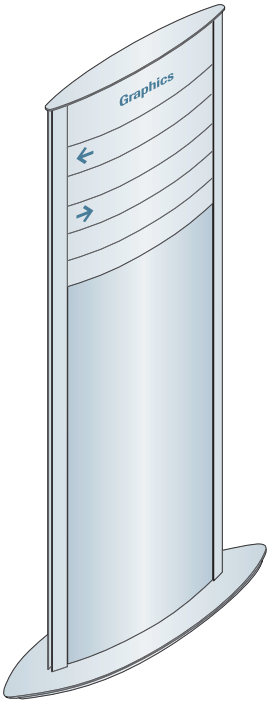
Series 3200

Arcadia® Freestanding Stanchion



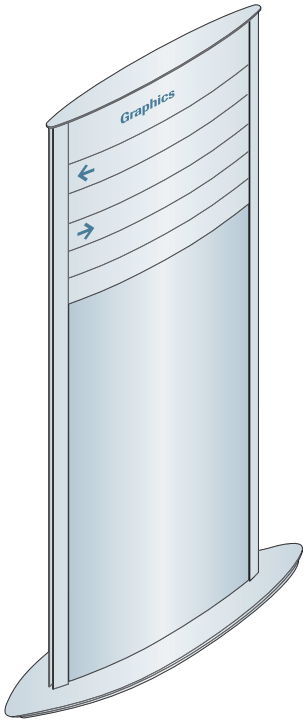
ARFS-280
280mm (11") Width

Standard Heights
48", 60"



ARFS-430
430mm (17") Width

Standard Heights
48", 54", 60", 66"



ARFS-560
560mm (22") Width

Standard Heights
60", 66", 72", 78", 84"*

*Must be permanently bolted to the floor surface

Arcadia's Series 3200 modules are more than just signs, they are completely portable and re-configurable information centers. Constructed of durable extruded aluminum components, Arcadia's Series 3200 offers one of the highest quality and easiest solutions available. With numerous display options, Series 3200 does it all.

Features

- Numerous Insert & Display Options Including:
  - Full Sheet, Digital Graphic Inserts
  - Injection Molded Message Strips
  - Decorative Metallic Inserts
  - User Lettered Paper Inserts
  - POP Displays & Literature Holders
- Solid/Sturdy Steel Base

Ideal For:

- Events
- Exhibits
- Museums
- Galleries
- Lobbies
- Airports

Series 3300/3400

Arcadia® 3 & 4 Sided Totem

Like Arcadia's Series 3200 modules, the Series 3300 and 3400 offer complete informational and wayfinding solutions. The monolithic totems feature a combination of precision extruded and waterjet-cut aluminum and stainless steel components, offering superior quality and looks to enhance the image of any environment. Display options are virtually limitless, ranging from laser printed paper displays to the state-of-the-art digital sign and touchscreen solutions of APCO's iFind system. Header displays may be internally illuminated for enhanced visibility.

Numerous Insert & Display Options

- Full Sheet Digital Graphic Inserts
- Injection Molded Message Strips
- Decorative Metal or Simulated Wood Inserts
- User Lettered Paper Inserts
- POP Displays & Literature Holders

Components & Finishes

Structure

- Extruded Aluminum (Satin Anodized or Painted)

Kick-Plate & Top Cap

- Aluminum (Satin Anodized or Painted)
- Polished Stainless Steel

Optional Display Dividers

- Aluminum (Satin Anodized or Painted)
- Polished Stainless Steel

Insert/Display Components

- Varies

Display Widths

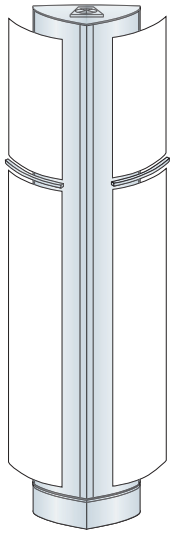
11" (280mm): ARH280

17" (430mm): ARH440

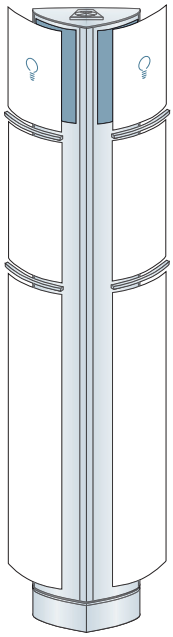
22" (560mm): ARH560

Totem Heights

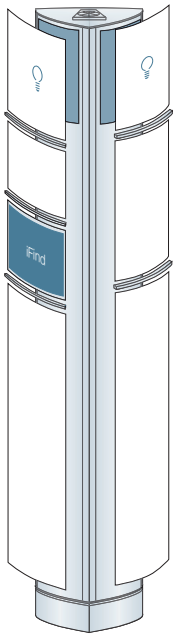
60" (1524mm) to 96" (2440mm)



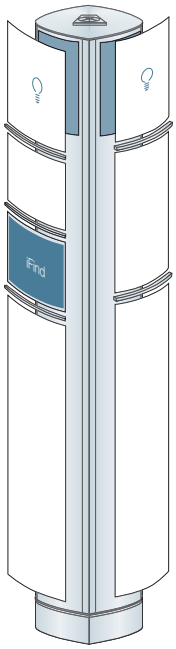
3300 - 3 Sided
Basic Module
- Non-Illuminated Header



3300 - 3 Sided
Basic Illuminated Module
- Iluminated Header



3300 - 3 Sided
iFind Module
- iFind Digital Display
- Iluminated Header



3400 - 4 Sided
iFind Module
- iFind Digital Display
- Iluminated Header

1

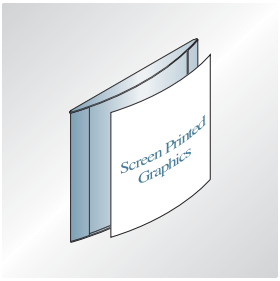
2

4

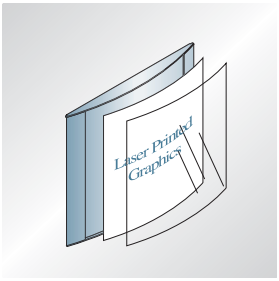
5

3

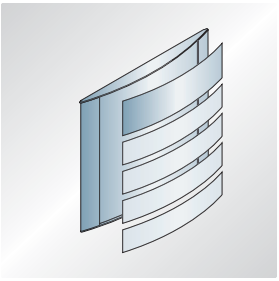
Arcadia Insert Options



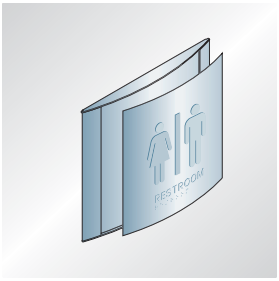
ARI Opaque Insert with Permanent Graphics



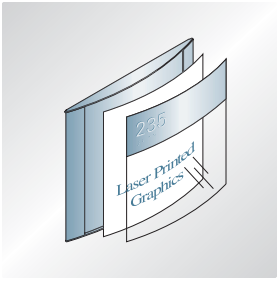
ARI-CL ClearLens with Paper Insert



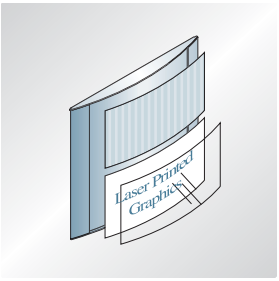
ARI-MB Injection Molded Message Strips
45mm, 60mm Standard Heights



ARI-A ADA Plaque Insert



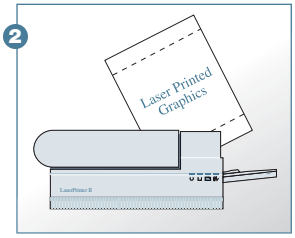
ARI-ACL ADA Band Attached to ClearLens



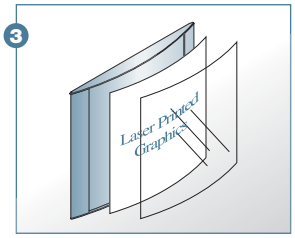
ARI-DM Decorative Metal Inserts

Update Arcadia Inserts in 3 Easy Steps

With SignWord Pro Software, enter your message and symbols using pre-established formats or your own custom layouts.



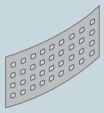
Print the image on a special paper that is perforated to fit the sign holder.



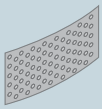
Punch out the sign insert, place it in the holder, flex in the clear plastic lens and PRESTO – in less than 60 seconds you have a completed sign!

The Arcadia system offers a wide range of standard, front loaded, interchangeable inserts, maximizing the creative possibilities. Graphic options include permanent silk-screen printing, paper inserts, Braille/tactile graphics for ADA compliance, and more...

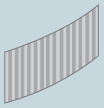
elements™ decorative finishes also available including Metal, Wood, and other patterns. See apcosigns.com for additional patterns not shown.



DMP1
Perforated Metal
Squares Pattern



DMS4
Solid Laminate
Dimpled Texture



DMS5
Solid Laminate
Ribbed Texture

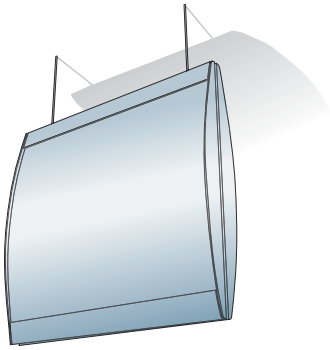
DWM1
Maple
Wood Pattern

DWC4
Cherry
Wood Texture

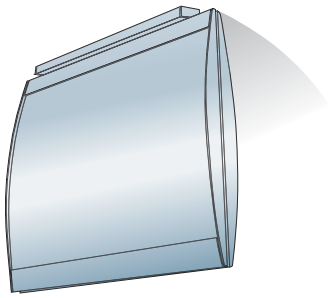
DWM5
Mahogany
Wood Texture

Attachment Methods

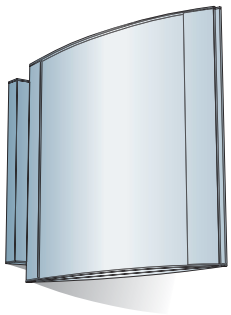
From walls and ceilings to desk tops and office panel systems, Arcadia offers a range of quality, well-engineered attachment solutions for nearly every environment.



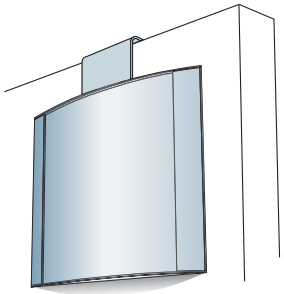
ARSCM
Suspended Ceiling



ARFCM
Flush Ceiling

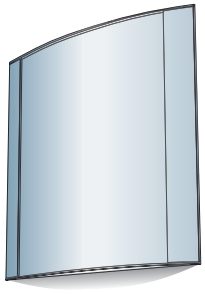


ARPWM
Projecting Wall

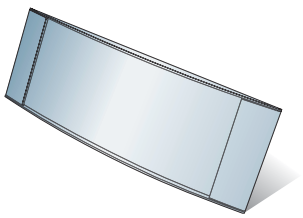


ARPCA
Office Panel - Aluminum Clip Attachment

Also available:
ARPCW *- Stainless Wire Attachment*

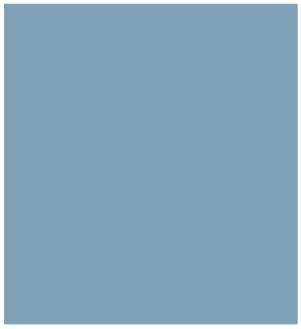


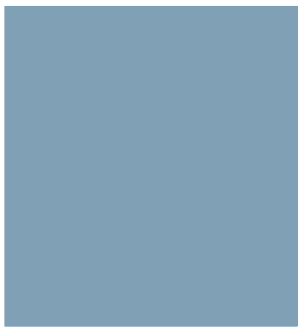
ARSTD
Wall - Via Concealed Mechanical Fasteners or Double Sided Adhesive

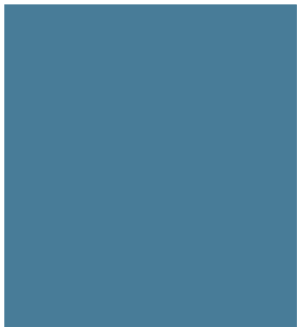


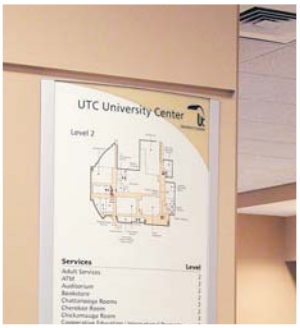
ARDSA
Desk Top

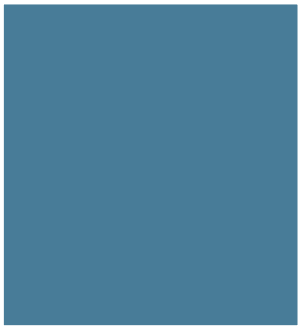
apco**signs**.com











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Series 3300/3400

Arcadia® 3 & 4 Sided Totem

Like Arcadia's Series 3200 modules, the Series 3300 and 3400 offer complete informational and wayfinding solutions. The monolithic totems feature a combination of precision extruded and waterjet-cut aluminum and stainless steel components, offering superior quality and looks to enhance the image of any environment. Display options are virtually limitless, ranging from laser printed paper displays to the state-of-the-art digital sign and touchscreen solutions of APCO's iFind system. Header displays may be internally illuminated for enhanced visibility.

Numerous Insert & Display Options

- Full Sheet Digital Graphic Inserts
- Injection Molded Message Strips
- Decorative Metal or Simulated Wood Inserts
- User Lettered Paper Inserts
- POP Displays & Literature Holders

Components & Finishes

Structure

- Extruded Aluminum (Satin Anodized or Painted)

Kick-Plate & Top Cap

- Aluminum (Satin Anodized or Painted)
- Polished Stainless Steel

Optional Display Dividers

- Aluminum (Satin Anodized or Painted)
- Polished Stainless Steel

Insert/Display Components

- Varies

Display Widths

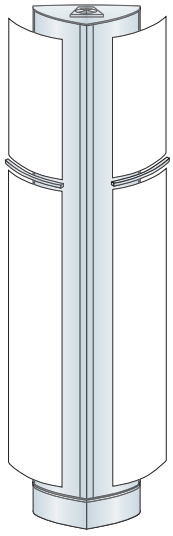
11" (280mm): ARH280

17" (430mm): ARH440

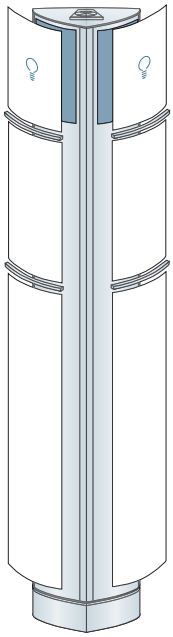
22" (560mm): ARH560

Totem Heights

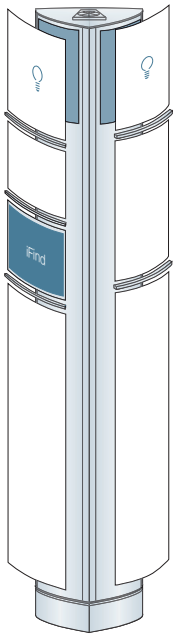
60" (1524mm) to 96" (2440mm)



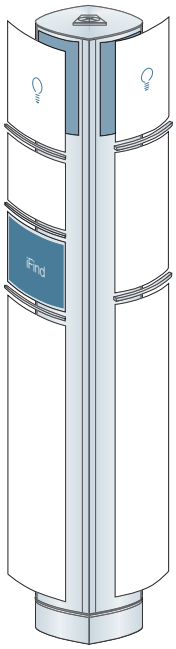
3300 - 3 Sided
Basic Module
- Non-Illuminated Header



3300 - 3 Sided
Basic Illuminated Module
- Iluminated Header



3300 - 3 Sided
iFind Module
- iFind Digital Display
- Iluminated Header



3400 - 4 Sided
iFind Module
- iFind Digital Display
- Iluminated Header

1

2

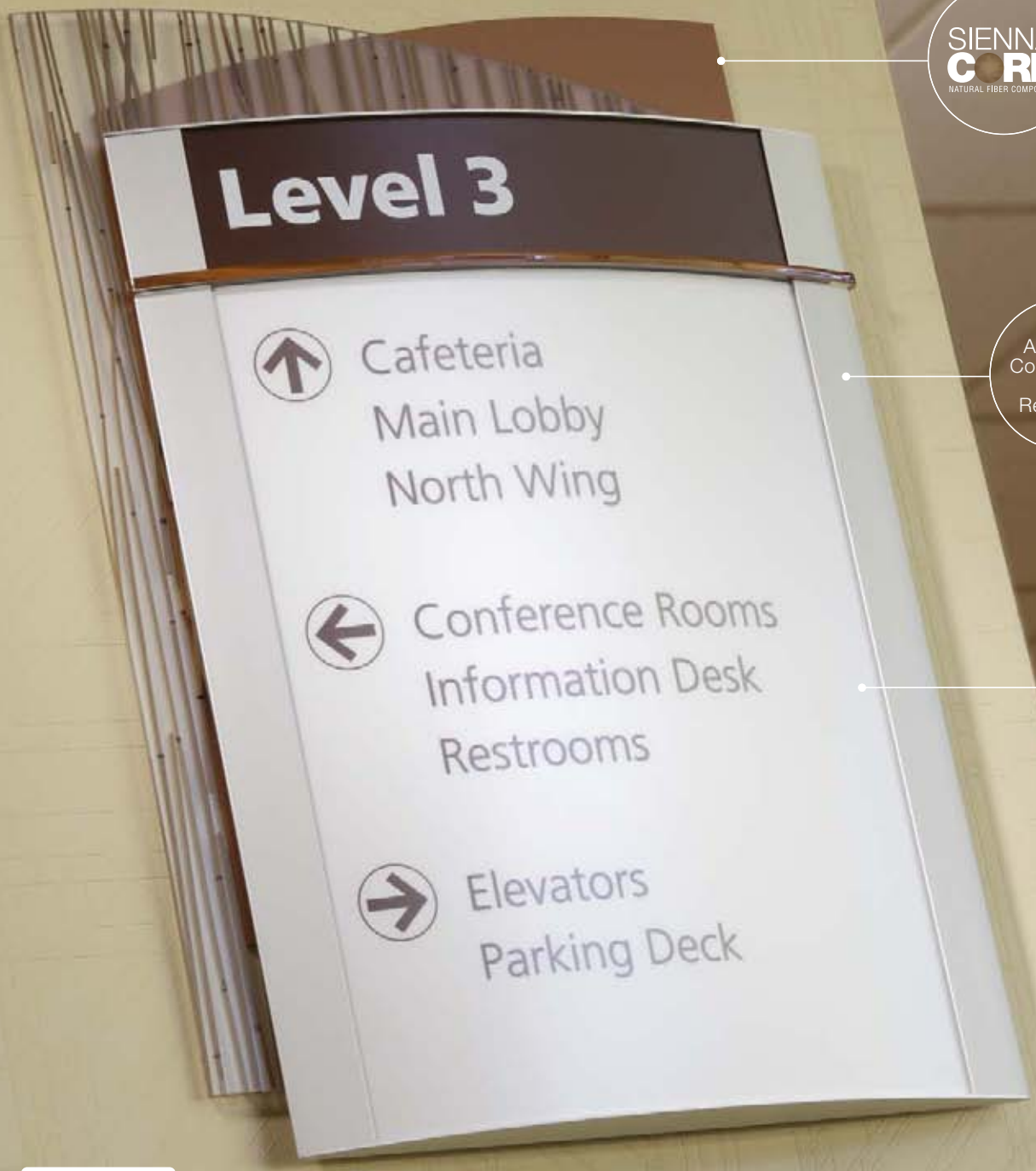
4

5

3

elements 2™

Benefits of Modularity. Freedom to Design.



SIENNA CORE® NATURAL FIBER COMPOSITE

Aluminum Components 100% Recyclable

Three Unique **Modular Systems** to Choose From

APCO

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The Systems

arcadia®
Curved Face Sign System

Curved-face aluminum system with unique contour edge profiles.

- Aluminum components 100% recyclable
- Accomodates a wide range of user-updatable solutions, decorative materials and digitally printed displays

Patent Protected

Accord®15
Comprehensive Modular Sign System

The most comprehensive modular system available.

- Five edge profile options: Square, Radius, Bevel, Contour, Thinline
- User updatable solutions ideal for directories, directionals and personnel signs
- Aesthetically compatible with APCO's FullView system

Patent Protected

FullView®
Low Profile Sign System

A low-profile vandal resistant system with a wide range of user-focused solutions

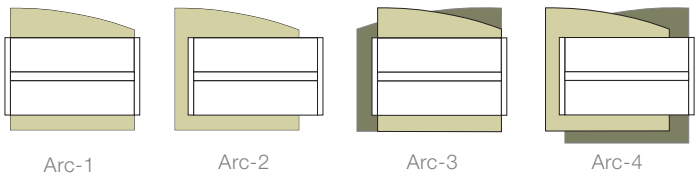
- Five edge profile options: Square, Radius, Bevel, Contour, Contour Ribbed
- Innovative solutions for all interior signtypes

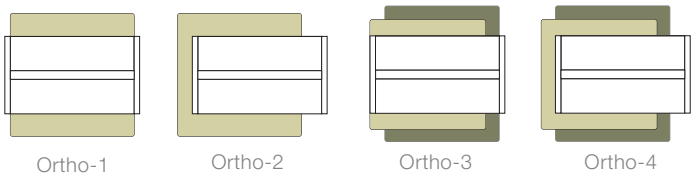
Patent Protected

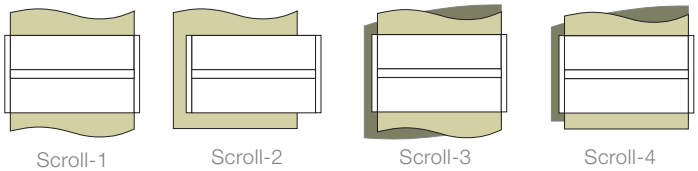
Shapes & Materials

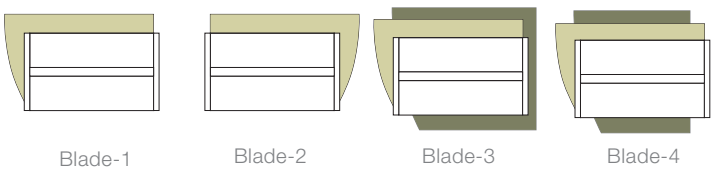
APCO's Elements 2 system of decorative components & finishes combines the functional benefits of a comprehensive modular sign system with the unique look of a custom design. At the center of Elements 2 is SiennaCORE™, a thermoset composite backer with 50% recycled content, comprised of materials from FSC certified sources. Standard options include a range of wood, stone, translucent, solid color and custom decorative finishes that customize the look of APCO's award-winning FullView®, Accord15® or curved-face Arcadia® modular systems. With 20 shapes and 82 standard finishes, the combinations are limitless, offering creative solutions for any interior environment.

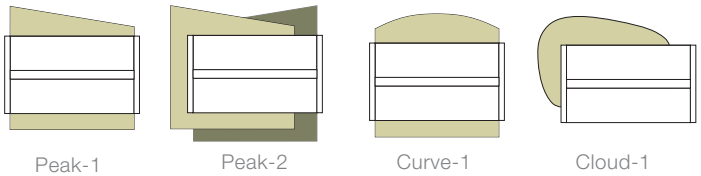
20 Unique Shapes











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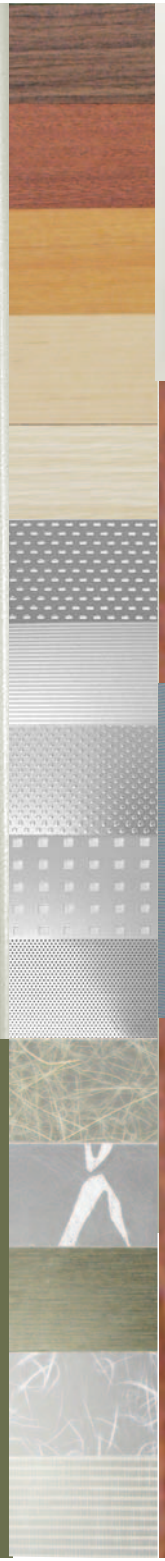
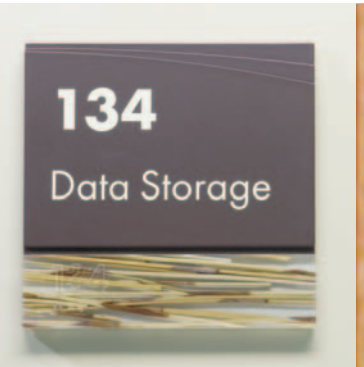
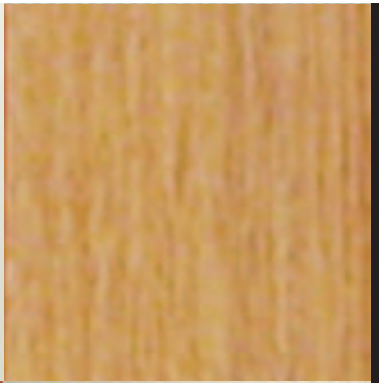
Email: sales@apcosigns.com

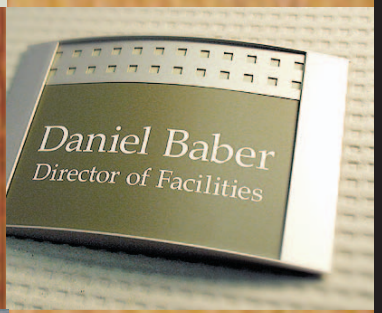
Give your interior signs a fresh new look with **elements**.

Available in a variety of styles, these decorative accents not only enhance the look of your signs, but are sure to provide the perfect complement to the designed environment.









U.S. GREEN BUILDING COUNCIL MEMBER

APCO is proud to be an environmentally conscious company. Please visit **apcosigns.com** for more information on APCO s commitment to the environment.

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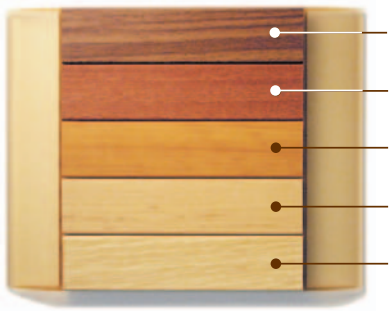
elements™

The Finishing Touch for APCO Interior Sign Systems

Naturals

Naturals offer the traditional look and feel of wood, but are actually cost-effective adhesive backed vinyls that can be applied in a variety of ways to many of APCO s interior systems.



Walnut - DWW2
Mahogany - DWM5
Cherry - DWC4
Maple - DWM1
Oak - DWO3

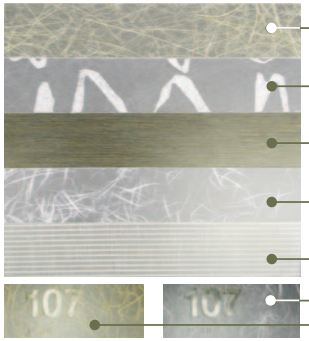
Industrials

Industrials give APCO s interior signs a modern sleek look that is perfect for even the most contemporary spaces. Each of the five metallic finishes can be custom cut to size and can be used with any of APCO s interior systems.

Dimples - DMS4
Ribbed - DMS5
Microperf - DMP3
Capsules - DMP2
Squares - DMP1

Environmentals

Environmentals offer truly unique options for APCO s sign systems. These options, made of up to 40% recycled material (Greenguard Certified), can be used as decorative inserts to complement environmentally friendly interiors. The Fiber and Silk options are also offered with a tactile & Braille feature for ADA compatibility.



Fiber - DEF4
Script - DES3
Wool - DEW2
Silk - DES5
Linen - DEL1
Silk - DES5-A
Fiber - DEF4-A
Embedded ADA Material

APCO

apcosigns.com

InfoLock™

PATIENT INFORMATION SYSTEM

With hospital liability and patients' health on the line, patient information signage must clearly communicate with no ambiguity and it must do so in a secure manner, ensuring that only designated hospital personnel are controlling the messages. APCO's InfoLock system delivers these essential features and a host of other unique benefits.

The **InfoLock** ™ System

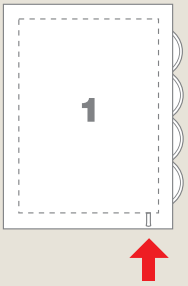
ADA Compliance
Modular ADA compliant plaques displaying room numbers or custom messages. Featuring grade-2 Braille and raised copy in a limitless range of colors and finishes.

Modular Display Area
InfoLock display areas accommodate a wide range of graphics, messages or decorative finishes and can be easily customized to suit a client's specific needs. Optional non-glare protective faces can be removed with a special tool thus allowing for updates and customization as needed.

Locking Message Bands
InfoLock message bands are engineered precisely to slide on an aluminum track which is fully concealed behind the sign. Aluminum bands accommodate changeable & customizable messages, thus allowing both symbols & text to clearly communicate necessary patient information.

Concealed Release Pin
When not in use, patient messages remain fully concealed and locked behind the sign. By pressing the Concealed Release Pin, message bands may then be slid and engaged into a visible & secure position. Precisely engineered aluminum & injection molded components ensure a high quality, long lasting solution.

Easy 2 Step Functionality



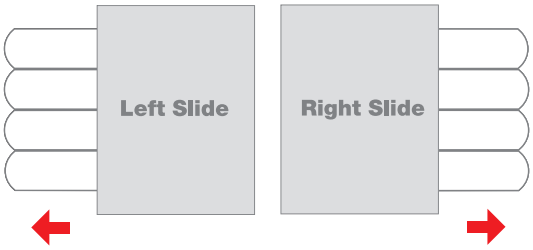
Locate Concealed Release Pin beneath sign & press upward

While Releasing the Concealed Pin, Slide the Message Band until Locked & Secure.

Configurations

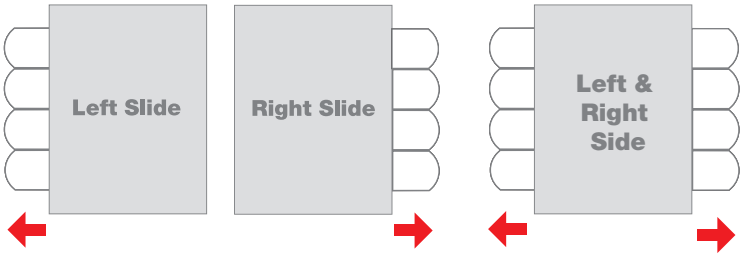
4-1/2" Sliding Bands

(Symbols & Text)



2-1/2" Sliding Bands

(Symbols Only)



Message Bands are available in quantities of 4,6 or 8 per side. Please reference the included technical sheet for specifics.

Standard Symbols & Messages

For 4-1/2" Bands

(Symbols & Text)

For 2-1/2" Bands

(Symbols Only)

Message Removal

Message Replacement

The above messages & symbols represent APCO's standard offering. Custom and/or customer supplied symbols and text are optional. All InfoLock message inserts are **secure**, yet **100% updatable & changeable** by in-house hospital staff.

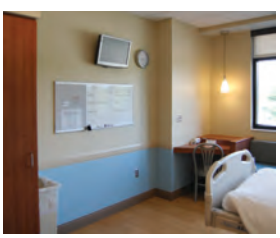
Integral Part of a Complete Sign System

The InfoLock assembly functions with APCO's modular curved-face Arcadia system or low-profile FullView system.

Both the Arcadia and FullView sign systems offer comprehensive wayfinding solutions for Healthcare environments so you can be assured of design consistency from your patient information signs through to your directional signs and the entire sign program.

APCO also offers a host of other signage and related products for Healthcare environments:

- Directories & Displays
- HealthView Infection Control Stations
- MyDay Marker Board and Pin Board Solutions
- Donor Board Solutions



InfoLock™

PATIENT INFORMATION SYSTEM

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IL100611-5000-GP

Signage Innovations™

Horizon

Smart and Stylish Curved-face Extruded Aluminum System

Horizon is a curved-face extruded aluminum signage solution. The system features a myriad of size options giving you the possibility of creating all sign types, from door signs to directories. Horizon includes ADA-Ready panels and graphic panels, and is available with a variety of finish applications ranging from standard anodized colors to powder-coated wood grain options. The option also exist to add patented decorative accent bar to the sign that provides a very distinguished look. Additionally, Horizon is made from materials which can be efficiently and effectively recycled at the end of the life of the sign.

- Curved-face interior sign system with changeable inserts
- Aluminum extruded frame construction with removable end caps and insert panels
- Select from five standard anodized accent colors or 140 paint colors
- Powder-coated simulated wood grain finished available

Sustainable Innovations

The flexibility and longevity of Horizon promotes sustainability by allowing updates to the message panels, as necessary, without replacing entire signs. Horizon is also recyclable at the end-of-life.

Extrusion Signage Solutions

Standard Features
- Interior curved-face modular system based on an extruded anodized aluminum frame
- Changeable insert areas can hold ADA-Ready™ or graphic panels, paper or digital graphic inserts
- Standard molded black or gray end caps or aluminum end caps
- Paper insert protected by matte acrylic cover
- Optional accent bar available

Finish Options
- 140 standard paint colors, with custom colors available
- ADA-Ready™ and graphic panels finished with quality satin to meet ADA requirements
- Silk-screened or vinyl text on graphic panels
- Accent bar available in five anodized colors: clear, black, gold, red, and blue
- Accent bar available in custom powder-coated finishes to simulate wood grain appearance: Light Oak, Wide Grain, Dark Nut, and Mahogany

Desktop and Cubical Mounted Nameplate
- Size options: 2.25″(h) x 7″(w)
- Desktop stand reclines at a 20° angle
- Aluminum cubical hangers available as a "C" clip, or pin mount
- Optional aluminum insert available — can be silk-screened or digitally printed into anodized aluminum

Wall Mounted Room Sign
- Size options: 4″(h) x 10″(w); 6″(h) x 10″(w); 6.25″(h) x 7″(w); 6.5″(h) x 10.75″(w) ; 8.75″(h) x 9″(w)
- Aluminum backed photopolymer with raised characters and Braille

Wall Mounted Suite Sign
- ADA suite ID size: 10.75″(w) x 6.5″(h)
- ADA panel size: 8.5″(w) x 2″(h), paper insert 8.5″(w) x 3.75″(h)
- 8.5″ x 11″ paper car be used to create inserts in-house
- Available with ADA-Ready™ panel insert and changeable paper insert
- "In Use" slider available

Wall Mounted Directional, Multiple Panels
- Size options: 25.5″(h) x 15.7″(w) and 28″(h) x 19.5″(w)
- Modular graphic inserts available in heights of 2.25″, 3.25″, 4″
- Silk-screened texting or vinyl graphic text on insert panels

Wall Mounted Directory/Map Insert
- Size options: 19.5″(h) x 21.5″(w) and 24.5″(h) x 25.5″(w)
- Changeable digital graphic insert protected by matte acrylic cover

Letter Paper Insert and Evacuation Route Sign
- Letter size sign option holds standard US letter size sheet; the overall size of the sign is 11.75″(h) x 10.75″(w)
- Evacuation route sign option holds an 11.25″(h) x 11.75″(w) sheet; the overall size of the sign is 13.25″(w) x 11.75″(h)
- 8.5″ x 11″ or 11″ x 17″ paper can be used to create inserts in-house

Double-sided Projecting Sign
- Size options: 11.5″(h) x 13″(w) and 15.5″(h) x 13″(w)
- Aluminum wall plate mounts to the wall with two mechanical fasteners
- Graphic panels can be painted acrylic cover with vinyl graphic, acrylic cover with digital graphic, silkscreen on aluminum insert or digital print into anodized aluminum
- Changeable paper insert protected by matte acrylic cover

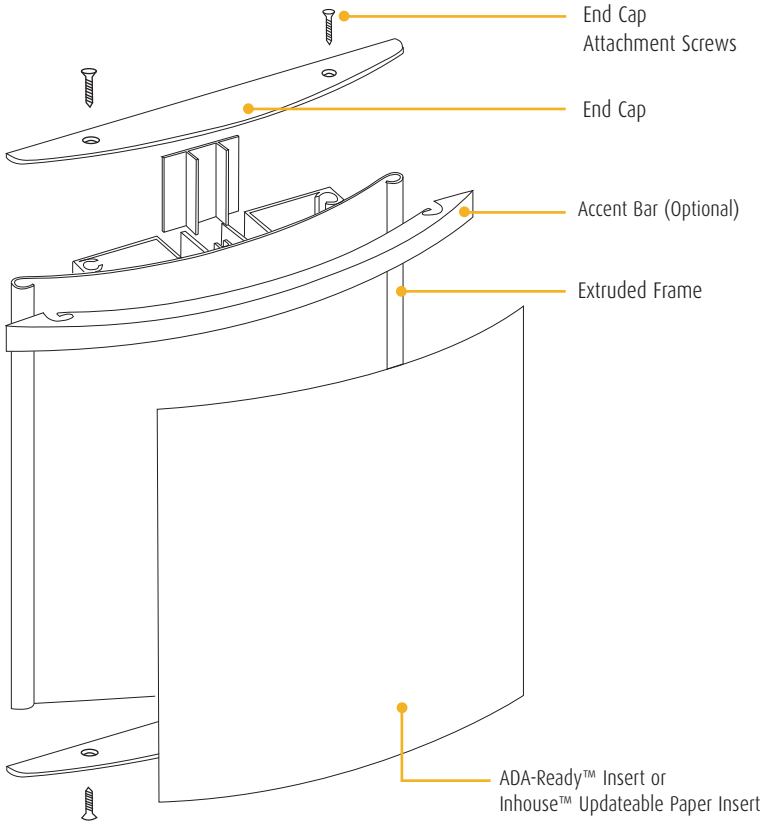
Double-sided Suspended Sign
- Size options: 7.5″(h) x 25.5″(w), 11.5″(h) x 25.5″(w), 11.5″(h) x 37.5″(w) and 11.5″(h) x 49.25″(w)
- Graphic panels can be painted acrylic cover with vinyl graphic, acrylic cover with digital graphic, silkscreen on aluminum insert or digital print into anodized aluminum
- Paper insert protected by matte acrylic cover

Interior Monolith
- 78.75″(h) x 27.5″(w) free-standing sign with full-face digital graphic
- 78.75″(h) x 19.5″(w) free-standing multi-panel sign
- Inserts for multi-panel option measure 4″ or 2″ in height with silk-screened or vinyl graphic text on insert panels

Horizon

Horizon is a solution comprised of anodized aluminum extrusions that provide flexibility with a distinguished look. It is available with or without a decorative accent bar and can be customized for your unique environment.

Horizon features standard interior signage, including name plates, wall mounts, directionals, projecting and suspended signs. Horizon includes ADA-Ready™ panels, graphic panels and all sign components can be finished with any of ASI's 140 standard paint colors. Additionally, Horizon is made from aluminum which can be easily recycled at the end of the life of the sign.



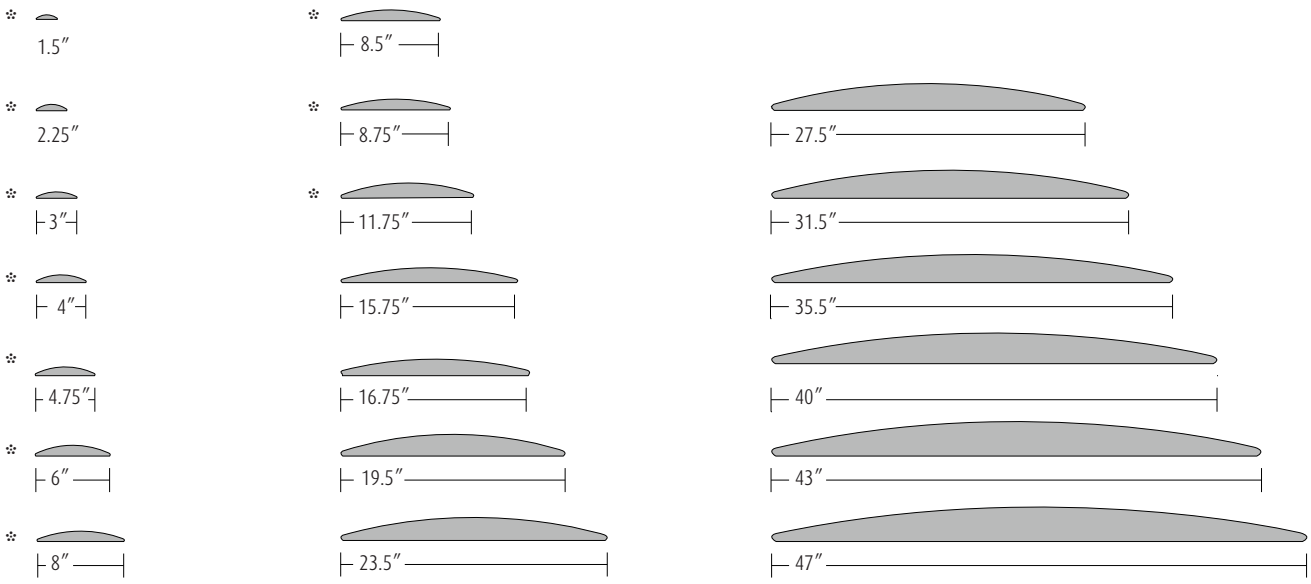
Product Features

- Versatile, expandable, changeable system
- Front-loading interchangeable aluminum, graphic or ADA-Ready™ inserts
- Inhouse™ updateable paper inserts available
- Single or double-sided options
- Five standard anodized accent colors or 140 standard paint colors
- Powder-coated simulated wood grain finishes available

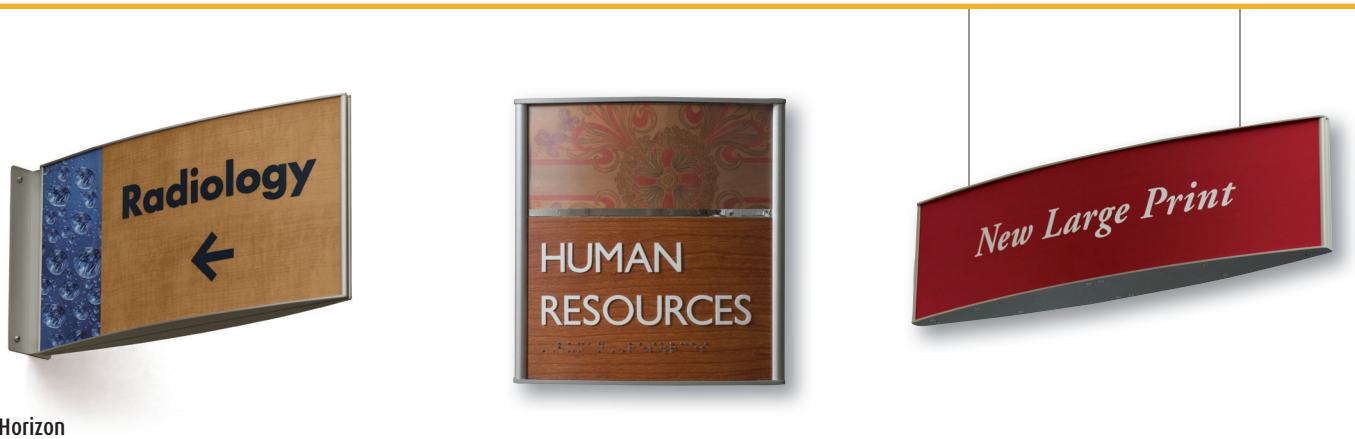
Extruded Frame Width Sizes

Sizes are nominal

⁂ accents available



Versatile Designs for Any Environment



Basic Horizon

Horizon is featured here as a basic extruded frame solution with ADA-Ready™ and paper inserts to create an economical signage solution.

Horizon with Design Accents

Accentuate Horizon by adding accent bars anywhere on the face of the sign. Accents are available with a variety of finish options.

Customized Horizon

Customize Horizon with a variety of materials to complement your interior finishes to create a unique design.

Infinite Design Possibilities

The Infinity™ modular signage system offers unlimited possibilities supported by simple, elegant engineering. A perforated metal chassis designed to receive patented, precision-molded attachment devices, is used to configure virtually any material or component in addition to a wide range of standard-size panels and accessories. Precise alignment, securely attached components and easy updates are the hallmarks of this sophisticated modular system. Designers can choose to mount Infinity ADA-Ready™ or graphic panels directly to a surface through the use of a black foam backer and snap-fit wall mounting clips or traditional VHB tape.

- Wide variety of standard components and accessories with custom options
- Full-face print on panel graphics available
- Complete range of mounting options: chassis, wall, ceiling, projecting, desk, and floor fixtures
- All chassis, ADA-Ready™, graphic and glass panels available in custom sizes and colors
- ISO 9001 manufacturing process
- Two year warranty on parts and labor

Sustainable Innovations

The Infinity™ signage system is a durable, modular solution, which ensures that the system can be easily updated or repaired. The components can also be easily disassembled and sorted into appropriate recycling processes at end-of-life.

Modular Signage Solutions

Standard Features and Options

Chassis
- Material: 18 ga. cold rolled steel or stainless steel, powder coated or painted in matte or gloss finish; natural, brushed or polished metal (stainless steel only)

Graphic and Glass Panels
- Material: aluminum alloy or tempered glass, 0.118″
- Glass panel is clear, not frosted or opaque
- Glass panel receives subsurface digital graphics
- 140 standard paint colors, one per sign with multiple and custom colors available
- Full-panel face print on panel graphics -- 720 dpi, seven-color print system, including white ink
- Vinyl and silkscreen graphics available
- Finish: high temperature cured polyester coating

Module Attachment and Registration
- HookTab™, tamper resistant fastener
- LocTab™, tamper resistant fastener
- PresTab™, changeable fastener
- PinTab™, registration device
- MagTab™, magnetic fastener

Accessories
- PaperFlex™, Inhouse™ updatable modules
- NoteBar™, message holder
- NoteBall™, message holder
- EyeBeam™, room control accessory
- Linear accents and decorative trim components

Mounting
- VHB tape or optional installation clip/spacer
- Suspended via cable suspension kits
- Projecting flag mount
- Partition
- Counter
- Desk

Panels
- ADA-Ready™ panels
- Graphic panels
- Glass panels

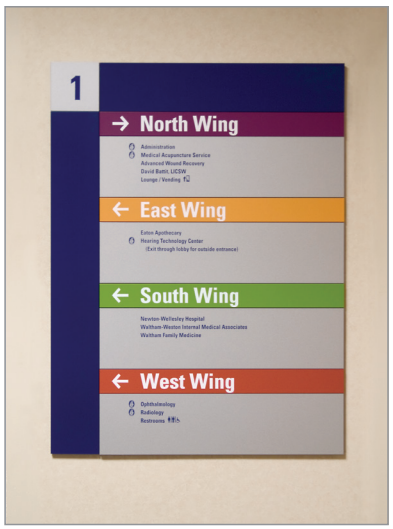
Graphic Method for ADA-Ready™ Panels
- InTouch™ and InTac™, tactile characters and Braille
- Screen process tipped for raised graphics
- PaperFlex™, Inhouse™ updatable modules: laser printed paper inserts, generated with Microsoft® Word® templates
- 140 standard paint colors with multiple and custom colors available

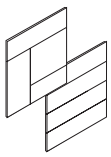
Chassis Components
- Wall
- Projecting flag
- Half-round
- Suspended
- Partition
- Counter fixture
- Desk bar fixture
- Wall Rail

PaperFlex Signs™
- PaperFlex™ accessory
- PaperFlex™ curved fixture
- PaperFlex™ flat face fixture

Floor Stand
- May be composed of any combination of same width curved modular Inhouse™ updatable or graphic panels within min/max range of fixture

Interior Monolith
- Available in widths: 18″ or 24″, with a height of 72″
- May be composed of any combination of same width graphic panels
- Steel internal structure and weighted base

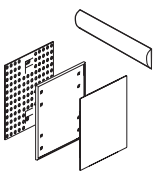



Module Attachment and Precision Registration

Graphic, Glass and ADA-Ready™ Panels

Perforated Metal Chassis

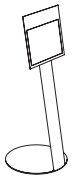
Wall Rail


PaperFlex Signs™

Attachment Devices, Installation Clip and Spacer

Accents

Accessories


Floor Stand

Signage Innovations™

Pacific Interior™

Engineered to Perfection

The simple curved lines and clean appearance of the Pacific Interior™ modular signage system blend into any environment and offers a solution that is clear, unobtrusive and inviting. Pacific Interior's ADA-Ready™ panels and graphic panels are modular and completely interchangeable making the system simple to update. There are configurations for every situation: wall mounted, suspended, projecting and free-standing.

- Versatile, expandable, flexible sign system
- Front-loading interchangeable aluminum graphic panels
- Front-loading interchangeable ADA-Ready™ panels
- Attractive wood grain finishes and metal finishes available
- Full-face print on panel graphics available
- Standard and custom design accents available
- ISO 9001 manufacturing process
- Two year warranty on parts and labor

Sustainable Innovations

The Pacific Interior™ modular signage system is a durable solution, which ensures that the system can be easily updated or repaired. The components can also be easily disassembled and sorted into appropriate recycling processes at end-of-life.

Modular Signage Solutions

Standard Features and Options

- ADA-Ready™ and graphic panel finish of high temperature cured polyester paint
- For ADA-Ready™ and graphic panels: 140 standard paint colors, one per sign with multiple and custom colors available
- For graphic panels only: mahogany, oak, birch, leather finishes and brushed or polished finishes such as brass and silver available
- Standard and custom design accents available

Graphics Options

- Full-panel face print on panel graphics -- 720 dpi, seven-color print system, including white ink
- Vinyl graphics and silkscreen available
- For ADA-Ready™ panels: screen-tipped Intouch™ and InTac™, tactile characters and Braille
- For modular Inhouse™ updatable panels: computer generated printed inserts via Microsoft® Word® templates

Wall Mounted Sign

- May be composed of any combination of same width, curved graphic, ADA-Ready™ and modular Inhouse™ updatable panels
- Optional room control device
- Extruded aluminum vertical supports and mechanical wall attachment
- Molded polycarbonate internal panel structure with graphic or ADA-Ready™ panels

Suspended Sign

- Single or double-sided curved, aluminum graphic panels
- Molded polycarbonate internal panel structure with aluminum vertical supports
- Suspension: stainless steel or nylon cable system

Projecting Sign

- Single-or double-sided curved, aluminum graphic panels, 6″x 6″ or 8.75″x 9″
- Molded polycarbonate internal panel structure
- Extruded aluminum vertical supports and wall attachment bracket

Interior Monolith

- Available in two widths, 17.5″ and 24″, and a single height of 72″
- May be composed of any combination of same width graphic panels
- Powder-coated steel internal structure and weighted base
- Extruded aluminum vertical supports and panel attachment system

Floor Stand

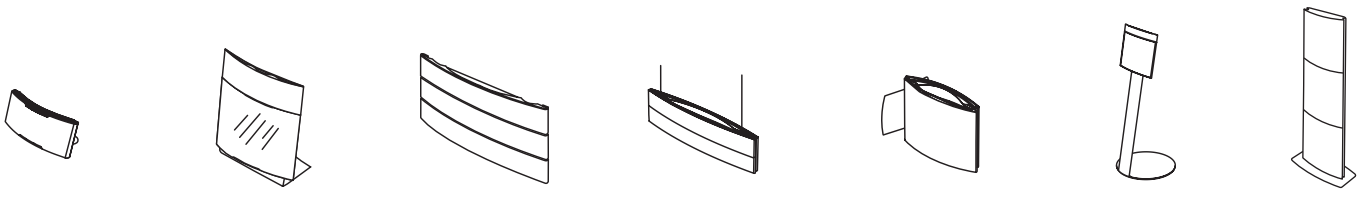
- May be composed of any combination of same width curved modular Inhouse™ updatable or graphic panels within min/max range of fixture
- Powder-coated steel structure with aluminum sign component attachment plate

Countertop Sign

- May be composed of any combination of 12″ wide modular Inhouse™ updatable and graphic panels that equal a total height of 12″
- Other sizes available include 3.5″x 6″ and 6″x 6″
- Formed aluminum counter fixture with protective pads

Desktop Sign

- May be composed of any combination of 6″ wide modular Inhouse™ updatable and graphic panels in range shown that equal a total height of 2.5″
- Molded polycarbonate desk fixture, charcoal gray color



Accentuate Pacific Interior's Curved Profile and Enhance Wayfinding Solutions with Design Accents

Standard and custom design accents are available for Pacific Interior™, ASI's curved-face modular system. Pacific Interior's simple lines and graceful appearance complement any environment, offering a presence that is unobtrusive and inviting.

By adding design accents, designers can further accentuate the curve of the profile and enhance interior wayfinding plans. The design accents can be finished with any of ASI's standard colors.

Features and Benefits:

- Standard accents fill the gap between the panels and follow the curved profile of the panel
- Custom accent shapes available
- Accents can be applied to the top, the bottom and in between each modular panel
- Ideal solution for color-coded wayfinding solutions
- Accents are finished with any of ASI's standard colors

iSO SIGN™

INFECTION PREVENTION SIGNAGE

PRODUCT CATALOG 2017

A. ISOSIGN
B. ISOPLUS
C. ISOCOMPLETE
D. ISOLATION PRECAUTION SIGNS "8.5 x 11"
E. ISO - ACCESSORY SIGN
F. ISOSIGN 6.0
G. BLACK SIGN BACK OPTION

www.theisosign.com info@theisosign.com 866.504.4001

A.

iSO SIGN

IsoSign is the base signage solution, and is a great addition to your current facility if you already have the proper signage or are just wanting that additional element of effective communication for your staff. It is an 11.75”x7.5” multi-insert sign frame which includes up to FIVE isolation precaution inserts. You can choose from our standard inserts or have us design to your specific needs.

www.theisosign.com info@theisosign.com 866.504.4001

B.

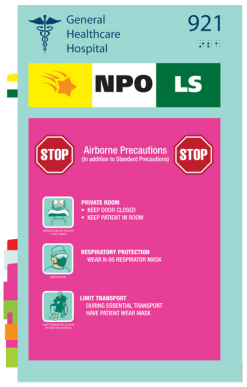
iSO PLUS

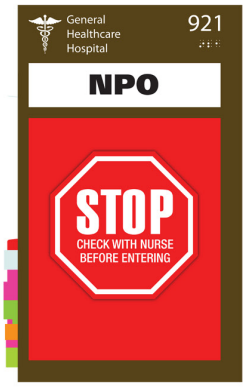
ISOPLUS is a great solution if you already have ADA compliant room numbers with braille to match. ISOPLUS provides isolation precaution inserts and offers a second slot for risk management/patient information inserts. It is an 11.75”x7.5” Multi-insert sign frame which includes up to FIVE isolation precaution inserts and up to FIVE risk management inserts with color coded tabs. You can choose from our standard inserts or have us design to your specific needs.

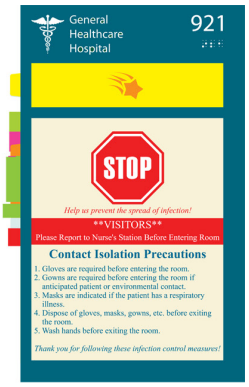
www.theisosign.com info@theisosign.com 866.504.4001

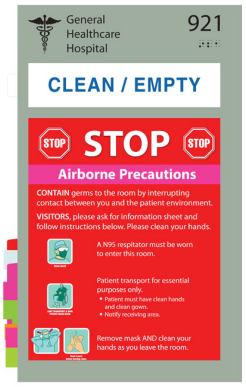
C.

iSO COMPLETE







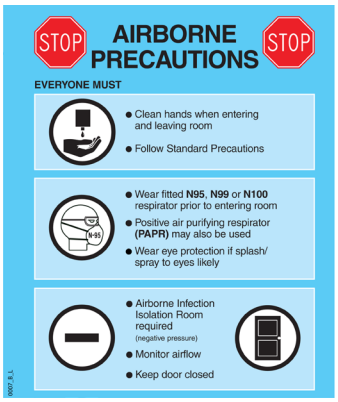


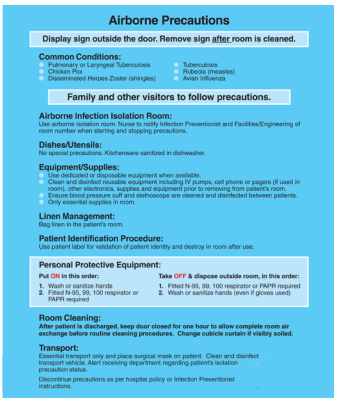
IsoComplete is the "complete" patient room signage solution. It provides everything you need for clear communication and risk management. It is a 13 ½"x 8 ¼" multi-insert sign frame which includes a large slot for up to FIVE isolation precaution inserts and a second, smaller slot, for up to FIVE risk management inserts. The IsoComplete includes ADA compliant room number with braille and also offers a space to showcase your brand / logo. You can choose from our standard inserts or have us design to your specific needs.

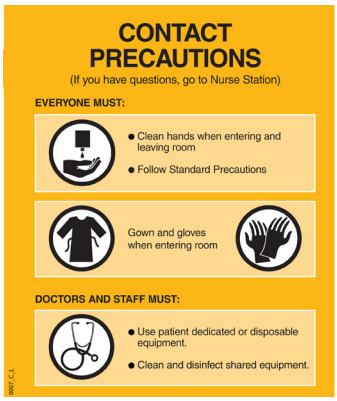
www.theisosign.com info@theisosign.com 866.504.4001

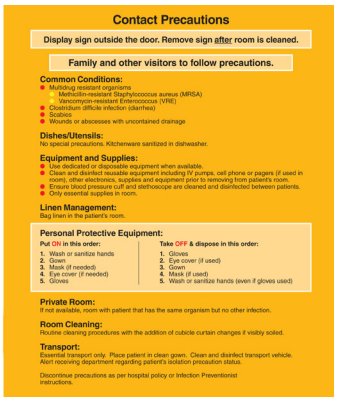
D. ISOLATION PRECAUTION SIGNS

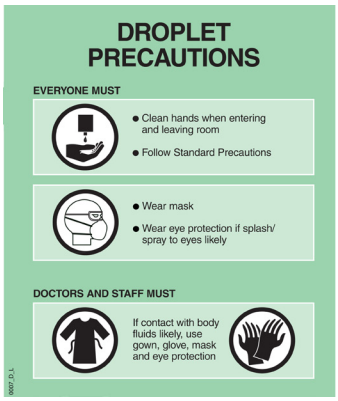
“8.5 x 11”

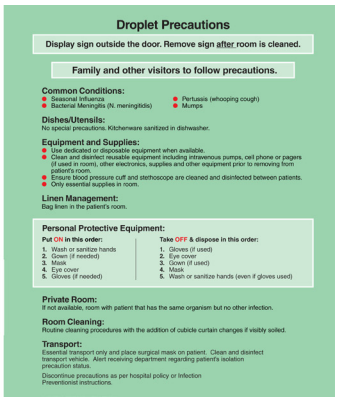


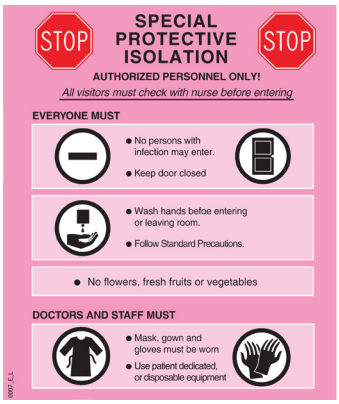


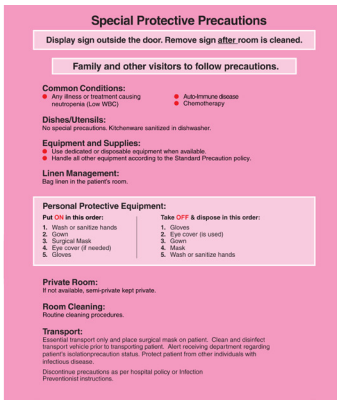


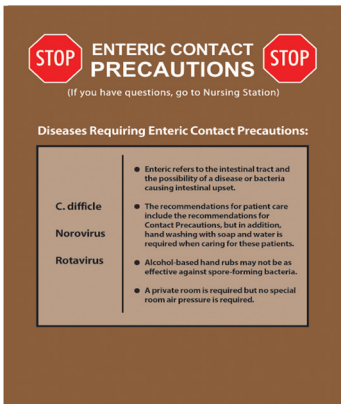












ISOSIGN is now offering for sale our Isolation Precaution Designs in an 8.5” x 11”dual-sided UV printed sign on our insert material, durable styrene. These signs can be easily cleaned with bleach wipes. They come in packs of 10.

Custom Sizes and/or Designs are available. Vertical formats are also available.

We can also print for your facility any state required Infection Prevention Signage such as North Carolina’s SPICE program or Washington State Hospital Association standardization Project.

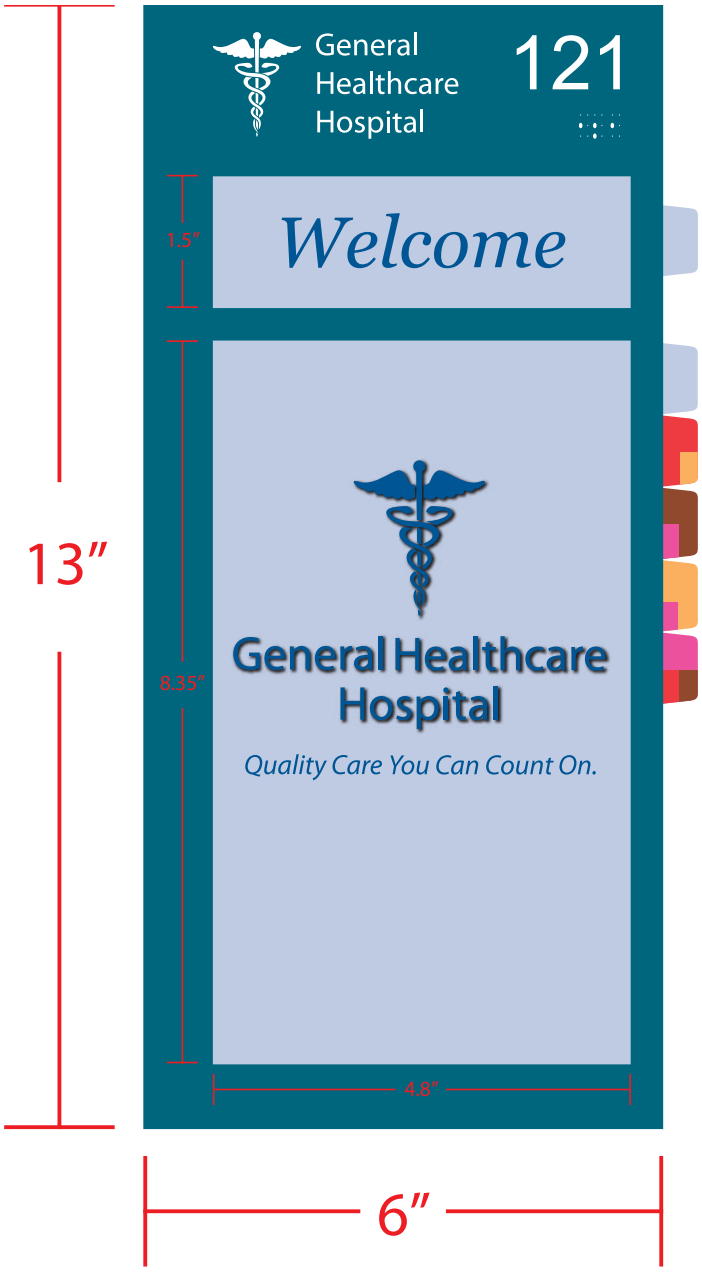
www.theisosign.com **info@theisosign.com** **866.504.4001**

E. ISO - ACCESSORY SIGN

ISOSIGN is proud to introduce a new design, the ISO – ACCESSORY SIGN.

The ISO-Accessory Sign has a changeable insert to keep your facility's patients, visitors, and personnel informed with custom messages. The accessory on this sign is the Face Mask Holder. It acts as a permanent storage and easy access to a face mask. When one reaches for a face mask they will be informed with the message above the holder.

F. ISOSIGN 6.0



The 6.0 version of ISOSIGN was developed due to the lack of wall space outside patient's rooms in some of our client's hospitals. This slimmer version of ISO-SIGN is only 6" in width compared to the original ISOSIGN version measuring 7 3/4" wide.

The 6.0 comes in "Complete", "Plus", and "Isosign".

G. BLACK SIGN BACK OPTION

Now we have a slick black sign back option for ISOSIGN that you can choose instead of our standard white sign back. This will make your returns or sides of the sign the color of the sign back. Other colored sign backs are available on request. We can even do custom colored sign backs!!

2017 Product List
Alta Touchscreen

800.704.3458
www.TouchSource.com

The Alta is a thin profile architecturally finished free standing kiosk. Meets ADA requirements for wheel chair access.

AT-19-TO

AT-22H-TO

AT-32H-TO

AT-32V-TO

ATSL-40H-TO

Monitor	Size	19-inch high resolution flat panel LCD touchscreen monitor	22-inch high resolution flat panel LCD touchscreen monitor	32-inch high resolution flat panel LCD touchscreen monitor	32-inch high resolution flat panel LCD Touchscreen Monitor	40-inch high resolution flat panel LCD Touchscreen Monitor
	Resolution	1280 x 1024	1920 x 1080	1920 x 1080	1080 x 1920	1920 x 1080
	Display Dimensions	14.81”W x 11.85”H	19” W x 10.75”H	27.75”W x 15.75”H	15.5”W x 27.575”H	34.85”W x 19.63”H
Kiosk	Dimensions	18”W	21.8”W	32”W	22”W	15”W
		52.875”H	52.875”H	58.1”H	70.75”H	65.25”H
		4.25”D	4.25”D	5.765”D	5.125”D	15”D
	Base Dimensions	18.25”W x 16.75”D	21.99”W x 16.75”D	32.194”W x 19.75”D	24”W x 19.5”D	32”W x 24”D
	Finish	Brushed Stainless Steel face and Silver Powder Coat paint back and	Brushed Stainless Steel face and Silver Powder Coat paint back and	Brushed Stainless Steel face and Silver Powder Coat paint back and	Brushed Stainless Steel	Silver Powder Coat Paint
Lead Time	Approx.	4 Weeks	4 weeks	6 weeks	6 weeks	6 weeks
Power / Data	Electrical: 120 Volt—20 AMP MC Cable, Electrician installed Duplex box inside Cabinet. Knock out in base. (Dedicated circuit is not necessary)					Also available in 32”, 48”, and 55” monitor sizes, please request quote for pricing.
	Data: CAT5 Data Cable with RJ– Male connector					
Warranty	2 Year Warranty on all Hardware, Unlimited Warranty on Software					

Note: Specs are subject to change without notice. Custom 40”, 48”, and 55” kiosk directories are available upon request.

2017 Product List
Alta Non-Touch

800.704.3458
www.TouchSource.com

The Alta is a thin profile architecturally finished free standing kiosk. Meets ADA requirements for wheel chair access.

AT-19-ST

AT-22H-ST

AT-32H-ST

AT-32V-ST

ATSL-40H-ST

Monitor	Size	19-inch high resolution flat panel LCD touchscreen monitor	22-inch high resolution flat panel LCD non-touch display monitor	32-inch high resolution flat panel LED non-touch display monitor	32-inch high resolution flat panel LED non-touch display monitor	40-inch high resolution flat panel LED non-touch display monitor
	Resolution	1280 x 1024	1920 x 1080	1920 x 1080	1080 x 1920	1920 x 1080
	Display Dimensions	14.81”W x 11.85”H	19” W x 10.75”H	27.75”W x 15.75”H	15.5”W x 27.575”H	34.94”W x 19.69”H
	Displays approx	15-20 Listings	25-30 Listings	50-60 Listings	50-60 Listings	60-80 Listings
Kiosk	Dimensions	18”W	21.8”W	32”W	22”W	15”W
		52.875”H	52.875”H	58.1”H	70.75”H	65.25”H
		4.25”D	4.25”D	5.765”D	5.125”D	15”D
	Base Dimensions	18.25”W x 16.75”D	21.99”W x 16.75”D	32.194”W x 19.75”D	24”W x 19.5”D	32”W x 24”D
	Finish	Brushed Stainless Steel face and Silver Powder Coat paint back and base	Brushed Stainless Steel face and Silver Powder Coat paint back and base	Brushed Stainless Steel face and Silver Powder Coat paint back and base	Brushed Stainless Steel	Silver Powder Coat Paint
Lead Time	Approx.	4 Weeks	4 weeks	6 weeks	6 weeks	6 weeks
Power / Data	Electrical: 120 Volt—20 AMP MC Cable, Electrician installed Duplex box inside Cabinet. Knock out in base. (Dedicated circuit is not necessary)					Also available in 32”, 48”, and 55” monitor sizes, please request quote for pricing.
	Data: CAT5 Data Cable with RJ– Male connector					
Warranty	2 Year Warranty on all Hardware, Unlimited Warranty on Software					

Note: Specs are subject to change without notice. Custom 40”, 48”, and 55” kiosk directories are available upon request.

Wayfinding and Mapping

- Easy-to-read wayfinding maps
- Animated paths point the way
- Simple text directions
- Mobile wayfinding for smart phones
- Simple floor plans to advanced 3-D multi-floor view
- Campus and area maps

Comprehensive Wayfinding and Mapping Systems Uniquely Designed for the Healthcare Market

Wayfinding Simplified

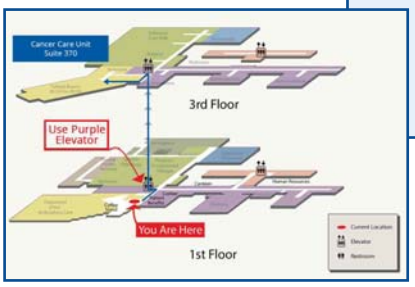
Give your visitors the tools they need to easily find their way within your facility. User-friendly directories offer easy-to-read maps of your floor plan to quickly guide visitors to their destination.

Animated Paths at a Glance

Animated paths offer your visitors step-by-step guidance throughout your facility. Each path is customized by location, clearly illustrating your visitor's starting point and final destination in one easy map.

3-D Mapping

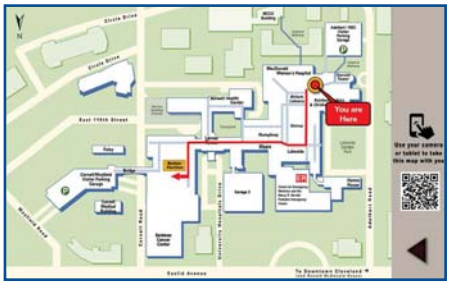
3-D floor plans offer facility-wide guidance within a powerful, easy-to-read multi-floor map system. This helps visitors visualize where they need to go at a glance. Add animated paths and your visitors are on their way!



Choose simple floor plans or animated paths.

Mapping the Campus

Navigating across a hospital campus or medical office complex can be a major challenge. Without a good map, patients and visitors may find themselves late for appointments. TouchSource campus maps simplify the complex with comprehensive floor plans and sophisticated mapping tools. So your visitors arrive on time without the stress.



TouchSource™

1-800-704-3458
www.touchsource.com

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2017 Product List
Mirada Fully-Recessed Touchscreen

Our Mirada flush mount directory series is fully recessed into the wall for a smooth finished appearance. All equipment is housed in the architecturally finished case, with easy access from the front for maintenance.

MRR-22H-TO

MRR-32H-TO

MRR-40H-TO

MRR-48H-TO

MRR-55H-TO

Monitor	Size	22-inch high resolution flat panel LCD Touchscreen	32-inch high resolution flat panel LCD Touchscreen	40-inch high resolution flat panel LCD Touchscreen	48-inch Commercial grade high resolution flat panel LED touchscreen	55-inch Commercial grade high resolution flat panel LED touchscreen
	Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
	Display Dimensions	19”W x 10.75” H	27.49”W x 15.43”H	34.5”W x 19.5”H	41.54”W x 23.38”H	46.625”W x 26.5”H
Cabinet Finish	Cabinet face has a Brushed Stainless Steel finish standard, optional Powder Coat Finish Upon request					
Power / Data	Electrical: 120 Volt—20 AMP MC Cable, Electrician installed Flush Mount Duplex on wall behind Cabinet. (Dedicated circuit is not necessary)					
	Data: CAT5 Data Cable with RJ– Male connector					
Warranty	2 Year Warranty on all Hardware, Unlimited Warranty on Software					
Horizontal Cabinet	Finish Face Dimensions	25.43”W	35.5”W	43.5”W	50.137”W	54.433”W
		17.22”H	23.5”H	28.5”H	32.23”H	33.943”H
	Back Box Dimensions (Portion recessed in wall)	23.68”W	33.75”W	41.75”W	48.387”W	52.7”W
		15.72”H	22”H	27”H	30.726”H	32.44”H
		3.75”D	4.125”D	4.5”D	4.625”D	4”D
Vertical Cabinet	Finish Face Dimensions	17.22”W	23.5”W	28.5”W	32.226”W	33.94”W
		25.43”H	35.5”H	43.5”H	50.137”H	54.43”H
	Back Box Dimensions (Portion recessed in wall)	15.72”W	22”W	27”W	30.726”W	32.44”W
		23.68”H	33.75”W	41.75”H	48.387”H	52.7”H
		3.75”D	4.125”D	4.5”D	4.625”D	4”D

MRR-22V-TO

MRR-32V-TO

MRR-40V-TO

MRR-48V-TO

MRR-55V-TO

Note: Specs are subject to change without notice. 65”, 75” monitors and custom sizes available for an additional cost upon request.

2017 Product List
Mirada Fully-Recessed Non-Touch

800.704.3458
www.TouchSource.com

Our static Mirada flush mount directory series is fully recessed into the wall for a smooth finished appearance. All equipment is housed in the architecturally finished case, with easy access from the front for maintenance.

MRR-22H-ST

MRR-32H-ST

MRR-40H-ST

MRR-48H-ST

MRR-55H-ST

Monitor	Size	22-inch high resolution flat panel LCD non-touch display monitor	32-inch high resolution flat panel LED non-touch display monitor	40-inch high resolution flat panel LED non-touch display monitor	48-inch high resolution flat panel LED non-touch display monitor	55-inch high resolution flat panel LED non-touch display monitor
	Resolution	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
	Display Dimensions	19”W x 10.75” H	27.49”W x 15.43”H	34.5”W x 19.5”H	41.54”W x 23.38”H	46.625”W x 26.5”H
	Displays approx	25-30 Listings	50-60 Listings	60-80 Listings	80-100 Listings	100-125 Listings
Cabinet Finish	Cabinet face has a Brushed Stainless Steel finish standard, optional Powder Coat Finish Upon request					
Power / Data	Electrical: 120 Volt—20 AMP MC Cable, Electrician installed Flush Mount Duplex on wall behind Cabinet. (Dedicated circuit is not necessary)					
	Data: CAT5 Data Cable with RJ– Male connector					
Warranty	2 Year Warranty on all Hardware, Unlimited Warranty on Software					
Horizontal Cabinet	Finish Face Dimensions	25.43”W	35.5”W	43.5”W	50.137”W	54.433”W
		17.22”H	23.5”H	28.5”H	32.23”H	33.943”H
	Back Box Dimensions (Portion recessed in wall)	23.68”W	33.75”W	41.75”W	48.387”W	52.7”W
		15.72”H	22”H	27”H	30.726”H	32.44”H
		3.75”D	4.125”D	4.5”D	4.625”D	4”D
Vertical Cabinet	Finish Face Dimensions	17.22”W	23.5”W	28.5”W	32.226”W	33.94”W
		25.43”H	35.5”H	43.5”H	50.137”H	54.43”H
	Back Box Dimensions (Portion recessed in wall)	15.72”W	22”W	27”W	30.726”W	32.44”W
		23.68”H	33.75”W	41.75”H	48.387”H	52.7”H
		3.75”D	4.125”D	4.5”D	4.625”D	4”D

MRR-22V-ST

MRR-32V-ST

MRR-40V-ST

MRR-48V-ST

MRR-55V-ST

Note: Specs are subject to change without notice. 65”, 75” monitors and custom sizes available for an additional cost upon request.

11. Specifications

2019

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SECTION 06 41 16.00 10

PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS
08/10

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A161.2	(1998) Decorative Laminate Countertops, Performance Standards for Fabricated High Pressure

ARCHITECTURAL WOODWORK INSTITUTE (AWI)

AWI AWS	(2009) Architectural Woodwork Standards

ASTM INTERNATIONAL (ASTM)

ASTM D1037	(2012) Evaluating Properties of Wood-Base Fiber and Particle Panel Materials
ASTM E84	(2015a) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM F547	(2006; R 2012) Nails for Use with Wood and Wood-Base Materials

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.9	(2010) Cabinet Hardware

COMPOSITE PANEL ASSOCIATION (CPA)

CPA A208.1	(2009) Particleboard
CPA A208.2	(2009) Medium Density Fiberboard (MDF) for Interior Applications

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI/NEMA LD 3	(2005) Standard for High-Pressure Decorative Laminates

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	Scientific Certification Systems (SCS)Indoor Advantage

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED BD+C	(2009; R 2010) Leadership in Energy and Environmental Design(tm) Building Design and Construction (LEED-NC)

UL ENVIRONMENT (ULE)

ULE Greenguard	UL Greenguard Certification Program

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)

ANSI/WDMA I.S.1A	(2013) Interior Architectural Wood Flush Doors

1.2 SYSTEM DESCRIPTION

Work in this section includes laminate clad custom casework [cabinets] [_____] as shown on the drawings and as described in this specification. This Section includes high-pressure laminate surfacing and cabinet hardware. Comply with EPA requirements in accordance with Section 01 33 29 SUSTAINABILITY REPORTING. All exposed and semi-exposed surfaces, whose finish is not otherwise noted on the drawings or finish schedule, shall be sanded smooth and shall receive a clear finish of polyurethane. Wood finish may be shop finished or field applied in accordance with Section 09 90 00 PAINTS AND COATINGS.

1.3 SUSTAINABILITY REPORTING

Materials in this technical specification may contribute towards contract compliance with sustainability requirements. See Section 01 33 29 SUSTAINABILITY REPORTING for project LEED BD+C [local/regional materials,] [low-emitting materials,] [recycled content,] [certified wood] [____] [and][rapidly renewable materials] LEED documentation requirements.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Drawings
Installation

SD-03 Product Data

Wood Materials
Wood Finishes
Finish Schedule
Certification

SD-04 Samples

Plastic Laminates
Cabinet Hardware

SD-07 Certificates

Quality Assurance
Laminate Clad Casework

SD-11 Closeout Submittals

LEED Documentation

1.5 QUALITY ASSURANCE

1.5.1 General Requirements

Unless otherwise noted on the drawings, all materials, construction methods, and fabrication shall conform to and comply with the [premium] [custom] grade quality standards as outlined in AWI AWS, Section for laminate clad cabinets. These standards shall apply in lieu of omissions or specific requirements in this specification. Contractors and their personnel engaged in the work shall be able to demonstrate successful experience with work of comparable extent, complexity and quality to that shown and specified. Submit a quality control statement which illustrates compliance with and understanding of AWI AWS requirements, in general, and the specific AWI AWS requirements provided in this specification. The quality control statement shall also certify a minimum of ten years Contractor's experience in laminate clad casework fabrication and construction. The quality control statement shall provide a list of a minimum of five successfully completed projects of a similar scope, size, and complexity.

1.5.2 Mock-ups

Prior to final approval of shop drawings, provide a full-size mock-up of a typical [vanity] [floor cabinet] [wall cabinet] [_____], including all components and hardware necessary to illustrate a completed unit with a minimum of one door and one drawer assembly. The completed mock-up shall include countertops and back splashes where specified. The mock-up shall utilize specified finishes in the patterns and colors [as indicated] [as indicated in Section 09 06 00 SCHEDULES FOR FINISHES. Upon disapproval, rework or remake the mock-up until approval is secured. Remove rejected units from the jobsite. Approved mock-up may remain as part of the finished work. Submit shop drawings showing all fabricated casework items in plan view, elevations and cross-sections to accurately indicate materials used, details of construction, dimensions, methods of fastening and erection, and installation methods proposed. Shop drawing casework items shall be clearly cross-referenced to casework items located on the project drawings. Shop drawings shall include a color schedule of all casework items to include all countertop, exposed, and semi-exposed cabinet finishes to include finish material manufacturer, pattern, and color.

1.5.3 Sustainable Design Certification

Product shall be third party certified in accordance with ULE Greenguard[Gold], SCS Scientific Certification Systems Indoor Advantage[Gold]or equal. Certification shall be performed annually and shall be current.

1.6 DELIVERY, STORAGE, AND HANDLING

Casework may be delivered knockdown or fully assembled. Deliver all units to the site in undamaged condition, stored off the ground in fully enclosed areas, and protected from damage. The storage area shall be well ventilated and not subject to extreme changes in temperature or humidity.

1.7 SEQUENCING AND SCHEDULING

Coordinate work with other trades. Units shall not be installed in any room or space until painting, and ceiling installation are complete within the room where the units are located. Floor cabinets shall be installed before finished flooring materials are installed.

PART 2 PRODUCTS

2.1 WOOD MATERIALS

2.1.1 Lumber

a. All framing lumber shall be kiln-dried Grade III to dimensions as shown on the drawings. Frame front, where indicated on the drawings, shall be nominal 3/4 inch hardwood.

b. Standing or running trim casework components, which are specified to receive a transparent finish, shall be [_____] hardwood species, plain sawn. AWI grade shall be [premium] [custom]. Location, shape, and dimensions shall be as indicated on the drawings.

2.1.2 Panel Products

2.1.2.1 Plywood

All plywood panels used for framing purposes shall be veneer core hardwood plywood, AWI AWS Grade AA. Nominal thickness of plywood panels shall be as indicated in this specification and on the drawings.

2.1.2.2 Particleboard

All particleboard shall be industrial grade, medium density (40 to 50 pounds per cubic foot), 3/4 inch thick. A moisture-resistant particleboard in grade Type 2-M-2 or 2-M-3 shall be used as the substrate for plastic laminate covered [countertops] [backsplashes] [_____] [components as located on the drawings] and other areas subjected to moisture. Particleboard shall meet the minimum standards listed in ASTM D1037 and CPA A208.1.

2.1.2.3 Medium Density Fiberboard

Medium density fiberboard (MDF) shall be an acceptable panel substrate where noted on the drawings. Medium density fiberboard shall meet the minimum standards listed in CPA A208.2.

2.2 SOLID POLYMER MATERIAL

Solid surfacing casework and countertop components shall conform to the requirements of Section 06 61 16 SOLID POLYMER (SOLID SURFACING) FABRICATIONS.

2.3 HIGH PRESSURE DECORATIVE LAMINATE (HPDL)

All plastic laminates shall meet the requirements of ANSI/NEMA LD 3 and ANSI A161.2 for high-pressure decorative laminates. Design, colors, surface finish and texture, and locations shall be as indicated on the drawings] and [Section 09 06 00 SCHEDULES FOR FINISHES. Submit two samples of each plastic laminate pattern and color. Samples shall be a minimum of 5 by 7 inches in size. Plastic laminate types and nominal minimum thicknesses for casework components shall be as indicated in the following paragraphs.

2.3.1 Horizontal General Purpose Standard (HGS) Grade

Horizontal general purpose standard grade plastic laminate shall be 0.048 inches (plus or minus 0.005 inches) in thickness. This laminate grade is intended for horizontal surfaces where postforming is not required.

2.3.2 Vertical General Purpose Standard (VGS) Grade

Vertical general purpose standard grade plastic laminate shall be 0.028 inches (plus or minus 0.004 inches) in thickness. This laminate grade is intended for exposed exterior vertical surfaces of casework components where postforming is not required.

2.3.3 Horizontal General Purpose Postformable (HGP) Grade

Horizontal general purpose postformable grade plastic laminate shall be 0.042 inches (plus or minus 0.005 inches) in thickness. This laminate grade is intended for horizontal surfaces where post forming is required.

2.3.4 Vertical General Purpose Postformable (VGP) Grade

Vertical general purpose postformable grade plastic laminate shall be 0.028 inches (plus or minus 0.004 inches) in thickness. This laminate grade is intended for exposed exterior vertical surfaces of components where postforming is required for curved surfaces.

2.3.5 Horizontal General Purpose Fire Rated (HGF) Grade

Horizontal general purpose fire rated grade plastic laminate shall be 0.048 inches (plus or minus 0.005 inches) in thickness. Laminate grade shall have a class 1, class A fire rating in accordance with ASTM E84.

2.3.6 Vertical General Purpose Fire Rated (VGF) Grade

Vertical general purpose fire rated grade plastic laminate shall be 0.028 inches (plus or minus 0.004 inches) in thickness. This laminate grade shall have a class 1, class A fire rating in accordance with ASTM E84.

2.3.7 Cabinet Liner Standard (CLS) Grade

Cabinet liner standard grade plastic laminate shall be 0.020 inches in thickness. This laminate grade is intended for light duty semi-exposed interior surfaces of casework components.

2.3.8 Backing Sheet (BK) Grade

Undecorated backing sheet grade laminate is formulated specifically to be used on the backside of plastic laminated panel substrates to enhance

dimensional stability of the substrate. Backing sheet thickness shall be 0.020 inches. Backing sheets shall be provided for all laminated casework components where plastic laminate finish is applied to only one surface of the component substrate.

2.4 THERMOSET DECORATIVE OVERLAYS (MELAMINE)

Thermoset decorative overlays (melamine panels) shall be used for [casework cabinet interior] [drawer interior] [all semi-exposed] [_____] surfaces.

2.5 EDGE BANDING

Edge banding for casework doors and drawer fronts shall be PVC vinyl and shall be [0.020 inch] [0.125 inch] [_____] thick. Material width shall be [15/16 inches] [as indicated on the drawings] [_____]. Color and pattern shall [match exposed door and drawer front laminate pattern and color] [be as indicated on the drawings] [_____].

2.6 CABINET HARDWARE

Submit one sample of each cabinet hardware item specified to include [hinges], [pulls], [drawer glides], and [_____]. All hardware shall conform to ANSI/BHMA A156.9, unless otherwise noted, and shall consist of the following components:

2.6.1 Door Hinges

[_____] type, BHMA No. [_____].

2.6.2 Cabinet Pulls

[_____] type, BHMA No. [_____].

2.6.3 Drawer Slide

Side mounted [_____] type, BHMA No. [_____] with [full] [_____] extension and a minimum [75 pound] [100 pound] [_____] load capacity. Slides shall include an [integral] [positive] stop to avoid accidental drawer removal.

2.6.4 Adjustable Shelf Support System

[Recessed (mortised) metal standards, BHMA No. BO4071, finish: [_____]. Support clips for the standards shall be [open type, BHMA No. B04091] [closed type, BHMA No. B04081], finish: [_____]] [Multiple holes with [metal] [plastic] [wood] pin supports].

2.7 FASTENERS

Nails, screws, and other suitable fasteners shall be the size and type best suited for the purpose and shall conform to ASTM F547 where applicable.

2.8 ADHESIVES, CAULKS, AND SEALANTS

2.8.1 Adhesives

Adhesives shall be of a formula and type recommended by AWI. Adhesives shall be selected for their ability to provide a durable, permanent bond and shall take into consideration such factors as materials to be bonded, expansion and contraction, bond strength, fire rating, and moisture

resistance. Adhesives shall meet local regulations regarding VOC emissions and off-gassing.

2.8.1.1 Wood Joinery

Adhesives used to bond wood members shall be a Type II for interior use [urea-formaldehyde resin formula] [polyvinyl acetate resin emulsion] [_____]. Adhesives shall withstand a bond test as described in ANSI/WDMA I.S.1A.

2.8.1.2 Laminate Adhesive

Adhesive used to join high-pressure decorative laminate to wood shall be [a water-based contact adhesive] [_____] [adhesive consistent with AWI and laminate manufacturer's recommendations]. PVC edgebanding shall be adhered using a polymer-based hot melt glue.

2.8.2 Caulk

Caulk used to fill voids and joints between laminated components and between laminated components and adjacent surfaces shall be clear, 100 percent silicone.

2.8.3 Sealant

Sealant shall be of a type and composition recommended by the substrate manufacturer to provide a moisture barrier at all locations where unfinished substrate edges may be subjected to moisture.

2.9 WOOD FINISHES

Paint, stain, varnish and their applications required for laminate clad casework components shall be [_____] [as indicated in Section 09 90 00 PAINTS AND COATINGS] [as indicated in Section 09 06 00 SCHEDULES FOR FINISHES]. Color and location shall be as indicated on the drawings.

2.10 ACCESSORIES

2.10.1 Glass and Glazing

Glass required in laminated casework shall be referenced by type in accordance with Section 08 81 00 GLAZING. Glass shall be one of the following:

a. Type [A] [_____].

b. [Float] [Patterned] glass: [Clear] [pattern] quality.

c. Safety glass: [Clear] [_____]; [heat strengthened] [fully tempered] [laminated] [_____]; [_____] inches thick minimum.

d. Wire Glass: [Clear] [_____], polished [both sides] [one side]; [square] [diagonal] [_____] mesh woven stainless steel wire of grid [_____] inches size; [_____] inches thick.

2.10.2 Grommets

Grommets shall be [plastic] [metal] [rubber] [_____] material for cutouts with a diameter of [_____] inches. Locations shall be as indicated on the

drawings.

2.11 FABRICATION

Verify field measurements as indicated in the shop drawings before fabrication. Fabrication and assembly of components shall be accomplished at the shop site to the maximum extent possible. Construction and fabrication of cabinets and their components shall meet or exceed the requirements for AWI [premium] [custom] grade unless otherwise indicated in this specification. Cabinet style, in accordance with AWI AWS, Section 400-G descriptions, shall be [flush overlay] [reveal overlay] [flush inset without face frame] [flush inset with face frame] [as indicated on the drawings].

2.11.1 Base and Wall Cabinet Case Body

2.11.1.1 Cabinet Components

Frame members shall be glued-together, kiln-dried hardwood lumber. Top corners, bottom corners, and cabinet bottoms shall be braced with either hardwood blocks or water-resistant glue and nailed in place metal or plastic corner braces. Cabinet components shall be constructed from the following materials and thicknesses:

2.11.1.1.1 Body Members (Ends, Divisions, Bottoms, and Tops)

3/4 inch [particleboard] [medium density fiberboard (MDF)] [veneer core plywood] panel product

2.11.1.1.2 Face Frames and Rails

3/4 inch [hardwood lumber] [panel product]

2.11.1.1.3 Shelving

3/4 inch [particleboard] [medium density fiberboard (MDF)] [veneer core plywood] panel product

2.11.1.1.4 Cabinet Backs

1/4 inch [particleboard] [medium density fiberboard (MDF)] [veneer core plywood] panel product

2.11.1.1.5 Drawer Sides, Backs, and Subfronts

1/2 inch [hardwood lumber] [panel product]

2.11.1.1.6 Drawer Bottoms

1/4 inch [particleboard] [medium density fiberboard (MDF)] [veneer core plywood] panel product

2.11.1.1.7 Door and Drawer Fronts

3/4-inch [particleboard] [medium density fiberboard (MDF)] panel product

2.11.1.2 Joinery Method for Case Body Members

2.11.1.2.1 Tops, Exposed Ends, and Bottoms

a. Steel "European" assembly screws (1-1/2 inch from end, 5 inch on center, fasteners will not be visible on exposed parts).

b. Doweled, glued under pressure (approx. 4 dowels per 12 inches of joint).

c. Stop dado, glued under pressure, and either nailed, stapled or screwed (fasteners will not be visible on exposed parts).

d. Spline or biscuit, glued under pressure.

2.11.1.2.2 Exposed End Corner and Face Frame Attachment

2.11.1.2.2.1 Mitered Joint

lock miter or spline or biscuit, glued under pressure (no visible fasteners)

2.11.1.2.2.2 Non-Mitered Joint (90 degree)

butt joint glued under pressure (no visible fasteners)

2.11.1.2.2.3 Butt Joint

glued and nailed

2.11.1.2.3 Cabinet Backs (Wall Hung Cabinets)

Wall hung cabinet backs must not be relied upon to support the full weight of the cabinet and its anticipated load for hanging/mounting purposes. Method of back joinery and hanging/mounting mechanisms should transfer the load to case body members. Fabrication method shall be:

2.11.1.2.3.1 Full Bound

Full bound, captured in grooves on cabinet sides, top, and bottom. Cabinet backs for floor standing cabinets shall be side bound, captured in grooves; glued and fastened to top and bottom.

2.11.1.2.3.2 Full Overlay

Full overlay, plant-on backs with minimum back thickness of 1/2 inchand minimum No. 12 plated (no case hardened) screws spaced a minimum 3 inches on center. Edge of back shall not be exposed on finished sides. Anchor strips are not required when so attached.

2.11.1.2.3.3 Side Bound

Side bound, captured in groove or rabbetts; glued and fastened.

2.11.1.2.4 Cabinet Backs (Floor Standing Cabinets)

2.11.1.2.4.1 Side Bound

Side bound, captured in grooves; glued and fastened to top and bottom.

2.11.1.2.4.2 Full Overlay

Full overlay, plant-on backs with minimum back thickness of 1/2 inch and minimum No. 12 plated (no case hardened) screws spaced a minimum 3 inches on center. Edge of back shall not be exposed on finished sides. Anchor strips are not required when so attached.

2.11.1.2.4.3 Side Bound with Rabbetts

Side bound, placed in rabbetts; glued and fastened in rabbetts.

2.11.1.2.5 Wall Anchor Strips

Wall Anchor Strips shall be required for all cabinets with backs less than 1/2 inch thick. Strips shall consist of minimum 1/2 inch thick lumber, minimum 2-1/2 inches width; securely attached to wall side of cabinet back - top and bottom for wall hung cabinets, top only for floor standing cabinets.

2.11.2 Cabinet Floor Base

Floor cabinets shall be mounted on a base constructed of [nominal 2 inch thick lumber] [3/4 inch particleboard] [3/4 inch fiberboard] [3/4 inch veneer core exterior plywood]. Base assembly components shall be [treated lumber] [a moisture-resistant panel product]. Finished height for each cabinet base shall be [not less than the full height of the installed, specified wall base] [as indicated on the drawings]. Bottom edge of the cabinet door or drawer face shall [be flush with top of base] [extend below the top of the base as indicated on the drawings].

2.11.3 Cabinet Door and Drawer Fronts

Door and drawer fronts shall be fabricated from [3/4 inch medium density particleboard] [3/4 inch medium density fiberboard (MDF]. All door and drawer front edges shall be surfaced with [high pressure plastic laminate] [PVC edgebanding], color and pattern [to match exterior face laminate] [as indicated on the drawings] [as indicated in Section 09 06 00 SCHEDULES FOR FINISHES.

2.11.4 Drawer Assembly

2.11.4.1 Drawer Components

Drawer components shall consist of a removable drawer front, sides, backs, and bottom. Drawer components shall be constructed of the following materials and thicknesses:

2.11.4.1.1 Drawer Sides and Backs For Transparent Finish

1/2 inch thick [solid hardwood lumber] [7-ply hardwood veneer core plywood (no voids), any species]

2.11.4.1.2 Drawer Sides and Backs For Laminate Finish

1/2 inch thick 7-ply hardwood veneer core substrate

2.11.4.1.3 Drawer Sides and Back For Thermoset Decorative Overlay (Melamine) Finish

1/2 inch thick medium density particleboard or MDF fiberboard substrate

2.11.4.1.4 Drawer Bottom

1/4 inch thick [veneer core panel product for transparent or plastic laminate finish] [thermoset decorative overlay melamine panel product]

2.11.4.2 Drawer Assembly Joinery Method

a. Multiple dovetail (all corners) or French dovetail front/dadoed back, glued under pressure.

b. Doweled, glued under pressure.

c. Lock shoulder, glued and pin nailed.

d. Bottoms shall be set into sides, front, and back, 1/4 inch deep groove with a minimum 3/8 inch standing shoulder.

2.11.5 Shelving

2.11.5.1 General Requirements

Shelving shall be fabricated from [3/4 inch medium density particleboard] [3/4 inch medium density fiberboard (MDF] [3/4 inch veneer core plywood]. All shelving top and bottom surfaces shall be finished with [HPDL plastic laminate] [thermoset decorative overlay (melamine)]. Shelf edges shall be finished in a [HPDL plastic laminate] [thermoset decorative overlay (melamine)] [PVC edgebanding].

2.11.5.2 Shelf Support System

The shelf support system shall be:

2.11.5.2.1 Recessed (Mortised) Metal Shelf Standards

Mortise standards flush with the finishes surface of the cabinet interior side walls, two per side. Pposition and space standards on the side walls to provide a stable shelf surface that eliminates tipping when shelf front is weighted. Install and adjust standards vertically to provide a level, stable shelf surface when clips are in place.

2.11.5.2.2 Pin Hole Method

Drill holes on the interior surface of the cabinet side walls. Evenly space holes in two vertical columns Space the holes in each column at [1 inch] [_____] increments starting [6 inches] [_____] from the cabinet interior bottom and extending to within [6 inches] [_____] of the top interior surface of the cabinet. Drill holes to provide a level, stable surface when the shelf is resting on the shelf pins. Coordinate hole diameter with pin insert size to provide a firm, tight fit.

2.11.6 Laminate Application

Laminate application to substrates shall follow the recommended procedures and instructions of the laminate manufacturer and ANSI/NEMA LD 3, using

tools and devices specifically designed for laminate fabrication and application. Provide a balanced backer sheet (Grade BK) wherever only one surface of the component substrate requires a plastic laminate finish. Apply required grade of laminate in full uninterrupted sheets consistent with manufactured sizes using one piece for full length only, using adhesives specified herein or as recommended by the manufacturer. Fit corners and joints hairline. All laminate edges shall be machined flush, filed, sanded, or buffed to remove machine marks and eased (sharp corners removed). Clean up at easing shall be such that no overlap of the member eased is visible. Fabrication shall conform to ANSI A161.2. Laminate types and grades for component surfaces shall be as follows unless otherwise indicated on the drawings:

2.11.6.1 Base/Wall Cabinet Case Body

a. Exterior (exposed) surfaces to include exposed and semi-exposed face frame surfaces: HPDL Grade [VGS] [VGP].

b. Interior (semi-exposed) surfaces to include interior back wall, bottom, and side walls: [HPDL Grade CLS] [Thermoset Decorative Overlay (melamine)].

2.11.6.2 Adjustable Shelving

2.11.6.2.1 Top and Bottom Surfaces

[HPDL Grade HGS] [Thermoset Decorative Overlay (melamine)]

2.11.6.2.2 All Edges

[HPDL Grade VGS] [Thermoset Decorative Overlay (melamine)][PVC edgebanding]

2.11.6.3 Fixed Shelving

2.11.6.3.1 Top and Bottom Surfaces

[HPDL Grade HGS] [Thermoset Decorative Overlay (melamine)]

2.11.6.3.2 Exposed Edges

[HPDL Grade VGS] [Thermoset Decorative Overlay (melamine)][PVC edgebanding]

2.11.6.4 Door, Drawer Fronts, Access Panels

2.11.6.4.1 Exterior (Exposed) and Interior (Semi-Exposed) Faces

HPDL Grade [VGS] [VGP]

2.11.6.4.2 Edges

[HPDL Grade VGS] [PVC edgebanding]

2.11.6.5 Drawer Assembly

All interior and exterior surfaces: [HPDL Grade CLS] [Thermoset Decorative Overlay (melamine)].

2.11.6.6 Tolerances

Flushness, flatness, and joint tolerances of laminated surfaces shall meet the AWI AWS [premium] [custom] grade requirements.

2.11.7 Finishing

2.11.7.1 Filling

No fasteners shall be exposed on laminated surfaces. All nails, screws, and other fasteners in non-laminated cabinet components shall be countersunk and the holes filled with wood filler consistent in color with the wood species.

2.11.7.2 Sanding

All surfaces requiring coatings shall be prepared by sanding with a grit and in a manner that scratches will not show in the final system.

2.11.7.3 Coatings

Types, method of application and location of casework finishes shall be in accordance with the finish schedule, drawings and Section 09 90 00 PAINTS AND COATINGS. All cabinet reveals shall be painted. Submit descriptive data which provides narrative written verification of all types of construction materials and finishes, methods of construction, etc. not clearly illustrated on the submitted shop drawings. Data shall provide written verification of conformance with AWI AWS for the quality indicated to include materials, tolerances, and types of construction. Both the manufacturer of materials and the fabricator shall submit available literature which describes re-cycled product content, operations and processes in place that support efficient use of natural resources, energy efficiency, emissions of ozone depleting chemicals, management of water and operational waste, indoor environmental quality, and other production techniques supporting sustainable design and products.

PART 3 EXECUTION

3.1 INSTALLATION

Installation shall comply with applicable requirements for AWI AWS [premium] [custom] quality standards. Countertops and fabricated assemblies shall be installed level, plumb, and true to line, in locations shown on the drawings. Cabinets and other laminate clad casework assemblies shall be attached and anchored securely to the floor and walls with mechanical fasteners that are appropriate for the wall and floor construction.

3.1.1 Anchoring Systems

3.1.1.1 Floor

[Base cabinets] [_____] shall utilize a floor anchoring system [as detailed on the drawings]. Anchoring and mechanical fasteners shall not be visible from the finished side of the casework assembly. [Cabinet] [_____] assemblies shall be attached to anchored bases without visible fasteners [as indicated in the drawings]. Where assembly abuts a wall surface, anchoring shall include a minimum 1/2 inch thick lumber or panel product hanging strip, minimum 2-1/2 inch width; securely attached to the top of

the wall side of the cabinet back.

3.1.1.2 Wall

[Cabinet] [vanity] [_____] to be wall mounted shall utilize minimum 1/2 inch thick lumber or panel product hanging strips, minimum 2-1/2 inch width; securely attached to the wall side of the cabinet back, both top and bottom.

3.1.2 Countertops

Countertops shall be installed in locations as indicated on the drawings. Countertops shall be fastened to supporting casework structure with mechanical fasteners, hidden from view. All joints formed by the countertop or countertop splash and adjacent wall surfaces shall be filled with a clear silicone caulk. Loose [back] [side] splashes shall be adhered to both the countertop surface perimeter and the adjacent wall surface with adhesives appropriate for the type of materials to be adhered. Joints between the countertop surface and splash shall be filled with clear silicone caulk in a smooth consistent concave bead. Bead size shall be the minimum necessary to fill the joint and any surrounding voids or cracks.

3.1.3 Hardware

Casework hardware shall be installed in types and locations as indicated on the drawings. Where fully concealed European-style hinges are specified to be used with particleboard or fiberboard doors, the use of plastic or synthetic insertion dowels shall be used to receive 3/16 inch "Euroscrews". The use of wood screws without insertion dowels is prohibited.

3.1.4 Doors, Drawers and Removable Panels

The fitting of doors, drawers and removable panels shall be accomplished within target fitting tolerances for gaps and flushness in accordance with AWI AWS [premium] [custom] grade requirements.

3.1.5 Plumbing Fixtures

Install sinks, sink hardware, and other plumbing fixtures in locations as indicated on the drawings and in accordance with [Section 22 00 00 PLUMBING, GENERAL PURPOSE] [_____].

3.1.6 Glass

Install glass and glazing in the casework using methods and materials specified in Section 08 81 00 GLAZING in locations as indicated on the drawings.

-- End of Section --

SECTION 06 61 16

SOLID SURFACING FABRICATIONS
08/10

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D2583	(2013a) Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
ASTM D5116	(2010) Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products
ASTM D570	(1998; E 2010; R 2010) Standard Test Method for Water Absorption of Plastics
ASTM D638	(2014) Standard Test Method for Tensile Properties of Plastics
ASTM D696	(2016) Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30 degrees C and 30 degrees C With a Vitreous Silica Dilatometer
ASTM E84	(2017) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM G21	(2015) Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

CSA GROUP (CSA)

CSA B45.5-11/IAPMO Z124	(2011; Update 1 2012) Plastic Plumbing Fixtures - First Edition

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI/NEMA LD 3	(2005) Standard for High-Pressure Decorative Laminates

NSF INTERNATIONAL (NSF)

NSF/ANSI 51	(2012) Food Equipment Materials

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	Scientific Certification Systems (SCS)Indoor Advantage

TILE COUNCIL OF NORTH AMERICA (TCNA)

TCNA Hdbk	(2013) Handbook for Ceramic, Glass, and Stone Tile Installation

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED BD+C	(2009; R 2010) Leadership in Energy and Environmental Design(tm) Building Design and Construction (LEED-NC)

UL ENVIRONMENT (ULE)

ULE Greenguard	UL Greenguard Certification Program

1.2 SYSTEM DESCRIPTION

a. Work under this section includes [_____] and other items utilizing solid polymer (solid surfacing) fabrication as shown on the drawings and as described in this specification. Do not change source of supply for materials after work has started, if the appearance of finished work would be affected.

b. In most instances, installation of solid polymer fabricated components and assemblies will require strong, correctly located structural support provided by other trades. To provide a stable, sound, secure installation, close coordination is required between the solid polymer fabricator/installer and other trades to ensure that necessary structural wall support, cabinet counter top structural support, proper clearances, and other supporting components are provided for the installation of wall panels, countertops, shelving, and all other solid polymer fabrications to the degree and extent recommended by the solid polymer manufacturer.

c. Appropriate staging areas for solid polymer fabrications. Allow variation in component size and location of openings of plus or minus 1/8 inch.

1.3 SUSTAINABILITY REPORTING

Materials in this technical specification may contribute towards contract compliance with sustainability requirements. See Section 01 33 29 SUSTAINABILITY REPORTING for project LEED BD+C [local/ regional materials][recycled content] and LEED documentation requirements.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00

SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Detail Drawings; G[, [_____]]
Installation; G[, [_____]]

SD-03 Product Data

Solid Polymer Material
Qualifications
Fabrications
Certification
VOC Content

SD-04 Samples

Material; G[, [_____]]
Counter; G[, [_____]]

SD-06 Test Reports

Solid Polymer Material

SD-07 Certificates

Fabrications
Qualifications

SD-10 Operation and Maintenance Data

Clean-up

SD-11 Closeout Submittals

LEED Documentation

1.5 QUALITY ASSURANCE

1.5.1 Qualifications

To ensure warranty coverage, solid polymer fabricators shall be certified to fabricate by the solid polymer material manufacturer being utilized. Mark all fabrications with the fabricator's certification label affixed in an inconspicuous location. Fabricators shall have a minimum of 5 years of experience working with solid polymer materials. Submit solid polymer manufacturer's certification attesting to fabricator qualification approval.

1.5.2 Mock-ups

Submit Detail Drawings indicating locations, dimensions, component sizes, fabrication and joint details, attachment provisions, installation details, and coordination requirements with adjacent work. Prior to final approval of shop drawings, provide a full-size mock-up of a typical [countertop] [shelving] [_____] where multiple units are required. The mock-up shall include all solid polymer components required to provide a completed unit. The mock-up shall utilize finishes in patterns and colors indicated on the drawings. Should the mock-up not be approved, re-work or remake it until approval is secured. Remove rejected units from the jobsite. Approved

mock-up may remain as part of the finished work.

1.5.3 Sustainable Design Certification

Product shall be third party certified in accordance with ULE Greenguard[Gold], SCS Scientific Certification Systems Indoor Advantage[Gold]or equal. VOC content and emissions shall be determined by ASTM D5116. Certification shall be performed annually and shall be current.

1.6 DELIVERY, STORAGE, AND HANDLING

Do not deliver materials to project site until areas are ready for installation. Deliver components and materials to the site undamaged, in containers clearly marked and labeled with manufacturer's name. Materials shall be stored indoors and adequate precautions taken to prevent damage to finished surfaces. Provide protective coverings to prevent physical damage or staining following installation, for duration of project.

1.7 WARRANTY

Provide manufacturer's warranty of ten years against defects in materials, excluding damages caused by physical or chemical abuse or excessive heat. Warranty shall provide for material and labor for replacement or repair of defective material for a period of ten years after component installation.

PART 2 PRODUCTS

2.1 MATERIAL

Provide solid polymer material that is a homogeneous filled solid polymer; not coated, laminated or of a composite construction; meeting CSA B45.5-11/IAPMO Z124 requirements. Material shall have minimum physical and performance properties specified. Superficial damage to a depth of 0.01 inch shall be repairable by sanding or polishing. Material thickness shall be as indicated on the drawings. In no case shall material be less than 1/4 inch in thickness. Submit a minimum 4 by 4 inch sample of each color and pattern for approval. Samples shall indicate full range of color and pattern variation. Approved samples shall be retained as a standard for this work. Submit test report results from an independent testing laboratory attesting that the submitted solid polymer material meets or exceeds each of the specified performance requirements.

2.1.1 Cast, 100 Percent Acrylic Polymer Solid Surfacing Material, SSM

Cast, 100 percent acrylic solid polymer material shall be composed of acrylic polymer, mineral fillers, and pigments and shall meet the following minimum performance requirements:

PROPERTY	REQUIREMENT (min. or max.)	TEST PROCEDURE
Tensile Strength	4000 psi (max.)	ASTM D638
Hardness	55-Barcol Impressor (min.)	ASTM D2583

PROPERTY	REQUIREMENT (min. or max.)	TEST PROCEDURE
Thermal Expansion	.000023 in/in/F (max.)	ASTM D696
Boiling Water Surface Resistance	No Change	ANSI/NEMA LD 3-3.05
High Temperature Resistance	No Change	ANSI/NEMA LD 3-3.06
Impact Resistance (Ball drop)		ANSI/NEMA LD 3-303
1/4 inch sheet	36 inches, 1/2 lb ball, no failure	
1/2 inch sheet	140 inches, 1/2 lb ball, no failure	
3/4 inch sheet	200 inches, 1/2 lb ball, no failure	
Mold & Mildew Growth	No growth	ASTM G21
Bacteria Growth	No growth	ASTM G21
Liquid Absorption (Weight in 24 hrs.)	0.1 percent max.	ASTM D570
Flammability		ASTM E84
Flame Spread	25 max.	
Smoke Developed	30 max.	
Sanitation	"Food Contact" approval	NSF/ANSI 51

2.1.2 Quartz Polymer Solid Surfacing Material, QZP

Cast, solid polymer material shall be composed of a formulation containing 93 percent quartz with additions of polyester resins, mineral fillers, and pigments.

2.1.3 Material Patterns and Colors

Patterns and colors for all solid polymer components and fabrications shall be those indicated on the project [drawings] [color schedule] [_____]. Pattern and color shall occur, and shall be consistent in appearance, throughout the entire depth (thickness) of the solid polymer material.

2.1.4 Surface Finish

Exposed finished surfaces and edges shall receive a uniform appearance. Exposed surface finish shall be [matte; gloss rating of 5-20] [semigloss; gloss rating of 25-50] [polished; gloss rating of 55-80] [as indicated on the drawings].

2.2 ACCESSORY PRODUCTS

Accessory products, as specified below, shall be manufactured by the solid polymer manufacturer or shall be products approved by the solid polymer manufacturer for use with the solid polymer materials being specified.

2.2.1 Seam Adhesive

Seam adhesive shall be a two-part adhesive kit to create permanent, inconspicuous, non-porous, hard seams and joints by chemical bond between solid polymer materials and components to create a monolithic appearance of the fabrication. Adhesive shall be approved by the solid polymer manufacturer. Adhesive shall be color-matched to the surfaces being bonded where solid-colored, solid polymer materials are being bonded together. The seam adhesive shall be clear or color matched where particulate patterned, solid polymer materials are being bonded together.

2.2.2 Panel Adhesive

Panel adhesive shall be neoprene based panel adhesive meeting TCNA Hdbk, Underwriter's Laboratories (UL) listed. Use this adhesive to bond solid polymer components to adjacent and underlying substrates.

2.2.3 Silicone Sealant

Sealant shall be a mildew-resistant, FDA and OSHA Nationally Recognized Testing Laboratory (NRTL) listed silicone sealant or caulk in a clear formulation. The silicone sealant shall be approved for use by the solid polymer manufacturer. Use sealant to seal all expansion joints between solid polymer components and all joints between solid polymer components and other adjacent surfaces such as walls, floors, ceiling, and plumbing fixtures.

2.2.4 Conductive Tape

Conductive tape shall be manufacturer's standard foil tape, 4 mils thick, applied around the edges of cut outs containing hot or cold appliances.

2.2.5 Insulating Felt Tape

Insulating tape shall be manufacturer's standard product for use with drop-in food wells used in commercial food service applications to insulate solid polymer surfaces from hot or cold appliances.

2.2.6 Heat Reflective Tape

Heat reflective tape as recommended by the solid polymer manufacturer for use with cutouts for heat sources.

2.2.7 Mounting Hardware

Provide mounting hardware, including sink/bowl clips, inserts and fasteners for attachment of undermount sinks and lavatories.

2.3 FABRICATIONS

Components shall be factory or shop fabricated to sizes and shapes indicated, to the greatest extent practical, in accordance with approved Shop Drawings and manufacturer's requirements. Provide factory cutouts for

sinks, lavatories, and plumbing fixtures where indicated on the drawings. Contours and radii shall be routed to template, with edges smooth. Defective and inaccurate work will be rejected. Submit product data indicating product description, fabrication information, and compliance with specified performance requirements for solid polymer, joint adhesive, sealants, and heat reflective tape. Both the manufacturer of materials and the fabricator shall submit a detailed description of operations and processes in place that support efficient use of natural resources, energy efficiency, emissions of ozone depleting chemicals, management of water and operational waste, indoor environmental quality, and other production techniques supporting sustainable design and products.

2.3.1 Joints and Seams

Form joints and seams between solid polymer components using manufacturer's approved seam adhesive. Joints shall be inconspicuous in appearance and without voids to create a monolithic appearance.

2.3.2 Edge Finishing

Rout and finish component edges to a smooth, uniform appearance and finish. Edge shapes and treatments, including any inserts, shall be as detailed on the drawings. Rout all cutouts, then sand all edges smooth. Repair or reject defective or inaccurate work.

2.3.3 Counter Top Splashes

Fabricate backsplashes and end splashes from [1/2 inch] [_____] thick solid surfacing material to be [[4 inches] [_____] high] [in conformance with dimensions and shapes as indicated on the drawings]. Backsplashes and end splashes shall be provided [for all counter tops] [at locations indicated on the drawings]. Backsplashes shall be shop fabricated and be [permanently attached] [loose, to be field attached].

2.3.3.1 Permanently Attached Backsplash

Permanently attached backsplashes shall be attached [straight with seam adhesive to form a 90 degree transition] [with seam adhesive and to form a radiused coved transition from countertop to backsplash].

2.3.3.2 End Splashes

End splashes shall be provided loose for installation at the jobsite after horizontal surfaces to which they are to be attached have been installed.

2.3.4 Shelving

Shelving [and wall support brackets] shall be fabricated from [1/2 inch] [_____] thick solid surfacing, solid polymer material. Dimensions, edge shape, and other details shall be as indicated on the drawings.

2.3.5 Window Stools

Fabricate window stools from [1/2 inch] [_____] thick solid surfacing, solid polymer material. Dimensions, edge shape, and other details shall be [as indicated on the drawings] [selected from manufacturer's available pre-fabricated standards].

2.3.6 Counter Tops

Fabricate all solid surfacing, solid polymer counter top and components from [1/2 inch] [_____] thick material. Edge details, dimensions, locations, and quantities shall be as indicated on the Drawings. Counter tops shall be complete with [4 inch] [_____] high [loose] [permanently attached, 90 degree transition] [permanently attached with coved transition backsplash and loose endsplashes] [at all locations] [where indicated on the drawings]. Attach 2 inch wide reinforcing strip of polymer material under each horizontal counter top seam. Submit a minimum 1 foot wide by 6 inch deep, full size sample for each type of counter top shown on the project drawings. The sample shall include the edge profile and backsplash as detailed on the project drawings. Solid polymer material shall be of a pattern and color as indicated on the drawings. Sample shall include at least one seam. Approved sample shall be retained as standard for this work.

2.3.6.1 Counter Top With Sink

a. Stainless Steel or Vitreous China Sink. Countertops with sinks shall include cutouts to template as furnished by the sink manufacturer. Manufacturer's standard sink mounting hardware for [stainless steel] [vitreous china] [rimless] [_____] installation shall be provided. Seam between sink and counter top shall be sealed with silicone sealant. Sink, faucet, and plumbing requirements shall be in accordance with Section 22 00 00 PLUMBING,GENERAL PURPOSE.

b. Solid polymer sinks shall be a manufacturer's standard, pre-molded product specifically designed for attachment to solid polymer counter tops.

2.3.6.2 Cafeteria Counter Tops

Cutouts for cold or hot appliances shall be made to templates furnished by the equipment manufacturers. Joints and cutouts shall be reinforced as recommended by the solid polymer manufacturer. Insulation shall be provided between the solid polymer surface and all appliances, hot or cold. Hot applications shall be thermally isolated from cold applications in accordance with the solid polymer manufacturer's recommendations. Provide expansion joints as necessary to accommodate hot appliances. Where cabinets exist beneath counter tops, adequate ventilation shall be provided to prevent heat build-up.

2.3.7 Solid Polymer Sinks

Solid polymer sinks shall be a standard product of the solid polymer manufacturer, designed specifically to be installed in solid polymer countertops. Sinks shall be of the same polymer composition as the adjoining counter top. Sink design shall support a [seam adhesive undermount] [seam adhesive flush] installation method. Sinks shall be a [single bowl] [double bowl] [double bowl with molded drainboard] configuration. Sink dimensions shall be [as indicated on the drawings][_____].

2.3.8 Tub/Shower Wall Panel System

Tub/shower wall enclosures shall provide a system of solid polymer components to include: [panels] [corner trim] [soap dish] [shampoo shelf] [panel edge trim] [_____]. Dimensions of all components shall be [as

indicated on the drawings] [standard manufacturer's dimensions to be field cut to fit]. Panels shall be formed from manufacturer's standard [1/4 inch] [_____] thick sheet product. Panels shall be full width and height with seams occurring only at the inside corners of the enclosure. Soap dish and shampoo shelf shall be of a configuration, shape, and location [as indicated on the drawings] [as standard with the manufacturer's system].

2.3.9 Wall Cladding/Wainscoting

Solid polymer wall cladding or wainscoting shall be provided to dimensions and in locations as shown on the drawings. Panels shall be fabricated from manufacturer's standard [1/4 inch] [_____] thick sheet product. Panels shall be provided to heights shown on the drawings with no horizontal seaming. Panels shall utilize the maximum panel dimension available to minimize vertical seams.

2.3.10 Toilet/Shower Partition System

Floor-mounted, solid polymer [toilet] [shower partition] system shall be [provided to dimensions and] [as standard manufacturer's dimensions]in locations as shown on the drawings. Panels and pilasters shall be fabricated from manufacturer's standard [1/2 inch] [_____] thick sheet product. System shall include all necessary hardware for installation and mounting of panels, pilasters, and doors.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Components

Install all components and fabricated units plumb, level, and rigid. Make field joints between solid polymer components using solid polymer manufacturer's approved seam adhesives, to provide a monolithic appearance with joints inconspicuous in the finished work. Attach metal or vitreous china sinks and lavatory bowls to counter tops using solid polymer manufacturer's recommended clear silicone sealant and mounting hardware. Solid polymer sinks and bowls shall be installed using a color-matched seam adhesive. Plumbing connections to sinks and lavatories shall be made in accordance with [Section 22 00 00 PLUMBING, GENERAL PURPOSE] [_____].

3.1.1.1 Loose Counter Top Splashes

Mount loose splashes in the locations noted on the drawings. Loose splashes shall be adhered to the counter top with a color matched silicone sealant when the solid polymer components are solid colors. Use a clear silicone sealant to provide adhesion of particulate patterned solid polymer splashes to counter tops.

3.1.1.2 Wall Panels & Panel Systems

Installation of wall panels and system components to substrates shall include the use of a neoprene-based panel adhesive. Use seam adhesive to adhere all solid polymer components to each other with the exception of expansion joints and inside corners. All inside corners and expansion joints between solid polymer components shall be joined with silicone sealant. All joints between solid polymer components and non-solid polymer surfaces shall be sealed with a clear silicone sealant.

3.1.2 Silicone Sealant

Use a clear, silicone sealant or caulk to seal all expansion joints between solid polymer components and all joints between solid polymer components and other adjacent surfaces such as walls, floors, ceiling, and plumbing fixtures. Sealant bead shall be smooth and uniform in appearance and shall be the minimum size necessary to bridge any gaps between the solid surfacing material and the adjacent surface. Bead shall be continuous and run the entire length of the joint being sealed.

3.1.3 Plumbing

Make plumbing connections to sinks and lavatories in accordance with Section [22 00 00 PLUMBING, GENERAL PURPOSE] [_____].

3.2 CLEAN-UP

Components shall be cleaned after installation and covered to protect against damage during completion of the remaining project items. Components damaged after installation by other trades will be repaired or replaced at the General Contractor's cost. Component supplier will provide a repair/replace cost estimate to the General Contractor who shall approve estimate before repairs are made. Submit a minimum of [six] [_____] copies of maintenance data indicating manufacturer's care, repair and cleaning instructions. Maintenance video shall be provided,if available. Maintenance kit for matte finishes shall be submitted.

-- End of Section --

SECTION 08 14 00

WOOD DOORS
08/16

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN FOREST FOUNDATION (AFF)

ATFS STANDARDS	(2015) American Tree Farm System Standards of Sustainability 2015-2020

ARCHITECTURAL WOODWORK INSTITUTE (AWI)

AWI AWS	(2nd Edition) Architectural Woodwork Standards

ASTM INTERNATIONAL (ASTM)

ASTM E90	(2009) Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

CALIFORNIA AIR RESOURCES BOARD (CARB)

CARB 93120	(2007) Airborne Toxic Control Measure (ATCM) to Reduce Formaldehyde Emissions from Composite Wood Products

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	(2004; Add 2004-01) Standard Practice for the Testing Of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers

CSA GROUP (CSA)

CSA Z809-08	(R2013) Sustainable Forest Management

FOREST STEWARDSHIP COUNCIL (FSC)

FSC STD 01 001	(2000) Principles and Criteria for Forest Stewardship

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 105	(2016) Standard for Installation of Smoke Door Assemblies and Other Opening Protectives

NFPA 80	(2016; TIA 16-1) Standard for Fire Doors and Other Opening Protectives

PROGRAMME FOR ENDORSEMENT OF FOREST CERTIFICATION (PEFC)

PEFC ST 2002:2013	(2015) PEFC International Standard Chain of Custody of Forest Based Products Requirements

SUSTAINABLE FOREST INITIATIVE (SFI)

SFI 2015-2019	(2015) Standards, Rules for Label Use, Procedures and Guidance

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)

ANSI/WDMA I.S.1A	(2013) Interior Architectural Wood Flush Doors
ANSI/WDMA I.S.6A	(2013) Interior Architectural Stile and Rail Doors

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.][for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance with Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Doors; G[, [_____]]

Submit drawings or catalog data showing each type of door unit [; include descriptive data of head and jamb weatherstripping with installation instructions]. Indicate within drawings and data the door types and construction, sizes, thickness, [methods of assembly,] [door louvers,] and [glazing,].

SD-03 Product Data

Doors; G[, [_____]]

Accessories

Water-resistant Sealer

Sample Warranty

[Sound Transmission Class Rating; G[, [_____]]

][Fire Resistance Rating; G[, [_____]]

] SD-04 Samples

Doors

Prior to the delivery of wood doors, submit a sample section of each type of door which shows the stile, rail, veneer, finish, and core construction.

Door Finish Colors; G[, [_____]]

Submit a minimum of three color selection samples [, minimum 3 by 5 inches in size representing wood stain] [for selection by the Contracting Officer].

SD-06 Test Reports

Cycle-Slam

Hinge Loading Resistance

Submit cycle-slam test report for doors tested in accordance with ANSI/WDMA I.S.1A, and hinge loading resistance test report for doors tested in accordance with ANSI/WDMA I.S.6A.

SD-07 Certificates

Certificates of Grade

[Certified Sustainably Harvested Wood; G[, [_____]]

][Indoor Air Quality: G[, [_____]]

] SD-11 Closeout Submittals

[Certified Sustainably Harvested Stile and Rail Wood Doors; S

][Certified Sustainably Harvested Flush Wood Doors; S

][Recycled Content for Door Cores; S

][Indoor Air Quality for Particleboard and Agrifiber Door Cores; S

] Warranty

1.3 CERTIFICATIONS

1.3.1 Certified Wood Grades

Provide certificates of grade from the grading agency on [x-ray resistant doors], [acoustical doors], and [fire doors].

[1.3.2 Certified Sustainably Harvested Wood

Provide wood certified as sustainably harvested by FSC STD 01 001[, ATFS STANDARDS, CSA Z809-08, SFI 2015-2019, or other third party program certified by PEFC ST 2002:2013]. Provide a letter of Certification of Sustainably Harvested Wood signed by the wood supplier. Identify certifying organization and their third party program name and indicate compliance with chain-of-custody program requirements. Submit sustainable wood certification data; identify each certified product on a line item basis. Submit copies of invoices bearing certification numbers.

][1.3.3 Indoor Air Quality Certification

[1.3.3.1 Composite Wood, Wood Structural Panel and Agrifiber Products

For purposes of this specification, composite wood and agrifiber products include particleboard, medium density fiberboard (MDF), wheatboard, strawboard, panel substrates, and door cores. Products must contain no added urea-formaldehyde resins. Provide products certified to meet emissions requirements of either CARB 93120 or CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type). Provide current product certification documentation from certification body.

]]1.4 DELIVERY, STORAGE, AND HANDLING

Deliver doors to the site in an undamaged condition and protect against damage and dampness. Stack doors flat under cover. Support on blocking, a minimum of 4 inch thick, located at each end and at the midpoint of the door. Store doors in a well-ventilated building so that they will not be exposed to excessive moisture, heat, dryness, direct sunlight, or extreme changes of temperature and humidity. [Do not store in a building under construction until concrete, masonry work, and plaster are dry.] Replace defective or damaged doors with new ones.

1.5 WARRANTY

Warrant doors free of defects as set forth in the door manufacturer's standard door warranty.

PART 2 PRODUCTS

2.1 PRODUCT SUSTAINABILITY CRITERIA

For products in this section, where applicable and to extent allowed by performance criteria, provide and document the following:

[2.1.1 Certified Sustainably Harvested Wood

Certified sustainably harvested wood is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph BIOBASED PRODUCTS. Other products listed in this section may be available as certified sustainably harvested wood; identify those products that meet project requirements for certified sustainably harvested wood, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph BIOBASED PRODUCTS.

][2.1.2 Recycled Content for Wood Doors

Recycled content is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph RECYCLED CONTENT. Other products listed in this section may be available with recycled content; identify those products that meet project requirements for recycled content, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph RECYCLED CONTENT.

]2.1.3 Reduce Volatile Organic Compounds (VOC) (Low-Emitting Materials) for Products

Reduced VOC content is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph REDUCE VOLATILE ORGANIC COMPOUNDS (VOC) (LOW-EMITTING MATERIALS). Other products listed in this section may be available with reduced VOC content; identify those products that meet project requirements for reduced VOC content, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph REDUCE VOLATILE ORGANIC COMPOUNDS (VOC) (LOW-EMITTING MATERIALS).

2.2 DOORS

Provide doors of the types, sizes, and designs [indicated] [specified] free of urea-formaldehyde resins.

2.2.1 Stile and Rail Doors

[Premium] [Standard] grade Ponderosa Pine doors or [premium or select] [standard] stile and rail doors conforming to ANSI/WDMA I.S.6A. Furnish laminate panels in not less than three ply thickness. Provide flat panels with a minimum finished panel thickness of 1/2 inch and 3/4 inch thickness for raised panels. [Provide certified sustainably harvested stile and rail wood doors.]

2.2.2 Flush Doors

Conform to ANSI/WDMA I.S.1A for flush doors. Provide hollow core doors with lock blocks and 1 inch minimum thickness hinge stile. Hardwood stile edge bands of doors receives a natural finish, compatible with face veneer. Provide mill option for stile edge of doors scheduled to be painted. No visible finger joints will be accepted in stile edge bands. When used, locate finger-joints under hardware. [Provide certified sustainably harvested flush wood doors.]

2.2.2.1 Interior Flush Doors

Provide hollow core, Type II flush doors conforming to ANSI/WDMA I.S.1A with faces of [[premium] grade natural birch] [select [premium white] [red] birch] [[premium] grade [red] [white] oak] [[premium] [good] grade walnut]. [Hardwood veneers must be [[rotary cut] [plain sliced] [quarter sliced]] [[random] [slip] [book] matched]]. [Door cores must have a minimum recycled content of [45][_____] percent. Provide data identifying percentage of recycled content for door cores.] [Provide certification of indoor air quality for particleboard and agrifiber door cores.]

2.2.3 X-Ray Resistant Doors

ANSI/WDMA I.S.1A solid core flush doors, hardwood veneered, minimum [13/4] [2] [2 1/4] [2 1/2] inch thick, of sizes and construction indicated. Provide lead sheets with 99.9 percent pure lead, [_____] inch thickness, free from dross, oxide, inclusions, laminations, scale, blisters, and cracks. Locate lead sheets in accordance with manufacturer's standard, to extend fully from edge to edge, from top to bottom, and to be an integral part of the door. Provide wood edge strips compatible with face veneers.

2.2.4 Acoustical Doors

ANSI/WDMA I.S.1A, solid core, constructed to provide Sound Transmission Class rating of [35] [_____] when tested in accordance with ASTM E90.

2.3 ACCESSORIES

2.3.1 Door Light Openings

Provide glazed openings with the manufacturer's standard wood moldings. [Provide moldings for doors to receive natural finish of the same wood species and color as the wood face veneers.] Provide moldings on the exterior doors with sloped surfaces. [Lip type moldings for flush doors.]

2.4 FABRICATION

2.4.1 Marking

Stamp each door with a brand, stamp, or other identifying mark indicating quality and construction of the door.

2.4.2 Quality and Construction

Identify the standard on which the construction of the door was based [, identify the standard under which preservative treatment was made,] and identify doors having a Type I glue bond.

2.4.3 Preservative Treatment

Treat doors scheduled for restrooms, janitor closets and other possible wet locations including exterior doors with a water-repellent preservative treatment and so marketed at the manufacturer's plant.

2.4.4 Adhesives and Bonds

ANSI/WDMA I.S.1A. Use Type I bond for exterior doors and Type II bond for interior doors. Provide a nonstaining adhesive on doors with a natural finish.

2.4.5 Prefitting

Provide factory [prefinished] [finished] [and] factory prefitted doors for the specified hardware, door frame and door-swing indicated. Machine and size doors at the factory by the door manufacturer in accordance with the standards under which the doors are produced and manufactured. The work includes sizing, beveling edges, mortising, and drilling for hardware and providing necessary beaded openings for glass and louvers. Provide the door manufacturer with the necessary hardware samples, and frame and hardware schedules to coordinate the work.

2.4.6 Finishes

2.4.6.1 Field Painting

Factory prime or seal doors, and field paint.

2.4.6.2 Factory Finish

Provide doors finished at the factory by the door manufacturer as follows:

[AWI AWS Section 1500, specification for System No. 4 Conversion varnish alkyd urea or System No. 5 Vinyl catalyzed.][WDMA System TR-8 (UV cured acrylated polyester/urethane) or TR-2 (catalyzed lacquer) or TR-4 (conversion varnish) factory finish systems that utilize water-based stains and finishes with ultraviolet UV protection.] The coating is AWI AWS premium, medium rubbed sheen, [open] [closed] grain effect. Use stain when required to produce the finish specified for color. Seal edges, cutouts, trim, and wood accessories, and apply two coats of finish compatible with the door face finish. Touch-up finishes that are scratched or marred, or where exposed fastener holes are filled, in accordance with the door manufacturer's instructions. Match color and sheen of factory finish using materials compatible for field application.

2.4.6.3 Color

Provide door finish colors in accordance with Section 09 06 00 SCHEDULES FOR FINISHES.

2.4.7 Water-Resistant Sealer

Provide manufacturer's standard water-resistant sealer compatible with the specified finish[es].

2.5 SOURCE QUALITY CONTROL

Meet or exceed the following minimum performance criteria of stiles of "B" and "C" label fire doors utilizing standard mortise leaf hinges:

a. Cycle-slam: [Standard Duty Doors: 250,000 cycles with no loose hinge screws or other visible signs of failure when tested in accordance with the requirements of ANSI/WDMA I.S.1A] [Heavy Duty Doors: 500,000 cycles with no loose hinge screws or other visible signs of failure when tested in accordance with the requirements of ANSI/WDMA I.S.1A] [Extra Heavy Duty Doors: 1,000,000 cycles with no loose hinge screws or other visible signs of failure when tested in accordance with the requirements of ANSI/WDMA I.S.1A].

b. Hinge loading resistance: Averages of ten test samples not less than [Standard Duty doors: 400 pounds force] [Heavy Duty doors: 475 pounds force] [Extra Heavy Duty doors: 550 pounds force] when tested for direct screw withdrawal in accordance with ANSI/WDMA I.S.6A using a No. 12, 1-1/4 inch long, steel, fully threaded wood screw. Drill 5/32 inch pilot hole, use 1-1/2 inch opening around screw for bearing surface, and engage screw full, except for last 1/8 inch. Do not use a steel plate to reinforce screw area.

PART 3 EXECUTION

3.1 INSTALLATION

Do not install building construction materials that show visual evidence of biological growth.

Before installation, seal top and bottom edges of doors with the approved water-resistant sealer. Seal cuts made on the job immediately after cutting using approved water-resistant sealer. Fit, trim, and hang doors with a 1/16 inch minimum, 1/8 inch maximum clearance at sides and top, and a 3/16 inch minimum, 1/4 inch maximum clearance over thresholds. Provide 3/8 inch minimum, 7/16 inch maximum clearance at bottom where no threshold

occurs. Bevel edges of doors at the rate of 1/8 inch in 2 inch. Door warp must not exceed 1/4 inch when measured in accordance with ANSI/WDMA I.S.1A.

3.1.1 Fire[and Smoke] Doors

Install fire doors in accordance with NFPA 80. [Install smoke doors in accordance with NFPA 105.]Do not paint over labels.

-- End of Section --

SECTION 09 06 00

SCHEDULES FOR FINISHES
05/09

PART 1 GENERAL

1.1 SUMMARY

This section covers only the color of exterior and interior materials and products that are exposed to view in the finished construction. The word "color", as used herein, includes surface color and pattern. Requirements for quality, product specifications, and method of installation are covered in other appropriate sections of the specifications. Specific locations where the various materials are required are shown on the drawings if not identified in this specification. Items not designated for color in this section may be specified in other sections. When color is not designated for items, propose a color for approval.

PART 2 PRODUCTS

2.1 COLOR SCHEDULE

The color schedule information provided in the following paragraphs lists the colors, patterns and textures required for exterior and interior finishes, including both factory applied and field applied colors. Where color is shown as being specific to one manufacturer, an equivalent color by another manufacturer may be submitted for approval. Manufacturers and materials specified are not intended to limit the selection of equal colors from other manufacturers. In the case of difference between the drawings and specifications, colors identified in this specification govern.

2.2 EXTERIOR FINISHES

Coordinate exterior finishes with Base Exterior Guidelines and DPW architect.

[Reference drawings for manufacturer and color information.]

[2.2.1 Exterior Walls

Exterior wall colors apply to exterior wall surfaces including recesses at entrances and projecting vestibules. When applicable, paint conduit to closely match the adjacent surface color. Provide wall colors to match the colors listed below.

2.2.1.1 Brick

[_____]

2.2.1.2 Mortar

[_____]

2.2.1.3 Concrete Masonry Units ([Integrally Colored][Rock/Split-Faced][Ribbed][Burnished][_____])

[_____]

2.2.1.4 Metal Wall Panels, Hardware, and Associated Trim

[_____]

2.2.1.5 Insulation and Finish System

[_____]

2.2.1.6 Precast Concrete

[_____]

2.2.1.7 Precast Stone

[_____]

2.2.1.8 Glass and Glazing

[_____]

2.2.1.9 Paint

[_____]

2.2.1.10 Cement Board Siding and Trim

[_____]

2.2.1.11 Cultured Stone

[_____]

2.2.1.12 Screen Wall

[_____]

2.2.2 Exterior Trim

Provide exterior trim to match the colors listed below.

2.2.2.1 Steel Doors and Door Frames

[_____]

2.2.2.2 Steel Windows (mullion, muntin, sash, trim, and sill)

[_____]

2.2.2.3 Aluminum Doors and Door Frames

[_____]

2.2.2.4 Aluminum Windows (mullion, muntin, sash, trim, and sill)

[_____]

2.2.2.5 Wood Clad Windows (mullion, muntin, sash, trim, and sill)

[_____]

2.2.2.6 Window Screens

[_____]

2.2.2.7 Wood Stain

[_____]

2.2.2.8 Fascia

[_____]

2.2.2.9 Soffits and Ceilings

[_____]

2.2.2.10 Overhangs

[_____]

2.2.2.11 Downspouts and Gutters

[_____]

2.2.2.12 Scuppers

[_____]

2.2.2.13 Louvers

[Match adjacent material in color.][_____]

2.2.2.14 Flashings

[Match adjacent material in color.][_____]

2.2.2.15 Coping

[_____]

2.2.2.16 Precast Concrete [[Caps][,][_____][and][Sills]]

[_____]

2.2.2.17 Precast Stone [[Caps][,][_____][and][Sills]]

[_____]

2.2.2.18 Handrails

[_____]

2.2.2.19 Guardrails

[_____]

2.2.2.20 Caulking and Sealants

[Match adjacent material in color.][_____]

2.2.2.21 Stringers and Stair Framing

[_____]

2.2.2.22 Bollards

[_____]

2.2.2.23 Signage

[_____]

2.2.2.24 Sun Shades

[_____]

2.2.2.25 Control Joints

[Match adjacent material in color.][_____]

2.2.2.26 Expansion Joint and/or Covers

[Match adjacent material in color.][_____]

2.2.3 Exterior Roof

Apply roof color to exterior roof surfaces including sheet metal flashings and copings, snow guards, mechanical units, mechanical penthouses, roof trim, pipes, conduits, electrical appurtenances, and similar items. Provide roof color to match the colors listed below.

2.2.3.1 Metal

[_____]

2.2.3.2 Shingles

[_____]

2.2.3.3 EPDM

[_____]

2.2.3.4 TPO

[_____]

2.2.3.5 Penetrations

[Match roof in color.] [_____]

]2.3 INTERIOR FINISHES

2.3.1 Interior Floor Finishes

Provide flooring materials to match the colors listed below.

2.3.1.1 Carpet Tile

CPT-1, Carpet Tile, Mannington, Portland Project, Summit, [12" x 48"], #80900 Nomad.

CPT-2, Carpet Tile, Bentley, Roadside Attractions, [18" x 36", 24" x 24"], #802141 Minister's Tree House.

CPT-3, Carpet Tile, Masland, Distressed Solutions, Lava, [24" x 24"], #51208 Inferno.

CPT-4, Carpet Tile, Bentley, Outlier, [9" x 36", 18" x 36", 24" x 24"], #801670 Frontier.

CPT-5, Carpet Tile, Bentley, The Outskirts Collection, Repose, [9" x 36", 18" x 36", 24" x 24"], #800228 Composure.

CPT-6, Carpet Tile, Bentley, The Outskirts Collection, Ritual, [9" x 36", 18" x 36", 24" x 24"], #800228 Composure.

CPT-7, Carpet Tile, Mannington, Portland Project, Summit, [12" x 48"], #10901 Crest.

CPT-8, Carpet Tile, Bentley, Roadside Attractions, [18" x 36", 24" x 24"], #802142 Radon Health Mines

CPT-9, Carpet Tile, Masland, Distressed Solutions, Lava, [24" x 24"], #51212 Radiate.

CPT-10, Carpet Tile, Bentley, Outlier, [9" x 36", 18" x 36", 24" x 24"], #801678 Subdivision.

CPT-11, Carpet Tile, Bentley, The Outskirts Collection, Repose, [9" x 36", 18" x 36", 24" x 24"], #800221 Social Conduct.

CPT-12, Carpet Tile, Bentley, The Outskirts Collection, Ritual, [9" x 36", 18" x 36", 24" x 24"], #800221 Social Conduct.

CPT-13, Carpet Tile, Mannington, Design Local Tucson Collection, Arroyo, [12" x 48"], #13165 Sediment.

2.3.1.2 Luxury Vinyl Tile

LVT-1, Luxury Vinyl Tile, Mannington, Color Anchor Collection, Stride, [6" x 36", 12" x 24", 18" x 18"] x .098", #C138 Cottontail.

LVT-2, Luxury Vinyl Tile, Mannington, Amtico, Anthology, City Grid, [4.5" x 36", 18" x 18", 18" x 36"] x .098", #ANT100 Core.

LVT-3, Luxury Vinyl Tile, Mannington, Color Anchor Collection, [6" x 36", 12" x 24", 18" x 18"] x .098", Stride, #C139 London Fog.

LVT-4, Luxury Vinyl Tile, Mannington, Amtico, Anthology, City Grid, [4.5" x 36", 18" x 18", 18" x 36"] x .098", #ANT104 Interaction.

LVT-5, Luxury Vinyl Tile, Mannington, Amtico, Wood, [3" x 36", 4.5" x 36", 6" x 36", 9" x 36"] x .098", #AR0W7450 American Cherry.

LVT-6, Luxury Vinyl Tile, Mannington, Amtico, Wood, [3" x 36", 4.5" x 36", 6" x 36", 9" x 36"] x .098", #AR0W6840 Maple.

LVT-7, Luxury Vinyl Tile, Mannington, Amtico, Wood, [3" x 36", 4.5" x 36", 6" x 36", 9" x 36"] x .098", #AR0W7610 Classic Walnut.

2.3.1.3 Sheet Vinyl

SVF-1, Sheet Vinyl Flooring, Teknoflor, Forestscapes HPD, [6'W x 75'L x .091"Thick], #88074 Sunrise.

SVF-2, Sheet Vinyl Flooring, Teknoflor, Forestscapes HPD, [6'W x 75'L x .091"Thick], #88059 Natural.

SVT-3, Sheet Vinyl Flooring, Teknoflor, Forestscapes HPD, [6'W x 75'L x .091"Thick], #88067 Sepia.

2.3.1.4 Rubber Tile

RF-1, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm], #2945 Lace Vine.

RF-2, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm], #2933 Whispering Fog.

RF-3, Rubber Flooring, Nora, Noraplan, Sentica, [24"x 24" x 3 mm], #6505 Silk.

RF-4, Rubber Flooring, Nora, Noraplan, Sentica, [24"x 24" x 3 mm], #6506 Cashmere.

RF-8, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm], #2930 Windflower.

RF-9, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm], #2931 Smoky Fennel.

RF-10, Rubber Flooring, Nora, Noraplan, Sentica, [24"x 24" x 3 mm], #6520 Snow Day.

RF-11, Rubber Flooring, Nora, Noraplan, Sentica, [24"x 24" x 3 mm], #6521 Sunday Paper.

RF-15, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm], #2958 Fallen Acorn.

RF-16, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm], #2967 Moor Grass.

RF-17, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm], #2949 Sage.

RF-18, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm],

#2945 Irish Moss.

RF-19, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm], #2779 Evergreen Path.

RF-20, Rubber Flooring, Nora, Noraplan, Environcare, [24"x 24" x 3 mm], #2941 China Berry.

RF-21, Rubber Flooring, Nora, Noraplan, Sentica, [24"x 24" x 3 mm], #6503 Indulgence.

2.3.1.5 Rubber Sheet

RF-5, Rubber Flooring, Nora, Noraplan, Valua, Sheet, [49' x 48" x 3 mm], #6714 Mushroom.

RF-6, Rubber Flooring, Nora, Noraplan, Valua, Sheet, [49' x 48" x 3 mm], #6722 Pine Cone.

RF-12, Rubber Flooring, Nora, Noraplan, Valua, Sheet, [49' x 48" x 3 mm], #6708 Beach Wood.

RF-13, Rubber Flooring, Nora, Noraplan, Valua, Sheet, [49' x 48" x 3 mm], #6709 Smoke.

2.3.1.6 Rubber Plank

RF-6, Rubber Flooring, Nora, Noraplan, Valua, [24" x 8", 24" x 12", 48" x 16"] x 3 mm, #6722 Pine Cone.

RF-7, Rubber Flooring, Nora, Noraplan, Arago, [40" x 20" x 3.5 mm], #5178 Calm.

RF-14, Rubber Flooring, Nora, Noraplan, Arago, [40" x 20" x 3.5 mm], #5177 Balance.

2.3.1.7 Stair Flooring

See Rubber Flooring

2.3.1.8 Stair Landings

See Rubber Flooring

2.3.1.9 Porcelain Tile

PFT-1, Porcelain Floor Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV242 Vapor.

PFT-2, Porcelain Floor Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV243 Fog.

PFT-3, Porcelain Floor Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV247 Haze.

PFT-4, Porcelain Floor Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV245 Clay.

PFT-5, Porcelain Floor Tile, Crossville, Shades, [6" x 24", 12" x 24", 24"

x 24"] x 10.5 mm, #AV246 Ash.

PFT-6, Porcelain Floor Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV244 Mist.

PFT-7, Porcelain Floor Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV248 Thunder.

PFT-8, Porcelain Floor Tile, Crossville, Argent, [6" x 6", 6" x 24", 12" x 24"] x 9.5 mm, #A1401 Winter Garden.

PFT-9, Porcelain Floor Tile, Crossville, Argent, [6" x 6", 6" x 24", 12" x 24"] x 9.5 mm, #A1417 Clean Slate.

PFT-10, Porcelain Floor Tile, Iris US, Travertini Al Contro, [8" x 48", 24" x 48", 6" x 24", 12" x 24"] x 5/16", Argento.

PFT-11, Porcelain Floor Tile, Crossville, Nest, [3" x 15", 6" x 36", 8" x 36"] x 10.5 mm, #AV362 Joyous Olive.

PFT-12, Porcelain Floor Tile, Crossville, Nest, [3" x 15", 6" x 36", 8" x 36"] x 10.5 mm, #AV363 Blissful Olive.

PFT-13, Porcelain Floor Tile, Mediterranea USA, Touch, [3" x 6", 3" x 12", 4" x 18", 12" x 12", 12" x 24", 18" x 36"], Sun Glow.

PFT-14, Porcelain Floor Tile, Iris US, Travertini Al Contro, [8" x 48", 24" x 48", 6" x 24", 12" x 24"] x 5/16", Grigio.

PFT-15, Porcelain Floor Tile, Crossville, Nest, [3" x 15", 6" x 36", 8" x 36"] x 10.5 mm, #AV364 Mindful Olive.

PFT-16, Porcelain Floor Tile, Crossville, Nest, [3" x 15", 6" x 36", 8" x 36"] x 10.5 mm, #AV366 Slumber Olive.

PFT-17, Porcelain Floor Tile, Mediterranea USA, Touch, [3" x 6", 3" x 12", 4" x 18", 12" x 12", 12" x 24", 18" x 36"], Pearl Essence.

2.3.1.10 Grout

GRT-1, Grout, Mapei, Kerapoxy, Epoxy Grout, #39 Ivory.

GRT-2, Grout, Mapei, Kerapoxy, Epoxy Grout, #09 Gray.

GRT-3, Grout, Mapei, Kerapoxy, Epoxy Grout, #19 Pearl Gray.

GRT-4, Grout, Mapei, Kerapoxy, Epoxy Grout, #27 Silver.

2.3.1.11 Aluminum Transition

TS-1, Transition, Johnsonite, Moldings & Transition, #80 Fawn.

TS-2, Transition, Johnsonite, Moldings & Transition, #32 Pebble.

TS-3, Transition, Schluter Systems, Tile to resilient sloped transition, Reno-U.

TS-4, Transition, Schluter Systems, Tile to carpet transition, Schiene.

TS-5, Transition, Schluter Systems, Title to tile cove transition, Dilex-Ahk or Dilex-Ehk.

2.3.1.12 Entrance Mat

WM-1, Walk Off Mat, C-S Group, Pedimat M1, Entry Mat, Recessed or Surface Mounted, Monotuft HD Nylon Insert, #9327 Dry Brown.

WM-2, Walk Off Mat, C-S Group, Pedimat M1, Entry Mat, Recessed or Surface Mounted, Monotuft HD Nylon Insert, #9322 Slate.

WM-3, Walk Off Mat, C-S Group, Pedimat M1, Entry Mat, Recessed or Surface Mounted, Rubber Insert, Black Rubber.

WM-4, Walk Off Mat, Milliken, Arx Collection, Prior, Tergo, and Forma 2.0, #FOR144-27 Boundary.

2.3.1.13 Epoxy Terrazzo

ET-1, Epoxy Terrazzo, Poured Floor, Light Warm Epoxy Terrazo, #TM 14-1780.

ET-2, Epoxy Terrazzo, Poured Floor, Dark Warm Epoxy Terrazo, #TM 17-621.

ET-3, Epoxy Terrazzo, Poured Floor, Light Cool Epoxy Terrazo, #TM 18-163.

ET-4, Epoxy Terrazzo, Poured Floor, Dark Cool Epoxy Terrazo, #TM 18-162.

2.3.1.14 Resin

RES-1, Resin, Stonhard, Stonclad UR, Poured Resin, Beechwood.

RES-2, Resin, Stonhard, Stontec TRF, Poured Resin, Small and large flake, Silver Sage.

RES-3, Resin, Stonhard, Stonclad UR, Poured Resin, Pewter.

RES-4, Resin, Stonhard, Stontec TRF, Poured Resin, Small and large flake, Smokey Mountains.

2.3.1.15 Specialty Flooring - Physical Therapy

SF-1, Specialty Flooring, Connor Sports, ElastiPlus, Poured floor/Rubber base, Overall thickness 6-11, #1019 Arid Bronze.

SF-2, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30'Roll, 7 mm thick, #2702 Beam Me Up Beige.

SF-3, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30'Roll, 7 mm thick, #2703 Princess Greya.

SF-4, Specialty Flooring, Connor Sports, ElastiPlus, Poured floor/Rubber base, Overall thickness 6-11, #7001 Silver Mine.

SF-5, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30'Roll, 7 mm thick, #2706 Rastro Grey.

SF-6, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30'Roll, 7 mm thick, #2708 Dark Vadar.

SF-7, Specialty Flooring, Ecore, Forest RX, Sheet, Vinyl Top/Rubber back, 6'W x 30'Roll, 7 mm thick, #3360 Mahogany.

SF-8, Specialty Flooring, Ecore, Forest RX, Sheet, Vinyl Top/Rubber back, 6'W x 30'Roll, 7 mm thick, #3290 Warm Beech.

SF-9, Specialty Flooring, Ecore, Forest RX, Sheet, Vinyl Top/Rubber back, 6'W x 30'Roll, 7 mm thick, #9824 Aged Oak.

2.3.1.16 Specialty Flooring - Nutrition Care

SF-10, Specialty Flooring, Stonhard, Stonclad UT, Poured Resin, 6 mm thick, Beechwood.

SF-11, Specialty Flooring, Stonhard, Stonclad UT, Poured Resin, 6 mm thick, Pewter.

2.3.1.17 Specialty Flooring - Operating Room

SF-2, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #2702 Beam Me Up Beige.

SF-3, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #2703 Princess Greya.

SF-5, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #2706 Rastro Grey.

SF-6, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #2708 Dark Vadar.

SF-12, Specialty Flooring, Stonhard, Stonres RTZ, Poured Resin, 5 mm thick, Santa Fe.

SF-13, Specialty Flooring, Stonhard, Stonres RTZ, Poured Resin, 5 mm thick, Canvas.

2.3.1.18 Specialty Flooring - Pharmacy

SF-2, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #2702 Beam Me Up Beige.

SF-3, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #2703 Princess Greya.

SF-5, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #2706 Rastro Grey.

SF-6, Specialty Flooring, Ecore, Galaxy RX, Sheet, Rubber Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #2708 Dark Vadar.

SF-7, Specialty Flooring, Ecore, Forest RX, Sheet, Vinyl Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #3360 Mahogany.

SF-8, Specialty Flooring, Ecore, Forest RX, Sheet, Vinyl Top/Rubber back, 6'W x 30' Roll, 7 mm thick, #3290 Warm Beech.

SF-9, Specialty Flooring, Ecore, Forest RX, Sheet, Vinyl Top/Rubber back,

6'W x 30'Roll, 7 mm thick, #9824 Aged Oak.

SF-14, Specialty Flooring, SikaFloor, ComfortFloor Decorative Pro, Poured Floor/Rubber back, 320 mil seamless system, #248 Beige.

SF-15, Specialty Flooring, SikaFloor, ComfortFloor Decorative Pro, Poured Floor/Rubber back, 320 mil seamless system, Gray.

2.3.2 Interior Base Finishes

Provide base materials to match the colors listed below.

2.3.2.1 Resilient Base and Moldings

RB-1, Rubber Base, Johnsonite, Tightlock wall base, #80 Fawn.

RB-2, Rubber Base, Johnsonite, Inflection Millwork base, #80 Fawn.

RB-3, Rubber Base, Johnsonite, Tightlock wall base, #32 Pebble.

RB-4, Rubber Base, Johnsonite, Inflection Millwork base, #32 Pebble.

2.3.2.2 Porcelain Tile

Reference Interior Floor Finishes, paragraph 2.3.1.

2.3.2.3 Grout

Same as floor

2.3.2.4 Integral Cove Base

Same as welded flooring products

2.3.3 Interior Wall Finishes

Apply interior wall color to the entire wall surface, including reveals, vertical furred spaces and columns, grilles, diffusers, electrical and access panels, and piping and conduit adjacent to wall surfaces unless otherwise specified. Paint items not specified in other paragraphs to match adjacent wall surface. Provide wall materials to match the colors listed below.

2.3.3.1 Paint

PT-1, Paint, Sherwin Williams, #SW7005 Pure White.
PT-2, Paint, Sherwin Williams, #SW7011 Natural Choice.
PT-3, Paint, Sherwin Williams, #SW7036 Accessible Beige.
PT-4, Paint, Sherwin Williams, #SW7015 Repose Gray.
PT-5, Paint, Sherwin Williams, #SW7017 Dorian Gray.
PT-6, Paint, Sherwin Williams, #SW7686 Hinoki.
PT-7, Paint, Sherwin Williams, #SW7687 August Moon.
PT-8, Paint, Sherwin Williams, #SW7695 Mesa Tan.
PT-9, Paint, Sherwin Williams, #SW6644 Champagne.
PT-10, Paint, Sherwin Williams, #SW6348 Reynard.
PT-11, Paint, Sherwin Williams, #SW6349 Pennywise.
PT-12, Paint, Sherwin Williams, #SW9149 Inkie Blue.
PT-13, Paint, Sherwin Williams, #SW9147 Favorite Jeans.
PT-14, Paint, Sherwin Williams, #SW9144 Moonmist.

PT-15, Paint, Sherwin Williams, #SW6179 Artichoke.
PT-16, Paint, Sherwin Williams, #SW6178 Clary Sage.
PT-17, Paint, Sherwin Williams, #SW6176 Liveable Green.
PT-18, Paint, Sherwin Williams, #SW6285 Grape Harvest.
PT-19, Paint, Sherwin Williams, #SW6283 Thistle.
PT-20, Paint, Sherwin Williams, #SW6281 Wallflower.
PT-21, Paint, Sherwin Williams, #SW6415 Hearts of Palm.
PT-22, Paint, Sherwin Williams, #SW9029 Cool Avocado.
PT-23, Paint, Sherwin Williams, #SW6416 Sassy Green.
PT-24, Paint, Sherwin Williams, #SW6211 Rainwashed.
PT-25, Paint, Sherwin Williams, #SW6212 Quietude.
PT-26, Paint, Sherwin Williams, #SW6213 Halcyon Green.

2.3.3.2 Porcelain Tile

PWT-1, Porcelain Wall Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV242 Vapor.

PWT-2, Porcelain Wall Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV243 Fog.

PWT-3, Porcelain Wall Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV247 Haze.

PWT-4, Porcelain Wall Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV245 Clay.

PWT-5, Porcelain Wall Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV246 Ash.

PWT-6, Porcelain Wall Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV244 Mist.

PWT-7, Porcelain Wall Tile, Crossville, Shades, [6" x 24", 12" x 24", 24" x 24"] x 10.5 mm, #AV248 Thunder.

PWT-8, Porcelain Wall Tile, Crossville, Shades, Mosaic, [1" x 3" Mosaic mounted in 11-7/8" x 11-7/8" Sheets] x 10.5", #SBC1/.10103HMOS Warm Grays.

PWT-9, Porcelain Wall Tile, Crossville, Shades, [1" x 3" Mosaic mounted in 11-7/8" x 11-7/8" Sheets] x 10.5", Mosaic, #SBC2/.10103HMOS Cool Grays.

PWT-10, Porcelain Wall Tile, Crossville, Argent, [6" x 6", 6" x 24", 12" x 24"] x 9.5 mm, #A1401 Winter Garden.

PWT-11, Porcelain Wall Tile, Crossville, Argent, [6" x 6", 6" x 24", 12" x 24"] x 9.5 mm, #A1417 Clean Slate.

PWT-12, Porcelain Wall Tile, Iris US, Travertini Al Contro, [8" x 48", 24" x 48", 6" x 24", 12" x 24"] x 5/16", Argento.

PWT-13, Porcelain Wall Tile, Crossville, Nest, [3" x 15", 6" x 36", 8" x 36"] x 10.5 mm, #AV362 Joyous Olive.

PWT-14, Porcelain Wall Tile, Crossville, Nest, [3" x 15", 6" x 36", 8" x 36"] x 10.5 mm, #AV363 Blissful Olive.

PWT-15, Porcelain Wall Tile, Mediterranea USA, Touch, [3" x 6", 3" x 12",

4" x 18", 12" x 12", 12" x 24", 18" x 36"], Sun Glow.

PWT-16, Porcelain Wall Tile, Iris US, Travertini Al Contro, [8" x 48", 24" x 48", 6" x 24", 12" x 24"] x 5/16", Grigio.

PWT-17, Porcelain Wall Tile, Crossville, Nest, [3" x 15", 6" x 36", 8" x 36"] x 10.5 mm, #AV364 Mindful Olive.

PWT-18, Porcelain Wall Tile, Crossville, Nest, [3" x 15", 6" x 36", 8" x 36"] x 10.5 mm, #AV366 Slumber Olive.

PWT-19, Porcelain Wall Tile, Mediterranea USA, Touch, [3" x 6", 3" x 12", 4" x 18", 12" x 12", 12" x 24", 18" x 36"], Pearl Essence.

2.3.3.3 Grout

GRT-1, Grout, Mapei, Kerapoxy, Epoxy Grout, #39 Ivory.
GRT-2, Grout, Mapei, Kerapoxy, Epoxy Grout, #09 Gray.
GRT-3, Grout, Mapei, Kerapoxy, Epoxy Grout, #19 Pearl Gray.
GRT-4, Grout, Mapei, Kerapoxy, Epoxy Grout, #27 Silver.
GRT-5, Grout, Mapei, Kerapoxy, Epoxy Grout, #14 Biscuit

2.3.3.4 Trim

TR-1, Trim, Schluter Systems, Finishing Edge Trim, Jolly.
TR-2, Trim, Schluter Systems, Square Edge Trim, Quadec.
TR-3, Trim, Schluter Systems, Rounded Edge Trim, Rondec.
TR-5, Trim, Schluter Systems, Cove Trim, Dilex-Ahk or Dilex-Ehk.

2.3.4 Interior Ceiling Finishes

Apply ceiling colors to ceiling surfaces including soffits, furred down areas, grilles, diffusers, registers, and access panels. In addition, apply ceiling color to joists, underside of roof deck, and conduit and piping where joists and deck are exposed and required to be painted. Provide ceiling materials to match the colors listed below.

2.3.4.1 Acoustical Tile and Grid

ACT-1, Acoustical Ceiling Tile, Armstrong, Ultima, Tegular Edge, #1911 White.
ACT-2, Acoustical Ceiling Tile, Armstrong, Fine Fissured, Square Edge, Cermaguard, Non-perforated, #607 White.

ACT-3, Acoustical Ceiling Tile, Armstrong, Clean Room VL, Square Edge, #868 White.

ACT-4, Acoustical Ceiling Tile, Armstrong, Lyra, Plant-based binder, Tegular Edge, #8730PB White.
ACC, Acoustical Ceiling Cloud, Armstrong, Formations Cloud System.

2.3.4.2 Paint (Ceilings)

PT-1, Paint, Sherwin Williams, #SW7005 Pure White.

2.3.4.3 Paint (Soffits)

See paints.

2.3.4.4 Wood Ceiling

WCT-1, Wood Ceiling Tile, Armstrong, Woodworks Vector Panels, Natural Variations, #NDC Dark Cherry.

WCT-2, Wood Ceiling Tile, Armstrong, Woodworks Vector Panels, Natural Variations, #NBE Natural Beech.

WCT-3, Wood Ceiling Tile, Armstrong, Woodworks Vector Panels, Natural Variations, #NWN Walnut.

WCP-1, Wood Ceiling Tile, Armstrong, Woodworks Linear Veneer Planks, Natural Variations, #NDC Dark Cherry.

WCP-2, Wood Ceiling Tile, Armstrong, Woodworks Linear Veneer Planks, Natural Variations, #NBE Natural Beech.

WCP-3, Wood Ceiling Tile, Armstrong, Woodworks Linear Veneer Planks, Natural Variations, #NWN Walnut.

2.3.4.5 Metal Ceiling

MCT, Metal Ceiling Tile, Armstrong, Metalworks Tegular Panels.

2.3.4.6 Healing Ceiling

Healing Ceiling, Sky Factory, Luminous SkyCeiling.

2.3.5 Interior Trim

Provide interior trim to match the colors listed below.

2.3.5.1 Steel Doors

Same as frame

2.3.5.2 Steel Door Frames

PT-3, Paint, Sherwin Williams, #SW7036 Accessible Beige.

PT-5, Paint, Sherwin Williams, #SW7017 Dorian Gray.

2.3.5.3 Steel Windows (mullion, muntin, sash, trim, and stool)

Same as frame.

2.3.5.4 Aluminum Doors and Door Frames

Aluminum, Satin Anodized or to match exterior window trim.

2.3.5.5 Aluminum Windows (mullion, muntin, sash, trim, and stool)

See above

2.3.5.6 Wood Doors

WS-1, Wood Stain, Sherwin Williams, #SW3109-B Bright Cherry Stain.

WS-2, Wood Stain, Sherwin Williams, #SW3121-B Pearwood Stain.

WS-3, Wood Stain, Sherwin Williams, #SW3134-B Weathered Teak Stain.

2.3.5.7 Wood Stain

WS-1, Wood Stain, Sherwin Williams, #SW3109-B Bright Cherry Stain.

WS-2, Wood Stain, Sherwin Williams, #SW3121-B Pearwood Stain.

WS-3, Wood Stain, Sherwin Williams, #SW3134-B Weathered Teak Stain.

2.3.5.8 Fire Extinguisher Cabinets

Satin Anodized Aluminum.

2.3.5.9 Handrails

Handrail, Acrovyn, #HR-6CN.

Handrail, Acrovyn, Stainless Steel, #HRS-6C.

Handrail, Acrovyn, #HRB-4CN.

Handrail, Acrovyn, Simulated wood product trim, #HRB-10CN.

Handrail, Decorative Handrail, Koroguard, BellaLucent.

HR-1, Handrail, Acrovyn, 4000 PVC/PBT/BPA-free product, Suede Texture, #858 Pumice.

HR-2, Handrail, Acrovyn, 4000 PVC/PBT/BPA-free product, Suede Texture, #314 Ozark.

HR-3, Handrail, Acrovyn, Simulated wood product, Chameleon, #373 Amber Cherry.

HR-4, Handrail, Acrovyn, Simulated wood product, Chameleon, #372 Classic Maple.

HR-5, Handrail, Acrovyn, Simulated wood product, Chameleon, #1352 Fossil Teak.

DHR-1, Decorative Handrail, Koroguard, Korowood, Stain to match PL-5.

DHR-2, Decorative Handrail, Koroguard, Korowood, Stain to match PL-6.

DHR-3, Decorative Handrail, Koroguard, Korowood, Stain to match PL-7.

2.3.5.10 Guardrails

[_____]

2.3.5.11 Ladders

[_____]

2.3.5.12 Metal Stairs[; includes [risers][and underside of stairs] only]

[_____]

2.3.5.13 Exposed Ductwork

[_____]

2.3.5.14 Bollards

[_____]

2.3.6 Interior Window Treatment

Provide window treatments to match the colors listed below.

2.3.6.1 Window Shades

WT-1, Window Treatment, Mechosystems, Mechoshade, Ecoveil, 1350 Series, 5% open, #1352 Beige.

WT-2, Window Treatment, Mechosystems, Mechoshade, 0100 Equinox Blackout, #0104 Sandstone.

WT-3, Window Treatment, Mechosystems, Mechoshade, Ecoveil, 1350 Series, 5% open, #1363 Grey.

WT-4, Window Treatment, Mechosystems, Mechoshade, 0100 Equinox Blackout, #0105 Silver.

2.3.7 Interior Miscellaneous

Provide miscellaneous items to match the colors listed below.

2.3.7.1 Toilet Partitions and Urinal Screens

TP-1, Toilet Partition, Bradley, Series 600, Ceiling-Hung, Restroom Partitions, Stainless Steel

TP-2, Toilet Partition, Scranton, Hiny Hiders, HDPE Partition, Orange Peel Finish, Sandcastle.

TP-3, Toilet Partition, Scranton, Hiny Hiders, HDPE Partition, Orange Peel Finish, Shale.

2.3.7.2 Casework

See plastic laminate, solid surfacing, and quartz options.

2.3.7.3 Plastic Laminate

PL-1, Plastic Laminate, Wilsonart, #D439-60 Wallaby.

PL-2, Plastic Laminate, Wilsonart, #4990-60 Flax Linen.

PL-3, Plastic Laminate, Wilsonart, #1500-60 Grey

PL-4, Plastic Laminate, Wilsonart, #4943-60 Classic Linen.

PL-5, Plastic Laminate, Wilsonart, #7054-60 Wild Cherry.

PL-6, Plastic Laminate, Wilsonart, #10776-60 Kensington Maple.

PL-7, Plastic Laminate, Wilsonart, #7960-60 Studio Teak.

2.3.7.4 Solid Surfacing Material

SS-1, Solid Surface, Avonite, Recycled Content Collection, #4330 Honey Crunch.

SS-2, Solid Surface, Corian, Clam Shell.

SS-3, Solid Surface, Corian, Linen.

SS-4, Solid Surface, Wilsonart, EOS-Copper Infused Solid Surface, Beige.

SS-5, Solid Surface, Avonite, #7710 Gulf Coast.

SS-6, Solid Surface, Corian, Arrowroot.

SS-7, Solid Surface, Avonite, #7713 Algodon.

SS-8, Solid Surface, Wilsonart, EOS-Copper Infused Solid Surface, Grey.

2.3.7.5 Quartz Material

QZP-1, Quartz, Cambria, #0355 Galloway.

QZP-2, Quartz, Cambria, #0126 Brittanicca.

QZP-3, Quartz, Cambria, #0356 Summerhill.

QZP-4, Quartz, Cambria, #0381 Seagrove.

2.3.7.6 Resin Panel

SRP-1, Solid Resin Panel, 3form, Varia Ecoresin, Highres Imagery, Stroll.

SRP-2, Solid Resin Panel, Lumicor, Metallic, Intersect.

SRP-3, Solid Resin Panel, 3form, Varia Ecoresin, Artisan, Connection Square Pure.

SRP-4, Solid Resin Panel, Lumicor, Textiles, Kauri.

SRP-5, Solid Resin Panel, 3form, Varia Ecoresin, Textures, Wave.

SRP-6, Solid Resin Panel, 3form, Varia Ecoresin, Textures, Crinkle.

SRP-7, Solid Resin Panel, 3form, Varia Ecoresin, Naturals, Thatch.

SRP-8, Solid Resin Panel, Lumicor, Natural, Mojave.

2.3.7.7 Wall Panel

WP-1, Wall Panel, Pionite, FRL, #FW624 Oiled Cherry.

WP-2, Wall Panel, Pionite, FRL, #FW327 Hardrock Maple.

WP-3, Wall Panel, Pionite, FRL, #FW176 Pralines and Cream.

2.3.7.8 Solid Surface

SS-1, Solid Surface, Avonite, Recycled Content Collection, #4330 Honey Crunch.

SS-2, Solid Surface, Corian, Clam Shell.

SS-3, Solid Surface, Corian, Linen.

SS-5, Solid Surface, Avonite, #7710 Gulf Coast.

SS-6, Solid Surface, Corian, Arrowroot.

SS-7, Solid Surface, Avonite, #7713 Algodon.

2.3.7.9 Window Sills ([Solid Surface][Plastic Laminate][_____])

[_____]

2.3.7.10 Operable Partitions

[_____]

2.3.7.11 Accordion Partitions

[_____]

2.3.7.12 Acoustical Wall Panels

[_____]

2.3.7.13 Corner Guards

Corner Guard, Acrovyn, Stainless Steel, #CO-8.

Corner Guard, Acrovyn, Surface Mounted, #SM-20N.

Corner Guard, Acrovyn, Flush, #FS-20N.

CG-1, Corner Guard, Acrovyn, Stainless steel, #407 Silver.

CG-2, Corner Guard, Acrovyn, 4000 PVC/BBT/BPA free product, Suede texture, #858 Pumice.

CG-3, Corner Guard, Acrovyn, 4000 PVC/BBT/BPA free product, Suede texture, #314 Ozark.

2.3.7.14 Crash Rail

Crash Rail, Acrovyn, #SCR-64N.

CR-1, Crash Rail, Acrovyn, 4000 PVC/BBT/BPA free product, Suede texture, #858 Pumice.

CR-2, Crash Rail, Acrovyn, 4000 PVC/BBT/BPA free product, Suede texture, #314 Ozark.

2.3.7.15 Protective Wall Covering/Panel

Door Edge Protection, CS Group, Acrovyn.

Door Kick Plate, CS Group, Acrovyn.

Door Frame Protection, CS Group, Acrovyn, Stainless Steel.

DP-1, Door Protection, Acrovyn, Stainless Steel.

VWP-1, Vinyl Wall Protection, Acrovyn, 4000 PVC/BBT/BPA free product, Suede texture, #858 Pumice.

VWP-2, Vinyl Wall Protection, Acrovyn, 4000 PVC/BBT/BPA free product, Suede texture, #314 Ozark.

VWP-3, Vinyl Wall Protection, Acrovyn, Simulated Wood Product, Chameleon, #373 Amber Cherry.

VWP-4, Vinyl Wall Protection, Acrovyn, Simulated Wood Product, Chameleon, #372 Classic Maple.

VWP-5, Vinyl Wall Protection, Acrovyn, Simulated Wood Product, Chameleon, #1352 Fossil Teak.

VWP-6, Vinyl Wall Protection, Acrovyn, Acrovyn by Design, .040N Sheet, Digital Printed image wall protection.

SWP-1, Stainless Wall Protection, Acrovyn, Stainless Steel, Diamond Plate Texture, Type 304.

2.3.7.16 Chair Rail

Chair Rail, Acrovyn, #FR-251N.

CHR-1, Chair Rail, Acrovyn, 4000 PVC/BBT/BPA free product, Suede texture, #858 Pumice.

CHR-2, Chair Rail, Acrovyn, 4000 PVC/BBT/BPA free product, Suede texture, #314 Ozark.

2.3.7.17 Vinyl Protected Doors

VWP-3, Vinyl Wall Protection, Acrovyn, Simulated Wood Product, Chameleon, #373 Amber Cherry.

VWP-4, Vinyl Wall Protection, Acrovyn, Simulated Wood Product, Chameleon, #372 Classic Maple.

VWP-5, Vinyl Wall Protection, Acrovyn, Simulated Wood Product, Chameleon, #1352 Fossil Teak.

2.3.7.18 Signage Message Color

[_____]

2.3.7.19 Signage Background Color

[_____]

2.3.7.20 Building Directory

[_____]

2.3.7.21 Closet Shelving

[_____]

2.3.7.22 Lockers

[_____]

2.3.7.23 Benches

[_____]

2.3.7.24 Wall Switch Handles and Standard Receptacle Bodies

[_____]

2.3.7.25 Electrical Device Cover Plates

[_____]

2.3.7.26 Electrical Panels

[_____]

2.3.7.27 Fin Tubes

[_____]

2.3.7.28 Shower [Curtain][Doors]

[_____]

2.3.7.29 Shower Wall Kits, Trim and Shower Pan

SSM-1, Solid Surface Material, Corian, Integral Sinks, Cameo White.

SSM-2, Solid Surface Material, Corian, Shower Pan/Walls, Linen.

SSM-3, Solid Surface Material, Corian, Shower Pan/Walls, Everest.

SSM-4, Solid Surface Material, Avonite, Integral Sinks, #8016 White.

SSM-5, Solid Surface Material, Avonite, Shower Pan/Walls, #9036 Sandstorm.

SSM-6, Solid Surface Material, Avonite, Shower Pan/Walls, #7810 Malt.
SSM-7, Solid Surface Material, Bradley, Pre-fabricated Vanity system, Evero natural quartz, Antarctica.

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION 09 30 10

TILING
08/17

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A137.1	(2012) American National Standards Specifications for Ceramic Tile

ASTM INTERNATIONAL (ASTM)

ASTM A1064/A1064M	(2017) Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM C1026	(2013) Standard Test Method for Measuring the Resistance of Ceramic Tile to Freeze-Thaw Cycling
ASTM C1027	(2009) Standard Test Method for Determining Visible Abrasion Resistance of Glazed Ceramic Tile
ASTM C1178/C1178M	(2013) Standard Specification for Glass Mat Water-Resistant Gypsum Backing Panel
ASTM C144	(2011) Standard Specification for Aggregate for Masonry Mortar
ASTM C150/C150M	(2017) Standard Specification for Portland Cement
ASTM C206	(2014) Standard Specification for Finishing Hydrated Lime
ASTM C207	(2006; R 2011) Standard Specification for Hydrated Lime for Masonry Purposes
ASTM C33/C33M	(2016) Standard Specification for Concrete Aggregates
ASTM C373	(2016; E 2016)Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products

ASTM C648	(2004; R 2009) Breaking Strength of Ceramic Tile
ASTM C847	(2014a) Standard Specification for Metal Lath
ASTM D2103	(2015) Standard Specification for Polyethylene Film and Sheeting
ASTM D226/D226M	(2009) Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
ASTM D4068	(2017) Standard Specification for Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-Containment Membrane

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	SCS Global Services (SCS)Indoor Advantage

TILE COUNCIL OF NORTH AMERICA (TCNA)

TCNA Hdbk	(2013) Handbook for Ceramic, Glass, and Stone Tile Installation

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines

UNDERWRITERS LABORATORIES (UL)

UL 2818	(2013) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Detail Drawings; G[, [_____]]

SD-03 Product Data

Porcelain Tile; G[, [_____]]

Mosaic Tile; G[, [_____]]

Setting-Bed; G[, [_____]]

Mortar, Grout; G[, [_____]]

SD-04 Samples

Tile; G[, [_____]]

Transition Strips; G[, [_____]]

Grout; G[, [_____]]

SD-07 Certificates

Indoor Air Quality

SD-08 Manufacturer's Instructions

Maintenance Instructions

SD-10 Operation and Maintenance Data

Installation; G[, [_____]]

SD-11 Closeout Submittals

[Recycled Content for Porcelain Tile; S]

[Recycled Content for Mosaic Tile; S]

[Indoor Air Quality for Sealants; S]

1.3 CERTIFICATIONS

1.3.1 Indoor Air Quality Certifications

1.3.1.1 Sealants

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party programs that products meet the requirements of this Section. Provide current product certification documentation from certification body.

1.4 QUALITY ASSURANCE

Provide installers having a minimum of two years experience with a company specializing in performing the type of work described. Each type and color of tile to be provided from a single source. Each type and color of

mortar, adhesive, and grout to be provided from the same source.

1.5 DELIVERY, STORAGE, AND HANDLING

Ship tiles in sealed packages and clearly marked with the grade, type of tile, producer identification, and country of origin. Deliver materials to the project site in manufacturer's original unopened containers with seals unbroken and labels and hallmarks intact. Protect materials from weather, and store them under cover in accordance with manufacturer's printed instructions.

1.6 ENVIRONMENTAL REQUIREMENTS

Do not perform ceramic tile work unless the substrate and ambient temperature is at least 50 degrees F and rising. Maintain temperature above 50 degrees F while the work is being performed and for at least 7 days after completion of the work. When temporary heaters are used, ventilate the area to the outside to avoid carbon dioxide damage to new tilework.

1.7 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a 1-year period.

1.8 EXTRA MATERIALS

Supply an extra [2][_____] percent of each type tile used in clean and marked cartons.

PART 2 PRODUCTS

2.1 TILE

Provide tiles that comply with ANSI A137.1 and are standard grade tiles. Provide a minimum breaking strength of 125 lbs. for wall tile and 250 lbs. for floor tile in accordance with ASTM C648. Provide exterior building tile for cold climate projects that is approved by the manufacturer for exterior use when tested in accordance with ASTM C1026. Provide floor tiles with a wet dynamic coefficient of friction (DCOF) value of [0.42][_____] or greater when tested in accordance with ANSI A137.1 requirements. Provide glazed floor tile with a Class [IV-Commercial][V-Heavy Commercial][_____] classification as rated by the manufacturer when tested in accordance with ASTM C1027 for visible abrasion resistance as related to foot traffic. For materials like tile, and transition strips submit samples of sufficient size to show color range, pattern, type and joints. Submit manufacturer's catalog data.

2.1.1 Porcelain Tile, PFT and PWT

Provide [[unglazed][or][glazed],][rectified] porcelain tile, [cove][bullnose] base and trim pieces[with color extending uniformly through the body of the tile]. [Provide tile with a [V0][V1][V2][V3][V4] aesthetic classification. Blend tiles in factory and in a packages to have same color range and continuous blend for installation.] Provide nominal tile size(s) as indicated in Section 09 06 00 SCHEDULES FOR FINISHES. Provide a [0.50][_____] percent maximum water absorption in accordance with ASTM C373.

Provide Porcelain Tiling Materials that contain a minimum of 10 percent

recycled content. Provide data identifying percentage of recycled content for porcelain tile.

2.1.2 Mosaic Tile, PWT-8 and PWT-9

Furnish glazed, mosaic tile[, [cove][bullnose] base] and trim composed of porcelain. Provide tile with a V2 aesthetic classification. Blend tiles in factory and in a packages to have same color range and continuous blend for installation. Provide [nominal tile size(s) of a mixture of standard sizes in a stock pattern. Provide porcelain mosaics with a water absorption up to 0.50 percent when tested in accordance with ASTM C373.

Provide Mosaic Tiling Materials that contain a minimum of 3 percent recycled content. Provide data identifying percentage of recycled content for mosaic tile.

2.2 SETTING-BED

Submit manufacturer's catalog data. Compose the setting-bed of the following materials:

2.2.1 Aggregate for Concrete Fill

Conform to ASTM C33/C33M for aggregate fill. Do not exceed one-half the thickness of concrete fill for maximum size of coarse aggregate.

2.2.2 Portland Cement

Conform to ASTM C150/C150M for cement, Type I, white for wall mortar and gray for other uses.

2.2.3 Sand

Conform to ASTM C144 for sand.

2.2.4 Hydrated Lime

Conform to ASTM C206 for hydrated lime, Type S or ASTM C207, Type S.

2.2.5 Metal Lath

Conform to ASTM C847 for flat expanded type metal lath, and weighing a minimum 2.5 pound/square yard.

2.2.6 Reinforcing Wire Fabric

Conform to ASTM A1064/A1064M for wire fabric. Provide [2 by 2 inch mesh, 16/16 wire] [or] [1-1/2 by 2 inch mesh, 16/13 wire].

2.3 WATER

Provide potable water.

2.4 MORTARAND GROUT

2.4.1 Dry-Set Portland Cement Mortar

TCNA Hdbk.

2.4.2 Latex-Portland Cement Mortar

TCNA Hdbk.

2.4.3 Epoxy Resin Grout, GRT

TCNA Hdbk.

2.4.4 Sealants

Comply with applicable regulations regarding toxic and hazardous materials and as specified. Grout sealant must not change the color or alter the appearance of the grout. Refer to Section 07 92 00 JOINT SEALANTS.

2.5 SUBSTRATES

2.5.1 Cementitious Backer Board

Provide cementitious backer units, for use as tile substrate over wood sub-floors, in accordance with TCNA Hdbk. Furnish [1/4][1/2] inch thick cementitious backer units.

2.5.2 Glass Mat Gypsum Backer Panel

Provide glass mat water-resistant gypsum backer board, for use as tile substrate over wood subfloors, in accordance with ASTM C1178/C1178M. Provide [1/4][1/2] inch thick glass mat gypsum backer board.

2.6 TRANSITION STRIPS, TS

Provide anodized aluminum transitions between tile and carpet or resilient flooring. Provide types as recommended by flooring manufacturer for both edges and transitions of flooring materials specified in Section 09 06 00 SCHEDULES FOR FINISHES. Provide transition strips that comply with 36 CFR 1191requirements.

2.7 MEMBRANE MATERIALS

Conform to ASTM D226/D226M, Type 1 for 15 pound waterproofing membrane, asphalt-saturated building felt. Conform to [ASTM D2103] [ASTM D4068] 4 mil for polyethylene film.

2.8 COLOR, TEXTURE, AND PATTERN

Provide color, pattern and texture in accordance with Section 09 06 00 SCHEDULES FOR FINISHES. Color listed is not intended to limit the selection of equal colors from other manufacturers.[Provide floor patterns as specified on the drawings.]

PART 3 EXECUTION

3.1 PREPARATORY WORK AND WORKMANSHIP

Inspect surface to receive tile in conformance to the requirements of TCNA Hdbk for surface conditions for the type setting bed specified and for workmanship. Provide variations of tiled surfaces that fall within maximum values shown below:

TYPE	WALLS	FLOORS
Dry-Set Mortar	1/8 inch in 8 ft.	1/8 inch in 10 ft.
Latex Portland Cement Mortar	1/8 inch in 8 ft.	1/8 inch in 10 ft.

3.2 GENERAL INSTALLATION REQUIREMENTS

Do not start tile work until roughing in for mechanical and electrical work has been completed and tested, and built-in items requiring membrane waterproofing have been installed and tested. Close space, in which tile is being set, to traffic and other work. Keep closed until tile is firmly set. Do not start floor tile installation in spaces requiring wall tile until after wall tile has been installed. Apply tile in colors and patterns indicated in the area shown on the drawings. Install tile with the respective surfaces in true even planes to the elevations and grades shown. Provide special shapes as required for sills, jambs, recesses, offsets, external corners, and other conditions to provide a complete and neatly finished installation. Solidly back tile bases and coves with mortar. Do not walk or work on newly tiled floors without using kneeling boards or equivalent protection of the tiled surface. Keep traffic off horizontal portland cement mortar installations for at least 72 hours. Keep all traffic off epoxy installed floors for at least 40 hours after grouting, and heavy traffic off for at least 7 days, unless otherwise specifically authorized by manufacturer. Dimension and draw detail drawings at a minimum scale of 1/4 inch = 1 foot. Include drawings of pattern at inside corners, outside corners, termination points and location of all equipment items such as thermostats, switch plates, mirrors and toilet accessories mounted on surface. Submit drawings showing ceramic tile pattern [elevations][and][floor plans]. Submit manufacturer's preprinted installation instructions.

Do not install building construction materials that show visual evidence of biological growth.

3.3 INSTALLATION OF WALL TILE

Install wall tile in accordance with the TCNA Hdbk, method [_____] and with grout joints [[as recommended by the manufacturer for the type of tile][of [_____] inch]. [Install thinner wall tile flush with thicker wall tile applied on same wall and provide installation materials as recommended by the tile and setting materials manufacturer's to achieve flush installation.]]

3.3.1 Workable or Cured Mortar Bed

Install tile over workable mortar bed or a cured mortar bed at the option of the Contractor. Install a 4 mil polyethylene membrane, metal lath, and scratch coat. Conform to TCNA Hdbk for workable mortar bed, materials, and installation of tile. Conform to TCNA Hdbk for cured mortar bed and materials.

3.3.2 Dry-Set Mortar and Latex-Portland Cement Mortar

Use [Dry-set] [or] [Latex-Portland Cement] to install tile in accordance

with TCNA Hdbk. Use Latex Portland Cement when installing porcelain ceramic tile.

3.4 INSTALLATION OF FLOOR TILE

Install floor tile in accordance with TCNA Hdbk method [_____] and with grout joints [as recommended by the manufacturer for the type of tile][of [_____] inch]. Install shower receptors in accordance with TCNA Hdbk method [B414] [B415].

3.4.1 Workable or Cured Mortar Bed

Install floor tile over a workable mortar bed or a cured mortar bed at the option of the Contractor. Conform to TCNA Hdbk for workable mortar bed materials and installation. Conform to TCNA Hdbk for cured mortar bed materials and installation. Provide minimum 1/4 inch to maximum 3/8 inch joints in uniformed width.

3.4.2 Dry-Set and Latex-Portland Cement

Use [dry-set] [or] [Latex-Portland cement] mortar to install tile directly over properly cured, plane, clean concrete slabs in accordance with TCNA Hdbk. Use Latex Portland cement when installing porcelain ceramic tile.

3.4.3 Resinous Grout

When resinous grout is indicated, grout tile with epoxy resin grout. Rake and clean joints to the full depth of the tile and neutralize when recommended by the resin manufacturer. Install epoxy resin grout in conformance with TCNA Hdbk. Install resin grout in accordance with manufacturer's printed installation instructions. Follow manufacturer's printed installation instructions of installed resin grout for proportioning, mixing, installing, and curing. Maintain the recommended temperature in the area and on the surface to be grouted. Protect finished grout of grout stain.

3.4.4 Waterproofing

Shower pans are specified in Section 22 00 00 PLUMBING, GENERAL PURPOSE. Conform to the requirements of Section 07 12 00 BUILT-UP BITUMINOUS WATERPROOFING for waterproofing under concrete fill.

3.4.5 Concrete Fill

Provide a 3500 psi concrete fill mix to dry as consistency as practicable. [Compose concrete fill by volume of 1 part Portland cement to 3 parts fine aggregate to 4 parts coarse aggregate, and mix with water to as dry a consistency as practicable.] Spread, tamp, and screed concrete fill to a true plane, and pitch to drains or levels as shown. Thoroughly damp concrete fill before applying setting-bed material. Reinforce concrete fill with one layer of reinforcement, with the uncut edges lapped the width of one mesh and the cut ends and edges lapped a minimum 2 inch. Tie laps together with 18 gauge wire every 10 inch along the finished edges and every 6 inch along the cut ends and edges. Provide reinforcement with support and secure in the centers of concrete fills. Provide a continuous mesh; except where expansion joints occur, cut mesh and discontinue across such joints. Provide reinforced concrete fill under the setting-bed where the distance between the under-floor surface and the finished tiles floor

surface is a minimum of 2 inches, and of the same thickness that the mortar setting-bed over the concrete fill with the thickness required in the specified TCNA Hdbk method.

3.5 INSTALLATION OF TRANSITION STRIPS

Install transition strips where indicated, in a manner similar to that of the ceramic tile floor and as recommended by the manufacturer. Provide thresholds full width of the opening. Install head joints at ends not exceeding 1/4 inch in width and grouted full.

3.6 EXPANSION JOINTS

Form and seal joints as specified in Section 07 92 00 JOINT SEALANTS.

3.6.1 Walls

Provide expansion joints at control joints in backing material. Wherever backing material changes, install an expansion joint to separate the different materials.

3.6.2 Floors

Provide expansion joints over construction joints, control joints, and expansion joints in concrete slabs. Provide expansion joints where tile abuts restraining surfaces such as perimeter walls, curbs and columns and at intervals of 24 to 36 feet each way in large interior floor areas and 12 to 16 feet each way in large exterior areas or areas exposed to direct sunlight or moisture. Extend expansion joints through setting-beds and fill.

3.7 CLEANING AND PROTECTING

Upon completion, thoroughly clean tile surfaces in accordance with manufacturer's approved cleaning instructions. Do not use acid for cleaning glazed tile. Clean floor tile with resinous grout or with factory mixed grout in accordance with printed instructions of the grout manufacturer. After the grout has set, provide a protective coat of a noncorrosive soap or other approved method of protection for tile wall surfaces. Cover tiled floor areas with building paper before foot traffic is permitted over the finished tile floors. Provide board walkways on tiled floors that are to be continuously used as passageways by workmen. Replace damaged or defective tiles. Submit copy of manufacturer's printed maintenance instructions.

-- End of Section --

SECTION 09 51 00

ACOUSTICAL CEILINGS
08/17

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM A1008/A1008M	(2016) Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
ASTM A489	(2012) Standard Specification for Carbon Steel Lifting Eyes
ASTM A580/A580M	(2016) Standard Specification for Stainless Steel Wire
ASTM A641/A641M	(2009a; R 2014) Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
ASTM A653/A653M	(2015; E 2016) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM B633	(2015) Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
ASTM C635/C635M	(2013a) Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings
ASTM C636/C636M	(2013) Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels
ASTM C834	(2017) Standard Specification for Latex Sealants
ASTM E119	(2016a) Standard Test Methods for Fire Tests of Building Construction and Materials
ASTM E1264	(2014) Acoustical Ceiling Products
ASTM E1414/E1414M	(2011a; E 2014) Airborne Sound Attenuation

	Between Rooms Sharing a Common Ceiling Plenum
ASTM E1477	(1998a; R 2013) Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers
ASTM E580/E580M	(2014) Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions
ASTM E84	(2016) Standard Test Method for Surface Burning Characteristics of Building Materials

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	SCS Global Services (SCS)Indoor Advantage

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1168	(1989; R 2005) Adhesive and Sealant Applications

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-310-04	(2013) Seismic Design for Buildings

UNDERWRITERS LABORATORIES (UL)

UL 2818	(2013) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Approved Detail Drawings; G[, [_____]]

SD-03 Product Data

Acoustical Ceiling Systems; G[, [_____]]

Certifications; G[, [_____]]

SD-04 Samples

Acoustical Units; G[, [_____]]

Acoustical Ceiling Tiles; G[, [_____]]

SD-06 Test Reports

Ceiling Attenuation Class and Test; G[, [_____]]

SD-07 Certificates

Indoor Air Quality

SD-11 Closeout Submittals

[Recycled Content for Type IV Ceiling Tiles; S]

[Recycled Content for Type XII Ceiling Tiles; S]

[Recycled Content for Suspension Systems; S]

[Indoor Air Quality for Type IV Ceiling Tiles; S]

[Indoor Air Quality for Type X Ceiling Tiles; S]

[Indoor Air Quality for Type XII Ceiling Tiles; S]

[Indoor Air Quality for Sealants; S]

1.3 CERTIFICATIONS

1.3.1 Indoor Air Quality Certifications

1.3.1.1 Ceiling Tiles

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party programs that products meet the requirements of this Section. Provide current product certification documentation from certification body.

[1.3.1.2 Sealants

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party programs that products meet the requirements of this Section. Provide current product certification documentation from certification body.

]1.4 DELIVERY, STORAGE. AND HANDLING

Deliver materials to the site in the manufacturer's original unopened containers with brand name and type clearly marked. Carefully handle and store materials in dry, watertight enclosures. Immediately before

installation, store acoustical units for not less than 24 hours at the same temperature and relative humidity as the space where they will be installed in order to assure proper temperature and moisture acclimation.

1.5 ENVIRONMENTAL REQUIREMENTS

Maintain a uniform temperature of not less than 60 degrees F nor more than 85 degrees F and a relative humidity of not more than 70 percent for 24 hours before, during, and 24 hours after installation of acoustical units.

1.6 SCHEDULING

Complete and dry interior finish work such as plastering, concrete and terrazzo work before ceiling installation. Complete mechanical, electrical, and other work above the ceiling line; install and start operating heating, ventilating, and air conditioning systems in order to maintain temperature and humidity requirements.

1.7 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a one year period. Include an agreement to repair or replace acoustical panels that fail within the warranty period in the standard performance guarantee or warranty. Failures include, but are not limited to, sagging and warping of panels; rusting and manufacturers defects of grid system.

1.8 EXTRA MATERIALS

Furnish spare tiles, from the same lot as those installed, of each color at the rate of [_____] [5] tiles for each 1000 tiles installed.

1.9 OTHER SUBMITTAL REQUIREMENTS

Submit the following:

a. Manufacturer's catalog showing UL classification of fire-rated ceilings giving materials, construction details, types of floor and roof constructions to be protected, and UL design number and fire protection time rating for each required floor or roof construction and acoustic ceiling assembly.

b. Reports by an independent testing laboratory attesting that acoustical ceiling systems meet specified [fire endurance] [and] [sound transmission] requirements. Data attesting to conformance of the proposed system to Underwriters Laboratories requirements for the fire endurance rating listed in UL Fire Resistance may be submitted in lieu of test reports.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

Provide sound controlling units mechanically mounted on a ceiling suspension system for acoustical treatment. The unit size, texture, finish, and color must be as specified. The Contractor has the option to substitute inch-pound (I-P) Recessed Light Fixtures (RLF) for metric RLF. If the Contractor opts to furnish I-P RLF, other ceiling elements like acoustical ceiling tiles, air diffusers, air registers and grills, must

also be I-P products. Coordinate the whole ceiling system with other details, like the location of access panels and ceiling penetrations, etc., shown on the drawings. The Contractor is responsible for all associated labor and materials and for the final assembly and performance of the specified work and products if I-P products are used. The location and extent of acoustical treatment must be as shown on the approved detail drawings. Submit drawings showing suspension system, method of anchoring and fastening, details, and reflected ceiling plan. Coordinate with paragraph RECLAMATION PROCEDURES for reclamation of mineral fiber acoustical ceiling panels to be removed from the job site.

2.1.1 Fire Resistive Ceilings

Rate acoustical ceiling systems, indicated as fire resistant, for fire endurance as specified when tested in accordance with ASTM E119. Test suspended ceiling with a specimen [roof][floor] assembly representative of the indicated construction, including mechanical and electrical work within ceiling space openings for light fixtures, and air outlets, and access panels. Provide ceiling assembly rating for [[1][1-1/2][2][3][4] hour [concealed grid system][exposed grid system]][as shown on drawings]. Provide acoustical units with a flame spread of 25 or less and smoke development of 50 or less when tested in accordance with ASTM E84.

2.1.2 Ceiling Attenuation Class and Test

Provide a ceiling system with an attenuation class (CAC) as indicated when determined in accordance with ASTM E1414/E1414M. Provide fixture attenuators over light fixtures and other ceiling penetrations, and provide acoustical blanket insulation adjacent to partitions, as required to achieve the specified CAC. Provide test ceiling continuous at the partition and assembled in the suspension system in the same manner that the ceiling will be installed on the project.

2.1.3 Ceiling Sound Absorption

Determine the Noise Reduction Coefficient (NRC) in accordance with ASTM C423 Test Method.

2.1.4 Light Reflectance

Determine light reflectance factor in accordance with ASTM E1477 Test Method.

2.2 ACOUSTICAL UNITS

Submit two samples of each type of acoustical unit and each type of suspension grid tee section showing texture, finish, and color. Conform acoustical units to ASTM E1264, Class A, and the following requirements:

2.2.1 Units for Exposed-Grid System(ACT-1)

2.2.1.1 Type

IV (Non-asbestos mineral fiber with membrane-faced overlay)

2.2.1.2 Flame Spread

Class A, 25 or less

2.2.1.3 Pattern

E

2.2.1.4 Minimum NRC

0.75

2.2.1.5 Minimum Light Reflectance Coefficient

0.80 or greater

2.2.1.6 Nominal Sizee

24 by 24 inch by ¾ inch

2.2.1.7 Edge Detail

Tegular

2.2.1.8 Finish

Factory applied standard vinyl faced membrane finish

2.2.1.9 Minimum CAC

30

2.2.1.10 Mold, Mildew and Bacterial Coating (Healthzone Product)

Text

2.2.2 Units for Exposed-Grid System (ACT-2)

2.2.2.1 Type

XX (high density ceramic-like composition with scrubbable finish)

2.2.2.2 Flame Spread

Class A, 25 or less

2.2.2.3 Pattern

C, E

2.2.2.4 Minimum NRC

0.55

2.2.2.5 Minimum Light Reflectance Coefficient

0.85 or greater

2.2.2.6 Nominal Size

24 by 24 inch by 5/8 inch

2.2.2.7 Edge Detail

Square

2.2.2.8 Finish

Scrubbable factory applied plastic paint finish

2.2.2.9 Minimum CAC

38

2.2.3 Units for Exposed-Grid System (ACT-3)

2.2.3.1 Type

IV (Non-asbestos mineral fiber with membrane-faced overlay)

2.2.3.2 Flame Spread

Class A, 25 or less

2.2.3.3 Pattern

E

2.2.3.4 Minimum NRC

N/A

2.2.3.5 Minimum Light Reflectance Coefficient

0.80 or greater

2.2.3.6 Nominal Size

24 by 24 inch by ¾ inch

2.2.3.7 Edge Detail

Square

2.2.3.8 Finish

Factory applied standard vinyl faced membrane finish

2.2.3.9 Minimum CAC

40

2.2.4 Units for Exposed-Grid System (ACT-4)

2.2.4.1 Type

XII (Fiberglass base with membrane-faced overlay)

2.2.4.2 Flame Spread

Class A, 25 or less

2.2.4.3 Pattern

E

2.2.4.4 Minimum NRC

0.95

2.2.4.5 Minimum Light Reflectance Coefficient

0.80 or greater

2.2.4.6 Nominal Size

24 by 24 inch by 1-3/4 inch

2.2.4.7 Edge Detail

Tegular

2.2.4.8 Finish

Factory applied acoustically transparent membrane finish

2.2.4.9 Minimum CAC

42

2.2.5 Metal Faced Composition Units, MCT

2.2.5.1 Type

Factory applied powder coated finish over electrogalvanized steel, 0.021 inch thick.

2.2.5.2 Flame Spread

Class: A, flame spread 25 or less

2.2.5.3 Pattern

[C],[G]

2.2.5.4 Minimum NRC

0.70

2.2.5.5 Minimum Light Reflectance Coefficient

0.75 or greater

2.2.5.6 Nominal Size

600 by 600 mm, 24 by 24 inch

2.2.5.7 Edge Detail

Tegular

2.2.5.8 Finish

Refer to 09 06 00, SCHEDULES FOR FINISHES for surface finish and perforation.

2.3 SUSPENSION SYSTEM

Provide [[standard] exposed-grid] [as shown on drawings] suspension system conforming to ASTM C635/C635M [for intermediate-duty systems] [for heavy-duty systems]. Provide surfaces exposed to view of [aluminum or steel with a factory-applied [white] baked-enamel finish] [aluminum with colored factory-applied vinyl paint finish]. Provide wall molding having a flange of not less than [15/16 inch] [_____]. Provide [inside and outside corner caps] [[standard] [overlapped] [mitered] corners]. Suspended ceiling framing system must have the capability to support the finished ceiling, light fixtures, air diffusers, and accessories, as shown. Provide a suspension system with a maximum deflection of 1/360 of the span length. Conform seismic details to the [guidance in UFC 3-310-04 and ASTM E580/E580M] [contract drawings].

Provide Suspension System containing a minimum of 15 percent recycled content. Provide data identifying percentage of recycled content for suspension systems.

2.4 HANGERS

Provide hangers and attachment capable of supporting a minimum 300 pound ultimate vertical load without failure of supporting material or attachment.

2.4.1 Wires

Conform wires to [ASTM A641/A641M, Class 1, [0.08 inch (12 gauge)] [[_____] inch] in diameter.] [ASTM A580/A580M, composition 302 or 304, condition annealed stainless steel, [0.08 inch (12 gauge)] [[_____] inch] in diameter.]

2.4.2 Straps

Provide straps of 1 by 3/16 inch galvanized steel conforming to ASTM A653/A653M, with a light commercial zinc coating or ASTM A1008/A1008M with an electrodeposited zinc coating conforming to ASTM B633, Type RS.

2.4.3 Rods

Provide 3/16 inch diameter threaded steel rods, zinc or cadmium coated.

2.4.4 Eyebolts

Provide eyebolts of weldless, forged-carbon-steel, with a straight-shank in accordance with ASTM A489. Eyebolt size must be a minimum [_____] [1/4] inch, [zinc coated][cadmium plated].

2.4.5 Masonry Anchorage Devices

Comply with [ASTM C636/C636M] [_____] for anchorage devices for [eyebolts] [machine screws] [wood screws].

2.5 ACCESS PANELS

Provide access panels that match adjacent acoustical units, designed and equipped with suitable framing and fastenings for removal and replacement without damage. Size panel to be not less than 12 by 12 inch or more than 12 by 24 inch.

a. Attach an identification plate of 0.032 inch thick aluminum, 3/4 inch in diameter, stamped with the letters "AP" and finished the same as the unit, near one corner on the face of each access panel.

b. Identify ceiling access panel by a number utilizing white identification plates or plastic buttons with contrasting numerals. Provide plates or buttons of minimum 1 inch diameter and securely attached to one corner of each access unit. Provide a typewritten card framed under glass listing the code identification numbers and corresponding system descriptions listed above. Mount the framed card where directed and furnish a duplicate card to the Contracting Officer. Code identification system is as follows:

1 Fire detection/alarm system

2 Air conditioning controls

3 Plumbing system

4 Heating and steam systems

5 Air conditioning duct system

6 Sprinkler system

7 Intercommunication system

8 Nurse's call system

9 Pneumatic tube system

10 Medical piping system

11 Program entertainment

12 Telephone junction boxes

13 Detector X-ray

14 [_____]

2.6 FINISHES

Use manufacturer's standard textures, patterns and finishes as specified for acoustical units and suspension system members. Treat ceiling suspension system components to inhibit corrosion.

2.7 COLORS AND PATTERNS

Use colors and patterns for acoustical units and suspension system components as specified in Section 09 06 00 SCHEDULES FOR FINISHES.

2.8 ACOUSTICAL SEALANT

Conform acoustical sealant to ASTM C834, nonstaining. [Provide sealants used on the interior of the building (defined as inside of the weatherproofing system) that meet either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. For products located on the interior of the building (inside of the weatherproofing system), provide certification of indoor air quality for Sealants.]

PART 3 EXECUTION

3.1 INSTALLATION

Do not install building construction materials that show visual evidence of biological growth.

Examine surfaces to receive directly attached acoustical units for unevenness, irregularities, and dampness that would affect quality and execution of the work. Rid areas, where acoustical units will be cemented, of oils, form residue, or other materials that reduce bonding capabilities of the adhesive. Complete and dry interior finish work such as plastering, concrete, and terrazzo work before installation. Complete and approve mechanical, electrical, and other work above the ceiling line prior to the start of acoustical ceiling installation. Provide acoustical work complete with necessary fastenings, clips, and other accessories required for a complete installation. Do not expose mechanical fastenings in the finished work. Lay out hangers for each individual room or space. Provide hangers to support framing around beams, ducts, columns, grilles, and other penetrations through ceilings. Keep main runners and carrying channels clear of abutting walls and partitions. Provide at least two main runners for each ceiling span. Wherever required to bypass an object with the hanger wires, install a subsuspension system so that all hanger wires will be plumb.

3.1.1 Suspension System

Install suspension system in accordance with ASTM C636/C636M and as specified herein. Do not suspend hanger wires or other loads from underside of steel decking.

3.1.1.1 Plumb Hangers

Install hangers plumb and not pressing against insulation covering ducts and pipes. Where lighting fixtures are supported from the suspended ceiling system, provide hangers at a minimum of four hangers per fixture and located not more than 6 inch from each corner of each fixture.

3.1.1.2 Splayed Hangers

Where hangers must be splayed (sloped or slanted) around obstructions, offset the resulting horizontal force by bracing, countersplaying, or other acceptable means.

3.1.2 Wall Molding

Provide wall molding where ceilings abut vertical surfaces. Miter corners where wall moldings intersect or install corner caps. Secure wall molding

not more than 3 inch from ends of each length and not more than 16 inch on centers between end fastenings. Provide wall molding springs at each acoustical unit in semi-exposed or concealed systems.

3.1.3 Acoustical Units

Install acoustical units in accordance with the approved installation instructions of the manufacturer. Ensure that edges of acoustical units are in close contact with metal supports, with each other, and in true alignment. Arrange acoustical units so that units less than one-half width are minimized. Hold units in exposed-grid system in place with manufacturer's standard hold-down clips, if units weigh less than 1 psf or if required for fire resistance rating.

3.1.4 Caulking

Seal all joints around pipes, ducts or electrical outlets penetrating the ceiling. Apply a continuous ribbon of acoustical sealant on vertical web of wall or edge moldings.

3.1.5 Adhesive Application

Wipe back of tile to remove accumulated dust. Daub acoustical units on back side with four equal daubs of adhesive. Apply daubs near corners of tiles. Ensure that contact area of each daub is at least 2 inch diameter in final position. Press units into place, aligning joints and abutting units tight and uniform without differences in joint widths.

3.2 CEILING ACCESS PANELS

Locate ceiling access panels directly under the items which require access.

3.3 CLEANING

Following installation, clean dirty or discolored surfaces of acoustical units and leave them free from defects. Remove units that are damaged or improperly installed and provide new units as directed.

3.4 RECLAMATION PROCEDURES

Neatly stack ceiling tile, designated for recycling by the Contracting Officer, on 4 by 4 foot pallets not higher than 4 foot. Panels must be completely dry. Shrink wrap and symmetrically stack pallets on top of each other without falling over.

-- End of Section --

SECTION 09 65 00

RESILIENT FLOORING
08/10

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D2047	(2017) Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces
ASTM D4078	(2002; R 2008) Water Emulsion Floor Polish
ASTM E648	(2014c) Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
ASTM F1303	(2004; R 2014) Sheet Vinyl Floor Covering with Backing
ASTM F1344	(2015) Rubber Floor Tile
ASTM F1482	(2004; E 2009; R 2009) Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
ASTM F1700	(2013a) Solid Vinyl Floor Tile
ASTM F1859	(2014) Rubber Sheet Floor Covering Without Backing
ASTM F1861	(2008; E 2012; R 2012) Resilient Wall Base
ASTM F1869	(2011) Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
ASTM F2169	(2014) Resilient Stair Treads
ASTM F2170	(2011) Determining Relative Humidity in Concrete Floor Slabs in situ Probes
ASTM F710	(2011) Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 253	(2011) Standard Method of Test for

Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED BD+C (2009; R 2010) Leadership in Energy and Environmental Design(tm) Building Design and Construction (LEED-NC)

1.2 SYSTEM DESCRIPTION

1.2.1 Fire Resistance Requirements

Provide a critical radiant flux of not less than 0.45 watts per square centimeter (Class 1) for flooring in corridors and exits when tested in accordance with ASTM E648 or NFPA 253.

1.3 SUSTAINABILITY REPORTING

Materials in this technical specification may contribute towards contract compliance with sustainability requirements. See Section 01 33 29 SUSTAINABILITY REPORTING for project LEED BD+C [local/regional materials,] [low-emitting materials,] [recycled content,] [_____] [and][rapidly renewable materials] and LEED documentationrequirements.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Resilient Flooring and Accessories; G[, [_____]]

SD-03 Product Data

Resilient Flooring and Accessories; G[, [_____]]
Adhesives

SD-04 Samples

Resilient Flooring and Accessories; G[, [_____]]

SD-06 Test Reports

Moisture, Alkalinity and Bond Tests; G[, [_____]]

SD-08 Manufacturer's Instructions

Surface Preparation; G[, [_____]]
Installation; G[, [_____]]

SD-10 Operation and Maintenance Data

Resilient Flooring and Accessories; G[, [_____]]

SD-11 Closeout Submittals

LEED Documentation

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the building site in original unopened containers bearing the manufacturer's name, style name, pattern color name and number, production run, project identification, and handling instructions. Store materials in a clean, dry, secure, and well-ventilated area with ambient air temperature maintained above 68 degrees F and below 85 degrees F, stacked according to manufacturer's recommendations. Protect materials from the direct flow of heat from hot-air registers, radiators and other heating fixtures and appliances. Observe ventilation and safety procedures specified in the MSDS. [Do not store [_____] near materials that may offgas or emit harmful fumes, such as kerosene heaters, fresh paint, or adhesives.]

1.6 ENVIRONMENTAL REQUIREMENTS

Maintain areas to receive resilient flooring at a temperature above 68 degrees F and below 85 degrees F for 3 days before application, during application and 2 days after application, unless otherwise directed by the flooring manufacturer for the flooring being installed. Maintain a minimum temperature of 55 degrees F thereafter. Provide adequate ventilation to remove moisture from area and to comply with regulations limiting concentrations of hazardous vapors.

1.7 SCHEDULING

Schedule resilient flooring application after the completion of other work which would damage the finished surface of the flooring.

1.8 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a one year period.

1.9 EXTRA MATERIALS

Provide extra flooring material of each color and pattern at the rate of [[_____] [5] tiles for each 1000 tiles] [and] [[_____] [5] square feet for each 1000 square feet of sheet flooring] installed. Provide extra wall base material composed of 20 linear feet of each type, color and pattern. Package all extra materials in original properly marked containers bearing the manufacturer's name, brand name, pattern color name and number, production run, and handling instructions. Provide extra materials from the same lot as those installed. Leave extra stock at the site in location assigned by Contracting Officer.

PART 2 PRODUCTS

2.1 SHEET VINYL FLOORING, SVF

Conform to [ASTM F1303, Type I, Grade 1, Class A-non-asbestos formulated fibrous backing (minimum wear layer thickness 0.020 inch and minimum

overall thickness 0.080 inch) and a minimum 6 feet wide.]

2.2 RUBBER TILE, RF

Conform to ASTM F1344 Class 1 homogeneous[Type A (solid color)][Type B (through mottled)], size, thickness and finish as indicated in Section 09 06 00 SCHEDULES FOR FINISHES.

2.3 RUBBER SHEET FLOORING, RF

Conform to ASTM F1859 (flooring without backing), Type I homogeneous size, thickness and finish as indicated in Section 09 06 00 SCHEDULES FOR FINISHES.

2.4 SOLID VINYL PLANK, LVT

Conform to ASTM F1700 Class III printed , Type [A (smooth)] [B (embossed)]. Provide size, thickness and finish as indicated in Section 09 06 00 SCHEDULES FOR FINISHES.

2.5 WALL BASE, RB

Conform to ASTM F1861, Type TP (thermoplastic rubber) and [Style B (coved - installed with resilient and carpet flooring)] [Style C (butt toe cove installed with 1/8 inch thick flooring)]. Provide [4] [6] inch high and a minimum 1/8 inch thick wall base. Provide preformed outside corners in matching height, shape, and color.

2.6 INTEGRAL COVE BASE

Extend integral coved base for sheet vinyl flooring up the wall [4] [6] inch]. Provide a [vinyl] [or] [rubber] [clear anodized aluminum], [square] [round] cap strip and vinyl, rubber, or wood fillet strip with a minimum radius of 3/4 inch for integral coved bases [at perimeter and fixed vertical interruptions to flooring] [as shown]. Provide integral cove of the same material as flooring. [Provide inside and outside corner protectors of [[_____]-colored anodized aluminum] [clear anodized aluminum] [or] [plastic] approved by flooring manufacturer.]

2.7 STAIR TREADS, RISERS AND STRINGERS

Conform to ASTM F2169, Type TS (vulcanized thermoset rubber). Conform to ASTM F2169 for surface of treads [Class 1 smooth] [[Class 2 raised [round] [square] [diamond] stud] [ribbed] pattern] [and have [Group 1 abrasive non-slip strip] [Group 2 strip for visually impaired of contrasting [_____] color of [same] [abrasive] material]]. Provide [square] [or] [round] nosing. Provide either a one piece nosing/tread/riser or a two piece nosing/tread design with a matching coved riser.

2.8 MOULDING

Provide tapered mouldings of rubber [clear anodized aluminum] and types as recommended by flooring manufacturer for both edges and transitions of flooring materials specified. Provide vertical lip on moulding of maximum 1/4 inch. Provide bevel change in level between 1/4 and 1/2 inch with a slope no greater than 1:2.

2.9 ADHESIVES

Provide adhesives for flooring, base and accessories as recommended by the manufacturer and comply with local indoor air quality standards. .] Submit manufacturer's descriptive data, documentation stating physical characteristics, and mildew and germicidal characteristics.

2.10 SURFACE PREPARATION MATERIALS

Provide surface preparation materials, such as panel type underlayment, lining felt, and floor crack fillers as recommended by the flooring manufacturer for the subfloor conditions. Comply with ASTM F1482 for panel type underlayment products.

2.11 POLISH/FINISH

Provide polish finish as recommended by the manufacturer and conform to ASTM D4078 for polish.

Flooring to conform to ASTM D2047 for slip resistance.

2.12 CAULKING AND SEALANTS

Provide caulking and sealants in accordance with Section 07 92 00 JOINT SEALANTS.

2.13 MANUFACTURER'S COLOR, PATTERN AND TEXTURE

Provide color, pattern and texture for resilient flooring and accessories [in accordance with Section 09 06 00 SCHEDULES FOR FINISHES [as indicated on the drawings].[Provide floor patterns as specified on the [drawings Sheet No. [_____]] [_____].] Provide flooring in any one continuous area or replacement of damaged flooring in continuous area from same production run with same shade and pattern. Submit scaled drawings indicating patterns (including location of patterns and colors) and dimensions. Submit manufacturer's descriptive data and [three] [_____] samples of each indicated color and type of flooring, base, mouldings, and accessories sized a minimum 2-1/2 by 4 inch. Submit Data Package 1 in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

PART 3 EXECUTION

3.1 EXAMINATION

Examine and verify that site conditions are in agreement with the design package. Report all conditions that will prevent a proper installation. Do not take any corrective action without written permission from the Government. Work will proceed only when conditions have been corrected and accepted by the installer. Submit manufacturer's printed installation instructions for all flooring materials and accessories, including preparation of substrate, seaming techniques, and recommended adhesives.

3.2 SURFACE PREPARATION

Provide a smooth, true, level plane for surface preparation of the flooring, except where indicated as sloped. Floor to be flat to within 3/16 inch in 10 feet. Prepare subfloor in accordance with flooring manufacturer's recommended instructions. Prepare the surfaces of lightweight concrete slabs (as defined by the flooring manufacturer) as

recommended by the flooring manufacturer. Comply with ASTM F710 for concrete subfloor preparation. Floor fills or toppings may be required as recommended by the flooring manufacturer. Install underlayments, when required by the flooring manufacturer, in accordance with manufacturer's recommended printed installation instructions. Comply with ASTM F1482 for panel type underlayments. Before any work under this section is begun, correct all defects such as rough or scaling concrete, chalk and dust, cracks, low spots, high spots, and uneven surfaces. Repair all damaged portions of concrete slabs as recommended by the flooring manufacturer. Remove concrete curing and sealer compounds from the slabs, other than the type that does not adversely affect adhesion. Remove paint, varnish, oils, release agents, sealers, waxes, and adhesives, as required by the flooring product in accordance with manufacturer's printed installation instructions.

3.3 MOISTURE, ALKALINITY AND BOND TESTS

Determine the suitability of the concrete subfloor for receiving the resilient flooring with regard to moisture content and pH level by moisture and alkalinity tests. Conduct moisture testing in accordance with ASTM F1869 or ASTM F2170, unless otherwise recommended by the flooring manufacturer. Conduct alkalinity testing as recommended by the flooring manufacturer. Determine the compatibility of the resilient flooring adhesives to the concrete floors by a bond test in accordance with the flooring manufacturer's recommendations. Submit copy of test reports for moisture and alkalinity content of concrete slab, and bond test stating date of test, person conducting the test, and the area tested.

3.4 PLACING SOLID VINYL PLANKS

Install tile flooring and accessories in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's directions. Keep tile lines and joints square, symmetrical, tight, and even. Keep each floor in true, level plane, except where slope is indicated. Vary edge width as necessary to maintain full-size tiles in the field, no edge tile to be less than one-half the field tile size, except where irregular shaped rooms make it impossible. Cut flooring to fit around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Cut, fit, and scribe edge tile to walls and partitions after field flooring has been applied.

3.5 PLACING SHEET VINYL FLOORING

Install sheet vinyl flooring and accessories in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Provide square, symmetrical, tight, and even flooring lines and joints. Keep each floor in true, level plane, except where slope is indicated. Cut flooring to fit around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Lay out sheets to minimize waste. Cut, fit, and scribe flooring to walls and partitions after field flooring has been applied. Provide heat welded seams and edges shown on the drawings in accordance with the manufacturer's written installation instructions. Finish joints flush, free from voids, recesses, and raised areas.] Install flooring with an integral coved base.

3.6 PLACING RUBBER TILE

Install rubber tile and accessories in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in

accordance with manufacturer's printed directions. Provide square, symmetrical, tight, and even flooring lines and joints. Keep each floor in true, level plane, except where slope is indicated. Vary width of edge tiles as necessary to maintain full-size tiles, except where irregular-shaped rooms makes it impossible. Cut flooring to fit around, all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Cut, fit, and scribe flooring to walls and partitions after field flooring has been applied.

3.7 PLACING RUBBER SHEET FLOORING

Install rubber sheet flooring and accessories in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Provide square, symmetrical, tight, and even flooring lines and joints. Keep each floor in true, level plane, except where slope is indicated. Cut seams by overlapping or underscribing as recommended by the manufacturer. Lay out sheets to minimize waste. Cut flooring to fit around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Cut, fit, and scribe flooring to walls and partitions after field flooring has been applied.

3.8 PLACING MOULDING

Provide moulding where flooring termination is higher than the adjacent finished flooring and at transitions between different flooring materials. When required, locate moulding under door centerline. Moulding is not required at doorways where thresholds are provided. [Secure moulding with adhesive as recommended by the manufacturer. Prepare and apply adhesives in accordance with manufacturer's printed directions.] [Anchor aluminum moulding to floor surfaces as recommended by the manufacturer.]

3.9 PLACING WALL BASE

Install wall base in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Tighten base joints and make even with adjacent resilient flooring. Fill voids along the top edge of base at masonry walls with caulk. Roll entire vertical surface of base with hand roller, and press toe of base with a straight piece of wood to ensure proper alignment. Avoid excess adhesive in corners.

3.10 PLACING STAIR TREADS, RISERS, AND STRINGERS

Secure and install stair treads, risers, and stringers in accordance with manufacturer's printed installation instructions. Cover the surface of treads and risers[the full width of the stairs][within 6 inch to the stair edges]. Provide equal length pieces butted together to cover the treads and risers for stairs wider than manufacturer's standard lengths. [Provide stringer angles on both the wall and banister sides of the stairs, and landing trim.]

3.11 PLACING INTEGRAL COVED BASE

Install integral cove base in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Shape integral coved base by extending the flooring material [4] [6] [_____] inch onto the wall surface. Support cove by a filler. Provide a cap strip at the top of the base. Fill voids

along the top edge of base at masonry walls with caulk.

3.12 CLEANING

Immediately upon completion of installation of flooring in a room or an area, dry/clean the flooring and adjacent surfaces to remove all surplus adhesive. Clean flooring as recommended in accordance with manufacturer's printed maintenance instructions and within the recommended time frame. As required by the manufacturer, apply the recommended number of coats and type of polish and/or finish in accordance with manufacturer's written instructions.

3.13 PROTECTION

From the time of installation until acceptance, protect flooring from damage as recommended by the flooring manufacturer. Remove and replace flooring which becomes damaged, loose, broken, or curled and wall base which is not tight to wall or securely adhered.

-- End of Section --

SECTION 09 65 66

RESILIENT ATHLETIC FLOORING
08/10

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM C920	(2014a) Standard Specification for Elastomeric Joint Sealants
ASTM D1054	(2002; R 2007) Rubber Property - Resilience Using a Rebound Pendulum
ASTM D2047	(2017) Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces
ASTM D2240	(2005; R 2010) Standard Test Method for Rubber Property - Durometer Hardness
ASTM D2632	(2014) Rubber Property-Resilience by Vertical Rebound
ASTM D395	(2014) Standard Test Methods for Rubber Property - Compression Set
ASTM D412	(2006a; R 2013) Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension
ASTM D624	(2000; R 2012) Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	Scientific Certification Systems (SCS)Indoor Advantage

UL ENVIRONMENT (ULE)

ULE Greenguard	UL Greenguard Certification Program

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the

Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Approved Detail Drawings; G[, [_____]]

SD-03 Product Data

Installation
Certification

SD-04 Samples

Flooring

SD-07 Certificates

Flooring

1.3 QUALITY ASSURANCE

1.3.1 Adhesive Application

Adhesive applied and poured-in-place flooring shall be installed by an experienced floor applicator approved by the manufacturer.

1.3.2 Flooring Material

Submit three samples minimum 9 x 11 inches of each color of flooring material required and manufacturer's certificates stating that the resilient athletic flooring materials conform to the specified requirements. Labels or markings affixed to manufacturer's products attesting that products meet requirements specified herein will be accepted in lieu of certificates.

1.3.3 Sustainable Design Certification

Product shall be third party certified in accordance with ULE Greenguard[Gold], SCS Scientific Certification Systems Indoor Advantage[Gold]or equal. Certification shall be performed annually and shall be current.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver Materials in manufacturer's original unopened containers with labels intact. Materials shall not be delivered to the installation area or installed before all work that may damage the materials or the finished floor, such as overhead work, is completed. Store materials in a clean, dry area. Materials in storage shall be maintained at temperatures recommended by the manufacturer. Protection boards shall be stored flat and off the ground.

1.5 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a one year period.

PART 2 PRODUCTS

2.1 SYNTHETIC POURED-IN-PLACE FLOORING TYPE, SF-1 AND SF-4

The resilient poured-in-place rubber surface shall be composed of chloroprene rubber, chloroprene rubber sponge, aggregate, setting powders, and a top finish composed of urethane resins. Flooring shall be able to withstand 50 percent compression for 72 hours at 72 degrees F with a residual deformation of less than 10 percent when tested in accordance with ASTM D395. Flooring shall have a minimum compression modulus at 10 percent of 100 psi, a minimum elongation of 250 percent and a minimum tensile strength of 550 psi plus or minus 5 psi when tested in accordance with ASTM D412. Flooring shall have a durometer hardness Shore-A of 55-60 when tested in accordance with ASTM D2240 and a minimum tear resistance of 60 lbf/inch when tested in accordance with ASTM D624.

a. System Characteristics:

1. Base Layer Surface: Recycled rubber and foam granules bound with MDI polyurethane. Thickness of 6 mm.
2. Sealant: Two-component, thixotropic polyurethane compound.
3. Wear Layer: Two-component, pigmented, seamless self-leveling polyurethane. Thickness of 2 mm
4. Topcoat: Three-component water-based urethane, matte finish.
5. Overall System Thickness: 6 mm to 11 mm available
6. Flooring to have Class 1 fire rating when tested in accordance with ASTM D395.

2.2 SHEET RUBBER COMPOSITION FLOORING, SF-2, SF-3, SF-5 AND SF-6

Sheet rubber flooring shall be prefabricated, homogenous, vulcanized rubbers with recycled rubber backing and shall have an overall thickness of 7 mm, consisting of 5 mm rubber backing bonded to a 2 mm homogenous rubber layer. Flooring shall be roll type not less than 72 inches wide. Flooring shall have a minimum tensile stress at 100 percent elongation of 360 psi. Flooring shall be able to withstand 50 percent compression for 72 hours at 72 degrees F with a residual deformation of less than 10 percent when tested in accordance with ASTM D395. Flooring shall provide a 55 plus or minus 5 percent rebound when tested in accordance with ASTM D1054. Flooring shall meet coefficient of friction >0.6 when tested in accordance with ASTM D2047. Flooring shall have a Class 1 rating in accordance with ASTM E 648. Welding rods are to blend seamlessly in color and be fully compatible with the flooring material. The rubber backing shall consist of post-consumer recycled rubber granules encapsulated in a wear and water-resistant elastomeric network fusion bonded to a virgin rubber surface layer or heterogenous PUR-enhanced vinyl wear layer.

2.3 SHEET VINYL COMPOSITION FLOORING, SF-7, SF-8 AND SF-9

Sheet vinyl flooring shall consist of a fusion bonded, double-ply, rubber-back vinyl surface. Floor shall have an overall thickness of 7 mm, consisting of 5 mm rubber backing bonded to a 2 mm vinyl surface layer. Flooring shall be roll type not less than 72 inches wide. Flooring shall have a minimum coefficient of friction of 0.6 when tested in accordance with ASTM D2047. Rebound resilience of flooring shall be greater than 12 percent and less than 30 percent when tested in accordance with ASTM D2632. Flooring shall have a Class 1 rating in accordance with ASTM E 648. Welding rods are to blend seamlessly in color and be fully compatible with the flooring material. The rubber backing shall consist of post-consumer

recycled rubber granules encapsulated in a wear and water-resistant elastomeric network fusion bonded to a virgin rubber surface layer or heterogenous PUR-enhanced vinyl wear layer.

2.4 ADHESIVES

Adhesive shall be as recommended by the flooring manufacturer and correspond to the specified flooring product and to the substrate.

2.5 CRACK FILLER/LEVELER FOR CONCRETE SURFACES

Crack filler/leveler for concrete floor surfaces shall be as recommended by flooring manufacturer.

2.6 EDGING STRIPS

Strips shall be of the same material and design as recommended by flooring manufacturer.

2.7 PRIMER

Concrete primer shall be as recommended by flooring manufacturer and correspond to the specified flooring product and to the substrate.

2.8 WALL BASE

Base shall be rubber, Type [straight] [coved] style. Base shall be 4 inches high and minimum 0.080 inch thick. Rubber wall base to be used with products indicated in paragraphs 2.1, 2.2, 2.3.

2.9 SEALANTS

Sealants shall be in accordance with Section 07 92 00 JOINT SEALANTS.

2.10 MANUFACTURERS COLOR

Color shall be in accordance with Section 09 06 00 SCHEDUELES FOR FINISHES.

PART 3 EXECUTION

3.1 PREPARATION

Concrete surfaces shall be completely cured and dry. No curing agents, sealers, or hardeners shall be used to aid in the curing of the concrete slab. Surfaces shall be free of paint spots, and other foreign materials. Surfaces shall be ground down or leveled with an approved leveling compound to a tolerance of plus or minus 1/8 inch within a 10 foot radius. Cracks, construction joints, or damaged portions of floor shall be filled with crack filler for concrete surfaces. Expansion joints shall be filled and sealed in accordance with the approved installation instructions of the manufacturer. All sealants shall be in accordance with ASTM C920. Expansion joints shall not be filled with a material that will make them inoperable.

3.2 MOISTURE TEST

The suitability of the concrete subfloor for receiving the resilient flooring with regard to moisture content shall be determined by a moisture test as recommended by the flooring manufacturer.

3.3 INSTALLATION

3.3.1 General Requirements

Installation shall be in accordance with the approved installation instructions. Tile or sheet flooring shall be rolled with a medium-sized roller in both directions to release entrapped air. Submit manufacturer's descriptive data and catalog cuts indicating materials of construction and physical characteristics. Installation, cleaning and maintenance instructions shall be included.

3.3.2 Rubber Base

Base shall be installed in accordance with the approved installation instructions of the manufacturer of the base.

3.3.3 Sheet Rubber Flooring

Concrete slab shall be primed in accordance with approved installation instructions. Flooring shall be installed as recommended by the manufacturer.

3.3.3.1 Seams

End seams shall be cut and placed as recommended by the manufacturer. Seams shall be weighted as required.

3.3.3.2 Hot-welded Seams

Butted sheets shall be grooved to a depth of approximately two thirds of their total thickness using an electrical or hand grooving tool. Grooved seams shall be thermowelded using a hot air welding tool and a PVC welding thread. After seam has cooled to room temperature, the excess shall be trimmed off to provide a flush joint.

3.3.4 Sheet Rubber and Sheet Vinyl Flooring

Sheet flooring shall be dry cut and layed out flat a minimum of 24 hours prior to adhering to the substrate. End seams shall be single cut. Edge seams shall be cut through overlapping sheets, then snapped into place to ensure tight seams. Seams shall be weighted as required.

3.3.5 Synthetic Poured-in-Place Flooring

Concrete slab shall be primed with primer recommended by manufacturer in a thin film covering approximately 400 square feet per gallon. Chloroprene rubber shall be poured onto subfloor and troweled to a smooth and uniform layer of the required thickness. A grout chloroprene rubber coat shall be applied to fill possible voids in surface. After the chloroprene rubber is completely dry, a pigmented finish shall be applied with a spray and roller.

3.4 PROTECTION

The installed flooring shall be protected from soiling and damage with heavy reinforced, nonstaining kraft paper, plywood, or hardboard sheets as required. Edges of kraft paper protection shall be lapped and secured to provide a continuous cover. Protective covering shall be removed when directed by the Contracting Officer.

-- End of Section --

SECTION 09 66 23

RESINOUS MATRIX TERRAZZO FLOORING
08/10

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D56	(2005; R 2010) Flash Point by Tag Closed Cup Tester
ASTM D2047	(2017) Standard Test Method for Static Coefficient of Friction of Polished Coated Flooring Surfaces

NATIONAL TERRAZZO AND MOSAIC ASSOCIATION (NTMA)

NTMA Info Guide	(2000) Terrazzo Information Guide

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	Scientific Certification Systems (SCS)Indoor Advantage

UL ENVIRONMENT (ULE)

ULE Greenguard	UL Greenguard Certification Program

1.2 SYSTEM DESCRIPTION

Apply resinous terrazzo flooring, in the colors indicated, in the areas shown on the approved detail drawings. Submit two 6 x 6 inches, (minimum) samples of each color of resinous terrazzo and two 6 inches lengths, of each type of strip. Flooring shall be an epoxy terrazzo system that conforms to the requirements specified in paragraphs 2.01A and B of NTMA Info Guide]]

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Approved Detail Drawings; G[, [_____]]

Strips; G[, [_____]]
Control Joint Strips; G[, [_____]]

SD-03 Product Data

Resin
Mixing, Proportioning, and Installation
Cleaning and Sealing
Certification

SD-04 Samples

Resinous Terrazzo Flooring

1.4 QUALITY ASSURANCE

1.4.1 Applicator

Applicator shall be approved by the resin manufacturer and shall have a minimum of 3 years experience in the application of the materials to be used and shall have completed 8 successful installations within the past 2 years.

1.4.2 Sustainable Design Certification

Product shall be third party certified in accordance with ULE Greenguard[Gold], SCS Scientific Certification Systems Indoor Advantage[Gold]or equal. Certification shall be performed annually and shall be current.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the project site in manufacturer's original unopened containers. Keep materials in a clean, dry, area with temperatures controlled between 50 and 90 degrees F.

1.6 ENVIRONMENTAL REQUIREMENTS

Areas to receive terrazzo shall be maintained at a temperature above 50 degrees F for 2 days prior to installation and for 7 days following installation.

PART 2 PRODUCTS

2.1 PRIMER

Primer shall be a material recommended by the resin manufacturer which will penetrate the pores of the substrate and bond with the topping to form a permanent monolithic bond between the substrate and the topping.

2.2 RESIN

Resin for the specified terrazzo flooring shall conform to the requirements shown in NTMA Info Guide. Submit resin manufacturer's descriptive data, plus mixing, proportioning, and installation instructions.

2.3 FILLERS

Fillers, if required, shall be inert mineral or cellulosic material as

recommended by the manufacturer and best suited for the resin binder used. Fillers shall be furnished in the quantity necessary to impart the required color and physical characteristics.

2.4 MARBLE CHIPS

Marble chips shall be of domestic origin of sizes and colors to match NTMA Info Guide color plate indicated [on the drawings] in Section 09 06 00 SCHEDULES FOR FINISHES. Chips shall be a range of sizes up to and including the NTMA Standard No. 0 and Standard No. 1 for 1/4 inch thick floors and Standard No. 0 through Standard No. 2 for 3/8 inch thick floors.

2.5 STRIPS

Submit drawings indicating the type, size, and layout of divider strips and control joint strips.

2.5.1 Divider Strips

Divider strips shall be as deep as required, [_____] gauge and of [brass] [zinc] [plastic in color as indicated [on the drawings] [in Section 09 06 00 SCHEDULES FOR FINISHES.

2.5.2 Control Joint Strips

Control joint strips shall be as deep as required, [_____] gauge and of [brass] [zinc] [plastic in color as indicated [on the drawings] in Section 09 06 00 SCHEDULES FOR FINISHES. Neoprene filler shall be [_____] inches thick in color as indicated [on the drawings] [in Section 09 06 00 SCHEDULES FOR FINISHES.

2.6 GROUT

Grout shall be as recommended by the manufacturer of the resin.

2.7 SEALER

Sealer shall have a pH factor between 7 and 10 and shall be a penetrating type specially prepared for use on terrazzo. The sealer shall not discolor or amber the terrazzo and shall produce a slip resistant surface that complies with the minimum rating concerning ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish Coated Flooring Surfaces. Flash point of sealer shall be a minimum of 80 degrees F when tested in accordance with ASTM D56.

PART 3 EXECUTION

3.1 PREPARATION OF CONCRETE SUBFLOOR

Installation of the floor topping shall not commence until the concrete substrate is at least 28 days old. The concrete surfaces shall be prepared in accordance with the instructions of the resin manufacturer.

3.2 MIXING, PROPORTIONING, AND INSTALLATION

Mixing, proportioning, and installing shall be in accordance with the approved instructions of the manufacturer. Strips shall be installed in locations indicated. The topping shall be applied to give a finish thickness of [1/4] [3/8] inch. Bases shall be cove type cast-in-place with

1 inch radius cove and shall be [4] [6] inch high.

3.3 CLEANING AND SEALING

The terrazzo shall be washed with a neutral cleaner and where required shall be cleaned with a fine abrasive to remove any stains or cement smears. The cleaned surfaces shall be rinsed. When dry, a terrazzo sealer shall be applied in accordance with the manufacturer's directions. Submit maintenance literature for terrazzo cleaning and sealing.

3.4 PROTECTION

The terrazzo work shall be covered and protected from damage until completion of the work of all other trades.

-- End of Section --

SECTION 09 67 23.13

STANDARD RESINOUS FLOORING
11/15

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D2047	(2017) Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces
ASTM D4259	(1988; R 2012) Standard Practice for Abrading Concrete

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC SP 6/NACE No.3	(2007) Commercial Blast Cleaning

1.2 ADMINISTRATIVE REQUIREMENTS

1.2.1 Product Data

Within [30] [_____] days of contract award, submit manufacturer's catalog data for the following items:

a. Resin Binder/Matrix

[b. Aggregate

] c. Surface Sealing Coat

1.2.2 Design Mix Data

Within [30] [_____] days of contract award, submit design mix data for the following items, including a complete list of ingredients and admixtures:

a. Resin Binder/Matrix

b. Surface Sealing Coat

Ensure applicable test reports verify the mix has been successfully tested and meets design requirements.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.][for information only. When used, a designation following the

"G" designation identifies the office that reviews the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation Drawings[; G[, [_____]]]

[Fabrication Drawings[; G[, [_____]]]
]

SD-03 Product Data

Manufacturer's Catalog Data[; G[, [_____]]]

SD-04 Samples

Hardboard Mounted Resin Flooring[; G[, [_____]]]

Floor Topping[; G[, [_____]]]

SD-05 Design Data

Design Mix Data[; G[, [_____]]]

SD-07 Certificates

Listing of Product Installations[; G[, [_____]]]

Referenced Standards Certificates[; G[, [_____]]]

SD-11 Closeout Submittals

Warranty[; G[, [_____]]]

1.4 DELIVERY, STORAGE, AND HANDLING

Protect materials from weather, soil, and damage during delivery, storage, and construction. Deliver materials in original packages, containers, or bundles bearing brand name and name of material.

Maintain materials used in the installation of floor topping at a temperature between 65 and 85 degrees F.

1.5 QUALITY CONTROL

Prior to commencement of work, submit referenced standards certificates for the following, showing conformance with the referenced standards contained in this section:

a. esin Binder/Matrix

b. Aggregate

c. Surface Sealing Coat

1.5.1 Qualifications

Submit a listing of product installations for heavy duty resin flooring including identification of at least [5][_____] units, similar to those proposed for use, that have been in successful service for a minimum period of [5][_____] years. Identify purchaser, address of installation, service organization, and date of installation.

Ensure floor system applicators are experienced in the application of troweled aggregate thin-set floor topping.

1.5.2 Sampling

Submit hardboard mounted flooring samples not less than 12-inch square for each required color.

Provide panels showing nominal thickness of finished toppings, color, and texture of finished surfaces. Finished floor toppings and the approved samples are to match in color and texture.

1.6 WARRANTY

Submit a [2] [_____] year written warranty for all materials and installation work.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

Submit installation drawings for heavy duty epoxy flooring systems clearly designating the areas of application and the installation plan. Include in the installation plan, methods to control sand and dust if sand blasting is required.

2.2 RESINOUS FLOORING, SF-14, SF-15

a. System Characteristics:

1. Wearing Surface: Manufacturer's standard wearing surface with slip resistance that complies with minimum rating in accordance with ASTM D2047 Test Method for Static Standard Coefficient of Friction of Polished-Coated Flooring Surfaces.
2. Overall System Thickness: 320 mils (8.0 mm).

b. Adhesive: Two component solvent free polyurethane adhesive, trowel applied.

c. Recycled Rubber Pad: Prefabricated, rolled into wet adhesive with carpet roller, 157 mills (4.0 mm).

d. Pore Sealer: Two-part solid polyurethane. Seals and levels recycled rubber pad.

e. Body Coats:

1. Resin: Two-part polyurethane.
2. Formulation Description: Aliphatic.

3. Type: Pigmented.
4. Application Method: Self-leveling slurry with broadcast flakes.
5. Thickness of Coat: 80 mils (2.0 mm).
6. Flakes: Vinyl.

f. Color Sealer: Two-part waterbased polyurethane pigmented matte topcoat, 8 mils (0.2 mm).

g. Clear Topcoats: Sealing or finish coats.

1. Resin: Urethane.
2. Formulation Description: Water based.
3. Type: Clear.
4. Number of Coats: Two.
5. Thickness of Coats: 8 mils (0.2 mm).
6. Finish: Matte.

2.3 RESINOUS FLOORING, SF-12, SF-13

a. System Characteristics:

1. Wearing Surface: Manufacturer's standard wearing surface with slip resistance that complies with minimum rating in accordance with ASTM D2047 Test Method for Static Standard Coefficient of Friction of Polished-Coated Flooring Surfaces.
2. Overall System Thickness: 3/16 inch (4.8 mm).

b. Primer: Type recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated.

c. Waterproofing Membrane: Type recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated.

d. Reinforcing Membrane: Flexible resin formulation that is recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated and that inhibits substrate cracks from reflecting through resinous flooring.

e. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

f. Body Coats:

1. Resin: Three component resilient urethane mortar consisting of urethane resin, curing agent and rubber aggregates.
2. Type: Pigmented.
3. Application Method: Screed raked and spike rolled.
4. Aggregates: Manufacturer's standard.

g. Grout Coat:

1. Resin: Two-part UV resistant, aliphatic, Polyaspartic urethane.
2. Type: Clear.

h. Topcoats: Sealing or finish coats. Topcoats are to be chemical resistant and provide high UV stability.

1. Resin: Polyurethane.

2. Formulation Description: Water based.
3. Type: Clear.
4. Number of Coats: Two.
5. Finish: Matte.

2.4 RESINOUS FLOORING, SF-10, SF-11

a. Resinous Flooring System: Abrasion-, impact-, and chemical-resistant, aggregate-filled, and resin-based monolithic floor surfacing designed to produce a seamless floor and integral cove base.

b. System Characteristics:

1. Wearing Surface: Textured for slip resistance that complies with minimum rating in accordance with ASTM D2047 Standard Coefficient of Friction.
2. Overall System Thickness: 1/4 inch (6.4 mm).

c. Waterproofing Membrane: Type recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated.

d. Reinforcing Membrane: Flexible resin formulation that is recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated and that inhibits substrate cracks from reflecting through resinous flooring.

e. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

f. Body Coats:

1. Resin: Self-priming, textured Polyurethane.
2. Type: Pigmented.
3. Application Method: Troweled or screeded.
4. Broadcast Aggregates: Colored quartz (ceramic-coated silica).

g. Topcoats: Sealing or finish coats.

1. Resin: Polyurethane.
2. Formulation Description: Water based.
3. Type: Clear.
4. Number of Coats: One.
5. Finish: Matte.

2.5 RESINOUS FLOORING, RES-1, RES-3

a. System Characteristics:

1. Wearing Surface: Manufacturer's standard wearing surface with slip resistance that complies with minimum rating in accordance with ASTM D2047 Test Method for Static Standard Coefficient of Friction of Polished-Coated Flooring Surfaces.
2. Overall System Thickness: 1/4 inch (6.35 mm).

b. Primer: Type recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated.

c. Waterproofing Membrane: Type recommended by resinous flooring

manufacturer for substrate and resinous flooring system indicated.

d. Reinforcing Membrane: Flexible resin formulation that is recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated and that inhibits substrate cracks from reflecting through resinous flooring.

e. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

f. Body Coats:

1. Resin: Four component polyurethane mortar consisting of urethane-urea binder, pigments and coarse aggregates.
2. Type: Pigmented.
3. Application Method: Trowel applied.
4. Aggregates: Manufacturer's standard.

g. Topcoats: Sealing or finish coats.

1. Resin: Polyurethane.
2. Formulation Description: Water based.
3. Type: Clear.
4. Number of Coats: Two.
5. Finish: Matte.

2.6 RESINOUS FLOORING, RES-2, RES-4

a. System Characteristics:

1. Wearing Surface: Manufacturer's standard wearing surface with slip resistance that complies with minimum rating in accordance with ASTM D2047 Test Method for Static Standard Coefficient of Friction of Polished-Coated Flooring Surfaces.
2. Overall System Thickness: 3/16 inch (5 mm).

b. Primer: Type recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated.

c. Waterproofing Membrane: Type recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated.

d. Reinforcing Membrane: Flexible resin formulation that is recommended by resinous flooring manufacturer for substrate and resinous flooring system indicated and that inhibits substrate cracks from reflecting through resinous flooring.

e. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

f. Body Coats:

1. Resin: Four component high solid polyurethane mortar.
2. Type: Unpigmented.
3. Application Method: Trowel applied.
4. Aggregates: Manufacturer's standard.

g. Undercoat:

1. Resin: Two component high solid epoxy bonding coat with broadcast flakes.
2. Type: Pigmented.
3. Application Method: Trowel applied.
4. Flakes: Manufacturer's standard.

h. Topcoats: Sealing or finish coats.

1. Resin: Two component, UV-resistant, aliphatic polyaspartic urethane sealer.
2. Formulation Description: Water based.
3. Type: Clear.
4. Number of Coats: Two.
5. Finish: Matte.

PART 3 EXECUTION

3.1 PREPARATION

Prior to applying resinous flooring material, inspect substrate and immediately report any unsatisfactory conditions that exist and repair.

3.1.1 Safety Precautions

Prior to application in confined spaces of toppings and coatings containing flammable or toxic properties, institute safety precautions recommended by the manufacturer of the product.

Erect "NO SMOKING" signs, and prohibit smoking or use of spark- or flame-producing devices within 50 feet of any mixing or placing operation involving flammable materials.

Provide personnel required to handle, mix, or apply toppings containing toxic or flammable properties with such items of personal protective equipment and apparel for eye, skin, and respiratory protection as are recommended by the manufacturer of the product. Ensure all personnel are trained in the appropriate use and wearing of personal protection equipment.

3.1.2 Protection of Adjacent Surfaces

In addition to the protection of adjacent surfaces during installation, provide areas used to store and mix materials with a protective covering under the materials. After application of the sealer coats, protect finished flooring during the remainder of the construction period. In areas of expected minimum or moderate traffic, cover floors with[70-pound kraft paper][a 30-30-30 waterproof kraft paper][_____], with strips taped together and edges secured to prevent roll-up. Place vegetable fiberboard, plywood, or other suitable material that does not mar the flooring over the paper to protect areas used as passages by workmen and areas subject to floor damage because of subsequent building operations. Upon completion of construction, remove the protection, clean flooring and, where necessary, repair, reseal, or both, at no additional cost to the Government.

3.1.3 Concrete Subfloor

[3.1.3.1 New Concrete Floors

Do not commence installation of floor topping until concrete has cured a minimum of 28 calendar days. Verify concrete floor is straight, properly sloped, and has [rough] [broom] [wooden float] type finish. Ensure concrete is moist cured with burlap or polyethylene. Prior to applying the prime coat, clean concrete surface by an approved method.

][3.1.3.2 Existing Concrete Floors

Clean existing concrete floors, with hard troweled or contaminated areas in conformance with ASTM D4259, and ensure concrete is free of all paint, sealers, curing agents, oil, grease, moisture, dirt or any other contaminants. Remove any loose or corroded segments of existing concrete and patch with a grouting compound as recommended by the resinous flooring manufacturer. Fill all cracks with an elastomeric jointing compound compatible with the resinous flooring system used.

][3.1.4 Steel Subfloor

Clean surfaces of grease, rust, and mill scale by dry sand blasting in accordance with SSPC SP 6/NACE No.3 for commercial sand blasting. Prime all surfaces with a primer as recommended by the resinous flooring manufacturer, the same day or before there are any visible signs of oxidation, which ever is sooner. Using other means of surface preparation is optional, as approved by the Contracting Officer, provided the degree of cleanliness and profile obtained by sand blasting is equaled. Power brushing is not permitted.

]3.1.5 Mixing Of Materials

Select job mix proportions on the trial batch proportions used to prepare the floor topping samples as submitted and approved.

Use mechanical equipment for mixing of materials in accordance with the manufacturer's instructions.

Ensure mixing times are as recommended by the materials supplier(s), provided mixing times result in homogeneous mixtures. Limit quantity of material mixed at one time to that which can be applied and finished within the working life of the mixtures. Verify temperature of materials at the time of mixing are between 65 and 85 degrees F.

3.2 APPLICATION

3.2.1 Areas of Application

Anchor plates set with the top surface at or above the finished resin floor level do not require coverage with this flooring material. Extend flooring under equipment, except when the equipment base is indicated to be flush against the structural floor. Cover and/or mask surfaces not to receive the floor topping, such as equipment or cabinets installed prior to surface-preparation efforts and adjacent to the flooring installation.

3.2.2 Application of Prime Coat and Troweling

Combine the binder components in the proportions specified by the manufacturer to form a clear compatible system immediately on mixing.

Install each system per manufacturer's directions and specified thickess.

3.2.3 Integral Cove Base

Provide a [4] [_____]-inch high cove base to all wall surfaces as indicated on the drawings. Install so as to provide a [1/2] [_____]-inch radius at the juncture of the floor and the wall.

]3.3 FIELD QUALITY CONTROL

3.3.1 Repairing

Remove and replace damaged or unacceptable portions of completed work with new work to match adjacent surfaces at no additional cost to the Government.

3.4 ADJUSTING AND CLEANING

Clean surfaces of the new work, and adjacent surfaces soiled as a result of the work. Remove all equipment, surplus materials, and rubbish associated with the work from the site.

-- End of Section --

SECTION 09 68 00

CARPETING
11/17

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)

AATCC 107	(2013) Colorfastness to Water
AATCC 134	(2016) Electrostatic Propensity of Carpets
AATCC 16	(2004; E 2008; E 2010) Colorfastness to Light
AATCC 165	(2013) Colorfastness to Crocking: Textile Floor Coverings - Crockmeter Method
AATCC 174	(2016) Antimicrobial Activity Assessment of New Carpets

ASTM INTERNATIONAL (ASTM)

ASTM D1335	(2017) Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
ASTM D2859	(2016) Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
ASTM D3278	(1996; R 2011) Flash Point of Liquids by Small Scale Closed-Cup Apparatus
ASTM D5793	(2013) Binding Sites Per Unit Length or Width of Pile Yarn Floor Coverings
ASTM D5848	(2010; E 2010) Mass Per Unit Area of Pile Yarn Floor Coverings
ASTM D6859	(2011) Standard Test Method for Pile Thickness of Finished Level Pile Yarn Floor Coverings
ASTM D7330	(2015) Standard Test Method for Assessment of Surface Appearance Change in Pile Floor Coverings Using Standard Reference Scales
ASTM E648	(2017) Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers

CARPET AND RUG INSTITUTE (CRI)

CRI CIS	(2011) Carpet Installation Standard
CRI GLP QM	(2015) Green Label Plus Quality Manual
Too many characters	(2015) Standard Test Method for the Evaluation of Texture Appearance Retention of Carpet Standards Program

GREEN SEAL (GS)

GS-36	(2011) Commercial Adhesives

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	SCS Global Services (SCS)Indoor Advantage

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1113	(2004) Architectural Coatings
SCAQMD Rule 1168	(1989; R 2005) Adhesive and Sealant Applications

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

16 CFR 1630	Standard for the Surface Flammability of Carpets and Rugs (FF 1-70)

UNDERWRITERS LABORATORIES (UL)

UL 2818	(2013) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation Drawings; G[, [_____]]

SD-03 Product Data

Carpet; G[, [_____]]

Moldings; G[, [_____]]

SD-04 Samples

Carpet; G[, [_____]]

Moldings; G[, [_____]]

SD-06 Test Reports

Moisture and Alkalinity Tests; G[, [_____]]

SD-07 Certificates

Indoor Air Quality

Warranty

SD-08 Manufacturer's Instructions

Surface Preparation

SD-10 Operation and Maintenance Data

Cleaning and Protection

Maintenance Service

SD-11 Closeout Submittals

Recycled Content for Carpeting; S

Indoor Air Quality for Carpet; S

Indoor Air Quality for Aerosol Adhesives and Sealants; S

Indoor Air Quality for Non-Aerosol Adhesives; S

Indoor Air Quality for Concrete Primer; S

Warranty

1.3 CERTIFICATIONS

1.3.1 Indoor Air Quality Certifications

1.3.1.1 Floor Covering Materials

Provide carpet and cushion products certified to meet indoor air quality requirements by UL 2818 (GreenGuard) Gold, SCS Global Services Indoor Advantage Gold, CRI GLP QM or provide validation by other third-party program that products meet the requirements of this paragraph. Products

must meet emissions requirements of CDPH SECTION 01350. Provide current product certification documentation from certification body.

1.3.1.2 Paints and Coatings

Concrete primer products used on the interior of the building (defined as inside of the weatherproofing system) must meet either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1113. Provide current product certification documentation from certification body.

1.3.1.3 Adhesives and Sealants

Sealants and non-aerosol adhesive products used on the interior of the building (defined as inside of the weatherproofing system) must meet either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. Aerosol adhesive products used on the interior of the building (defined as inside of the weatherproofing system) must meet either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of GS-36. Provide current product certification documentation from certification body.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the site in the manufacturer's original wrappings and packages clearly labeled with the manufacturer's name, brand name, size, dye lot number, and related information. Remove materials from packaging and store them in a clean, dry, well ventilated area protected from damage, soiling, and moisture, and maintain at a temperature above 60 degrees F for 2 days prior to installation. Do not store carpet near materials that may off gas or emit harmful fumes, such as kerosene heaters, fresh paint, or adhesives.

1.5 AMBIENT CONDITIONS

Maintain areas in which carpeting is to be installed at a temperature above 60 degrees F and below 90 degrees F for 2 days before installation, during installation, and for 2 days after installation. Provide temporary ventilation during work of this section. Maintain a minimum temperature of 55 degrees F thereafter for the duration of the contract.

1.6 WARRANTY

Provide manufacturer's standard performance guarantees or warranties including minimum ten year wear warranty, two year material and workmanship and ten year tuft bind and delamination.

PART 2 PRODUCTS

2.1 PRODUCT SUSTAINABILITY CRITERIA

For products in this section, where applicable and to extent allowed by performance criteria, provide and document the following:

[2.1.1 Recycled Content for Carpeting Materials

Recycled content is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph RECYCLED CONTENT. Other products listed in this section may be available with recycled content; identify those products that meet project requirements for recycled content, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph RECYCLED CONTENT.

]2.1.2 Reduce Volatile Organic Compounds (VOC) (LOW-EMITTING MATERIALS) for Products

Reduced VOC content is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph REDUCE VOLATILE ORGANIC COMPOUNDS (VOC) (LOW-EMITTING MATERIALS). Other products listed in this section may be available with reduced VOC content; identify those products that meet project requirements for reduced VOC content, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph REDUCE VOLATILE ORGANIC COMPOUNDS (VOC) (LOW-EMITTING MATERIALS).

2.2 CARPET

Furnish first quality carpet that is free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains, and other physical and manufacturing defects. Provide carpet materials and treatments as reasonably nonallergenic and free of other recognized health hazards. Provide a static control construction on all grade carpets which gives adequate durability and performance. Submit manufacturer's catalog data and printed documentation stating physical characteristics, durability, resistance to fading, and flame resistance characteristics for each type of carpet material and installation accessory. Submit manufacturer's Product Data for 1) Carpet, 2) Moldings. Also, submit Samples of the following:

a. Carpet: [Two] [_____] "Production Quality" samples 18 by 18 inches of each carpet proposed for use, showing quality, pattern, and color specified

b. Moldings: [Two] [_____] samples of each type minimum 12 inches long

2.2.1 Recycled Content

Carpeting must contain a minimum of [20][40][_____] percent post-consumer recycled content, or a minimum of [20][40][_____] percent post-industrial recycled content. Provide data identifying percentage of recycled content for carpeting.

Provide certification of indoor air quality for carpet.

2.2.2 Modular Carpet, CPT-1 and CPT-7

2.2.2.1 Carpet Construction

Tufted

2.2.2.2 Type

Modular tile, 12 by 48 inches

2.2.2.3 Pile Type

Patterned Loop

2.2.2.4 Pile Fiber

Commercial 100 percent branded (federally registered trademark) nylon continuous filament, Type 6,6, Solution Dyed.

2.2.2.5 Gauge or Pitch

Minimum 1/10 inch in accordance with ASTM D5793.

2.2.2.6 Stitches or Rows/Wires

Minimum 14.16 per square inch.

2.2.2.7 Surface Pile Weight

Minimum 22 ounces per square yard. This does not include weight of backings. Determine weight in accordance with ASTM D5848.

2.2.2.8 Pile Thickness

Minimum of 0.127 inch in accordance with ASTM D6859.

2.2.2.9 Pile Density

Minimum 6,236

2.2.2.10 TARR

CPT-1 and CPT-7: 3.5

2.2.3 Modular Carpet, CPT-2 and CPT-8

2.2.3.1 Carpet Construction

Tufted

2.2.3.2 Type

Modular tile, [24 by 24 inches] [18 by 36 inches]

2.2.3.3 Pile Type

Multilevel Loop Tip Sheared

2.2.3.4 Pile Fiber

Commercial 100 percent branded (federally registered trademark) nylon continuous filament, Type 6,6, Solution Dyed.

2.2.3.5 Gauge or Pitch

Minimum 5/64 inch in accordance with ASTM D5793.

2.2.3.6 Stitches or Rows/Wires

Minimum 12.7 per square inch.

2.2.3.7 Surface Pile Weight

Minimum 30 ounces per square yard. This does not include weight of backings. Determine weight in accordance with ASTM D5848.

2.2.3.8 Pile Thickness

Minimum range of 0.060 to 0.197 inch in accordance with ASTM D6859.

2.2.3.9 Pile Density

Minimum 7,800

2.2.3.10 TARR

CPT-2 and CPT-8: 3.5

2.2.4 Modular Carpet, CPT-3 and CPT-9

2.2.4.1 Carpet Construction

Tufted

2.2.4.2 Type

Modular tile, 24 by 24 inches

2.2.4.3 Pile Type

Multilevel Loop Tip Sheared,

2.2.4.4 Pile Fiber

Commercial 100 percent branded (federally registered trademark) nylon continuous filament, Type 6,6, Solution Dyed.

2.2.4.5 Gauge or Pitch

Minimum 1/12 inch in accordance with ASTM D5793

2.2.4.6 Stitches or Rows/Wires

Minimum 10 per square inch.

2.2.4.7 Surface Pile Weight

Minimum 22 ounces per square yard. This does not include weight of backings. Determine weight in accordance with ASTM D5848.

2.2.4.8 Pile Thickness

Minimum range of 0.125 to 0.313 inch in accordance with ASTM D6859.

2.2.4.9 Pile Density

Minimum 6,803

2.2.4.10 10 TARR

CPT-3: 3.0
CPT-9: 3.0

2.2.5 Modular Carpet, CPT-4 and CPT-10

2.2.5.1 Carpet Construction

Tufted

2.2.5.2 Type

Modular tile, [18 by 36 inches] [9 by 36 inches] [24 by 24 inches]

2.2.5.3 Pile Type

Textured Loop

2.2.5.4 Pile Fiber

Commercial 100 percent branded (federally registered trademark) nylon continuous filament, Type 6,6, Solution Dyed.

2.2.5.5 Gauge or Pitch

Minimum 1/10 inch in accordance with ASTM D5793.

2.2.5.6 Stitches or Rows/Wires

Minimum 11 per square inch.

2.2.5.7 Surface Pile Weight

Minimum 23 ounces per square yard. This does not include weight of backings. Determine weight in accordance with ASTM D5848.

2.2.5.8 Pile Thickness

Minimum range of 0.090 to 0.187 inch in accordance with ASTM D6859.

2.2.5.9 Pile Density

Minimum 7,582

2.2.5.10 TARR

CPT-4: 3.5
CPT-10: 3.5

2.2.6 Modular Carpet, CPT-5 and CPT-11

2.2.6.1 Carpet Construction

Tufted

2.2.6.2 Type

Modular tile, [18 by 36 inches] [9 by 36 inches] [24 by 24 inches]

2.2.6.3 Pile Type

Textured Loop

2.2.6.4 Pile Fiber

Commercial 100 percent branded (federally registered trademark) nylon continuous filament, Type 6,6, Solution Dyed.

2.2.6.5 Gauge or Pitch

Minimum 1/10 inch in accordance with ASTM D5793

2.2.6.6 Stitches or Rows/Wires

Minimum 11 per square inch.

2.2.6.7 Surface Pile Weight

Minimum 11 per square inch.

2.2.6.8 Pile Thickness

Minimum range of 0.082 to 0.186 inch in accordance with ASTM D6859.

2.2.6.9 Pile Density

Minimum 9,204

2.2.6.10 TARR

CPT-5 and CPT-11: 3.5

2.2.7 Modular Carpet, CPT-6 and CPT-12

2.2.7.1 Carpet Construction

Tufted

2.2.7.2 Type

Modular tile, [18 by 36 inches] [9 by 36 inches] [24 by 24 inches]

2.2.7.3 Pile Type

Textured Loop

2.2.7.4 Pile Fiber

Commercial 100 percent branded (federally registered trademark) nylon continuous filament, Type 6,6, Solution Dyed.

2.2.7.5 Gauge or Pitch

Minimum 1/10 inch in accordance with ASTM D5793

2.2.7.6 Stitches or Rows/Wires

Minimum 12 per square inch.

2.2.7.7 Surface Pile Weight

Minimum 25 ounces per square yard. This does not include weight of backings. Determine weight in accordance with ASTM D5848

2.2.7.8 Pile Thickness

Minimum range of 0.082 to 0.186 inch in accordance with ASTM D6859.

2.2.7.9 Pile Density

Minimum 7,719

2.2.7.10 TARR

CPT-6 and CPT-12: 3.5

2.2.8 Modular Carpet, CPT-13

2.2.8.1 Carpet Construction

Tufted

2.2.8.2 Type

Modular tile, 12 by 48 inches

2.2.8.3 Pile Type

Patterned Loop

2.2.8.4 Pile Fiber

Commercial 100 percent branded (federally registered trademark) nylon continuous filament, Type 6,6, Solution Dyed.

2.2.8.5 Gauge or Pitch

Minimum 1/10 inch in accordance with ASTM D5793

2.2.8.6 Stitches or Rows/Wires

Minimum 9.25 per square inch

2.2.8.7 Surface Pile Weight

Minimum 34 ounces per square yard. This does not include weight of backings. Determine weight in accordance with ASTM D5848.

2.2.8.8 Pile Thickness

Minimum of 0.151 inch in accordance with ASTM D6859.

2.2.8.9 Pile Density

Minimum 8,105

2.2.8.10 TARR

CPT-13: 3.5

2.2.8.11 Backing Materials

Provide primary backing materials like those customarily used and accepted by the trade for each type of carpet. Provide secondary backing to suit project requirements of those customarily used and accepted by the trade for each type of carpet.

2.3 PERFORMANCE REQUIREMENTS

2.3.1 Texture Appearance Retention Rating (TARR)

Provide carpet with a greater than or equal to [3.0 (Heavy)] [3.5 (Severe)] TARR traffic level classification in accordance with ASTM D7330 or CRI Test Method 103 Technical Bulletin.

2.3.2 Static Control

Provide static control to permanently regulate static buildup to less than 3.5 kV when tested at 20 percent relative humidity and 70 degrees F in accordance with AATCC 134.

2.3.3 Flammability and Critical Radiant Flux Requirements

Comply with 16 CFR 1630 or ASTM D2859. Provide carpet in corridors and exits with a minimum average critical radiant flux of 0.45 watts per square centimeter (Class 1) when tested in accordance with ASTM E648.

2.3.4 Tuft Bind

Comply with ASTM D1335 for tuft bind force required to pull a tuft or loop free from carpet backing with a minimum 8 pound average force for modular carpet tile.

2.3.5 Colorfastness to Crocking

Comply dry and wet crocking with AATCC 165 and with a Class 4 minimum rating on the AATCC Color Transference Chart for all colors.

2.3.6 Colorfastness to Light

Comply colorfastness to light with AATCC 16, Test Option E "Water-Cooled Xenon-Arc Lamp, Continuous Light" and with a minimum 4 grey scale rating

after 40 hours.

2.3.7 Colorfastness to Water

Comply colorfastness to water with AATCC 107 and with a minimum 4.0 gray scale rating and a minimum 4.0 transfer scale rating.

2.3.8 Delamination Strength

Provide delamination strength for tufted carpet with a secondary back of minimum 2.5 lbs/inch.

2.3.9 Antimicrobial

Nontoxic antimicrobial treatment in accordance with AATCC 174 Part I (qualitative), guaranteed by the carpet manufacturer to last the life of the carpet.

2.4 ADHESIVES AND CONCRETE PRIMER

Comply with applicable regulations regarding toxic and hazardous materials. Provide water resistant, mildew resistant, nonflammable, and nonstaining adhesives and concrete primers for carpet installation as required by the carpet manufacturer. Provide release adhesive for modular tile carpet as recommended by the carpet manufacturer. Provide adhesives flashpoint of minimum 140 degrees F in accordance with ASTM D3278. Provide certification of indoor air quality for aerosol adhesives and sealants. Provide certification of indoor air quality for non-aerosol adhesives. Provide certification of indoor air quality for concrete primer.

2.5 MOLDINGS

Provide carpet moldings where floor covering material changes or carpet edge does not abut a vertical surface. Provide a heavy-duty rubber molding designed for the type of carpet being installed. Provide floor flange of a minimum 1 1/2 inches wide. Provide color to match resilient base.

2.6 COLOR, TEXTURE, AND PATTERN

Provide color, texture, and pattern in accordance with Section 09 06 00 SCHEDULES FOR FINISHES [the drawings] [_____].

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Do not install carpet on surfaces that are unsuitable and will prevent a proper installation. Prepare subfloor in accordance with flooring manufacturer's recommended instructions. Repair holes, cracks, depressions, or rough areas using material recommended by the carpet or adhesive manufacturer. Free floor of any foreign materials and sweep clean. Before beginning work, test subfloor with glue and carpet to determine "open time" and bond. Submit [three] [_____] copies of the manufacturer's printed Installation instructions for the carpet, including Surface Preparation, seaming techniques, and recommended adhesives and tapes.

3.2 MOISTURE AND ALKALINITY TESTS

Test concrete slab for moisture content and excessive alkalinity in accordance with CRI CIS. Submit [three] [_____] copies of reports of Moisture and Alkalinity Tests including content of concrete slab stating date of test, person conducting the test, and the area tested.

3.3 PREPARATION OF CONCRETE SUBFLOOR

Do not commence installation of the carpeting until concrete substrate is at least 90 days old. Prepare the concrete surfaces in accordance with the carpet manufacturer's instructions. Match carpet, when required, and adhesives to prevent off-gassing to a type of curing compounds, leveling agents, and concrete sealer.

3.4 INSTALLATION

Perform all work by manufacturer's approved installers. Conduct installation in accordance with the manufacturer's printed instructions and CRI CIS. Protect edges of carpet meeting hard surface flooring with molding and install in accordance with the molding manufacturer's printed instructions. Follow ventilation, personal protection, and other safety precautions recommended by the adhesive manufacturer. Continue ventilation during installation and for at least 72 hours following installation. Do not permit traffic or movement of furniture or equipment in carpeted area for 24 hours after installation. Complete other work which would damage the carpet prior to installation of carpet. Submit [three] [_____] copies of Installation Drawings for Carpet, Carpet Cushion, and Moldings indicating areas receiving carpet, carpet types, patterns, direction of pile, location of seams, and locations of edge molding.

Do not install building construction materials that show visual evidence of biological growth.

3.5 CLEANING AND PROTECTION

Submit [three] [_____] copies of carpet manufacturer's maintenance instructions describing recommended type of cleaning equipment and material, spotting and cleaning methods, and cleaning cycles.

3.5.1 Cleaning

As specified in Section 01 78 00 CLOSEOUT SUBMITTALS. After installation of the carpet, remove debris, scraps, and other foreign matter. Remove soiled spots and adhesive from the face of the carpet with appropriate spot remover. Cut off and remove protruding face yarn. Vacuum carpet clean.

3.5.2 Protection

Protect the installed carpet from soiling and damage with heavy, reinforced, nonstaining kraft paper, plywood, or hardboard sheets. Lap and secure edges of kraft paper protection to provide a continuous cover. Restrict traffic for at least 48 hours. Remove protective covering when directed by the Contracting Officer.

3.6 REMNANTS

Manage waste as specified in the Waste Management Plan. [Provide remnants remaining from the installation, consisting of scrap pieces more than 2 feet

in dimension with more than 6 square feet total [to the Government] [to local non-profit such as Habitat for Humanity as directed by the Government]]. [Set aside and return non-retained scraps to manufacturer for recycling into new product] [Remove non-retained scraps from site and recycle appropriately].

3.7 MAINTENANCE

3.7.1 Extra Materials

Provide extra material from same dye lot consisting of uncut carpet tiles for future maintenance. Provide a minimum of [three] [_____] percent of total square yards of each carpet type, pattern, and color. [Furnish [three] [____] percent extra of total adhesive tabs.]

-- End of Section --

SECTION 09 84 20

ACOUSTICAL WALL PANELS
08/16

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN FOREST FOUNDATION (AFF)

ATFS STANDARDS	(2015) American Tree Farm System Standards of Sustainability 2015-2020

ASTM INTERNATIONAL (ASTM)

ASTM C423	(2009a) Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
ASTM E84	(2015b) Standard Test Method for Surface Burning Characteristics of Building Materials

CALIFORNIA AIR RESOURCES BOARD (CARB)

CARB 93120	(2007) Airborne Toxic Control Measure (ATCM) to Reduce Formaldehyde Emissions from Composite Wood Products

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	(2004; Add 2004-01) Standard Practice for the Testing Of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers

CSA GROUP (CSA)

CSA Z809-08	(R2013) Sustainable Forest Management

FOREST STEWARDSHIP COUNCIL (FSC)

FSC STD 01 001	(2000) Principles and Criteria for Forest Stewardship

PROGRAMME FOR ENDORSEMENT OF FOREST CERTIFICATION (PEFC)

PEFC ST 2002:2013	(2015) PEFC International Standard Chain of Custody of Forest Based Products Requirements

SUSTAINABLE FOREST INITIATIVE (SFI)

SFI 2015-2019	(2015) Standards, Rules for Label Use, Procedures and Guidance

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Approved Detail Drawings; G[, [_____]]

SD-03 Product Data

Installation

Acoustical Wall Panels; G[, [_____]]

SD-04 Samples

Acoustical Wall Panels; G[, [_____]]

SD-07 Certificates

Acoustical Wall Panels

Certified Sustainably Harvested Wood

SD-11 Closeout Submittals

Recycled Content for Wood Panels; S

Certified Sustainably Harvested Wood; S

Indoor Air Quality for Composite Wood and Agrifiber Products; S

Warranty

[1.3 CERTIFICATIONS

1.3.1 Certified Sustainably Harvested Wood

Provide wood certified as sustainably harvested by FSC STD 01 001[, ATFS STANDARDS, CSA Z809-08, SFI 2015-2019s, or other third party program certified by PEFC ST 2002:2013]. Provide a letter of Certification of Sustainably Harvested Wood signed by the wood supplier. Identify certifying organization and their third party program name and indicate compliance with chain-of-custody program requirements. Submit sustainable wood certification data; identify each certified product on a line item basis. Submit copies of invoices bearing certification numbers.

[1.3.2 Indoor Air Quality Certification

1.3.2.1 Composite Wood, Wood Structural Panel and Agrifiber Products

For purposes of this specification, composite wood and agrifiber products include particleboard, medium density fiberboard (MDF), wheatboard, strawboard, panel substrates, and door cores. Products must contain no added urea-formaldehyde resins. Provide products certified to meet emissions requirements of either CARB 93120 or CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type). Provide current product certification documentation from certification body.

]]1.4 DELIVERY, STORAGE, AND HANDLING

Protect materials delivered and placed in storage from the weather, humidity and temperature variations, dirt, dust, or other contaminants.

1.5 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a one year period.

PART 2 PRODUCTS

2.1 PRODUCT SUSTAINABILITY CRITERIA

For products in this section, where applicable and to extent allowed by performance criteria, provide and document the following:

2.1.1 Recycled Content for Acoustical Wall Panel Materials

Recycled content is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph RECYCLED CONTENT. Other products listed in this section may be available with recycled content; identify those products that meet project requirements for recycled content, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph RECYCLED CONTENT.

[2.1.2 Certified Sustainably Harvested Wood

Certified sustainably harvested wood is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph BIOBASED PRODUCTS. Other products listed in this section may be available as certified sustainably harvested wood; identify those products that meet project requirements for certified sustainably harvest wood, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph BIOBASED PRODUCTS.

]2.1.3 Reduce Volatile Organic Compounds (VOC) (LOW-EMITTING MATERIALS) for Products

Reduced VOC content is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph REDUCE VOLATILE ORGANIC COMPOUNDS (VOC) (LOW-EMITTING MATERIALS). Other products listed in this section may be available with reduced VOC content; identify those products that meet project requirements for reduced VOC content, and provide documentation in accordance with

Section 01 33 29 SUSTAINABILITY REPORTING paragraph REDUCE VOLATILE ORGANIC COMPOUNDS (VOC) (LOW-EMITTING MATERIALS).

2.2 SYSTEM DESCRIPTION

2.2.1 Design

Provide [wood] [plastic laminate], [metal], [FRP], [Graphic Image} acoustical wall panel materials in the manufacturer's standard sizes and finishes of the type, design and configuration indicated.

[2.2.1.1 Wood Recycled Content

Wood Panels must contain a minimum of [50][_____] percent recycled content, as calculated by the sum of the percentage of pre-consumer and ½ the percentage of post-industrial recycled content. Provide data identifying percentage of recycled content for wood panels.

][2.2.1.2 Sustainably Harvested Wood

Wood Panels must contain a minimum of [50][_____] percent certified sustainably harvested wood. Provide documentation that certified sustainably harvested wood is used and identify percentage.

Provide certification of indoor air quality for composite wood and agrifiber products.

2.3 ACOUSTICAL PANELS

a. [Fiberglass reinforced thermosetting polyester resin panel sheets complying with ASTM D5319.

1. [Custom graphics;

a) Customer supplied artwork, in a digital file format compatible with the panel dimensions as required for the installation].

2. [Laminated FRP is available with 2 different substrates.

a) Standard FRP laminated to 3/8 inch Plywood
b) Standard FRP laminated to 5/8 inch Gypsum]]

b. [Decorative 3/4 inch (19 mm) thick prefinished panel with pre-engineered attachment clip along with hardware and trim systems for installation directly to studs or solid substrate.

1. Hardware: Aluminum cross rail with cross splines.
2. Panels:

a. [Wood Grain and Graphic Images applied using direct digital imaging to wood fiber substrate including seal coats, color inks and protective topcoats.]
b. [Metal sheets laminated to wood fiber substrate.]
c. [Wood Veneer laminated to wood fiber substrate having a balancing backer sheet, with protective topcoats.]
d. [High Pressure Laminate adhered to wood fiber substrate and having a balancing backer sheet.]]

2.3.1 Panel Width

[Widths must be [24] [30] [48] [60] inches] [End panels may vary in width as necessary to cover wall] [Panel width must be as detailed.]

2.3.2 Panel Height

[Heights must be [96] [108] [120] inches.] [[Field measures panels for custom fit to ceiling.] [Tolerance at floor as detailed].] [Panel height must be as detailed.]

2.3.3 Thickness

[Panel thickness as required to meet the indicated NRC range] [_____].

2.3.4 Fire Rating for the Complete Composite System

Class A, 200 or less smoke density and flame spread less than 25, when tested in accordance with ASTM E84.

2.3.5 Noise Reduction Coefficient (NRC) Range

[0.50-0.60] [0.80-0.90] [_____] ASTM C423

2.3.6 Edge Detail

[Half bevel] [Bevel] [Radius] [Square] [Mitered] [_____] edge.

2.3.7 Core Type

[Standard acoustical] [High impact acoustical] [_____] core

2.3.8 Mounting Acoustical Panels

Mount acoustical panels by manufacturer's standard [concealed spline] [mechanical fasteners] [hook and loop][_____].

2.4 COLOR

In accordance with Section 09 06 00 SCHEDULES FOR FINISHES.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

mustshall be clean, smooth, oil free and prepared in accordance with panel manufacturer's instructions. Do not begin installation until all wet work, such as, plastering, painting, and concrete are completely dry.

3.2 INSTALLATION

Panel installation must be by personnel familiar with and normally engaged in installation of acoustical wall panels. Apply panels in accordance with the manufacturer's installation instructions. Submit manufacturer's installation instructions and recommended cleaning instructions.

3.3 CLEANING

Following installation, clean dirty or stained panel surfaces in accordance

with manufacturer's instructions and leave free from defects. Remove and replace panels that are damaged, discolored, or improperly installed.

-- End of Section --

SECTION 09 90 00

PAINTS AND COATINGS
05/11

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)

ACGIH 0100	(2001; Supplements 2002-2008) Documentation of the Threshold Limit Values and Biological Exposure Indices

ASME INTERNATIONAL (ASME)

ASME A13.1	(2007; R 2013) Scheme for the Identification of Piping Systems

ASTM INTERNATIONAL (ASTM)

ASTM D235	(2002; R 2012) Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)
ASTM D4214	(2007) Standard Test Method for Evaluating the Degree of Chalking of Exterior Paint Films
ASTM D4263	(1983; R 2012) Indicating Moisture in Concrete by the Plastic Sheet Method
ASTM D4444	(2013) Use and Calibration of Hand-Held Moisture Meters
ASTM D6386	(2010) Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting
ASTM F1869	(2011) Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

MASTER PAINTERS INSTITUTE (MPI)

MPI 1	(Oct 2009) Aluminum Paint
MPI 101	(Oct 2009) Epoxy Anti-Corrosive Metal Primer
MPI 107	(Oct 2009) Rust Inhibitive Primer (Water-Based)

MPI 116	(Oct 2009) Epoxy Block Filler
MPI 138	(Oct 2009) Interior High Performance Latex, MPI Gloss Level 2
MPI 139	(Oct 2009) Interior High Performance Latex, MPI Gloss Level 3
MPI 140	(Oct 2009) Interior High Performance Latex, MPI Gloss Level 4
MPI 141	(Oct 2009) Interior High Performance Latex MPI Gloss Level 5
MPI 144	(Oct 2009) Institutional Low Odor / VOC Interior Latex, MPI Gloss Level 2
MPI 145	(Oct 2009) Institutional Low Odor / VOC Interior Latex, MPI Gloss Level 3
MPI 146	(Oct 2009) Institutional Low Odor/VOC Interior Latex, MPI Gloss Level 4
MPI 147	(Oct 2009) Institutional Low Odor / VOC Interior Latex, Semi-Gloss, MPI Gloss Level 5
MPI 151	(Oct 2009) Interior W.B. Light Industrial Coating, MPI Gloss Level 3
MPI 153	(Oct 2009) Interior W.B. Light Industrial Coating, Semi-Gloss, MPI Gloss Level 5
MPI 154	(Oct 2009) Interior W.B. Light Industrial Coating, Gloss, MPI Gloss Level 6
MPI 19	(Oct 2009) Inorganic Zinc Rich Primer
MPI 2	(Oct 2009) Aluminum Heat Resistant Enamel (up to 427 C and 800 F
MPI 21	(Oct 2009) Heat Resistant Enamel, Gloss (up to 205 degrees C and 400 degrees F), MPI Gloss Level 6
MPI 22	(Oct 2009) Aluminum Paint, High Heat (up to 590 degrees C and 1100 degrees F.
MPI 23	(Oct 2009) Surface Tolerant Metal Primer
MPI 27	(Oct 2009) Exterior / Interior Alkyd Floor Enamel, Gloss
MPI 31	(Oct 2009) Polyurethane, Moisture Cured, Clear Gloss
MPI 39	(Oct 2009) Interior Latex-Based Wood Primer
MPI 4	(Oct 2009) Interior/Exterior Latex Block

	Filler
MPI 42	(Oct 2009) Latex Stucco and Masonry Textured Coating
MPI 44	(Oct 2009) Interior Latex, MPI Gloss Level 2
MPI 45	(Oct 2009) Interior Alkyd Primer Sealer
MPI 46	(Oct 2009) Interior Enamel Undercoat
MPI 47	(Oct 2009) Interior Alkyd, Semi-Gloss, MPI Gloss Level 5
MPI 48	(Oct 2009) Interior Alkyd, Gloss, MPI Gloss Level 6
MPI 49	(Oct 2009) Interior Alkyd, Flat, MPI Gloss Level 1
MPI 50	(Oct 2009) Interior Latex Primer Sealer
MPI 51	(Oct 2009) Interior Alkyd, Eggshell, MPI Gloss Level 2
MPI 52	(Oct 2009) Interior Latex, MPI Gloss Level 3
MPI 54	(Oct 2009) Interior Latex, Semi-Gloss, MPI Gloss Level 5
MPI 56	(Oct 2009) Interior Oil Modified Urethane Clear Gloss
MPI 57	(Oct 2009) Interior Oil Modified Urethane Clear Satin
MPI 71	(Oct 2009) Polyurethane, Moisture Cured, Clear, Flat
MPI 72	(Oct 2009) Polyurethane, Two Component, Pigmented, Gloss
MPI 77	(Oct 2009) Epoxy Gloss
MPI 79	(Oct 2009) Alkyd Anti-Corrosive Metal Primer
MPI 90	(Oct 2009) Interior Wood Stain, Semi-Transparent
MPI 95	(Oct 2009) Quick Drying Primer for Aluminum

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	Scientific Certification Systems (SCS)Indoor Advantage

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC 7/NACE No.4	(2007; E 2004) Brush-Off Blast Cleaning
SSPC PA 1	(2000; E 2004) Shop, Field, and Maintenance Painting of Steel
SSPC PA Guide 3	(1982; E 1995) A Guide to Safety in Paint Application
SSPC QP 1	(2012; E 2012) Standard Procedure for Evaluating Painting Contractors (Field Application to Complex Industrial Structures)
SSPC SP 1	(2015) Solvent Cleaning
SSPC SP 10/NACE No. 2	(2007) Near-White Blast Cleaning
SSPC SP 12/NACE No.5	(2002) Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating
SSPC SP 2	(1982; E 2000; E 2004) Hand Tool Cleaning
SSPC SP 3	(1982; E 2004) Power Tool Cleaning
SSPC SP 6/NACE No.3	(2007) Commercial Blast Cleaning
SSPC VIS 1	(2002; E 2004) Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning
SSPC VIS 3	(2004) Guide and Reference Photographs for Steel Surfaces Prepared by Hand and Power Tool Cleaning
SSPC VIS 4/NACE VIS 7	(1998; E 2000; E 2004) Guide and Reference Photographs for Steel Surfaces Prepared by Waterjetting

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2014) Safety and Health Requirements Manual

U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-STD-101	(2014; Rev C) Color Code for Pipelines and for Compressed Gas Cylinders

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA Method 24	(2000) Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FED-STD-313	(2014; Rev E) Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910.1000	Air Contaminants

UL ENVIRONMENT (ULE)

ULE Greenguard	UL Greenguard Certification Program

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.][for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

The current MPI, "Approved Product List" which lists paint by brand, label, product name and product code as of the date of contract award, will be used to determine compliance with the submittal requirements of this specification. The Contractor may choose to use a subsequent MPI "Approved Product List", however, only one list may be used for the entire contract and each coating system is to be from a single manufacturer. All coats on a particular substrate must be from a single manufacturer. No variation from the MPI Approved Products List is acceptable.

Samples of specified materials may be taken and tested for compliance with specification requirements.

SD-02 Shop Drawings

Piping identification

Submit color stencil codes

SD-03 Product Data

Certification

Coating; G[, [_____]]

Manufacturer's Technical Data Sheets

[Sealant]

SD-04 Samples

Color; G[, [_____]]

Submit manufacturer's samples of paint colors. Cross reference color samples to color scheme as indicated.

SD-07 Certificates

Applicator's qualifications

Qualification Testing laboratory for coatings; G[, [_____]]

SD-08 Manufacturer's Instructions

Application instructions

Mixing

Detailed mixing instructions, minimum and maximum application temperature and humidity, potlife, and curing and drying times between coats.

Manufacturer's Material Safety Data Sheets

Submit manufacturer's Material Safety Data Sheets for coatings, solvents, and other potentially hazardous materials, as defined in FED-STD-313.

SD-10 Operation and Maintenance Data

Coatings:; G[, [_____]]

Preprinted cleaning and maintenance instructions for all coating systems shall be provided.

SD-11 Closeout Submittals

[Local/Regional Materials; (LEED)

LEED documentation relative to local/regional materials credit in accordance with LEED Reference Guide. Include in LEED Documentation Notebook.]

[Materials; (LEED)]

[LEED documentation relative to recycled content credit in accordance with LEED Reference Guide. Include in LEED Documentation Notebook.]

[LEED documentation relative to low emitting materials credit in accordance with LEED Reference Guide. Include in LEED Documentation Notebook.]

1.3 APPLICATOR'S QUALIFICATIONS

[1.3.1 Contractor Qualification

Submit the name, address, telephone number, FAX number, and e-mail address of the contractor that will be performing all surface preparation and coating application. Submit evidence that key personnel have successfully performed surface preparation and application of coatings on [_____] on a minimum of three similar projects within the past three years. List information by individual and include the following:

a. Name of individual and proposed position for this work.

b. Information about each previous assignment including:

Position or responsibility

Employer (if other than the Contractor)

Name of facility owner

Mailing address, telephone number, and telex number (if non-US) of facility owner

Name of individual in facility owner's organization who can be contacted as a reference

Location, size and description of structure

Dates work was carried out

Description of work carried out on structure

]
[1.3.2 SSPC QP 1 Certification

All contractors and subcontractors that perform surface preparation or coating application shall be certified by the Society for Protective Coatings (formerly Steel Structures Painting Council) (SSPC) to the requirements of SSPC QP 1 prior to contract award, and shall remain certified while accomplishing any surface preparation or coating application. The painting contractors and painting subcontractors must remain so certified for the duration of the project. If a contractor's or subcontractor's certification expires, the firm will not be allowed to perform any work until the certification is reissued. Requests for extension of time for any delay to the completion of the project due to an inactive certification will not be considered and liquidated damages will apply. Notify the Contracting Officer of any change in contractor certification status.

]1.4 QUALITY ASSURANCE

1.4.1 Field Samples and Tests

The Contracting Officer may choose up to two coatings that have been delivered to the site to be tested at no cost to the Government. Take samples of each chosen product as specified in the paragraph "Sampling Procedures." Test each chosen product as specified in the paragraph "Testing Procedure." Products which do not conform, shall be removed from

the job site and replaced with new products that conform to the referenced specification. Testing of replacement products that failed initial testing shall be at no cost to the Government.

[Another required testing is Batch Quality Conformance Testing to prove conformance of the manufacturer's paint to the specified MPI standard. This testing is accomplished before the materials are delivered to the job site. Provide testing for [_____] paint products. Test paint products as specified in the paragraph "Testing Procedure".

]1.4.1.1 Sampling Procedure

The Contracting Officer will select paint at random from the products that have been delivered to the job site for sample testing. The Contractor shall provide one quart samples of the selected paint materials. The samples shall be taken in the presence of the Contracting Officer, and labeled, identifying each sample. Provide labels in accordance with the paragraph "Packaging, Labeling, and Storage" of this specification.

1.4.1.2 Testing Procedure

Provide Batch Quality Conformance Testing for specified products, as defined by and performed by MPI. As an alternative to Batch Quality Conformance Testing, the Contractor may provide Qualification Testing for specified products above to the appropriate MPI product specification, using the third-party laboratory approved under the paragraph "Qualification Testing" laboratory for coatings. The qualification testing lab report shall include the backup data and summary of the test results. The summary shall list all of the reference specification requirements and the result of each test. The summary shall clearly indicate whether the tested paint meets each test requirement. Note that Qualification Testing may take 4 to 6 weeks to perform, due to the extent of testing required.

Submit name, address, telephone number, FAX number, and e-mail address of the independent third party laboratory selected to perform testing of coating samples for compliance with specification requirements. Submit documentation that laboratory is regularly engaged in testing of paint samples for conformance with specifications, and that employees performing testing are qualified. If the Contractor chooses MPI to perform the Batch Quality Conformance testing, the above submittal information is not required, only a letter is required from the Contractor stating that MPI will perform the testing.

1.4.2 Sustainable Design Certification

Product shall be third party certified in accordance with ULE Greenguard[Gold], SCS Scientific Certification Systems Indoor Advantage[Gold]or equal. Certification shall be performed annually and shall be current.

]1.5 REGULATORY REQUIREMENTS

1.5.1 Environmental Protection

In addition to requirements specified elsewhere for environmental protection, provide coating materials that conform to the restrictions of the local Air Pollution Control District and regional jurisdiction. Notify Contracting Officer of any paint specified herein which fails to conform.

1.5.2 Lead Content

Do not use coatings having a lead content over 0.06 percent by weight of nonvolatile content.

1.5.3 Chromate Content

Do not use coatings containing zinc-chromate or strontium-chromate.

1.5.4 Asbestos Content

Materials shall not contain asbestos.

1.5.5 Mercury Content

Materials shall not contain mercury or mercury compounds.

1.5.6 Silica

Abrasive blast media shall not contain free crystalline silica.

1.5.7 Human Carcinogens

Materials shall not contain ACGIH 0100 confirmed human carcinogens (A1) or suspected human carcinogens (A2).

1.6 PACKAGING, LABELING, AND STORAGE

Paints shall be in sealed containers that legibly show the contract specification number, designation name, formula or specification number, batch number, color, quantity, date of manufacture, manufacturer's formulation number, manufacturer's directions including any warnings and special precautions, and name and address of manufacturer. Pigmented paints shall be furnished in containers not larger than 5 gallons. Paints and thinners shall be stored in accordance with the manufacturer's written directions, and as a minimum, stored off the ground, under cover, with sufficient ventilation to prevent the buildup of flammable vapors, and at temperatures between 40 to 95 degrees F.

1.7 SAFETY AND HEALTH

Apply coating materials using safety methods and equipment in accordance with the following:

Work shall comply with applicable Federal, State, and local laws and regulations, and with the ACCIDENT PREVENTION PLAN, including the Activity Hazard Analysis as specified in Section 01 35 26 GOVERNMENT SAFETY REQUIREMENTS and in Appendix A of EM 385-1-1. The Activity Hazard Analysis shall include analyses of the potential impact of painting operations on painting personnel and on others involved in and adjacent to the work zone.

1.7.1 Safety Methods Used During Coating Application

Comply with the requirements of SSPC PA Guide 3.

1.7.2 Toxic Materials

To protect personnel from overexposure to toxic materials, conform to the

most stringent guidance of:

a. The applicable manufacturer's Material Safety Data Sheets (MSDS) or local regulation.

b. 29 CFR 1910.1000.

c. ACGIH 0100, threshold limit values.

1.8 ENVIRONMENTAL CONDITIONS

Comply, at minimum, with manufacturer recommendations for space ventilation during and after installation. [Isolate area of application from rest of building when applying high-emission paints or coatings.]

1.8.1 Coatings

Do not apply coating when air or substrate conditions are:

a. Less than 5 degrees F above dew point;

b. Below 50 degrees F or over 95 degrees F, unless specifically pre-approved by the Contracting Officer and the product manufacturer. Under no circumstances shall application conditions exceed manufacturer recommendations.

1.9 SUSTAINABLE DESIGN REQUIREMENTS

1.9.1 Local/Regional Materials

[Use materials or products extracted, harvested, or recovered, as well as manufactured, within a [500][_____] mile radius from the project site, if available from a minimum of three sources.][See Section 01 33 29 LEED(tm) DOCUMENTATION for cumulative total local material requirements. Paint and coating materials may be locally available.

1.10 COLOR SELECTION

Color, texture, and pattern of wall coating systems shall be in accordance with Section 09 06 00 SCHEDULES FOR FINISHES.

1.11 LOCATION AND SURFACE TYPE TO BE PAINTED

1.11.1 Painting Included

Where a space or surface is indicated to be painted, include the following unless indicated otherwise.

a. Surfaces behind portable objects and surface mounted articles readily detachable by removal of fasteners, such as screws and bolts.

b. New factory finished surfaces that require identification or color coding and factory finished surfaces that are damaged during performance of the work.

c. Existing coated surfaces that are damaged during performance of the work.

1.11.1.1 Interior Painting

Includes new surfaces[, existing uncoated surfaces,] [and] [existing coated surfaces] of the building[s] and appurtenances as indicated and existing coated surfaces made bare by cleaning operations. Where a space or surface is indicated to be painted, include the following items, unless indicated otherwise.

a. Exposed columns, girders, beams, joists, and metal deck; and

b. Other contiguous surfaces.

1.11.2 Painting Excluded

Do not paint the following unless indicated otherwise.

a. Surfaces concealed and made inaccessible by panelboards, fixed ductwork, machinery, and equipment fixed in place.

b. Surfaces in concealed spaces. Concealed spaces are defined as enclosed spaces above suspended ceilings, furred spaces, attic spaces, crawl spaces, elevator shafts and chases.

c. Steel to be embedded in concrete.

d. Copper, stainless steel, aluminum, brass, and lead except existing coated surfaces.

e. Hardware, fittings, and other factory finished items.

[f. Surfaces in the following areas shall not be painted: [_____].

]1.11.3 Mechanical and Electrical Painting

Includes field coating of [interior] [and] [exterior] new [and existing] surfaces.

a. Where a space or surface is indicated to be painted, include the following items unless indicated otherwise.

(1) Exposed piping, conduit, and ductwork;

(2) Supports, hangers, air grilles, and registers;

(3) Miscellaneous metalwork and insulation coverings.

[b. Do not paint the following, unless indicated otherwise:

[(1) New zinc-coated, aluminum, and copper surfaces under insulation

][(2) New aluminum jacket on piping

][(3) New interior ferrous piping under insulation.

]][1.11.3.1 Fire Extinguishing Sprinkler Systems

Clean, pretreat, prime, and paint new fire extinguishing sprinkler systems including valves, piping, conduit, hangers, supports, miscellaneous

metalwork, and accessories. Apply coatings to clean, dry surfaces, using clean brushes. Clean the surfaces to remove dust, dirt, rust, and loose mill scale. Immediately after cleaning, provide the metal surfaces with one coat primer per schedules. Shield sprinkler heads with protective covering while painting is in progress. Upon completion of painting, remove protective covering from sprinkler heads. Remove sprinkler heads which have been painted and replace with new sprinkler heads. Provide primed surfaces with the following:

a. Piping in Unfinished Areas: Provide primed surfaces with one coat of red alkyd gloss enamel applied to a minimum dry film thickness of 1.0 mil in attic spaces, spaces above suspended ceilings, crawl spaces, pipe chases, mechanical equipment room, and spaces where walls or ceiling are not painted or not constructed of a prefinished material. [In lieu of red enamel finish coat, provide piping with 2 inch wide red enamel bands or self-adhering red plastic bands spaced at maximum of 20 foot intervals.]

b. Piping in Finished Areas: Provide primed surfaces with two coats of paint to match adjacent surfaces, except provide valves and operating accessories with one coat of red alkyd gloss enamel applied to a minimum dry film thickness of 1.0 mil. Provide piping with 2 inch wide red enamel bands or self-adhering red plastic bands spaced at maximum of 20 foot intervals throughout the piping systems.

PART 2 PRODUCTS

2.1 MATERIALS

Conform to the coating specifications and standards referenced in PART 3. Submit manufacturer's technical data sheets for specified coatings and solvents. [Minimum [20][50][_____] percent post-consumer recycled content for the following light-colored paints and primers: [_____]. Minimum [50][90][99][_____] percent post-consumer recycled content for the following dark-colored paints and primers: [_____]. [All][The following] consolidated latex paints shall contain a minimum of [100][_____] percent post-consumer recycled content[: [_____]].] Comply with applicable regulations regarding toxic and hazardous materials.

PART 3 EXECUTION

3.1 PROTECTION OF AREAS AND SPACES NOT TO BE PAINTED

Prior to surface preparation and coating applications, remove, mask, or otherwise protect, hardware, hardware accessories, machined surfaces, radiator covers, plates, lighting fixtures, public and private property, and other such items not to be coated that are in contact with surfaces to be coated. Following completion of painting, workmen skilled in the trades involved shall reinstall removed items. Restore surfaces contaminated by coating materials, to original condition and repair damaged items.

[3.2 REPUTTYING AND REGLAZING

Remove cracked, loose, and defective putty or glazing compound on glazed sash and provide new putty or glazing compound. Where defective putty or glazing compound constitutes 30 percent or more of the putty at any one light, remove the glass and putty or glazing compound and reset the glass. Remove putty or glazing compound without damaging sash or glass. Clean

rabbets to bare wood or metal and prime prior to reglazing. Putty for wood sash shall be a linseed oil putty. Patch surfaces to provide smooth transition between existing and new surfaces. Finish putty or glazing compound to a neat and true bead. Allow glazing compound time to cure, in accordance with manufacturer's recommendation, prior to coating application. Allow putty to set one week prior to coating application.

3.3 SURFACE PREPARATION

Remove dirt, splinters, loose particles, grease, oil, [disintegrated coatings,] and other foreign matter and substances deleterious to coating performance as specified for each substrate before application of paint or surface treatments. Oil and grease shall be removed prior to mechanical cleaning. Cleaning shall be programmed so that dust and other contaminants will not fall on wet, newly painted surfaces. Exposed ferrous metals such as nail heads on or in contact with surfaces to be painted with water-thinned paints, shall be spot-primed with a suitable corrosion-inhibitive primer capable of preventing flash rusting and compatible with the coating specified for the adjacent areas.

[3.3.1 Additional Requirements for Preparation of Surfaces With Existing Coatings

Before application of coatings, perform the following on surfaces covered by soundly-adhered coatings, defined as those which cannot be removed with a putty knife:

a. Test existing finishes for lead before sanding, scraping, or removing. If lead is present, refer to paragraph Toxic Materials.

b. Wipe previously painted surfaces to receive solvent-based coatings, except stucco and similarly rough surfaces clean with a clean, dry cloth saturated with mineral spirits, ASTM D235. Allow surface to dry. Wiping shall immediately precede the application of the first coat of any coating, unless specified otherwise.

c. Sand existing glossy surfaces to be painted to reduce gloss. Brush, and wipe clean with a damp cloth to remove dust.

d. The requirements specified are minimum. Comply also with the application instructions of the paint manufacturer.

e. Previously painted surfaces [specified to be repainted] [damaged during construction] shall be thoroughly cleaned of all grease, dirt, dust or other foreign matter.

f. Blistering, cracking, flaking and peeling or other deteriorated coatings shall be removed.

g. Chalk shall be removed so that when tested in accordance with ASTM D4214, the chalk resistance rating is no less than 8.

h. Slick surfaces shall be roughened. Damaged areas such as, but not limited to, nail holes, cracks, chips, and spalls shall be repaired with suitable material to match adjacent undamaged areas.

i. Edges of chipped paint shall be feather edged and sanded smooth.

j. Rusty metal surfaces shall be cleaned as per SSPC requirements.

Solvent, mechanical, or chemical cleaning methods shall be used to provide surfaces suitable for painting.

k. New, proposed coatings shall be compatible with existing coatings.

][3.3.2 Existing Coated Surfaces with Minor Defects

[Sand, spackle, and treat minor defects to render them smooth. Minor defects are defined as scratches, nicks, cracks, gouges, spalls, alligatoring, chalking, and irregularities due to partial peeling of previous coatings.] [Remove chalking by sanding [or blasting] so that when tested in accordance with ASTM D4214, the chalk rating is not less than 8.]

][3.3.3 Removal of Existing Coatings

Remove existing coatings from the following surfaces:

a. Surfaces containing large areas of minor defects;

b. Surfaces containing more than 20 percent peeling area; and

c. Surfaces designated by the Contracting Officer, such as surfaces where rust shows through existing coatings.

][3.3.4 Substrate Repair

a. Repair substrate surface damaged during coating removal;

b. Sand edges of adjacent soundly-adhered existing coatings so they are tapered as smooth as practical to areas involved with coating removal; and

c. Clean and prime the substrate as specified.

]3.4 PREPARATION OF METAL SURFACES

3.4.1 Existing and New Ferrous Surfaces

a. Ferrous Surfaces including Shop-coated Surfaces and Small Areas That Contain Rust, Mill Scale and Other Foreign Substances: [Solvent clean] [or] [detergent wash] in accordance with SSPC SP 1 to remove oil and grease. Where shop coat is missing or damaged, clean according to [SSPC SP 2], [SSPC SP 3], [SSPC SP 6/NACE No.3], or [SSPC SP 10/NACE No. 2]. [Brush-off blast remaining surface in accordance with SSPC 7/NACE No.4]; [Water jetting to SSPC SP 12/NACE No.5 WJ-4 may be used to remove loose coating and other loose materials. Use inhibitor as recommended by coating manufacturer to prevent premature rusting.] Shop-coated ferrous surfaces shall be protected from corrosion by treating and touching up corroded areas immediately upon detection.

b. Surfaces With More Than 20 Percent Rust, Mill Scale, and Other Foreign Substances: Clean entire surface in accordance with [SSPC SP 6/NACE No.3/SSPC SP 12/NACE No.5 WJ-3][SSPC SP 10/NACE No. 2/ SSPC SP 12/NACE No.5 WJ-2].

]3.4.2 Final Ferrous Surface Condition:

For tool cleaned surfaces, the requirements are stated in SSPC SP 2 and SSPC SP 3. As a visual reference, cleaned surfaces shall be similar to photographs in SSPC VIS 3.

For abrasive blast cleaned surfaces, the requirements are stated in SSPC 7/NACE No.4, SSPC SP 6/NACE No.3, and SSPC SP 10/NACE No. 2. As a visual reference, cleaned surfaces shall be similar to photographs in SSPC VIS 1.

For waterjet cleaned surfaces, the requirements are stated in SSPC SP 12/NACE No.5. As a visual reference, cleaned surfaces shall be similar to photographs in SSPC VIS 4/NACE VIS 7.

3.4.3 Galvanized Surfaces

a. New or Existing Galvanized Surfaces With Only Dirt and Zinc Oxidation Products: Clean with [solvent,][steam,][or][non-alkaline detergent solution]in accordance with SSPC SP 1. If the galvanized metal has been passivated or stabilized, the coating shall be completely removed by brush-off abrasive blast. New galvanized steel to be coated shall not be "passivated" or "stabilized" If the absence of hexavalent stain inhibitors is not documented, test as described in ASTM D6386, Appendix X2, and remove by one of the methods described therein.

b. Galvanized with Slight Coating Deterioration or with Little or No Rusting: Water jetting to SSPC SP 12/NACE No.5 WJ3 to remove loose coating from surfaces with less than 20 percent coating deterioration and no blistering, peeling, or cracking. Use inhibitor as recommended by the coating manufacturer to prevent rusting.

c. Galvanized With Severe Deteriorated Coating or Severe Rusting: [Water jet to SSPC SP 12/NACE No.5 WJ3 degree of cleanliness.] [Spot abrasive blast rusted areas as described for steel in SSPC SP 6/NACE No.3, and waterjet to SSPC SP 12/NACE No.5, WJ3 to remove existing coating.]

3.4.4 Non-Ferrous Metallic Surfaces

Aluminum and aluminum-alloy, lead, copper, and other nonferrous metal surfaces.

Surface Cleaning: Solvent clean in accordance with SSPC SP 1 and wash with mild non-alkaline detergent to remove dirt and water soluble contaminants.

3.4.5 Terne-Coated Metal Surfaces

Solvent clean surfaces with mineral spirits, ASTM D235. Wipe dry with clean, dry cloths.

3.4.6 Existing Surfaces with a Bituminous or Mastic-Type Coating

Remove chalk, mildew, and other loose material by washing with a solution of 1/2 cup trisodium phosphate, 1/4 cup household detergent, one quart 5 percent sodium hypochlorite solution and 3 quarts of warm water.

3.5 PREPARATION OF CONCRETE AND CEMENTITIOUS SURFACE

3.5.1 Concrete and Masonry

a. Curing: Concrete, stucco and masonry surfaces shall be allowed to cure at least 30 days before painting, except concrete slab on grade, which shall be allowed to cure 90 days before painting.

b. Surface Cleaning: Remove the following deleterious substances.

(1) Dirt, [Chalking,] Grease, and Oil: Wash new [and existing uncoated] surfaces with a solution composed of 1/2 cup trisodium phosphate, 1/4 cuphousehold detergent, and 4 quarts of warm water. Then rinse thoroughly with fresh water. [Wash existing coated surfaces with a suitable detergent and rinse thoroughly.] For large areas, water blasting may be used.

(2) Fungus and Mold: Wash [new] [, existing coated,] [and existing uncoated] surfaces with a solution composed of 1/2 cup trisodium phosphate, 1/4 cup household detergent, 1 quart 5 percent sodium hypochlorite solution and 3 quarts of warm water. Rinse thoroughly with fresh water.

(3) Paint and Loose Particles: Remove by wire brushing.

(4) Efflorescence: Remove by scraping or wire brushing followed by washing with a 5 to 10 percent by weight aqueous solution of hydrochloric (muriatic) acid. Do not allow acid to remain on the surface for more than five minutes before rinsing with fresh water. Do not acid clean more than 4 square feet of surface, per workman, at one time.

[(5) Removal of Existing Coatings: For surfaces to receive textured coating MPI 42, remove existing coatings including soundly adhered coatings if recommended by textured coating manufacturer.

] c. Cosmetic Repair of Minor Defects: Repair or fill mortar joints and minor defects, including but not limited to spalls, in accordance with manufacturer's recommendations and prior to coating application.

d. Allowable Moisture Content: Latex coatings may be applied to damp surfaces, but not to surfaces with droplets of water. Do not apply epoxies to damp vertical surfaces as determined by ASTM D4263 or horizontal surfaces that exceed 3 lbs of moisture per 1000 square feet in 24 hours as determined by ASTM F1869. In all cases follow manufacturers recommendations. Allow surfaces to cure a minimum of 30 days before painting.

3.5.2 Gypsum Board, Plaster, and Stucco

a. Surface Cleaning: Plaster and stucco shall be clean and free from loose matter; gypsum board shall be dry. Remove loose dirt and dust by brushing with a soft brush, rubbing with a dry cloth, or vacuum-cleaning prior to application of the first coat material. A damp cloth or sponge may be used if paint will be water-based.

b. Repair of Minor Defects: Prior to painting, repair joints, cracks, holes, surface irregularities, and other minor defects with patching plaster or spackling compound and sand smooth.

c. Allowable Moisture Content: Latex coatings may be applied to damp surfaces, but not surfaces with droplets of water. Do not apply epoxies to damp surfaces as determined by ASTM D4263. New plaster to be coated shall have a maximum moisture content of 8 percent, when measured in accordance with ASTM D4444, Method A, unless otherwise authorized. In addition to moisture content requirements, allow new plaster to age a minimum of 30 days before preparation for painting.

3.6 PREPARATION OF WOOD AND PLYWOOD SURFACES

3.6.1 New [, Existing Uncoated,] [and] [Existing Coated] Plywood and Wood Surfaces, Except Floors:

a. Wood surfaces shall be cleaned of foreign matter.

Surface Cleaning: Surfaces shall be free from dust and other deleterious substances and in a condition approved by the Contracting Officer prior to receiving paint or other finish. Do not use water to clean uncoated wood. [Scrape to remove loose coatings. Lightly sand to roughen the entire area of previously enamel-coated wood surfaces.]

[b. Removal of Fungus and Mold: Wash existing coated surfaces with a solution composed of 3 ounces (2/3 cup) trisodium phosphate, 1 ounce (1/3 cup) household detergent, 1 quart 5 percent sodium hypochlorite solution and 3 quarts of warm water. Rinse thoroughly with fresh water.

] c. Moisture content of the wood shall not exceed 12 percent as measured by a moisture meter in accordance with ASTM D4444, Method A, unless otherwise authorized.

d. Wood surfaces adjacent to surfaces to receive water-thinned paints shall be primed and/or touched up before applying water-thinned paints.

e. Cracks and Nailheads: Set and putty stop nailheads and putty cracks after the prime coat has dried.

f. Cosmetic Repair of Minor Defects:

(1) Knots and Resinous Wood [and Fire, Smoke, Water, and Color Marker Stained Existing Coated Surface]: Prior to application of coating, cover knots and stains with two or more coats of 3-pound-cut shellac varnish, plasticized with 5 ounces of castor oil per gallon. Scrape away existing coatings from knotty areas, and sand before treating. Prime before applying any putty over shellacked area.

(2) Open Joints and Other Openings: Fill with whiting putty, linseed oil putty. Sand smooth after putty has dried.

(3) Checking: Where checking of the wood is present, sand the surface, wipe and apply a coat of pigmented orange shellac. Allow to dry before paint is applied.

3.6.2 Interior Wood Surfaces, Stain Finish

Interior wood surfaces to receive stain shall be sanded. Oak and other open-grain wood to receive stain shall be given a coat of wood filler not

less than 8 hours before the application of stain; excess filler shall be removed and the surface sanded smooth.

3.7 APPLICATION

3.7.1 Coating Application

Painting practices shall comply with applicable federal, state and local laws enacted to insure compliance with Federal Clean Air Standards. Apply coating materials in accordance with SSPC PA 1. SSPC PA 1 methods are applicable to all substrates, except as modified herein.

At the time of application, paint shall show no signs of deterioration. Uniform suspension of pigments shall be maintained during application.

Unless otherwise specified or recommended by the paint manufacturer, paint may be applied by brush, roller, or spray. Use trigger operated spray nozzles for water hoses. Rollers for applying paints and enamels shall be of a type designed for the coating to be applied and the surface to be coated. Wear protective clothing and respirators when applying oil-based paints or using spray equipment with any paints.

Paints, except water-thinned types, shall be applied only to surfaces that are completely free of moisture as determined by sight or touch.

Thoroughly work coating materials into joints, crevices, and open spaces. Special attention shall be given to insure that all edges, corners, crevices, welds, and rivets receive a film thickness equal to that of adjacent painted surfaces.

Each coat of paint shall be applied so dry film shall be of uniform thickness and free from runs, drops, ridges, waves, pinholes or other voids, laps, brush marks, and variations in color, texture, and finish. Hiding shall be complete.

Touch up damaged coatings before applying subsequent coats.[Interior areas shall be broom clean and dust free before and during the application of coating material.]

3.7.2 Mixing and Thinning of Paints

Reduce paints to proper consistency by adding fresh paint, except when thinning is mandatory to suit surface, temperature, weather conditions, application methods, or for the type of paint being used. Obtain written permission from the Contracting Officer to use thinners. The written permission shall include quantities and types of thinners to use.

When thinning is allowed, paints shall be thinned immediately prior to application with not more than [0.125 L] [1 pint] of suitable thinner per [liter.] [gallon.] The use of thinner shall not relieve the Contractor from obtaining complete hiding, full film thickness, or required gloss. Thinning shall not cause the paint to exceed limits on volatile organic compounds. Paints of different manufacturers shall not be mixed.

3.7.3 Two-Component Systems

Two-component systems shall be mixed in accordance with manufacturer's instructions. Any thinning of the first coat to ensure proper penetration

and sealing shall be as recommended by the manufacturer for each type of substrate.

3.7.4 Coating Systems

a. Systems by Substrates: Apply coatings that conform to the respective specifications listed in the following Tables:

Table

Division 3. Interior Concrete Paint Table
Division 4. Interior Concrete Masonry Units Paint Table
Division 5. Interior Metal, Ferrous and Non-Ferrous Paint Table
Division 6. Interior Wood Paint Table
Division 9: Interior Plaster, Gypsum Board, Textured Surfaces Paint Table

b. Minimum Dry Film Thickness (DFT): Apply paints, primers, varnishes, enamels, undercoats, and other coatings to a minimum dry film thickness of 1.5 mil each coat unless specified otherwise in the Tables. Coating thickness where specified, refers to the minimum dry film thickness.

c. Coatings for Surfaces Not Specified Otherwise: Coat surfaces which have not been specified, the same as surfaces having similar conditions of exposure.

d. Existing Surfaces Damaged During Performance of the Work, Including New Patches In Existing Surfaces: Coat surfaces with the following:

(1) One coat of primer.

(2) One coat of undercoat or intermediate coat.

(3) One topcoat to match adjacent surfaces.

e. Existing Coated Surfaces To Be Painted: Apply coatings conforming to the respective specifications listed in the Tables herein, except that pretreatments, sealers and fillers need not be provided on surfaces where existing coatings are soundly adhered and in good condition. Do not omit undercoats or primers.

3.8 COATING SYSTEMS FOR METAL

Apply coatings of Tables in Division 5 for Exterior and Interior.

a. Apply specified ferrous metal primer on the same day that surface is cleaned, to surfaces that meet all specified surface preparation requirements at time of application.

b. Inaccessible Surfaces: Prior to erection, use one coat of specified primer on metal surfaces that will be inaccessible after erection.

c. Shop-primed Surfaces: Touch up exposed substrates and damaged coatings to protect from rusting prior to applying field primer.

d. Surface Previously Coated with Epoxy or Urethane: Apply MPI 101, 1.5 mils DFT immediately prior to application of epoxy or urethane coatings.

e. Pipes and Tubing: The semitransparent film applied to some pipes and tubing at the mill is not to be considered a shop coat, but shall be overcoated with the specified ferrous-metal primer prior to application of finish coats.

f. Exposed Nails, Screws, Fasteners, and Miscellaneous Ferrous Surfaces. On surfaces to be coated with water thinned coatings, spot prime exposed nails and other ferrous metal with latex primer MPI 107.

3.9 COATING SYSTEMS FOR CONCRETE AND CEMENTITIOUS SUBSTRATES

Apply coatings of Tables in Division 3, 4 and 9 for Exterior and Interior.

3.10 COATING SYSTEMS FOR WOOD AND PLYWOOD

a. Apply coatings of Tables in Division 6 for Exterior and Interior.

b. Prior to erection, apply two coats of specified primer to treat and prime wood [and plywood] surfaces which will be inaccessible after erection.

c. Apply stains in accordance with manufacturer's printed instructions.

]3.11 PIPING IDENTIFICATION

Piping Identification, Including Surfaces In Concealed Spaces: Provide in accordance with [MIL-STD-101][ASME A13.1]. Place stenciling in clearly visible locations. On piping not covered by [MIL-STD-101][ASME A13.1], stencil approved names or code letters, in letters a minimum of 1/2 inch high for piping and a minimum of 2 inches high elsewhere. Stencil arrow-shaped markings on piping to indicate direction of flow using black stencil paint.

3.12 INSPECTION AND ACCEPTANCE

In addition to meeting previously specified requirements, demonstrate mobility of moving components, including swinging and sliding doors, cabinets, and windows with operable sash, for inspection by the Contracting Officer. Perform this demonstration after appropriate curing and drying times of coatings have elapsed and prior to invoicing for final payment.

3.13 WASTE MANAGEMENT

As specified in the Waste Management Plan and as follows. Do not use kerosene or any such organic solvents to clean up water based paints. Properly dispose of paints or solvents in designated containers. Close and seal partially used containers of paint to maintain quality as necessary for reuse. Store in protected, well-ventilated, fire-safe area at moderate temperature. Place materials defined as hazardous or toxic waste in designated containers. [Coordinate with manufacturer for take-back program. Set aside scrap to be returned to manufacturer for recycling into new product. When such a service is not available, local recyclers shall be sought after to reclaim the materials.] [Set aside extra paint for future color matches or reuse by the Government.] [Where local options exist for leftover paint recycling, collect all waste paint by type and provide for delivery to recycling or collection facility for reuse by local organizations.]

3.14 PAINT TABLES

All DFT's are minimum values.[Use only materials [with a GPS green check mark] having a minimum MPI "Environmentally Friendly" [E1] [E2] [E3] rating based on VOC (EPA Method 24) content levels.][Use only interior paints and coatings that meet VOC requirements of LEED low emitting materials credit.] Acceptable products are listed in the MPI Green Approved Products List, available at http://www.specifygreen.com/APL/ProductIdxByMPInum.asp.

3.14.1 INTERIOR PAINT TABLES

DIVISION 3: INTERIOR CONCRETE PAINT TABLE

A. [New and uncoated existing] [and Existing, previously painted] Concrete, vertical surfaces, not specified otherwise:

1. [Latex
   [New; MPI INT 3.1A-G2 (Flat) / Existing; MPI RIN 3.1A-G2 (Flat)
   Primer: Intermediate: Topcoat:
   MPI 50 MPI 44 MPI 44
   System DFT: 4 mils]

   [New; MPI INT 3.1A-G3 (Eggshell) / Existing; MPI RIN 3.1A-G3 (Eggshell)
   Primer: Intermediate: Topcoat:
   MPI 50 MPI 52 MPI 52
   System DFT: 4 mils]

   [New; MPI INT 3.1A-G5 (Semigloss) / Existing; MPI RIN 3.1A-G5 (Semigloss)
   Primer: Intermediate: Topcoat:
   MPI 50 MPI 54 MPI 54
   System DFT: 4 mils]]

2. [High Performance Architectural Latex
   [New; MPI INT 3.1C-G2 (Flat) / Existing; MPI RIN 3.1J-G2 (Flat)
   Primer: Intermediate: Topcoat:
   MPI 50 MPI 138 MPI 138
   System DFT: 4 mils]

   [New; MPI INT 3.1C-G3 (Eggshell) / Existing; MPI RIN 3.1J-G3 (Eggshell)
   Primer: Intermediate: Topcoat:
   MPI 50 MPI 139 MPI 139
   System DFT: 4 mils]

   [New; MPI INT 3.1C-G4 (satin)/ Existing; MPI RIN 3.1J-G4
   Primer: Intermediate: Topcoat:
   MPI 50 MPI 140 MPI 140
   System DFT: 4 mils]

   [New; MPI INT 3.1C-G5 (Semigloss) / Existing; MPI RIN 3.1J-G5 (Semigloss)
   Primer: Intermediate: Topcoat:
   MPI 50 MPI 141 MPI 141
   System DFT: 4 mils]]

3. [Institutional Low Odor / Low VOC Latex
   [New; MPI INT 3.1M-G2 (Flat) / Existing; MPI RIN 3.1L-G2 (Flat)
   Primer: Intermediate: Topcoat:
   MPI 50 MPI 144 MPI 144
   System DFT: 4 mils]

DIVISION 3: INTERIOR CONCRETE PAINT TABLE

[New; MPI INT 3.1M-G3 (Eggshell) / Existing; MPI RIN 3.1L-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 50 MPI 145 MPI 145
System DFT: 4 mils]

[New; MPI INT 3.1M-G4 (satin)/ Existing; MPI RIN 3.1L-G4
Primer: Intermediate: Topcoat:
MPI 50 MPI 146 MPI 146
System DFT: 4 mils]

[New; MPI INT 3.1M-G5 (Semigloss) / Existing; MPI RIN 3.1L-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 50 MPI 147 MPI 147
System DFT: 4 mils]]

B. Concrete ceilings, uncoated:

1. [Latex Aggregate
MPI INT 3.1N
Primer: Intermediate: Topcoat:
N/A N/A MPI 42
System DFT: Per Manufacturer

Texture - [Fine] [Medium] [Coarse]. Surface preparation, number of coats, and primer in accordance with manufacturer's instructions. Topcoat: Coating to match adjacent surfaces.]

C. [New and uncoated existing] [and Existing, previously painted] Concrete in [toilets], [food-preparation], [food-serving], [restrooms], [laundry areas], [shower areas], [areas requiring a high degree of sanitation], [_____] [and other high-humidity areas] not otherwise specified except floors:

1. [Waterborne Light Industrial Coating
[New; MPI INT 3.1L-G3(Eggshell) / Existing; MPI RIN 3.1C-G3(Eggshell)
Primer: Intermediate: Topcoat:
MPI 151 MPI 151 MPI 151
System DFT: 4.8 mils]

[New; MPI INT 3.1L-G5(Semigloss) / Existing; MPI RIN 3.1C-G5(Semigloss)
Primer: Intermediate: Topcoat:
MPI 153 MPI 153 MPI 153
System DFT: 4.8 mils]

[New; MPI INT 3.1L-G6(Gloss) / Existing; MPI RIN 3.1C-G6(Gloss)
Primer: Intermediate: Topcoat:
MPI 154 MPI 154 MPI 154
System DFT: 4.8 mils]]

2. [Alkyd
[New; MPI INT 3.1D-G3 (Eggshell) / Existing; RIN 3.1D-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 50 MPI 51 MPI 51
System DFT: 4.5 mils]

[MPI INT 3.1D-G5 (Semigloss) / Existing; RIN 3.1D-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 50 MPI 47 MPI 47

DIVISION 3: INTERIOR CONCRETE PAINT TABLE
System DFT: 4.5 mils]

[MPI INT 3.1D-G6 (Gloss) / Existing; RIN 3.1D-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 50 MPI 48 MPI 48
System DFT: 4.5 mils]]

3. [Epoxy
New; MPI INT 3.1F-G6 (Gloss) / Existing; MPI RIN 3.1E-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 77 MPI 77 MPI 77
System DFT: 4 mils

Note: Primer may be reduced for penetration per manufacturer's instructions.]

4.. [Institutional, Low Odor, Low VOC, Microbicidal Latex, EPA Registered
[New, MPI INT 3.1M-G3 (Eggshell) / Existing; MPI RIN 3.1M-G3 (Eggshell)

Primer Intermediate Topcoat
MPI 50 Similar to MPI 144 Similar to MPI 144

DIVISION 4: INTERIOR CONCRETE MASONRY UNITS PAINT TABLE

A. New [and uncoated Existing] Concrete masonry:

1. [High Performance Architectural Latex
[MPI INT 4.2D-G2 (Flat)
Filler Primer: Intermediate: Topcoat:
MPI 4 N/A MPI 138 MPI 138
System DFT: 11 mils]

[MPI INT 4.2D-G3 (Eggshell)
Filler Primer: Intermediate: Topcoat:
MPI 4 N/A MPI 139 MPI 139
System DFT: 11 mils]

[MPI INT 4.2D-G4 (Satin)
Filler Primer: Intermediate: Topcoat:
MPI 4 N/A MPI 140 MPI 140
System DFT: 11 mils]

[MPI INT 4.2D-G5 (Semigloss)
Filler Primer: Intermediate: Topcoat:
MPI 4 N/A MPI 141 MPI 141
System DFT: 11 mils]

Fill all holes in masonry surface]

2. [Institutional Low Odor / Low VOC Latex
[New; MPI INT 4.2E-G2 (Flat)
Filler Primer: Intermediate: Topcoat:
MPI 4 N/A MPI 144 MPI 144
System DFT: 4 mils]

[New; MPI INT 4.2E-G3 (Eggshell)
Filler Primer: Intermediate: Topcoat:

DIVISION 4: INTERIOR CONCRETE MASONRY UNITS PAINT TABLE

MPI 4	N/A	MPI 145	MPI 145
System DFT: 4 mils]			

[New; MPI INT 4.2E-G4 (Satin)

Filler	Primer:	Intermediate:	Topcoat:
MPI 4	N/A	MPI 146	MPI 146
System DFT: 4 mils]			

[New; MPI INT 4.2E-G5 (Semigloss)

Filler	Primer:	Intermediate:	Topcoat:
MPI 4	N/A	MPI 147	MPI 147
System DFT: 4 mils]]			

3. [Institutional, Low Odor, Low VOC, Microbicidal Latex, EPA Registered

[New, MPI INT 4.2E-G3 (Eggshell) / Existing; MPI RIN 4.2E-G3 (Eggshell)

Primer	Intermediate	Topcoat
MPI 50	Similar to MPI 144	Similar to MPI 144

B. Existing, previously painted Concrete masonry:

1. [High Performance Architectural Latex

[MPI RIN 4.2K-G2 (Flat)

Spot Primer:	Intermediate:	Topcoat:
MPI 50	MPI 138	MPI 138
System DFT: 4.5 mils]		

[MPI RIN 4.2K-G3 (Eggshell)

Spot Primer:	Intermediate:	Topcoat:
MPI 50	MPI 139	MPI 139
System DFT: 4.5 mils]		

[MPI RIN 4.2K-G4

Spot Primer:	Intermediate:	Topcoat:
MPI 50	MPI 140	MPI 140
System DFT: 4.5 mils]		

[MPI RIN 4.2K-G5 (Semigloss)

Spot Primer:	Intermediate:	Topcoat:
MPI 50	MPI 141	MPI 141
System DFT: 4.5 mils]]		

2. [Institutional Low Odor / Low VOC Latex

[Existing; MPI RIN 4.2L-G2 (Flat)

Spot Primer:	Intermediate:	Topcoat:
MPI 50	MPI 144	MPI 144
System DFT: 4 mils]		

[Existing; MPI RIN 4.2L-G3 (Eggshell)

Spot Primer:	Intermediate:	Topcoat:
MPI 50	MPI 145	MPI 145
System DFT: 4 mils]		

[Existing; MPI RIN 4.2L-G4 (Satin)

Spot Primer:	Intermediate:	Topcoat:
MPI 50	MPI 146	MPI 146

DIVISION 4: INTERIOR CONCRETE MASONRY UNITS PAINT TABLE
System DFT: 4 mils]

[Existing; MPI RIN 4.2L-G5 (Semigloss)
Spot Primer: Intermediate: Topcoat:
MPI 50 MPI 147 MPI 147
System DFT: 4 mils]]

C. New [and uncoated Existing] Concrete masonry units in [toilets], [food-preparation], [food-serving], [restrooms], [laundry areas], [shower areas], [areas requiring a high degree of sanitation], [_____], [and other high humidity areas] unless otherwise specified:

1. [Waterborne Light Industrial Coating
[MPI INT 4.2K-G3(Eggshell)
Filler: Primer: Intermediate: Topcoat:
MPI 4 N/A MPI 151 MPI 151
System DFT: 11 mils]

[MPI INT 4.2K-G5(Semigloss)
Filler: Primer: Intermediate: Topcoat:
MPI 4 N/A MPI 153 MPI 153
System DFT: 11 mils]

[MPI INT 4.2K-G6(Gloss)
Filler: Primer: Intermediate: Topcoat:
MPI 4 N/A MPI 154 MPI 154
System DFT: 11 mils]

Fill all holes in masonry surface]

2. [Alkyd
[MPI INT 4.2N-G3 (Eggshell)
Filler: Primer: Intermediate: Topcoat:
MPI 4 MPI 50 MPI 51 MPI 51
System DFT: 12 mils]

[MPI INT 4.2N-G5 (Semigloss)
Filler: Primer: Intermediate: Topcoat:
MPI 4 MPI 50 MPI 47 MPI 47
System DFT: 12 mils]

[MPI INT 4.2N-G6 (Gloss)
Filler: Primer: Intermediate: Topcoat:
MPI 4 MPI 50 MPI 48 MPI 48
System DFT: 12 mils]

Fill all holes in masonry surface]

3. [Epoxy
MPI INT 4.2G-G6 (Gloss)
Filler: Primer: Intermediate: Topcoat:
MPI 116 N/A MPI 77 MPI 77
System DFT: 10 mils

Fill all holes in masonry surface]

D. Existing, previously painted, concrete masonry units in [toilets], [food-preparation], [food-serving], [restrooms], [laundry areas], [shower

DIVISION 4: INTERIOR CONCRETE MASONRY UNITS PAINT TABLE
areas], [areas requiring a high degree of sanitation], [_____], [and other high humidity areas] unless otherwise specified:

1. [Waterborne Light Industrial Coating
[MPI RIN 4.2G-G3(Eggshell)
Spot Primer: Intermediate: Topcoat:
MPI 151 MPI 151 MPI 151
System DFT: 4.5 mils]

[MPI RIN 4.2G-G5(Semigloss)
Spot Primer: Intermediate: Topcoat:
MPI 153 MPI 153 MPI 153
System DFT: 4.5 mils]

[MPI RIN 4.2G-G6(Gloss)
Spot Primer: Intermediate: Topcoat:
MPI 154 MPI 154 MPI 154
System DFT: 4.5 mils]]

2. [Alkyd
[MPI RIN 4.2C-G3 (Eggshell)
Spot Primer: Intermediate: Topcoat:
MPI 50 MPI 51 MPI 51
System DFT: 4.5 mils]

[MPI RIN 4.2C-G5 (Semigloss)
Spot Primer: Intermediate: Topcoat:
MPI 50 MPI 47 MPI 47
System DFT: 4.5 mils]

[MPI RIN 4.2C-G6 (Gloss)
Spot Primer: Intermediate: Topcoat:
MPI 50 MPI 48 MPI 48
System DFT: 4.5 mils]]

3. [Epoxy
MPI RIN 4.2D-G6 (Gloss)
Spot Primer: Intermediate: Topcoat:
MPI 77 MPI 77 MPI 77
System DFT: 5 mils]

4. [Institutional, Low Odor, Low VOC, Microbicidal Latex, EPA Registered

[New, MPI INT 4.2E-G3 (Eggshell) / Existing; MPI RIN 4.2E-G3 (Eggshell)

Primer	Intermediate	Topcoat
MPI 50	Similar to MPI 144	Similar to MPI 144

DIVISION 5: INTERIOR METAL, FERROUS AND NON-FERROUS PAINT TABLE

INTERIOR STEEL / FERROUS SURFACES

A. Metal, [Mechanical,] [Electrical,] [Fire extinguishing sprinkler systems including valves, conduit, hangers, supports,][Surfaces adjacent to painted surfaces (Match surrounding finish),] [exposed copper piping,] [and miscellaneous metal items] not otherwise specified except floors, hot metal

INTERIOR STEEL / FERROUS SURFACES
surfaces, and new prefinished equipment:

1. [High Performance Architectural Latex
[MPI INT 5.1R-G2 (Flat)
Primer: Intermediate: Topcoat:
MPI 79 MPI 138 MPI 138
System DFT: 5 mils]

[MPI INT 5.1R-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 79 MPI 139 MPI 139
System DFT: 5 mils]

[MPI INT 5.1R-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 79 MPI 141 MPI 141
System DFT: 5 mils]]

2. [Alkyd
[MPI INT 5.1E-G2 (Flat)
Primer: Intermediate: Topcoat:
MPI 79 MPI 49 MPI 49
System DFT: 5.25 mils]

[MPI INT 5.1E-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 79 MPI 51 MPI 51
System DFT: 5.25 mils]

[MPI INT 5.1E-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 79 MPI 47 MPI 47
System DFT: 5.25 mils]

[MPI INT 5.1E-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 79 MPI 48 MPI 48
System DFT: 5.25 mils]]

B. Metal floors (non-shop-primed surfaces or non-slip deck surfaces) with non-skid additive (NSA), load at manufacturer's recommendations.:

1. [Alkyd Floor Paint
MPI INT 5.1U-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 79 MPI 27 MPI 27 (plus NSA)
System DFT: 5.25 mils]

2. [Epoxy
MPI INT 5.1L-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 101 MPI 77 MPI 77 (plus NSA)
System DFT: 5.25 mils]

C. Metal in [toilets], [food-preparation], [food-serving], [restrooms], [laundry areas], [shower areas], [areas requiring a high degree of sanitation], [_____], [and other high-humidity areas] not otherwise

INTERIOR STEEL / FERROUS SURFACES
specified except floors, hot metal surfaces, and new prefinished equipment:

1. [Alkyd
[MPI INT 5.1E-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 79 MPI 51 MPI 51
System DFT: 5.25 mils]

[MPI INT 5.1E-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 79 MPI 47 MPI 47
System DFT: 5.25 mils]

[MPI INT 5.1E-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 79 MPI 48 MPI 48
System DFT: 5.25 mils]]

2. [Alkyd
[MPI INT 5.1T-G3 (Eggshell) For hand tool cleaning
Primer: Intermediate: Topcoat:
MPI 23 MPI 51 MPI 51
System DFT: 5.25 mils]

[MPI INT 5.1T-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 23 MPI 47 MPI 47
System DFT: 5.25 mils]

[MPI INT 5.1T-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 23 MPI 48 MPI 48
System DFT: 5.25 mils]]

D. Ferrous metal in concealed damp spaces or in exposed areas having unpainted adjacent surfaces as follows: [_____]

1. [Aluminum Paint
MPI INT 5.1M
Primer: Intermediate: Topcoat:
MPI 79 MPI 1 MPI 1
System DFT: 4.25 mils]

E. Miscellaneous non-ferrous metal items not otherwise specified except floors, hot metal surfaces, and new prefinished equipment. Match surrounding finish:

1. [High Performance Architectural Latex
[MPI INT 5.4F-G2 (Flat)
Primer: Intermediate: Topcoat:
MPI 95 MPI 138 MPI 138
System DFT: 5 mils]

[MPI INT 5.4F-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 95 MPI 139 MPI 139
System DFT: 5 mils]

INTERIOR STEEL / FERROUS SURFACES

[MPI INT 5.4F-G4 (Satin)
Primer: Intermediate: Topcoat:
MPI 95 MPI 140 MPI 140
System DFT: 5 mils]

[MPI INT 5.4F-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 95 MPI 141 MPI 141
System DFT: 5 mils]]

2. [Alkyd
[MPI INT 5.4J-G2 (Flat)
Primer: Intermediate: Topcoat:
MPI 95 MPI 49 MPI 49
System DFT: 5 mils]

[MPI INT 5.4J-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 95 MPI 51 MPI 51
System DFT: 5 mils]

[MPI INT 5.4J-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 95 MPI 47 MPI 47
System DFT: 5 mils]

[MPI INT 5.4J-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 95 MPI 48 MPI 48
System DFT: 5 mils]]

F. Hot metal surfaces [including smokestacks] subject to temperatures up to 400 degrees F:

1. [Heat Resistant Enamel
MPI INT 5.2A
Primer: Intermediate: Topcoat:
MPI 21 Surface preparation and number of coats per manufacturer's instructions.
System DFT: Per Manufacturer]

G. Ferrous metal subject to high temperature, up to 750 degrees F:

1. [Inorganic Zinc Rich Coating
MPI INT 5.2C
Primer: Intermediate: Topcoat:
MPI 19 Surface preparation and number of coats per manufacturer's instructions.
System DFT: Per Manufacturer]

2. [Heat Resistant Aluminum Paint
MPI INT 5.2B (Aluminum Finish)
Primer: Intermediate: Topcoat:
MPI 2 Surface preparation and number of coats per manufacturer's instructions.

INTERIOR STEEL / FERROUS SURFACES
System DFT: Per Manufacturer]

H. [New surfaces and] [Existing surfaces] made bare cleaning to SSPC SP 10/NACE No. 2
subject to temperatures up to 593 degrees C (1100 degrees F):

1. [High Heat Resistant Coating
MPI INT 5.2D
Primer: Intermediate: Topcoat:
MPI 22 Surface preparation and number of coats per manufacturer's instructions.
System DFT: Per Manufacturer]

DIVISION 6: INTERIOR WOOD PAINT TABLE

A. New [and Existing, uncoated] Wood and plywood not otherwise specified:

1. [High Performance Architectural Latex
[MPI INT 6.4S-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 39 MPI 139 MPI 139
System DFT: 4.5 mils]

[MPI INT 6.4S-G4 (Satin)
Primer: Intermediate: Topcoat:
MPI 39 MPI 140 MPI 140
System DFT: 4.5 mils]

[MPI INT 6.4S-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 39 MPI 141 MPI 141
System DFT: 4.5 mils]]

2. [Alkyd
[MPI INT 6.4B-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 45 MPI 51 MPI 51
System DFT: 4.5 mils]

[MPI INT 6.4B-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 45 MPI 47 MPI 47
System DFT: 4.5 mils]

[MPI INT 6.4B-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 45 MPI 48 MPI 48
System DFT: 4.5 mils]]

3. [Institutional Low Odor / Low VOC Latex
[New; MPI INT 6.3V-G2 (Flat)
Primer: Intermediate: Topcoat:
MPI 39 MPI 144 MPI 144
System DFT: 4 mils]

[New; MPI INT 6.3V-G3 (Eggshell)
Primer: Intermediate: Topcoat:

DIVISION 6: INTERIOR WOOD PAINT TABLE

MPI 39	MPI 145	MPI 145
System DFT: 4 mils]		

[New; MPI INT 6.3V-G4

Primer:	Intermediate:	Topcoat:
MPI 39	MPI 146	MPI 146
System DFT: 4 mils]		

[New; MPI INT 6.3V-G5 (Semigloss)

Primer:	Intermediate:	Topcoat:
MPI 39	MPI 147	MPI 147
System DFT: 4 mils]]		

B. Existing, previously painted Wood and plywood not otherwise specified:

1. [High Performance Architectural Latex

[MPI RIN 6.4B-G3 (Eggshell)

Primer:	Intermediate:	Topcoat:
MPI 46	MPI 139	MPI 139
System DFT: 4.5 mils]		

[MPI RIN 6.4B-G4 (Satin)

Primer:	Intermediate:	Topcoat:
MPI 46	MPI 140	MPI 140
System DFT: 4.5 mils]		

[MPI RIN 6.4B-G5 (Semigloss)

Primer:	Intermediate:	Topcoat:
MPI 46	MPI 141	MPI 141
System DFT: 4.5 mils]]		

2. [Alkyd

[MPI RIN 6.4C-G3 (Eggshell)

Primer:	Intermediate:	Topcoat:
MPI 46	MPI 51	MPI 51
System DFT: 4.5 mils]		

[MPI RIN 6.4C-G5 (Semigloss)

Primer:	Intermediate:	Topcoat:
MPI 46	MPI 47	MPI 47
System DFT: 4.5 mils]		

[MPI RIN 6.4C-G6 (Gloss)

Primer:	Intermediate:	Topcoat:
MPI 46	MPI 48	MPI 48
System DFT: 4.5 mils]]		

3. [Institutional Low Odor / Low VOC Latex

[Existing; MPI RIN 6.4D-G2 (Flat)

Primer:	Intermediate:	Topcoat:
MPI 39	MPI 144	MPI 144
System DFT: 4 mils]		

[Existing; MPI RIN 6.4D-G3 (Eggshell)

Primer:	Intermediate:	Topcoat:
MPI 39	MPI 145	MPI 145
System DFT: 4 mils]		

DIVISION 6: INTERIOR WOOD PAINT TABLE

[Existing; MPI RIN 6.4D-G4

Primer:	Intermediate:	Topcoat:
MPI 39	MPI 146	MPI 146

System DFT: 4 mils]

[Existing; MPI RIN 6.4D-G5 (Semigloss)

Primer:	Intermediate:	Topcoat:
MPI 39	MPI 147	MPI 147

System DFT: 4 mils]]

C. New [and Existing, previously finished or stained] Wood and Plywood, except floors; natural finish or stained:

1. [Natural finish, oil-modified polyurethane

[New; MPI INT 6.4J-G4 / Existing; MPI RIN 6.4L-G4

Primer:	Intermediate:	Topcoat:
MPI 57	MPI 57	MPI 57

System DFT: 4 mils]

[New; MPI INT 6.4J-G6 (Gloss) / Existing; MPI RIN 6.4L-G6 (Gloss)

Primer:	Intermediate:	Topcoat:
MPI 56	MPI 56	MPI 56

System DFT: 4 mils]]

2. [Stained, oil-modified polyurethane

[New; MPI INT 6.4E-G4 / Existing; MPI RIN 6.4G-G4

Stain:	Primer:	Intermediate:	Topcoat:
MPI 90	MPI 57	MPI 57	MPI 57

System DFT: 4 mils]

[New; MPI INT 6.4E-G6 (Gloss) / Existing; MPI RIN 6.4G-G6 (Gloss)

Stain:	Primer:	Intermediate:	Topcoat:
MPI 90	MPI 56	MPI 56	MPI 56

System DFT: 4 mils]]

3. [Stained, Moisture Cured Urethane

[New; MPI INT 6.4V-G2 (Flat) / Existing; MPI RIN 6.4V-G2 (Flat)

Stain:	Primer:	Intermediate:	Topcoat:
MPI 90	MPI 71	MPI 71	MPI 71

System DFT: 4 mils]

[New; MPI INT 6.4V-G6 (Gloss) / Existing; MPI RIN 6.4V-G6 (Gloss)

Stain:	Primer:	Intermediate:	Topcoat:
MPI 90	MPI 31	MPI 31	MPI 31

System DFT: 4 mils]]

D. New [and Existing, previously finished or stained] Wood Floors; Natural finish or stained:

1. [Natural finish, oil-modified polyurethane

New; MPI INT 6.5C-G6 (Gloss) / Existing; MPI RIN 6.5C-G6 (Gloss)

Primer:	Intermediate:	Topcoat:
MPI 56	MPI 56	MPI 56

System DFT: 4 mils]

2. [Natural finish, Moisture Cured Polyurethane

New; MPI INT 6.5K-G6 (Gloss) / Existing; MPI RIN 6.5D-G6 (Gloss)

Primer:	Intermediate:	Topcoat:

DIVISION 6: INTERIOR WOOD PAINT TABLE
MPI 31 MPI 31 MPI 31
System DFT: 4 mils]

3. [Stained, oil-modified polyurethane
New; MPI INT 6.5B-G6 (Gloss) / Existing; MPI RIN 6.5B-G6 (Gloss)
Stain: Primer: Intermediate: Topcoat:
MPI 90 MPI 56 MPI 56 MPI 56
System DFT: 4 mils]

4. [Stained, Moisture Cured Polyurethane
New; MPI INT 6.5J-G6 (Gloss) / Existing; MPI RIN 6.5L-G6 (Gloss)
Stain: Primer: Intermediate: Topcoat:
MPI 90 MPI 31 MPI 31 MPI 31
System DFT: 4 mils]

E. New [and Existing, previously finished or stained] Wood Doors; Natural Finish or Stained:

1. [Natural finish, oil-modified polyurethane
[New; MPI INT 6.3K-G4 / Existing; MPI RIN 6.3K-G4
Primer: Intermediate: Topcoat:
MPI 57 MPI 57 MPI 57
System DFT: 4 mils]

[New; MPI INT 6.3K-G6 (Gloss) / Existing; MPI RIN 6.3K-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 56 MPI 56 MPI 56
System DFT: 4 mils]

Note: Sand between all coats per manufacturers recommendations.]

2. [Stained, oil-modified polyurethane
[New; MPI INT 6.3E-G4 / Existing; MPI RIN 6.3E-G4
Stain: Primer: Intermediate: Topcoat:
MPI 90 MPI 57 MPI 57 MPI 57
System DFT: 4 mils]

[New; MPI INT 6.3E-G6 (Gloss) / Existing; MPI RIN 6.3E-G6 (Gloss)
Stain: Primer: Intermediate: Topcoat:
MPI 90 MPI 56 MPI 56 MPI 56
System DFT: 4 mils]

Note: Sand between all coats per manufacturers recommendations.]

3. [Stained, Moisture Cured Urethane
[New; MPI INT 6.4V-G2 (Flat) / Existing; MPI RIN 6.4V-G2 (Flat)
Stain: Primer: Intermediate: Topcoat:
MPI 90 MPI 71 MPI 71 MPI 71
System DFT: 4 mils]

[New; MPI INT 6.4V-G6 (Gloss) / Existing; MPI RIN 6.4V-G6 (Gloss)
Stain: Primer: Intermediate: Topcoat:
MPI 90 MPI 31 MPI 31 MPI 31
System DFT: 4 mils]

Note: Sand between all coats per manufacturers recommendations.]

DIVISION 6: INTERIOR WOOD PAINT TABLE

F. New [and Existing, uncoated] Wood Doors; Pigmented finish:

1. [Alkyd
[New; MPI INT 6.3B-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 45 MPI 47 MPI 47
System DFT: 4.5 mils]

[New; MPI INT 6.3B-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 45 MPI 48 MPI 48
System DFT: 4.5 mils]

Note: Sand between all coats per manufacturers recommendations.]

2. [Pigmented Polyurethane
New; MPI INT 6.1E-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 72 MPI 72 MPI 72
System DFT: 4.5 mils

Note: Sand between all coats per manufacturers recommendations.]

G. Existing, previously painted Wood Doors; Pigmented finish:

1. [Alkyd
[New; MPI RIN 6.3B-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 46 MPI 47 MPI 47
System DFT: 4.5 mils]

[New; MPI RIN 6.3B-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 46 MPI 48 MPI 48
System DFT: 4.5 mils]

Note: Sand between all coats per manufacturers recommendations.]

DIVISION 9: INTERIOR PLASTER, GYPSUM BOARD, TEXTURED SURFACES PAINT TABLE

A. New [and Existing, previously painted] [Plaster] [and] [Wallboard] not otherwise specified:

1. [Latex
[New; MPI INT 9.2A-G2 (Flat) / Existing; RIN 9.2A-G2 (Flat)
Primer: Intermediate: Topcoat:
MPI 50 MPI 44 MPI 44
System DFT: 4 mils]

[New; MPI INT 9.2A-G3 (Eggshell) / Existing; RIN 9.2A-G3 (Eggshell)
Primer: Intermediate: Topcoat:
MPI 50 MPI 52 MPI 52
System DFT: 4 mils]

[New; MPI INT 9.2A-G5 (Semigloss) / Existing; RIN 9.2A-G5 (Semigloss)
Primer: Intermediate: Topcoat:

DIVISION 9: INTERIOR PLASTER, GYPSUM BOARD, TEXTURED SURFACES PAINT TABLE

MPI 50	MPI 54	MPI 54
System DFT: 4 mils]]		

2. [High Performance Architectural Latex - High Traffic Areas

[New; MPI INT 9.2B-G2 (Flat) / Existing; MPI RIN 9.2B-G2 (Flat)

Primer:	Intermediate:	Topcoat:
MPI 50	MPI 138	MPI 138
System DFT: 4 mils]		

[New; MPI INT 9.2B-G3 (Eggshell) / Existing; MPI RIN 9.2B-G3 (Eggshell)

Primer:	Intermediate:	Topcoat:
MPI 50	MPI 139	MPI 139
System DFT: 4 mils]		

[New; MPI INT 9.2B-G5 (Semigloss) / Existing; MPI RIN 9.2B-G5 (Semigloss)

Primer:	Intermediate:	Topcoat:
MPI 50	MPI 141	MPI 141
System DFT: 4 mils]]		

3. [Institutional Low Odor / Low VOC Latex

[New; MPI INT 9.2M-G2 (Flat) / Existing; MPI RIN 9.2M-G2 (Flat)

Primer:	Intermediate:	Topcoat:
MPI 50	MPI 144	MPI 144
System DFT: 4 mils]		

[New; MPI INT 9.2M-G3 (Eggshell) / Existing; MPI RIN 9.2M-G3 (Eggshell)

Primer:	Intermediate:	Topcoat:
MPI 50	MPI 145	MPI 145
System DFT: 4 mils]		

[New; MPI INT 9.2M-G4 (Satin) / Existing; MPI RIN 9.2M-G4 (Satin)

Primer:	Intermediate:	Topcoat:
MPI 50	MPI 146	MPI 146
System DFT: 4 mils]		

[New; MPI INT 9.2M-G5 (Semigloss) / Existing; MPI RIN 9.2M-G5 (Semigloss)

Primer:	Intermediate:	Topcoat:
MPI 50	MPI 147	MPI 147
System DFT: 4 mils]]		

4. [Institutional, Low Odor, Low VOC, Microbicidal Latex, EPA Registered

[New, MPI INT 9.2M-G3 (Eggshell) / Existing; MPI RIN 9.2M-G3 (Eggshell)

Primer	Intermediate	Topcoat
MPI 50	Similar to MPI 144	Similar to MPI 144

B. New [and Existing, previously painted] [Plaster] [and] [Wallboard] in [toilets], [food-preparation], [food-serving], [restrooms], [laundry areas], [shower areas], [areas requiring a high degree of sanitation], [_____] [and other high humidity areas] not otherwise specified.:

1. [Waterborne Light Industrial Coating

New; MPI INT 9.2L-G5(Semigloss) / Existing; MPI RIN 9.2L-G5 (Semigloss)

Primer:	Intermediate:	Topcoat:
MPI 50	MPI 153	MPI 153

DIVISION 9: INTERIOR PLASTER, GYPSUM BOARD, TEXTURED SURFACES PAINT TABLE
System DFT: 4 mils]

2. [Alkyd
New; MPI INT 9.2C-G5 (Semigloss) / Existing; MPI RIN 9.2C-G5 (Semigloss)
Primer: Intermediate: Topcoat:
MPI 50 MPI 47 MPI 47
System DFT: 4 mils]

3. [Epoxy
New; MPI INT 9.2E-G6 (Gloss) / Existing; MPI RIN 9.2D-G6 (Gloss)
Primer: Intermediate: Topcoat:
MPI 50 MPI 77 MPI 77
System DFT: 4 mils]

4. [Institutional, Low Odor, Low VOC, Microbicidal Latex, EPA Registered

[New, MPI INT 9.2M-G3 (Eggshell) / Existing; MPI RIN 9.2M-G3 (Eggshell)

Primer	Intermediate	Topcoat
MPI 50	Similar to MPI 144	Similar to MPI 144

-- End of Section --

SECTION 10 14 00.20

INTERIOR SIGNAGE
08/17

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ALUMINUM ASSOCIATION (AA)

AA DAF45	(2003; Reaffirmed 2009) Designation System for Aluminum Finishes
AA PK-1	(2015) Pink Sheets: Designations and Chemical Composition Limits for Aluminum Alloys in the Form of Castings & Ingot

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z97.1	(2015) Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test

AMERICAN WELDING SOCIETY (AWS)

AWS D1.2/D1.2M	(2014) Structural Welding Code - Aluminum

ASTM INTERNATIONAL (ASTM)

ASTM B209	(2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B221	(2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM D635	(2014) Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position

INTERNATIONAL CODE COUNCIL (ICC)

ICC A117.1 COMM	(2009) Standard And Commentary and Usable Buildings and Facilities

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 101	(2015; ERTA 2016) Life Safety Code
NFPA 70	(2017; ERTA 1-2 2017; TIA 17-1; TIA 17-2) National Electrical Code

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines

UNIFIED FACILITIES CRITERIA (UFC)

UFC 4-510-01	Design: Medical Military Facilities
UFC 3-120-01	Design: Sign Standards

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Detail Drawings; G

SD-03 Product Data

Installation; G

Warranty; G

SD-04 Samples

Interior Signage; G

Software; G

SD-10 Operation and Maintenance Data

Approved Manufacturer's Instructions; G

Protection and Cleaning; G

1.3 EXTRA MATERIALS

Provide 20 extra frames and extra stock of the following: 50 blank plates of each color and size for sign types interior signs. 50 changeable message strips for interior signs. Provide 10 paper inserts and one copy of the software for user produced signs and inserts after project completion and equipment necessary for removal of signage parts and pieces.

1.4 QUALITY ASSURANCE

1.4.1 Samples

Submit interior signage samples of each of the following sign types showing typical quality, workmanship and color: Directional sign, Standard Room

sign, Changeable message strip sign, Overhead Departmental, Wall-mounted flag style, Overhead Directional, Dimensional Lettering. The samples may be installed in the work, provided each sample is identified and location recorded.

1.4.2 Detail Drawings

Submit detail drawings showing elevations of each type of sign, dimensions, details and methods of mounting or anchoring, mounting height, shape and thickness of materials, and details of construction. Include a schedule showing the location, each sign type, and message.

1.5 DELIVERY, STORAGE, AND HANDLING

Materials must be packaged to prevent damage and deterioration during shipment, handling, storage and installation. Product must be delivered to the jobsite in manufacturer's original packaging and stored in a clean, dry area in accordance with manufacturer's instructions.

1.6 WARRANTY

Warrant the interior signage for a period of 2 years against defective workmanship and material. Warranties must be signed by the authorized representative of the manufacturer. Submit warranty accompanied by the document authenticating the signer as an authorized representative of the guarantor. Guarantee that the signage products and the installation are free from any defects in material and workmanship from the date of delivery.

PART 2 PRODUCTS

2.1 STANDARD PRODUCTS

Signs, plaques, directories, and dimensional letters must be the standard product of a manufacturer regularly engaged in the manufacture of such products that essentially duplicate signs that have been in satisfactory use at least 2 years prior to bid opening. Obtain signage from a single manufacturer with edges and corners of finished letterforms and graphics true and clean. Provide signs that meet criteria as specified in UFC 3-120-01 Design: Sign Standards.

2.2 ROOM IDENTIFICATION/DIRECTIONAL SIGNAGE SYSTEM

2.2.1 Standard Room Signs

Signs must consist of acrylic plastic 0.080 inch thickness minimum conforming to ANSI Z97.1 and 6063-T5 extruded aluminum in accordance with ASTM B221 and ASTM B209 and must conform to the following:

Numbering for spaces within the medical facility will be determined jointly by the using Facility and the design team. User room number will be different than the architectural room number as indicated in UFC 4-510-01 Design: Medical Military Facilities. Room numbering will be consistent throughout the Facility.

Permanent information on room identification signs includes the room number an all signs, symbol and message on toilet rooms, message on janitor closets, mechanical/electrical and communication rooms and message on stairs. Personal names on interior signage is discouraged. If personal names are required, changeable message strips will be used. Any sign placed

at toilets must clearly indicate if it's a public, staff, and accessible patient toilet.

a. Frames must be aluminum, flat 1/4 inch thick.

b. End caps must be aluminum or molded acrylic with square style corners.

c. Units must be 200 mm x 200 mm (8 inch by 8 inch) or 230 m x 230 mm (9 inch by 9 inch)

d. Room number and message to be left justified.

2.2.2 Overhead Directional Signage

Provide overhead directional signs that do not block fire exits. Arrow placement order will comply with UFC 4-510-01 Design: Medical Military Facilities as follows: Left-pointing arrows to the top, up-pointing arrows next, and right pointing arrows at the bottom.

< EMERGENCY
^ Orthopedic Clinic
> Admissions

2.2.3 Changeable Message Strip Signs

Changeable message strip signs must be of same construction as standard room signs to include a clear sleeve that will accept a paper or plastic insert identifying changeable text. The insert must be prepared die-cut vinyl letters applied to 0.015 inch rigid vinyl film. Provide paper and] software for creating text and symbols for computers identified by owner for Owner production of paper inserts after project completion. Furnish one device to assist in removing face sheet. Sliding inserts or slide knobs that slide horizontally exposing different graphic information must be provided as identified in the signage placement schedule and drawings.

2.2.4 Type of Mounting For Signs

Provide extruded aluminum brackets for hanging, projecting, and double-sided signs. Mounting for framed, hanging, and projecting signs must be by mechanical fasteners. Surface mounted signs must be mounted with 1/16 inch thick closed cell vinyl foam with adhesive backing. Adhesive must be transparent, long aging, high tech formulation on two sides of the vinyl foam. fabricated from materials that are not corrosive to sign material and mounting surface.

2.2.5 Graphics

Signage graphics for modular signs must conform to the following:

2.2.5.1 Subsurface Copy

Copy is transferred to the back face of clear acrylic sheeting forming the panel face to produce precisely formed opaque image. This method bonds all sign elements (color, graphics, lettering, Braille and substrate) into a single unit.

2.2.5.2 First Surface Copy Direct Print or Silkscreened (Non-Tactile)

Message may be applied to panel using the silkscreen process. Silkscreened

images must be executed with photo screens prepared from original art. Handcut screens will not be accepted. Original art is defined as artwork that is a first generation reproduction of the specified art. Edges and corners must be clean.

2.2.5.3 Surface Applied Photopolymer

Integral graphics and Braille achieved by photomechanical stratification processes. Photopolymer used for ADA/ABA compliant graphics must be of the type that has a minimum durometer reading of 90. Tactile graphics must be raised 1/32 inch from the first surface of plaque by photomechanical stratification process.

2.2.5.4 Graphic Blast Raised Copy

Background is sandblasted to a uniform depth of 1/32 inch leaving raised text and Braille. Background must be painted with polyurethane paint.

2.2.5.5 Embossed

Methods other than sandblasting such as vacuum formed to create ADA/ABA compliant projected graphics.

2.2.6 Character Proportions and Heights

Letters and numbers on signs conform to 36 CFR 1191.

2.2.7 Tactile Letters, Symbols and Braille

Raised letters and numbers on signs must conform to 36 CFR 1191.

2.3 BEHAVIORAL HEALTH UNIT SIGNS

Behavioral health signs must be anti-ligature, pliable without hard edges or movable parts. Signage must allow for a changeable message and maintain ADA/ABA compliance. Room number and room identification as well as any symbols must be integrally designed into face of material for a seamless design. Sign installation must be vandal resistant with concealed tamper resistant fasteners to attach signs to wall.

2.4 STAIR SIGNAGE

Provide signs on stairs serving three or more stories with special signage within the enclosure at each floor landing conforming to NFPA 101. Indicate the floor level, the terminus of the top and bottom of the stair enclosure, and the identification of the stair enclosure. Also, state the floor level of, and the direction to, exit discharge. Locate the signage inside the enclosure in a position that is visible when the door is in the open or closed position and install in conformance with 36 CFR 1191. The floor level designation must also be tactile in accordance with ICC A117.1 COMM.

2.5 BUILDING DIRECTORIES

Building directories must be lobby directories or floor directories, and must be provided with a changeable directory listing consisting of the areas, offices and personnel located within the facility. Dimensions, details, and materials of sign and message content must be as shown on the [drawings][attachments][signage placement schedule].

Building directories as well as orientation maps for medical facilities, will be determined jointly by the using Facility and the design team. If required, orientation maps will be included as part of the interior signage package and should be of the same manufacturer.

2.5.1 Header Panel

Header panel must be acrylic with raised acrylic letters.

2.5.2 Electronic Directory System

Provide non-interactive and interactive electronic directory. Electronic directory system must be a complete turnkey system consisting of digital display, hardware, software connected through the local area network (LAN) to a server or cloud. Electrical equipment must be UL listed and must comply with NFPA 70. Unit must be free-standing or wall mounted.

2.6 DOOR TAGS

Provide one Door Tag plate for each room entry door, locate on door frame.
Size: As indicated.
Message: Room Number to match architectural floor plan room number.

2.6.1 Engraved Copy

Machine engrave letters, numbers, symbols, and other graphics into panel sign on face to produce precisely formed copy and sharp images, incised to uniform depth. Melamine plastic engraving stock used for ADA/ABA compliant graphic must be three-ply lamination contrasting color core meeting ASTM D635.

2.7 DIMENSIONAL BUILDING LETTERS

2.7.1 Fabrication

Letters must be cast molded plastic. Letters must be aluminum, bronze or brass. Package letters for protection until installation.

2.7.2 Size

Letter size must be as indicated. Provide letter thickness that is manufacturer's standard for the size of letter.

2.7.3 Finish

Provide clear anodized or two-component acrylic polyurethane finish.

2.7.4 Mounting

Threaded studs of number and size recommended by manufacturer, must be supplied for concealed anchorage. Letters which project from the mounting surface must have stud spacer sleeves. Letters, studs, and sleeves must be of the same material. Templates for mounting must be supplied.

2.8 FIRE EVACUATION SIGNS

If required, provide fire evacuation signs in accordance with the local Fire Marshal.

2.9 ALUMINUM ALLOY PRODUCTS

Aluminum extrusions must be at least 1/8 inch thick, and aluminum plate or sheet must be at least 0.0508 inch thick. Extrusions must conform to ASTM B221; plate and sheet must conform to ASTM B209. Where anodic coatings are specified, alloy must conform to AA PK-1 alloy designation 514.0. Exposed anodized aluminum finishes must be as shown. Welding for aluminum products must conform to AWS D1.2/D1.2M.

2.10 ANODIC COATING

Anodized finish must conform to AA DAF45 as follows:

a. Clear (natural) designation AA-M10-C22-A31, Architectural Class II 0.4 mil or thicker.

2.11 FABRICATION AND MANUFACTURE

2.11.1 Factory Workmanship

Holes for bolts and screws must be drilled or punched. Drilling and punching must produce clean, true lines and surfaces. Exposed surfaces of work must have a smooth finish and exposed riveting must be flush. Fastenings must be concealed where practicable.

2.11.2 Dissimilar Materials

Where dissimilar metals are in contact, the surfaces will be protected to prevent galvanic or corrosive action.

2.12 COLOR, FINISH, AND CONTRAST

Color must be in accordance with Section 09 06 00 SCHEDULES FOR FINISHES and as indicated. Finish of all signs must be eggshell, matte, or other non-glare finish as required in handicapped-accessible buildings.

2.13 TYPEFACE

ADA/ABA compliant font for Room Signs Helvetica Neue.

PART 3 EXECUTION

3.1 INSTALLATION

Signs must be installed plumb and true and in accordance with approved manufacturer's instructions at locations shown on the detail drawings . Submit six copies of operating instructions outlining the step-by-step procedures required for system operation. The instructions must include simplified diagrams for the system as installed, the manufacturer's name, model number, service manual, parts list, and brief description of all equipment and their basic operating features. Each set must be permanently bound and must have a hard cover. The following identification must be inscribed on the covers: the words "OPERATING AND MAINTENANCE INSTRUCTIONS", name and location of the facility, name of the Contractor, and contract number. Mounting height and mounting location must conform to 36 CFR 1191. Required blocking must be installed. Signs on doors or other surfaces must not be installed until finishes on such surfaces have been installed. Signs installed on glass surfaces must be installed with

matching blank back-up plates in accordance with manufacturer's instructions. Illuminated signage must be in conformance with the requirements of Section 26 51 00 INTERIOR LIGHTING.

Signage schedule must be provided in electronic spreadsheet format. The message schedule will include architectural room number, user room number, type of sign, message, symbol (if needed), color and mounting location.

Do not install items that show visual evidence of biological growth.

3.1.1 Anchorage

Anchorage must be in accordance with approved manufacturer's instructions. Anchorage not otherwise specified or shown must include slotted inserts, expansion shields, and powder-driven fasteners when approved for concrete; toggle bolts and through bolts for masonry; machine carriage bolts for steel; lag bolts and screws for wood. Exposed anchor and fastener materials must be compatible with metal to which applied and must have matching color and finish.

a. Signs mounted to painted gypsum board surfaces must be removable for painting maintenance.

b. Mount signs mounted to lay-in ceiling grids with clip connections to ceiling tees.

c. Install signs mounted on metal surfaces with magnetic tape.

d. Install signs mounted on fabric surfaces with hook and loop tape or pin mount.

3.1.2 Protection and Cleaning

Protect the work against damage during construction. Hardware and electrical equipment must be adjusted for proper operation. Glass, frames, and other sign surfaces must be cleaned at completion of sign installation in accordance with the manufacturer's approved instructions and the requirements of Section 01 78 23 OPERATION AND MAINTENANCE DATA, Package 1. Submit six copies of maintenance instructions listing routine procedures, repairs, and guides.

-- End of Section --

SECTION 10 21 13

TOILET COMPARTMENTS
08/17

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ALUMINUM ASSOCIATION (AA)

AA DAF45	(2003; Reaffirmed 2009) Designation System for Aluminum Finishes

ASTM INTERNATIONAL (ASTM)

ASTM A123/A123M	(2015) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A167	(2011) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM A336/A336M	(2015) Standard Specification for Alloy Steel Forgings for Pressure and High-Temperature Parts
ASTM A385/A385M	(2011) Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
ASTM A653/A653M	(2015; E 2016) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM B221	(2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B36/B36M	(2013) Standard Specification for Brass Plate, Sheet, Strip, and Rolled Bar
ASTM B456	(2011; E 2011) Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium
ASTM B86	(2013) Standard Specification for Zinc and Zinc-Aluminum (ZA) Alloy Foundry and Die Castings

ASTM D6386	(2016) Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting

INTERNATIONAL CODE COUNCIL (ICC)

ICC A117.1 COMM	(2009) Standard And Commentary and Usable Buildings and Facilities

SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)

SAE AMS2460	(2013; Rev A) Plating, Chromium

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-60003	(Basic) Partitions, Toilet, Complete

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Fabrication Drawings

Installation Drawings; G[, [_____]]

SD-03 Product Data

Cleaning and Maintenance Instructions

Colors And Finishes

Galvanized Steel Sheet

Sound-Deadening Cores

Anchoring Devices and Fasteners

Hardware and Fittings

Brackets

Door Hardware

Pilaster Shoes

Finishes; G[, [_____]]

SD-04 Samples

Colors and Finishes; G[, [_____]]

Hardware and Fittings

Anchoring Devices and Fasteners

SD-07 Certificates

Warranty

[Indoor Air Quality]

SD-11 Closeout Submittals

[Recycled content for stainless steel partitions and screens; S]

[Recycled content for plastic, solid polyethylene partitions and screens; S]

1.3 REGULATORY REQUIREMENTS

Conform to ICC A117.1 COMM code for access for the handicapped operation of toilet compartment door and hardware.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver materials in the manufacturer's original unopened packages with the brand, item identification, and project reference clearly marked. Store components in a dry location that is adequately ventilated; free from dust, water, other contaminants, and damage during delivery, storage, and construction.

1.5 WARRANTY

Provide certification or warranties that toilet partitions will be free of defects in materials, fabrication, finish, and installation and will remain so for a period of not less than [_____] years after completion.

PART 2 PRODUCTS

2.1 SYSTEM REQUIREMENTS

Provide a complete and usable toilet partition system, including toilet enclosures, room entrance screens, urinal screens, system of panels, hardware, and support components. Furnish the partition system from a single manufacturer, with a standard product as shown in the most recent catalog data. Submit Fabrication Drawings for metal toilet partitions and urinal screens consisting of fabrication and assembly details to be performed in the factory. Submit manufacturer's Cleaning and Maintenance

Instructions with Fabrication Drawings for review.

2.2 MATERIALS

2.2.1 Galvanized Steel Sheet

Provide galvanized steel sheet cold-rolled, stretcher-level, commercial quality material, conforming to ASTM A653/A653M. Conform surface preparation of material for painting to ASTM D6386, Method A.

2.2.2 Sound-Deadening Cores

Provide sound deadening consisting of treated kraft paper honeycomb cores with a cell size of not more than 1 inch. Resin-material content must weigh not less than 11 percent of the finished core weight. Expanded cores must be faced on both sides with kraft paper.

2.2.3 Anchoring Devices and Fasteners

Provide steel anchoring devices and fasteners hot-dipped galvanized after fabrication, in conformance with ASTM A385/A385M and ASTM A123/A123M. Conceal all galvanized anchoring devices.

2.2.4 Brackets

Wall brackets must be two-ear panel brackets, T-style, 1-inch stock. Provide stirrup style panel-to-pilaster brackets.

2.2.5 Hardware and Fittings

2.2.5.1 General Requirements

Conform hardware for the toilet partition system to CID A-A-60003 for the specified type and style of partitions. Provide hardware finish highly resistant to alkalis, urine, and other common toilet room acids. Comply latching devices and hinges for handicap compartments with 36 CFR 1191; provide stainless steel devices and hinges with door latches that operate without either tight grasping or twisting of the wrist of the operator. Submit three samples of each item, including anchoring devices and fasteners. Approved hardware samples may be installed in the work if properly identified.

Material	Conformance Standard
Cold-rolled sheet steel	ASTM A336/A336M, commercial quality
Zinc-base alloy	ASTM B86, Alloy AC41-A
Brass	ASTM B36/B36M, Alloy C26800
Aluminum	ASTM B221
Corrosion-resistant steel	ASTM A167, Type [302][304]

2.2.5.2 Finishes

[a. Chrome plating must conform to ASTM B456.]

[b. Finish must conform to SAE AMS2460, Class I, Type [I][II].]

[c. Aluminum must have a clear anodic coating conforming to AA DAF45.]

[d. Corrosion-resistant steel must have a No. 4 finish.]

[e. Exposed fasteners must match the hardware and fittings.]

2.2.6 Door Hardware

2.2.6.1 Hinges

Hinges must be adjustable to hold in-swinging doors open at any angle up to 90 degrees and outswinging doors to 10 degrees. Provide self-lubricating hinges with the indicated swing. Hinges must [be the surface-mounted type.] [be the cutout-insert type.] [have the following type of return movement:

[a. Gravity return movement]

[b. Spring-action cam return movement]

[c. Torsion-rod return movement]]

2.2.6.2 Latch and Pull

Latch and pull must be a combination rubber-faced door strike and keeper equipped with emergency access.

2.2.6.3 Coat Hooks

Coat hooks must be combination units with hooks and rubber tipped pins.

2.3 PARTITION PANELS AND DOORS

Fabricate partition panels and doors not less than 1 inch thick with face sheets not less than 0.0396 inch thick.

Provide stainless steel toilet partitions and screens with recycled content of 50 percent minimum. Provide data identifying percentage of recycled content for stainless steel partitions and screens.Provide solid polyethylene toilet partitions and screens with recycled content of 30 percent minimum. Provide data identifying percentage of recycled content for plastic, solid polyethylene partitions and screens.

2.3.1 Toilet Enclosures

Provide and conform toilet enclosures to CID A-A-60003, Type I, Style B, ceiling hung. Furnish width, length, and height of toilet enclosures as shown. [Provide a width of 1 inch.] Finish surface of panels must be stainless steel, Finish 2]solid polyethylene, Finish 5]; water resistant; graffiti resistant; non-absorbent. Reinforce panels indicated to receive toilet paper holders or grab bars for mounting of the items required. Provide grab bars to withstand a bending stress, shear stress, shear force, and a tensile force induced by 250 lbf. Grab bars must not rotate within their fittings.

2.3.2 Urinal Screens

Provide and conform urinal screens to CID A-A-60003, Type III, Style [B, ceiling hung] [D, floor to ceiling hung] [E, floor to ceiling post supported]. Provide finish for surface of screens as [stainless steel, Finish 2]solid polyethylene, Finish 5][_____]; water resistant; graffiti resistant; non-absorbent. Furnish width and height of urinal screens as shown. [Provide thickness of 1 inch.] Secure wall hung urinal screens with [a minimum of three wall stirrup brackets.] [42 inch long, continuous flanges.] Fabricate screens from the same types of panels and pilasters as the toilet partitions. Use corrosion-resistant steel fittings and fasteners.

2.4 CEILING-HUNG PARTITIONS

Pilasters must be not less than 1-1/4 inch thick with face sheets not less than 0.0635 inch thick. Anchoring device at the top of the pilaster must be welded to the reinforced face sheets and must have not less than two 3/8 inch round threaded rods, lock washers, and leveling-adjustment nuts. Anchoring device must be designed to transmit the strain and loading on the pilaster directly to the structural support above without putting strain or loading on the finished ceiling. Trim piece at the top of the pilaster must be 3 inch high and fabricated from not less than 0.030 inch thick stainless steel.

2.5 HARDWARE

Provide hardware for the toilet partition system that conforms to CID A-A-60003 for the specified type and style of partitions. [Provide hardware pre-drilled by manufacturer.] Use a hardware finish that is highly resistant to alkalis, urine, and other common toilet room acids. [Hardware includes: chrome plated non ferrous cast pivot hinges, gravity type, adjustable for door close positioning; nylon bearings; chrome plated] [_____] aluminum door latch; door strike and keeper with rubber bumper; and cast alloy chrome plated coat hook and bumper, [_____].] Provide latching devices and hinges for handicap compartments complying with 36 CFR 1191 and stainless steel door latches that operate without either tight grasping or twisting of the wrist of the operator. Use stainless steel, tamper proof type screws and bolts. Wall mounting brackets must be continuous, full height, stainless steel, in accordance with toilet compartment manufacturer's instructions.

2.6 COLORS AND FINISHES

2.6.1 Colors

Provide for toilet partition system components as indicated in Section 09 06 00 SCHEDULES FOR FINISHES. Submit three samples showing a finished edge on two adjacent sides and core construction, each not less than 12-inch square

2.6.2 Finish No. 2

Conform partitions, panels, screen, and door finishes to CID A-A-60003 finished with Finish No. 2, stainless steel] .

2.6.3 Finishes No. 5

Provide solid plastic fabricated of polymer resins (polyethylene) formed

under high pressure rendering a single component section not less than one inch thick. Colors must extend throughout the panel thickness. Provide exposed finish surfaces: smooth, waterproof, non-absorbent, and resistant to staining and marking with pens, pencils, or other writing devices. Solid plastic partitions must not show any sign of deterioration when immersed in the following chemicals and maintained at a temperature of 80 degrees F for a minimum of 30 days:

Acetic Acid (80 percent)	Hydrochloric Acid (40 percent)
Acetone	Hydrogen Peroxide (30 percent)
Ammonia (liquid)	Isopropyl Alcohol
Ammonia Phosphate	Lactic Acid (25 percent)
Bleach (12 percent)	Lime Sulfur
Borax	Nicotine
Brine	Potassium Bromide
Caustic Soda	Soaps
Chlorine Water	Sodium Bicarbonate
Citric Acid	Trisodium Phosphate
Copper Chloride	Urea; Urine
Core Oils	Vinegar

PART 3 EXECUTION

3.1 PREPARATION

Take field measurements prior to the preparation of drawing and fabrication to ensure proper fits. Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive work. Verify correct spacing of plumbing fixtures. Verify correct location of built in framing, anchorage, and bracing. Report in writing to Contracting Officer prevailing conditions that will adversely affect satisfactory execution of the work of this section. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

Do not install items that show visual evidence of biological growth. Install partitions rigid, straight, plumb, and level, with the panels centered between the fixtures. Provide a panel clearance of not more than 1/2 inch and secure the panels to walls and pilasters with not less than two wall brackets attached near the top and bottom of the panel. Locate wall brackets so that holes for wall bolts occur in masonry or tile joints. Secure Panels to pilasters with brackets matching the wall brackets. Provide for adjustment due to minor floor variations. Locate head rail joints at pilaster center lines. Install adjacent components for consistency of line and plane. Equip each door with hinges, one door

latch, and one coat hook and bumper. Align hardware to uniform clearance at vertical edges of doors.

a. Secure panels to hollow plastered walls with toggle bolts using not less than 1/4-20 screws of the length required for the wall thickness. Toggle bolts must have a load-carrying strength of not less than 600 pounds per anchor.

b. Secure panels to ceramic tile on hollow plastered walls or hollow concrete-masonry walls with toggle bolts using not less than 1/4-20 screws of the length required for the wall thickness. Toggle bolts must have a load-carrying strength of not less than 600 pounds per anchor.

c. Secure panels to solid masonry or concrete with lead or brass expansion shields designed for use with not less than 1/4-20 screws, with a shield length of not less than 1-1/2 inch. Expansion shields must have a load-carrying strength of not less than 600 pounds per anchor.

d. Submit Installation Drawings for metal toilet partitions and urinal screens showing plans, elevations, details of construction, hardware, reinforcing and blocking, fittings, mountings and escutcheons. Indicate on drawings the type of partition, location, mounting height, cutouts, and reinforcement required for toilet-room accessories.

3.3 CEILING-HUNG PARTITIONS

Secure pilasters to the structural support above with the anchorage device specified. Make all leveling devices readily accessible for leveling, plumbing, and tightening the installation. Level the bottoms of doors with bottoms of pilasters when doors are in a closed position.

3.4 FINAL ADJUSTMENT

After completion of the installation, make final adjustments to the pilaster-leveling devices, door hardware, and other working parts of the partition assembly. Doors must have a uniform vertical edge clearance of approximately 3/16 inch and must rest open at approximately 30 degrees when unlatched.

3.5 CLEANING

Clean all surfaces of the work, and adjacent surfaces soiled as a result of the work, in an approved manner compliant with the manufacturer's recommended cleaning and protection from damage procedures until accepted. Remove all equipment, tools, surplus materials, and work debris from the site.

-- End of Section --

SECTION 10 26 00

WALL AND DOOR PROTECTION
08/17

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ALUMINUM ASSOCIATION (AA)

AA DAF45	(2003; Reaffirmed 2009) Designation System for Aluminum Finishes

ASTM INTERNATIONAL (ASTM)

ASTM A167	(2011) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM B221	(2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM D256	(2010) Determining the Izod Pendulum Impact Resistance of Plastics
ASTM D543	(2014) Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents
ASTM D635	(2014) Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
ASTM E84	(2017) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM G21	(2015) Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers

GREEN SEAL (GS)

GS-36 (2011) Commercial Adhesives

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80 (2016; TIA 16-1) Standard for Fire Doors and Other Opening Protectives

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS SCS Global Services (SCS)Indoor Advantage

SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)

SAE J1545 (2005; R 2014) Instrumental Color Difference Measurement for Exterior Finishes, Textiles and Colored Trim

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1168 (1989; R 2005) Adhesive and Sealant Applications

UNDERWRITERS LABORATORIES (UL)

UL 2818 (2013) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Corner Guards; G[, [_____]]

Wall Guards (Bumper Guards); G[, [_____]]

Door Protectors; G[, [_____]]

Wall Covering/Panels; G[, [_____]]

SD-03 Product Data

Corner Guards; G[, [_____]]

Wall Guards (Bumper Guards); G[, [_____]]

Door Protectors; G[, [_____]]

Wall Covering/Panels; G[, [_____]]

SD-04 Samples

Finish; G[, [_____]]

SD-06 Test Reports

Corner Guards

Wall Guards (Bumper Guards)

Door Protectors

Wall Covering/Panels

SD-07 Certificates

Corner Guards

Wall Guards (Bumper Guards)

Door Protectors

Indoor Air Quality

SD-11 Closeout Submittals

[Recycled content for aluminum component of corner guards; S]

[Recycled content for steel component of corner guards; S]

[Recycled content for aluminum component of wall guards, Combination Handrail/Wall guard and handrails; S]

[Recycled content for aluminum component of wall guards/bed locators; S]

[Recycled content for aluminum component of combination handrail/wall guards; S]

[Recycled content for aluminum component of handrails; S]

[Indoor air quality for wall covering/panels; S]

[Indoor air quality for adhesives; S]

1.3 CERTIFICATIONS

1.3.1 Indoor Air Quality

1.3.1.1 Wall Covering/Panels

Provide sheet and high impact resistant resilient materials certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party program that products meet the requirements of this section. Provide current product certification documentation from certification body.

1.3.1.2 Adhesives and Sealants

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party program that products meet the requirements of this section. Provide current product certification documentation from certification body.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the project site in manufacturer's original unopened containers with seals unbroken and labels and trademarks intact. Keep materials dry, protected from weather and damage, and stored under cover. Materials must be stored at approximately 70 degrees F for at least 48 hours prior to installation.

1.5 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a 1 year period.

PART 2 PRODUCTS

2.1 STANDARD PRODUCTS

To the maximum extent possible, corner guards, door and door frame protectors, wall guards (bumper guards), wall panels and wall covering must be the standard products of a single manufacturer and must be furnished as detailed. Drawings show general configuration of products required, and items differing in minor details from those shown will be acceptable.

2.1.1 Resilient Material

Provide resilient material consisting of high impact resistant extruded acrylic vinyl, polyvinyl chloride, or injection molded thermal plastic conforming to the following:

2.1.1.1 Minimum Impact Resistance

Minimum impact resistance must be 18 ft-lbs/sq. inch when tested in accordance with ASTM D256, (Izod impact, ft-lbs per sq inch notched).

2.1.1.2 Fire Rating

Fire rating must be Class 1 when tested in accordance with ASTM E84, having a maximum flame spread of 25 and a smoke developed rating of 450 or less. Material must be rated self extinguishing when tested in accordance with ASTM D635. Material must be labeled and tested by an approved nationally known testing laboratory. Resilient material used for protection on fire rated doors and frames must be listed by the testing laboratory performing the tests. Resilient material installed on fire rated wood/steel door and frame assemblies must have been tested on similar type assemblies. Test results of material tested on any other combination of door/frame assembly will not be acceptable.

2.1.1.3 Integral Color

Colored components must have integral color and must be matched in

accordance with SAE J1545 to within plus or minus 1.0 on the CIE-LCH scales.

2.1.1.4 Chemical and Stain Resistance

Materials must be resistant to chemicals and stains reagents in accordance with ASTM D543.

2.1.1.5 Fungal and Bacterial Resistance

Materials must be resistant to fungi and bacteria in accordance with ASTM G21, as applicable.

2.2 CORNER GUARDS

2.2.1 Resilient Corner Guards

Corner guard units must be [flush mounted] [surface mounted] type, radius formed to profile shown. Corner guards must [extend from floor to ceiling.] [be [_____] feet high.] Mounting hardware, cushions, and base plates must be furnished. Assembly must consist of a snap-on corner guard formed from high impact resistant resilient material, mounted on a continuous aluminum retainer. Extruded aluminum retainer must conform to ASTM B221, alloy 6063, temper T5 or T6. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of corner guards. Flush mounted type guards must act as a stop for adjacent wall finish material. Factory fabricated end closure caps must be furnished for top and bottom of surface mounted corner guards. Flush mounted corner guards installed in fire rated wall must maintain the rating of the wall. Insulating materials that are an integral part of the corner guard system must be provided by the manufacturer of the corner guard system. Exposed metal portions of fire rated assemblies must have a paintable surface.

2.2.2 Stainless Steel Corner Guards

Stainless steel corner guards must be fabricated of [16 gauge][18 gauge] thick material conforming to ASTM A167, type 302 or 304. Provide stainless steel base material that contains a minimum of 60 percent recycled content. Provide data identifying percentage of recycled content for steel component of corner guards. Corner guards must [extend from floor to ceiling.] [be [_____] feet high.] Corner guard must be formed to dimensions shown.

2.3 WALL GUARDS (BUMPER GUARDS)

2.3.1 Wall Guards, Combination Handrail/Wall Guards and Handrails

Wall guards, combination handrail/wall guards, and handrails must be provided with prefabricated end closure caps, inside and outside corners, concealed splices, cushions, mounting hardware and other accessories standard with the manufacturer. Extruded aluminum retainers must conform to ASTM B221, alloy 6063, temper T5 or T6. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of wall guards, combination handrail/wall guard and handrails. End caps and corners must be field adjustable to assure close alignment with handrails and wall guards. [Wall guards] [Combination handrail/wall guards] must have profile as shown in Section 09 06 00 SCHEDULES FOR FINISHES.

2.3.2 Wall Guards/Bed Locators

Wall guards must consist of snap-on covers of high impact resistant resilient material, minimum 0.078 inch thick, mounted over [2] [_____] inch wide aluminum, minimum 0.062 inch thick retainer, anchored to wall at maximum 24 inches on center. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of wall guards/bed locators.

2.3.3 Combination Handrail/Wall Guards

Combination handrail/wall guards must consist of snap-on covers of high impact resistant resilient material, minimum 0.078 inch thick, on a continuous, extruded aluminum retainer, minimum 0.072 inch thick anchored to wall at maximum 32 inches on center. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of combination handrail/wall guards.

2.3.4 Handrails

Handrails must consist of snap-on covers of high impact resistant resilient material, minimum 0.078 inch thick on a continuous extruded aluminum retainer, minimum 0.072 inch thick anchored to wall at maximum 32 inches on center. Provide aluminum components that contain a minimum of 35 percent recycled content. Provide data identifying percentage of recycled content for aluminum component of handrails. Handrails must be provided with prefabricated end closure caps, inside and outside corners, concealed splices, cushions, mounting hardware and other accessories standard with the manufacturer. End caps and corners must be field adjustable to assure close alignment with handrails.

2.4 DOOR PROTECTORS

[Door] [Door envelope] [and] [door frame] protection items must consist of high impact resistant acrylic vinyl or polyvinyl chloride resilient material, minimum [0.060 inch thick for doors] [and] [0.035 inch thick for door frames]. Coordinate door and door frame protection material requirements with door and frame suppliers to insure fit for all components and color matching with other resilient materials. Provide adhesive as recommended by resilient material manufacturer.

2.5 WALL COVERING/PANELS

Provide wall covering/panels consisting of high impact rigid acrylic vinyl or polyvinyl chloride resilient material. Panel sizes must be [4 x 8], [4 x 10] feet [_____]. Submit fire rating and extinguishing test results for resilient material. Also submit statements attesting that the items comply with specified fire and safety code requirements. Provide wall covering material used on the interior of the building (defined as inside of the weatherproofing system) that meets either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) the VOC content requirements of SCAQMD Rule 1168, or VOC content requirements of GS-36. Provide certification of indoor air quality for wall covering/panels.

2.5.1 Rigid Vinyl Acrylic Wall Covering

Wall covering thickness must be [0.040] [0.375] inch.

2.5.1.1 High Impact Wall Panels with Custom Graphics

PETG rigid sheet, 0.040 inches thick in [4 x 8] [4 x 10] feet in Suede Texture. High definition graphic file reverse printed on clear sheet and sealed with protective backer. Provide [color matched caulk] [clear caulk] [aluminum trim] for joints and transitions.

2.5.2 High Impact Wall Panels

Wall panel face and edge thickness must be [0.040 inch. Panel face must be factory banded to a 0.375 inch thick particleboard core. The backside of the panel must be laminated with a moisture resistant vapor barrier.

2.5.3 Stainless Steel Sheet Panel

Stainless Steel Sheet in Diamond Plate texture, 0.0625 inch, [4 x 8] [4 x 10] feet sizes with screws for mechanical fastening.

2.6 TRIM, FASTENERS AND ANCHORS

Provide vinyl trim, fasteners and anchors for each specific installation as shown.

2.7 FINISH

Submit [three] [_____] samples indicating color and texture of materials requiring color and finish.

2.7.1 Aluminum Finish

Finish for aluminum must be in accordance with AA DAF45. Exposed aluminum must be designation [[AA-C22A31] [_____] chemically etched medium matte, with clear anodic coating] [[AA-C22A32] [_____] chemically etched medium matte with integrally colored anodic coating] class II architectural coating 0.4 mil thick. Concealed aluminum shall be mill finish as fabricated, uniform in natural color and free from surface blemishes.

2.7.2 Stainless Steel Finish

Finish for stainless steel must be in accordance with ASTM A167, 16 gauge Type 304, finish number 4 satin finish.

2.7.3 Resilient Material Finish

Finish for resilient material must be suede texture with colors in accordance with SAE J1545.

2.8 ADHESIVES

Adhesive for resilient material must be in accordance with manufacturers recommendations. Provide sealants and non-aerosol adhesive products used on the interior of the building (defined as inside of the weatherproofing system) that meet either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) the VOC content requirements of SCAQMD Rule 1168, or VOC

content requirements of GS-36. Provide certification of indoor air quality for adhesives.

2.9 COLOR

Color must be in accordance with Section 09 06 00 SCHEDULES FOR FINISHES.

PART 3 EXECUTION

3.1 INSTALLATION

Do not install items that show visual evidence of biological growth.

3.1.1 Corner Guards and Wall Guards (Bumper Guards)

Material must be mounted at location indicated in accordance with manufacturer's recommendations.

3.1.2 Door, Door Frame Protectors, and Wall Panels

Surfaces to receive protection must be clean, smooth, and free of obstructions. Protectors must be installed after frames are in place, but prior to hanging of doors, in accordance with manufacturer's specific instructions. Adhesives must be applied in controlled environment in accordance with manufacturer's recommendations. Protection for fire doors and frames must be installed in accordance with NFPA 80.

3.1.3 Stainless Steel Guards

a. Mount guards on external corners of interior walls, partitions and columns as [shown] [in accordance with manufacturer's recommendations].

b. Where corner guards are installed on walls, partitions or columns finished with plaster or ceramic tile, [anchor corner guards as indicated] [provide continuous 16 gage thick, perforated, galvanized z-shape steel anchors welded to back edges of corner guards and [wired to metal studs] [expansion bolted to concrete or masonry with four 3/8 inch diameter bolts, spaced 16 inches on centers]]. Coat back surfaces of corner guards, where shown, with a non-flammable, sound deadening material. Corner guards must overlap finish plaster surfaces.

c. Where corner guards are installed on exposed structural glazed facing tile units or masonry wall, partitions or columns, [anchor corner guards as indicated] [anchor corner guards to existing walls with 1/4 inch oval head stainless steel countersunk expansion or toggle bolts] [anchor corner guards with four nominal 0.0516 inch thick, adjustable galvanized steel anchors, spaced as shown]. Grout spaces solid between guards and backing with portland cement and sand mortar.

d. Where corner guards are installed on gypsum board, clean surfaces and anchor guards with a neoprene solvent-type contact adhesive specifically manufactured for use on gypsum board construction. Remove excess adhesive from the guard edges and allow to cure undisturbed for 24 hours.

e. For wall guards, space brackets at no more than 3 feet on centers and anchor to the wall in accordance with the manufacturer's installation instructions.

-- End of Section --

SECTION 12 24 13

ROLLER WINDOW SHADES
08/17

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

Provide roller window shades, complete with necessary brackets, fittings, and hardware [in accordance with paragraph ROLLER WINDOW SHADE PLACEMENT SCHEDULE] [as indicated]. Mount and operate equipment in accordance with manufacturer's instructions. Windows to receive a shade must be completely covered.

a. Submit drawings showing plans, elevations, sections, product details, installation details, operational clearances, wiring diagrams and relationship to adjacent work. Include the use of same room designations as indicated on the drawings.

b. Provide manufacturer's data composed of catalog cuts, brochures, product information, and operating and maintenance instructions on each product to be used. Include styles, profiles and features.

c. Furnish samples of each type and color of roller shade fabric and roller shade channel. Shade material shall be minimum6 by 6 inch in size. Mark face of material to indicate interior faces.

d. Mock up: Install shade in area designated by Contracting Officer. Do not proceed with remaining work until the Contracting Officer approves workmanship and operation. Re-work mock-up as required to produce acceptable work. The approved shade can be used in installation.

e. Submit fire resistance data, flame spread and smoke contribution data.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM G21	(2015) Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701	(2015) Standard Methods of Fire Tests for Flame Propagation of Textiles and Films

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	SCS Global Services (SCS)Indoor Advantage

UNDERWRITERS LABORATORIES (UL)

UL 2818	(2013) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings
UL 325	(2017) UL Standard for Safety Door, Drapery, Gate, Louver, and Window Operators and Systems

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES

SD-02 Shop Drawings

Installation; G[, [_____]]

SD-03 Product Data

Window Shades; G[, [_____]]

SD-04 Samples

Window Shades; G[, [_____]]

SD-06 Test Reports

Window Shades

SD-07 Certificates

[Indoor Air Quality]

SD-08 Manufacturer's Instructions

Window Shades

SD-10 Operation and Maintenance Data

Window Shades

SD-11 Closeout Submittals

[Recycled Content for various fiber components; S]

[Indoor Air Quality for roller window shades; S]

Warranty; G

1.4 CERTIFICATES

1.4.1 Indoor Air Quality Certifications

1.4.1.1 Roller Window Shades

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) [Gold], SCS Global Services Indoor Advantage Gold or provide validation by other third-party program that products meet the requirements of this paragraph. [Provide current product certification documentation from certification body.]

1.5 QUALITY ASSURANCE

1.5.1 Qualifications

1.5.1.1 Manufacturer's Qualifications

Obtain motor-controlled roller shades through one source from a single manufacturer with a minimum of twenty years experience and minimum of three projects of similar scope and size in manufacturing products comparable to those specified in this section.

1.5.1.2 Installer's Qualifications

Installer trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified in this section.

1.5.2 Flammability Requirements

Passes in accordance with NFPA 701 small and large-scale vertical burn. Materials tested must be identical to products proposed for use.

1.5.3 Electrical Requirements

NFPA Article 100 listed and labeled in accordance with UL 325 or other testing agency acceptable to authorities having jurisdiction, marked for intended use, and tested as a system. Individual testing of components will not be acceptable in lieu of system testing.

1.5.4 Anti-Microbial Requirements

'No Growth' per ASTM G21 results for fungi ATCC9642, ATCC 9644, ATCC9645.

1.6 DELIVERY, STORAGE, AND HANDLING

Deliver components to the jobsite in the manufacturer's original packaging with the brand or company name, item identification, and project reference clearly marked. Store components in a dry location that is adequately ventilated and free from dust, water, or other contaminants and has easy access for inspection and handling. Store materials flat in a clean dry area with temperature maintained above 50 degrees F. Do not open containers until needed for installation unless verification inspection is required.

1.7 WARRANTY

Provide 10 year minimum limited warranty.

PART 2 PRODUCTS

2.1 WINDOW SHADES

Roller tube must operate smoothly and be of sufficient diameter and thickness to prevent excessive deflection. Provide brackets that are appropriate for [inside] [outside] [ceiling] mount. The shade cloth must meet the performance described in NFPA 701, small scale test. Treat steel features for corrosion resistance.

Provide Various Fiber Components with a minimum of 60 percent recycled content. Provide data identifying percentage of recycled content for various fiber components.

[Provide certification of indoor air quality for roller window shades.]

2.1.1 Light Filtering Shades

Provide light filtering window shades to conform with the following:

a. Roller tube must be extruded aluminum or steel. Diameter, wall thickness, and material to be selected by the manufacturer to accommodate the shade size. Provide roller idler assembly of molded nylon and zinc-plated steel pin. Sliding pin must allow easy installation and removal of roller. Fabric must be connected to the roller tube with a spline lock system.

b. Shade cloth of 100 percent thermoplastic olefin (TPO) in patterned design, 96 inches wide, with 5 percent openness factor. Shade cloth shall comply with NFPA 701. Material shall be PVC free and recyclable.

c. Fascia must be L-shaped aluminum extrusion to conceal shade roller and hardware that snaps onto end caps without requiring exposed fasteners of any kind. Fascia can be mounted continuously across two or more shade bands.

d. End caps must be stamped steel with universal design suitable for mounting to window mullions. Provide size compatible with roller size. End cap covers must match fascia/headbox finish.

e. Provide hardware that allows for field adjustment or removal of shade roller tube and other operable hardware component[or adjustment of motor] without requiring removal of brackets and end or center supports. Provide hardware system that allows for operation of multiple shade bands by a single operator. Connectors must be offset to assure alignment from the first to the last shade band. Provide shade hardware constructed of minimum 1/8 inch thick plated steel or heavier as required to support 150 percent of the full weight of each shade.

[f. Manual Operated Chain Drive Hardware must provide for universal, regular and offset drive capacity, allowing drive chain to fall at front, rear or non-offset for all shade drive end brackets. Universal offset must be adjustable for future change. Provide positive mechanical engagement of drive mechanism to shade roller tube. The drive bracket must be fully integrated with all accessories. Drive chain must be #10 stainless steel chain rated to 90 lb. minimum breaking strength.]

[g. Motors must be [hard-wired, wired into the building electrical system] [plug-in to standard ac electrical outlets]. The position of the motor and electrical connection must be [left] [right] side of roller, based on the hand of the user facing the shade from inside, unless otherwise indicated [on drawings] [in the Roller Window Shade Placement Schedule].
]

[h. Activation Controls of Shades:

(1) [Wall mounted controls: [key pads] [switches] [_____] [hand held remote] are able to electronically set and reconfigure shade open and close limits, shade preset positions, system groups and system subgroups at the control without rewiring and without access to the Electronic Drive Unit.]

(2) [Sun sensor controls: Programmable system activated by LEDs detecting daylight intensity and responding by automatically adjusting shades]

(3) [Radio controls: Digital system consisting of code-compatible universal coaxial receiver, [one per shade] [one per roller] [where indicated on Drawings] and [2] [_____] portable multiple-channel transmitters for operating [2] [4] [_____] shades individually, each with a single button to open and close shades.]

(4) [Infrared Controls: System consisting of concealed receiver complete with external eye and connecting modular cable, and [2] [_____] portable, multiple-channel transmitters with separate buttons to open and close up to [12] [_____] individual shades or groups of shades, to open and close all shades simultaneously, and to stop.]

[(5) Whole building shade control system can be preprogrammed and reprogrammed to accomplish many different operations with management flexibility. System includes: [_____].]]

[i. Timer Controls: Clock timer, [24-hour] [7 day] [_____] programmable for regular events.]

j. [Switches that are adjustable and interlocked with motor controls and set to automatically stop the shade at fully raised and fully lowered positions must be provided.] [Low voltage switching is required.]

k. Operating function: [Stop and hold shade at any position] [Stop and hold shade at open, midpoint, and closed positions] [Stop and hold shade at 3 pre-determined positions including open, closed, and user-programmed position] [Stop and hold shade at 5 pre-determined positions including open, closed, and 3 user-programmed positions] [_____].

l. Provide the following options: [Low Voltage System] [Group switching with integrated switch control; single face plate for multiple switch cut-outs.] [Capable of interface with [audiovisual] [multi-room] [_____] control system] [Capable of accepting input from building automation control system] [Override switch] [Backup gear and crank operator for manual operation during power failures with detachable handle, [6 feet long] [length required to make operation convenient from floor level] [Power failure memory for the life of the systems

which protects presets] [_____].]

2.1.2 Room Darkening Shades

Provide room darkening (black-out) window shades designed to eliminate all visible light gaps when shades are fully closed, and conform with the following:

a. Roller tube must be aluminum, controlled by [webbing tape] [crank operated gear box with steel rods]. Provide shop fabricated light traps, consisting of a head box to house the shade roller, and U-shaped channels to serve as guides for the shade along the sides and to receive the bottom edge of the shade along the sill.

b. Provide light trap made of sheet steel having a minimum thickness of 22 gauge or anodized, extruded, aluminum. The legs of the channels must be not less than 1-3/4 inches long and separated by the minimum distance that will permit free operation of the shade. Edges of light trap coming into contact with the shade cloth must be smooth pile light seal. The exposed face of the head box must be hinged or removable for access to the shade roller. The interior or unexposed surfaces of the light trap must have a finish coat of flat black enamel. The exposed portions of the light trap must have a factory-applied priming coat of gray paint.

c. Shade cloth to be opaque for blackout purposes. Composed of PVC-free fiberglass material with opaque acrylic backing, 98 inches wide. Shade cloth shall be fade resistant and comply with NFPA 701.

d. Fit the bottom edge of the shade with a steel operating bar. Shades will engage positively with bottom rail through operating bar or chain pull. Paint bars with flat black enamel. Make pull cords of No. 4 braided nylon or beaded chain having not less than 175 pounds breaking strength.

2.2 COLOR

Provide color, pattern and texture for metal and shade fabric in accordance with Section 09 06 00 SCHEDULES FOR FINISHES.

PART 3 EXECUTION

3.1 FIELD MEASUREMENTS

After becoming familiar with details of the work, verify all dimensions in the field, and advise the Contracting Officer of any discrepancy before performing the work.

3.2 ROLLER WINDOW SHADE PLACEMENT SCHEDULE

[All exterior windows include [_____].] [Provide window covering as follows:

Room Number/Name	Roller Window Shade Covering Type	Window Type/Size	Window Quantity
[_____]	[_____]	[_____]	[_____]

]

3.3 INSTALLATION

Do not install building construction materials that show visual evidence of biological growth.

Perform installation in accordance with the approved detail drawings and manufacturer's installation instructions. Install units level, plumb, secure, and at proper height and location relative to window units. Provide and install supplementary or miscellaneous items in total, including clips, brackets, or anchorages incidental to or necessary for a sound, secure, and complete installation. Do not start installation until completion of room painting and finishing operations.

3.4 CLEAN-UP

Upon completion of the installation, clean window treatments and adjust them for form and appearance and proper operating condition. Repair or replace damaged units as directed by the Contracting Officer. Isolate metal parts from direct contact with concrete, mortar, or dissimilar metals. Ensure shades installed in recessed pockets can be removed without disturbing the pocket. The entire shade, when retracted, must be contained inside the pocket. For shades installed outside the jambs and mullions, overlap each jamb and mullion 0.75 inch or more when the jamb and mullion sizes permit. Include all hardware, brackets, anchors, fasteners, and accessories necessary for a complete, finished installation.

-- End of Section --

SECTION 12 35 70

HEALTHCARE CASEWORK
08/16

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN FOREST FOUNDATION (AFF)

ATFS STANDARDS	(2015) American Tree Farm System Standards of Sustainability 2015-2020

ASTM INTERNATIONAL (ASTM)

ASTM C920	(2014a) Standard Specification for Elastomeric Joint Sealants

CALIFORNIA AIR RESOURCES BOARD (CARB)

CARB 93120	(2007) Airborne Toxic Control Measure (ATCM) to Reduce Formaldehyde Emissions from Composite Wood Products

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	(2004; Add 2004-01) Standard Practice for the Testing Of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers

CSA GROUP (CSA)

CSA Z809-08	(R2013) Sustainable Forest Management

FOREST STEWARDSHIP COUNCIL (FSC)

FSC STD 01 001	(2000) Principles and Criteria for Forest Stewardship

PROGRAMME FOR ENDORSEMENT OF FOREST CERTIFICATION (PEFC)

PEFC ST 2002:2013	(2015) PEFC International Standard Chain of Custody of Forest Based Products Requirements

SUSTAINABLE FOREST INITIATIVE (SFI)

SFI 2015-2019	(2015) Standards, Rules for Label Use, Procedures and Guidance

U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-STD-1691 (1994; Rev F) Construction and Material Schedule for Military Medical and Dental Facilities

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Detail Drawings; G[, [_____]]

SD-03 Product Data

Casework

SD-04 Samples

Casework; G[, [_____]]

Wall Hung Cabinets; G[, [_____]]

Floor Mounted Cabinets; G[, [_____]]

Countertops; G[, [_____]]

Laminated Plastic Sheets; G[, [_____]]

SD-07 Certificates

Certified Sustainably Harvested Wood; G[, [_____]]

SD-08 Manufacturer's Instructions

Installation

SD-11 Closeout Submittals

Recycled Content for Baked Enamel Carbon Steel Casework; S

Recycled Content for Corrosion Resisting Steel Casework; S

Recycled Content for Wood Core Casework; S

Recycled Content for Baked Enamel Carbon Steel Dental Prosthetics Casework; S

Recycled Content for Corrosion Resisting Steel Dental Prosthetics Casework; S

Recycled Content for Corrosion Resisting Steel Countertops; S

Certified Sustainably Harvested Wood for Medical Casework; S

Indoor Air Quality for Composite Wood and Agrifiber Products Used In Countertops; S

1.3 CERTIFICATIONS

1.3.1 Certified Sustainably Harvested Wood

Provide wood certified as sustainably harvested by FSC STD 01 001[, ATFS STANDARDS, CSA Z809-08, SFI 2015-2019, or other third party program certified by PEFC ST 2002:2013]. Provide a letter of Certification of Sustainably Harvested Wood signed by the wood supplier. Identify certifying organization and their third party program name and indicate compliance with chain-of-custody program requirements. Submit sustainable wood certification data; identify each certified product on a line item basis. Submit copies of invoices bearing certification numbers.

[1.3.2 Indoor Air Quality Certification

For purposes of this specification, composite wood and agrifiber products include particleboard, medium density fiberboard (MDF), wheatboard, strawboard, panel substrates, and door cores. Products must contain no added urea-formaldehyde resins. Provide products certified to meet emissions requirements of either CARB 93120 or CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type). Provide current product certification documentation from certification body.

]1.4 DELIVERY, STORAGE, AND HANDLING

Deliver casework to the jobsite in the original individual containers, complete with screws, keys, and instructions. Mark each container with the manufacturer's name and catalog number. Store casework in an adequately ventilated, dry location that is free of dust, water, or other contaminates and in a manner to permit access for inspection and handling. Handle casework carefully to prevent damage to the surfaces. Replace damaged items that cannot be restored to like-new condition.

PART 2 PRODUCTS

2.1 PRODUCT SUSTAINABILITY CRITERIA

For products in this section, where applicable and to extent allowed by performance criteria, provide and document the following:

[2.1.1 Recycled Content for Healthcare Casework Materials

Recycled content is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph RECYCLED CONTENT. Other products listed in this section may be available with recycled content; identify those products that meet project requirements for recycled content, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph RECYCLED CONTENT.

][2.1.2 Certified Sustainably Harvested Wood

Certified sustainably harvested wood is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph BIOBASED PRODUCTS. Other products listed in this section may be available as certified sustainably harvested wood; identify those products that meet project requirements for certified sustainably harvest wood, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph BIOBASED PRODUCTS.

]2.1.3 Reduce Volatile Organic Compounds (VOC) (LOW-EMITTING MATERIALS) for Products

Reduced VOC content is identified for some products in this section; provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph REDUCE VOLATILE ORGANIC COMPOUNDS (VOC) (LOW-EMITTING MATERIALS). Other products listed in this section may be available with reduced VOC content; identify those products that meet project requirements for reduced VOC content, and provide documentation in accordance with Section 01 33 29 SUSTAINABILITY REPORTING paragraph REDUCE VOLATILE ORGANIC COMPOUNDS (VOC) (LOW-EMITTING MATERIALS).

2.2 CASEWORK

Submit for approval Drawings showing layout of casework at 3/4 inch equals one foot scale. Indicate details of construction and rough-in requirements. Indicate whether cabinets are metal or wood, whether countertop is corrosion-resisting steel or solid surface and whether sink is coated with [modified epoxy resin] [polypropylene] [polyethylene] or corrosion-resisting steel. All wood products must be formaldehyde free. Verify job condition affecting the work and obtain accurate field measurements for incorporation into drawings. Locate structural members, required utilities and services provided by other sections of this specification. Submit details and information necessary for fabrication and installation, manufacturer's printed data, catalog cuts, and instructions for installation and cleaning. Provide casework as scheduled on the detail drawings. Factory fabricate of manufacturer's standard sizes and finishes and conform to MIL-STD-1691, and the requirements specified below. Casework items are identified on drawings with numbers preceded by the letters "C" and "D". These numbers are Joint Schedule Numbers in MIL-STD-1691.[Material finish and color shall be in accordance with Section 09 06 00 SCHEDULES FOR FINISHES.

2.2.1 Medical Casework

Provide medical casework of [baked enamel carbon steel] [corrosion resisting steel] [wood core covered with laminated plastic sheets]. Color of finish [_____] in accordance with 09 06 00 SCHEDULES FOR FINISHES as indicated.

2.2.1.1 Recycled Content

[Baked enamel carbon steel must contain a minimum of [40][____] percent recycled content, as calculated by the sum of the percentage of pre-consumer and 1/2 the percentage of post-industrial recycled steel content. Provide data identifying percentage of recycled content for baked enamel carbon steel medical casework.] [Corrosion resisting steel must contain a minimum of [40][____] percent recycled content, as calculated by the sum of the percentage of pre-consumer and 1/2 the percentage of

post-industrial recycled steel content. Provide data identifying percentage of recycled content for corrosion resisting steel medical casework.] [Wood core must contain a minimum of [50][____] percent recycled content, as calculated by the sum of the percentage of pre-consumer and 1/2 the percentage of post-industrial recycled wood content. Provide data identifying percentage of recycled content for wood core medical casework.]

2.2.1.2 Sustainably Harvested Wood

Wood materials must contain a minimum of [50][_____] percent wood that is certified sustainably harvested. Provide documentation that certified sustainably harvested wood for medical casework is used and identify percentage.

2.2.2 Dental Casework

Provide dental operator casework of wood core covered with laminated plastic sheets. Pattern, color and finish of decorative laminated plastic for exteriors of casework in accordance with 09 06 00 SCHEDULES FOR FINISHES as indicated.[

Wood core covered laminated plastic sheets must contain a minimum of [50][____] percent post-industrial recycled wood content. Provide data identifying percentage of recycled content for wood core dental casework.]

2.2.3 Dental Prosthetics Casework

Provide dental prosthetics casework of [baked enamel carbon steel] [corrosion resisting steel]. Color of finish in accordance with 09 06 00 SCHEDULES FOR FINISHES as indicated.[

Baked enamel carbon steel must contain a minimum of [40][____] percent post-industrial recycled steel content. Provide data identifying percentage of recycled content for baked enamel carbon steel dental prosthetics casework.] [Corrosion resisting steel must contain a minimum of [40][____] percent post-industrial recycled steel content. Provide data identifying percentage of recycled content for corrosion resisting steel dental prosthetics casework.]

2.2.4 Countertops

Provide countertops of [corrosion-resisting steel] solid surface or [modified epoxy resin]. In lieu of individual samples, complete minimum size casework may be submitted as samples. Mock-up units are not acceptable. Samples shall be of sufficient size to show color, pattern, and method of assembly. Some requirements are:

Countertop and backsplash	One section, containing both
Door and drawer front	One of each, with hardware mounted
High pressure plastic laminate color samples	approx 2 X 3 inch size

[2.2.4.1 Recycled Content

[Corrosion-resisting steel must have a minimum of [40][_____] percent post-industrial recycled steel content. Provide data identifying percentage of recycled content for corrosion resisting steel countertops.] [Plastic Laminate (MDF or particleboard) must have a minimum of [50][_____] percent post-industrial recycled wood content. Provide data identifying percentage of recycled wood content for plastic laminate countertops.]

]2.2.4.2 Sustainably Harvested Wood

Wood materials must contain a minimum of [50][_____] percent wood that is certified sustainably harvested. Provide documentation that certified sustainably harvested wood for countertops is used and identify percentage.

2.3 PLUMBING FIXTURES

Provide faucet, trap and drain fittings, gas, air and vacuum cocks as required. Provide connection conforming to the requirements specified in Section 22 00 70 PLUMBING, HEALTHCARE FACILITIES.

PART 3 EXECUTION

3.1 INSTALLATION

Install casework in a manner that does not damage the work of other trades. Secure the casework in place in true alignment, level, and plumb. Secure units with screws through backs to cleats that have been anchored to building structure with toggle or expansion bolts.

Do not install building construction materials that show visual evidence of biological growth.

3.1.1 Wall Hung Cabinets

Install wall-hung cabinets to support the weight of the cabinets plus the normally expected weight of the contents of the cabinets. Space fasteners 12 inch on center using at least three bolts in each 3 or 4 foot unit width. Join adjacent cabinets in an assembly together at top and bottom with inconspicuous bolts or clips. Seal joints between the casework and wall surfaces which are not larger than the joints between casework sections with sealant conforming to ASTM C920, Type M, Grade NS, Class 25, Use NT. Close larger joints with filler strips of the same material and finish as adjacent casework. Cut filler strips to the contour of the wall surface and secure to the casework with concealed nails or screws. Use filler strips no wider than 6 inch.

3.1.2 Floor Mounted Cabinets

Set floor-mounted metal cabinets on a common metal base or integral base, in assemblies up to 6 feet in length in rooms having concrete or resilient flooring. Bolt cabinets to bases at cabinet corners. Face metal bases with resilient material to match wall base in space where the cabinets are located. Fasten together adjoining cabinets at top and bottom of front and back with bolts placed inconspicuously inside cabinets. Set metal cabinets in rooms having terrazzo or ceramic-tile floors on concrete or masonry bases with exposed faces finished the same as other bases in the room. Seal flush openings between cabinet and wall surfaces, due to irregularity

of surfaces, with Type S or M, Grade NS, Class 12.5, use NT, conforming to ASTM C920. Close exposed-to-view openings larger than joints in tile work with filler or scribing strip of the same material and finish as adjacent casework. Cut filler to contour of wall surface and secure to casework with concealed sheet-metal screws. Use minimum width and number of fillers consistent with need and in no case shall filler exceed 6 inch in width.

3.1.3 Countertops

Height of counter tops as indicated. Where required, toe space at front of cabinets shall be provided by installing front face of cabinets 3 inch in front of face of base. Where toe space is not required, face of base and cabinets shall be flush. Bases must have a height of approximately 4 inch. Install all items as required for proper operation in accordance with the manufacturer's directions.

3.2 INSPECTION AND CLEANING

Inspect placed items for proper location, fastening, connection to utilities, operation, and for damage which may have occurred during installation. Put each item into service to prove proper operation. Correct defects disclosed during inspection. Clean cabinets and countertops in accordance with manufacturer's instructions.

-- End of Section --

SECTION 12 36 00.00 20

MANUFACTURED VANITIES
08/11

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FED-STD-595	(Rev C; Notice 1) Colors Used in Government Procurement

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.][for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Vanities; G[, [_____]]

Show configuration, materials, thicknesses, hardware, finishes, and colors of vanities for the project.

1.3 DELIVERY, STORAGE, AND HANDLING

Deliver vanities undamaged and store in a safe, dry, and clean location. Handle so as to prevent damage.

PART 2 PRODUCTS

2.1 VANITIES

Provide, [single lavatory type] [double lavatory] type [The type and size shall be [as indicated] [[_____] inches wide]], and except as specified herein.

2.1.1 Quantity

[_____] [As indicated].

2.2 FINISHES

Five-digit designations refer to FED-STD-595.

2.2.1 Bowl

Rimless single piece molded design of quartz surface made from a blend of resin, natural quartz, granite and other materials. ABA compliant. Color as indicated in 09 06 00 SCHEDULES FOR FINISHES.

2.2.2 Access Panel

Water supplies, waste assembly are concealed within frame. Stainless steel accessible shroud.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Final Assembly

Distribute vanities to rooms [as indicated] [as directed]. Uncrate, assemble, adjust as necessary, and place as specified or indicated, complete with accessories and hardware. Position vanities [as indicated] [as directed].

3.1.2 Fastening

Fasten vanities as recommended by manufacturer. Fasten steel vanities through the holes in vanity back flanges. Fasteners shall be appropriate for use with the wall construction. Seal joint between back splash and wall and between end curb and wall as specified in Section 07 92 00 JOINT SEALANTS.

-- End of Section --

SECTION 12 48 13

ENTRANCE FLOOR MATS AND FRAMES
08/17

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM B221	(2014) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM D2047	(2017) Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces.
ASTM E648	(2017) Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines

1.2 SUSTAINABILITY REPORTING

Materials in this technical specification may increase contract compliance with sustainability requirements.

1.2.1 EPA Comprehensive Procurement Guidelines

See Section 01 33 29 SUSTAINABILITY REPORTING for requirements associated with EPA-designated products.

1.2.2 USDA Biobased

See Section 01 33 29 SUSTAINABILITY REPORTING for requirements associated with USDA Biobased products.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.][for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00

SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation Drawings; G[, [_____]]

Detail Drawings; G[, [_____]]

Custom Graphics Drawings; G[, [_____]]

SD-03 Product Data

Entrance Floor Mats and Frames; G[, [_____]]

Adhesives and Concrete Primers; G[, [_____]]

SD-04 Samples

Entrance Floor Mats and Frames; G[, [_____]]

Custom Graphics; G[, [_____]]

SD-08 Manufacturer's Instructions

Manufacturer's Instructions

SD-10 Operation and Maintenance Data

Protection, Maintenance, and Repair Information

1.4 QUALITY CONTROL

Comply with 36 CFR 1191 Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines for installed entrance floor mats and frames. Ensure that entrance floor mats and frames are slip-resistant in accordance with ASTM D2047, with a minimum 0.60 coefficient of friction, for accessible routes and are structurally capable of withstanding a [uniform floor load of 300 lb/sq ft][wheel load of 350 lb/wheel]. Ensure that flammability is in accordance with ASTM E648, Class 1, Critical Radiant Flux, minimum 0.45 watts/square meter.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the project site in their original packages or containers bearing labels clearly identifying the manufacturer, brand name, and quality or grade.

Store materials in their original unbroken packages or containers in the area in which they will be installed. Unwrap, inspect, and place mats at indicated locations. Remove all excess packing materials.

PART 2 PRODUCTS

2.1 MANUFACTURED UNITS

2.1.1 Entrance Floor Mats and Frames

Submit the manufacturer's catalog data. Submit samples of assembled

sections of floor mats showing corners, intersections, and other details of construction. Submit samples of custom graphics, exposed floor mats, frame finishes and accessories.

2.1.1.1 Vinyl Mats

Provide mats [1/4][3/8][1/16][_____] inches thick with [square edges for recessed installations][beveled edges for surface applications]. Provide mats with [perforated style], bottom surface. Ensure that mats are made of a nonslip prime-quality compound free of calendaring and curing defects, and resistant to weather aging and ozone in normal concentrations.

2.1.1.2 Carpet-Type Mats

Provide a nylon carpet bonded to a 1/8-inch to 1/4-inch-thick, flexible vinyl backing to form mats that are [3/8][7/16] inch thick with nonraveling edges.

2.1.1.3 Modular Floor Grids, WM-4

Provide a modular floor grid consisting of 100% virgin PVC, 11 mm thick.

2.1.1.4 Frames, WM-1, 2 and 3

[Provide surface-mounted frames that have a tapered flexible vinyl edge at least [2][1 1/2] inches wide, with welded corners and attached to the mat at all four edges.] [Ensure that surface-mounted frames are tapered, at least [2][1 1/2] inches wide, screwed into an opening in the floor to create an opening for the mat to sit in.] [Provide recessed frames in extruded aluminum Alloy 6061-T6 or Alloy 6063-T5 ASTM B221. Ensure that the frame depth accommodates the mat and system specified.] Frame color is [mill finish] [clear] [black] [[light] [medium] [dark] bronze] [_____]. Ensure that edge-frame members are fabricated in single lengths or with the fewest pieces possible, with hairline joints equally spaced and pieces spliced together by straight connecting pins. Ensure that any concealed surfaces of aluminum frames that contact cementous material are coated with the manufacturer's standard protective coating. Ensure that frames include accessories and devices required for a complete installation.

2.1.1.5 Tread Insert Options, WM-1 2, 3, and WM-4

Provide tread inserts consisting of [carpet composed of solution-dyed nylon or polypropylene carpet fibers fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous splice-free lengths; carpet has antistatic and antistain treatments. Ensure that pile weight is a minimum 28 ounces per square yard] [carpet/bristle filament mix].

2.1.2 Adhesives and Concrete Primers

Provide adhesives and concrete primers, where required, according to the manufacturer's recommendations.

2.1.3 Graphics

Clearly illustrate details in drawing of custom graphic [emblem] [logo][design].

2.1.4 Color and Size

Ensure that color is in accordance with Section 09 06 00 SCHEDULES FOR FINISHES. Ensure that the size of mat is [_____][as indicated].

PART 3 EXECUTION

3.1 EXAMINATION

Comply with the manufacturer's requirements for substrates and floor conditions affecting installation of floor mats and frames. Ensure that all unsatisfactory conditions have been corrected before installation.

3.2 INSTALLATION

Submit detail drawings, and custom graphics drawings as required. Provide installation drawings. Provide the manufacturer's protection, maintenance, and repair information.

Install floor mats and frames according to manufacturer's instructions. Set mat tops at the height recommended by the manufacturer for the most effective cleaning action. Provide clearance between bottoms of doors and tops of mats. [Coordinate recess frame installation with concrete construction to ensure that frame anchorage is correct and that the base is level and flat. Install grout and fill around frames and, if required to set mat tops at proper elevations, in recesses under mats. Finish grout and fill smooth and level.]

-- End of Section --

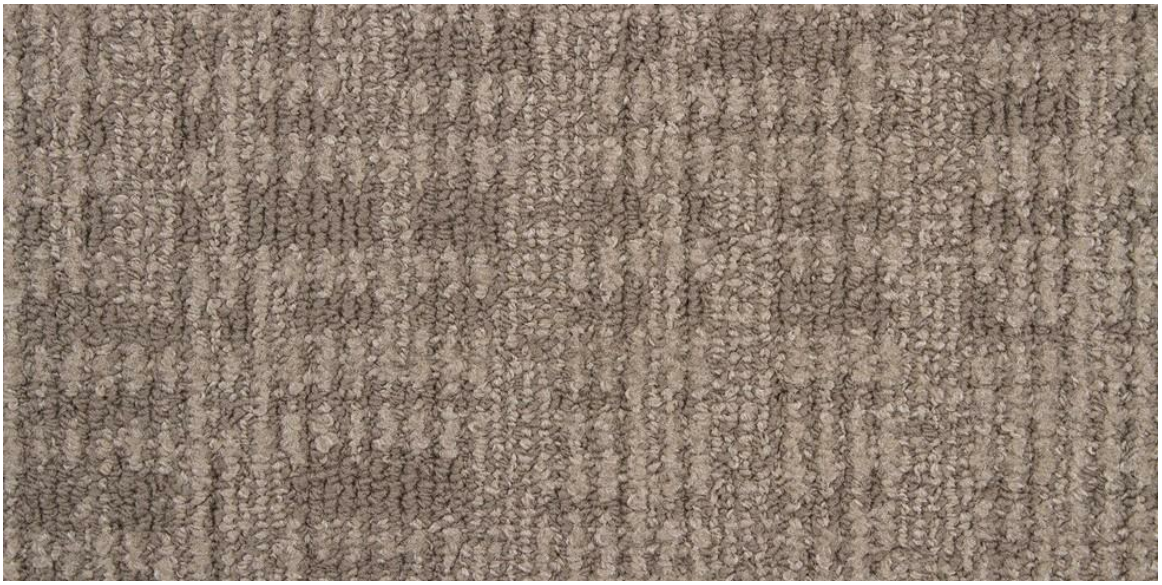
12.
Color Boards

2019

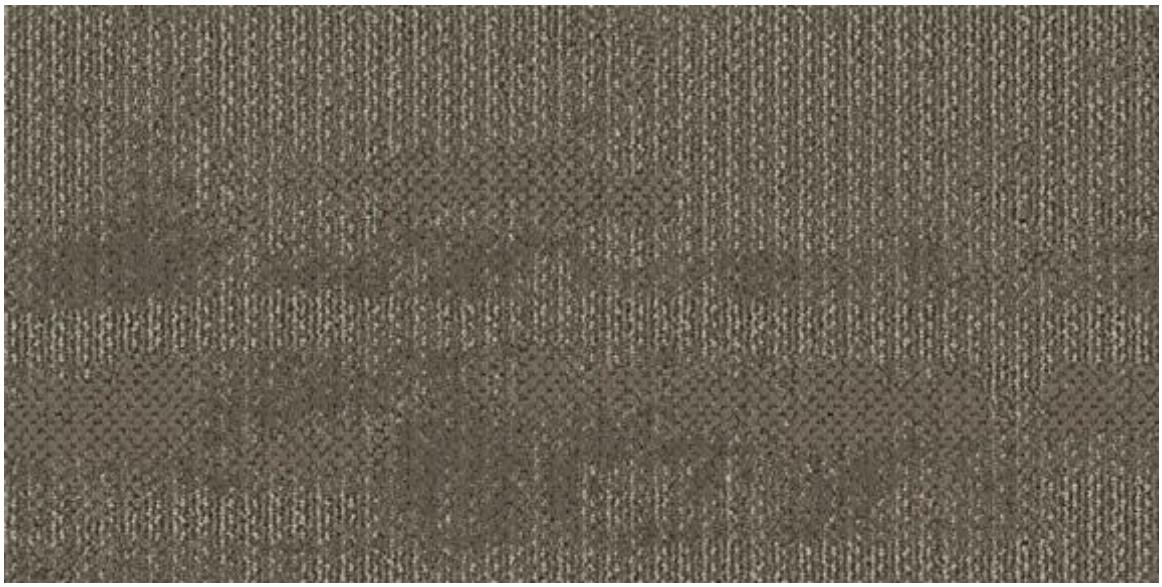
CPT-1: CARPET
MANNINGTON, PORTLAND PROJECT, SUMMIT, #80900 NOMAD

CPT-1: CARPET
MANNINGTON, PORTLAND PROJECT, SUMMIT, #80900 NOMAD

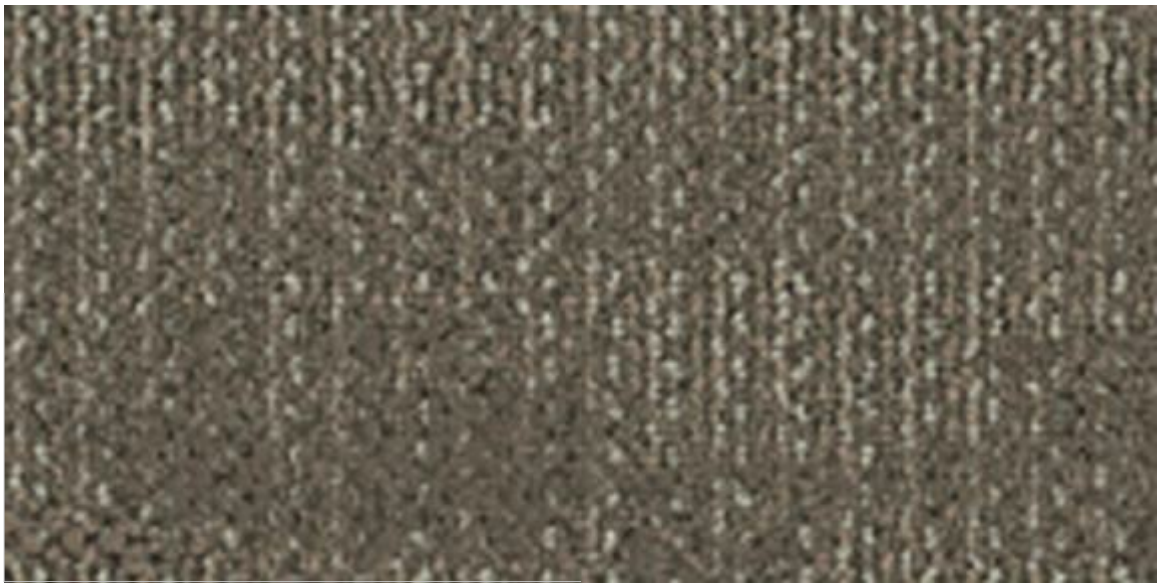
CPT-2: CARPET
BENTLEY, ROADSIDE ATTRACTIONS, #802141 MINISTER'S TREE HOUSE



CPT-2: CARPET
BENTLEY, ROADSIDE ATTRACTIONS, #802141 MINISTER'S TREE HOUSE



CPT-3: CARPET
MASLAND, DISTRESSED SOLUTIONS, LAVA, #51208 INFERNO



CPT-3: CARPET
MASLAND, DISTRESSED SOLUTIONS, LAVA, #51208 INFERNO

CPT-4: CARPET
BENTLEY, OUTLIER, FRONTIER #801670

CPT-4: CARPET
BENTLEY, OUTLIER, FRONTIER #801670

CPT-5: CARPET
BENTLEY, REPOSE, COMPOSURE #800228

CPT-5: CARPET
BENTLEY, REPOSE, COMPOSURE #800228

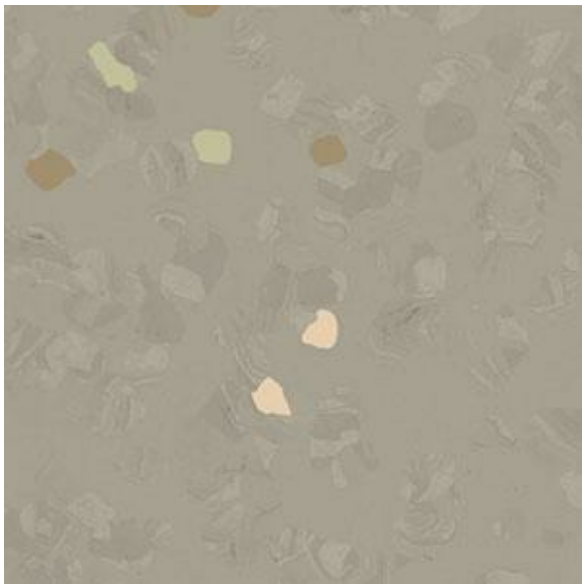
CPT-6: CARPET
BENTLEY, RITUAL, COMPOSURE #800228

CPT-6: CARPET
BENTLEY, RITUAL, COMPOSURE #800228

LVT-1: LUXURY VINYL TILE
MANNINGTON, COLOR ANCHOR, STRIDE, COTTONTAIL #C138

LVT-2: LUXURY VINYL TILE
MANNINGTON, AMTICO, ANTHOLOGY, CITY GRID, #ANT100 CORE

RF-1: RUBBER FLOORING
NORA, ENVIRONCARE, #2945 LACE VINE



RF-2: RUBBER FLOORING
NORA, ENVIRONCARE, #2933 WHISPERING FOG

RF-3: RUBBER FLOORING
NORA, SENTICA, #6505 SILK

RF-4: RUBBER FLOORING
NORA, SENTICA, #6506 CASHMERE

RF-5: RUBBER FLOORING
NORA, VALUA, #6714 MUSHROOM

RF-6: RUBBER FLOORING
NORA, VALUA, #6722 PINE CONE

RF-7: RUBBER FLOORING
NORA, ARAGO, #5178 CALM

RB-1, RB-2: RUBBER BASE
TS-1: TRANSITION STRIP
JOHNSONITE, #80 FAWN

WM-1: WALK OFF MAT
C/S GROUP, PEDIMAT, #9327
DRY BROWN

SOLID NEUTRALS

PFT-2: PORCELAIN FLOOR TILE
PWT-2: PORCELAIN WALL TILE
CROSSVILLE, SHADES, FOG AV243

PFT-4: PORCELAIN FLOOR TILE
PWT-4: PORCELAIN WALL TILE
CROSSVILLE, SHADES, CLAY AV245

PFT-3: PORCELAIN FLOOR TILE
PWT-3: PORCELAIN WALL TILE
CROSSVILLE, SHADES, HAZE AV247

PWT-8: PORCELAIN WALL TILE
CROSSVILLE, SHADES, WARM GRAYS
MOSAICS (AV243, AV245, AV247)

PFT-8: PORCELAIN FLOOR TILE
PWT-10: PORCELAIN WALL TILE
CROSSVILLE, ARGENT, A1401 WINTER GARDEN

GRT-5: GROUT
MAPEI, EPOXY GROUT, #14 BISCUIT;
FOR WALL TILE ONLY

GRT-1: GROUT
MAPEI, EPOXY GROUT, #39 IVORY

GRT-2: GROUT
MAPEI, EPOXY GROUT, #09 GRAY

STONE LOOK

PFT-10: PORCELAIN FLOOR TILE
PWT-12: PORCELAIN WALL TILE
IRIS US, TRAVERTINI AL CONTRO,
ARGENTO

FABRIC LOOK

PFT-13: PORCELAIN FLOOR TILE
PWT-15: PORCELAIN WALL TILE
MEDITERRANEA USA, TOUCH, SUN GLOW

WOOD PLANK

PFT-11: PORCELAIN FLOOR TILE
PWT-13: PORCELAIN WALL TILE
CROSSVILLE, NEST, JOYOUS OLIVE #AV362

PFT-12: PORCELAIN FLOOR TILE
PWT-14: PORCELAIN WALL TILE
CROSSVILLE, NEST, BLISSFUL OLIVE #AV363

CG-2: CORNER GUARD
CR-1: CRASH RAIL
CHR-1: CRASH RAIL
HR-1: HANDRAIL
VWP-1: WALL PROTECTION
C/S ACROVYN, #858 PUMICE

PT-2: PAINT
SHERWIN WILLIAMS,
#SW7011 NATURAL CHOICE

PT-3: PAINT
SHERWIN WILLIAMS,
#SW7036 ACCESSIBLE BEIGE

PL-1: PLASTIC LAMINATE
WILSONART, #D439-60 WALLABY

PL-2: PLASTIC LAMINATE
WILSONART, #4990-60 FLAX LINEN

SS-1: SOLID SURFACE
AVONITE, #4330 HONEY CRUNCH

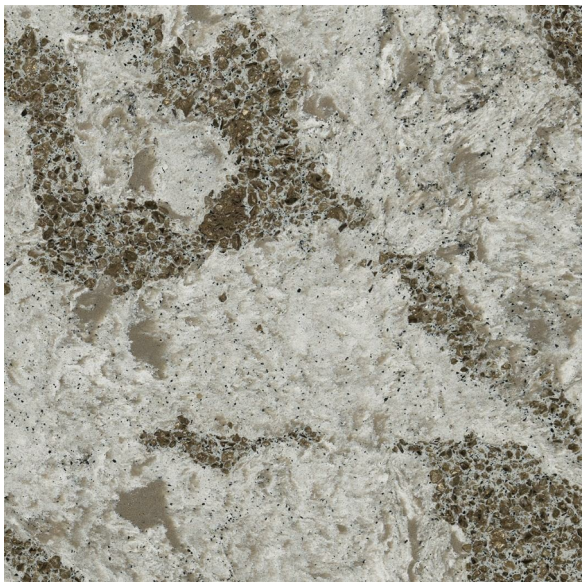
SS-2: SOLID SURFACE
CORIAN, CLAM SHELL

SS-3: SOLID SURFACE
CORIAN, LINEN

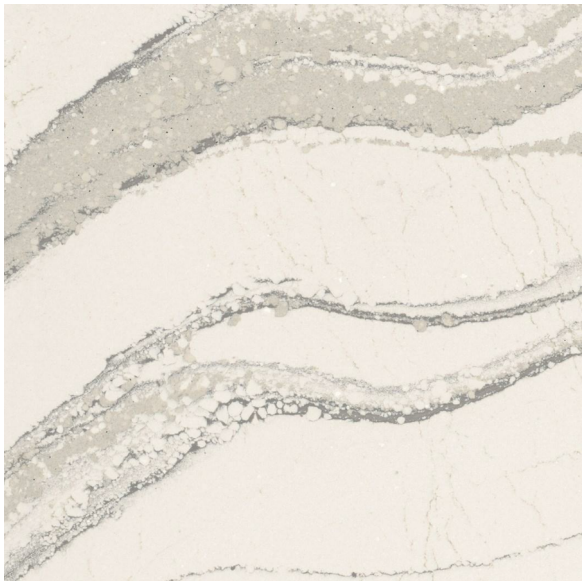
SS-4: SOLID SURFACE
WILSONART-EOS, BEIGE

SSM-2: SOLID SURFACE SYSTEMS
CORIAN, LINEN
TO BE USED AS SHOWER PAN / WALLS

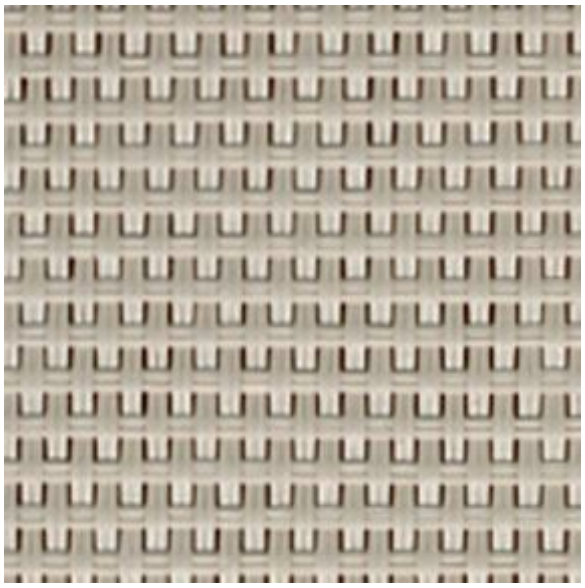
SSM-5: SOLID SURFACE SYSTEMS
AVONITE, #9036 SANDSTORM
TO BE USED AS SHOWER PAN / WALLS



QZP-1: QUARTZ
CAMBRIA, #0355 GALLOWAY



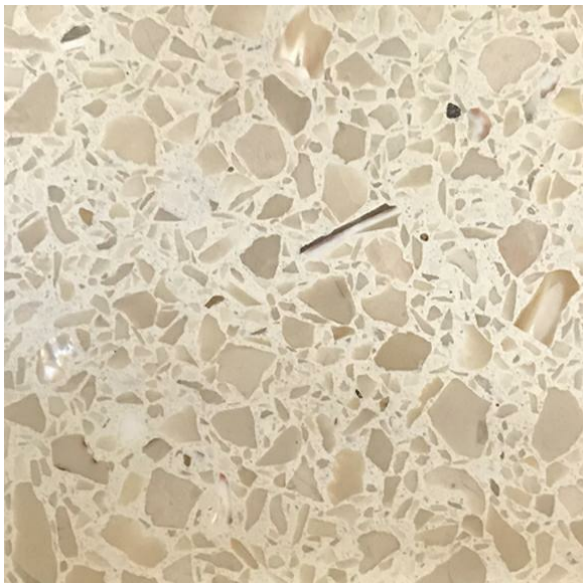
QZP-2: QUARTZ
CAMBRIA, #0126 BRITTANICCA



WT-1: WINDOW TREATMENT
MECHOSHADE, ECOVEIL 1350 SERIES,
#1352 BEIGE

WT-2: WINDOW TREATMENT
MECHOSHADE, 0100 EQUINOX
BLACKOUT, #0104 SANDSTONE

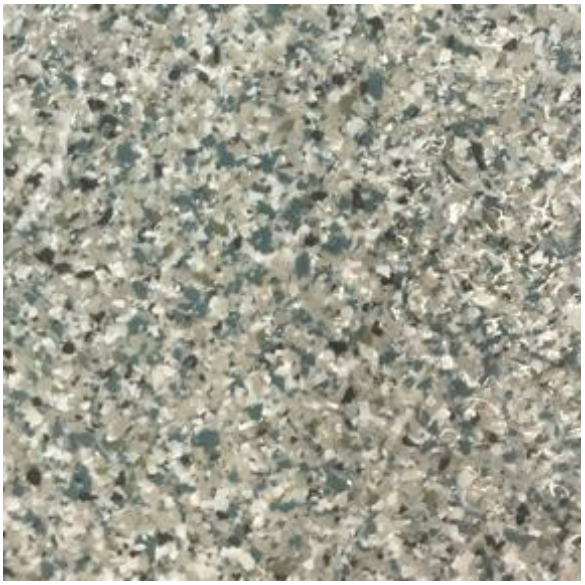
TP-2: TOILET PARTITION
SCRANTON PRODUCTS, HINY HIDERS,
HDPE SANDCASTLE, ORANGE PEEL



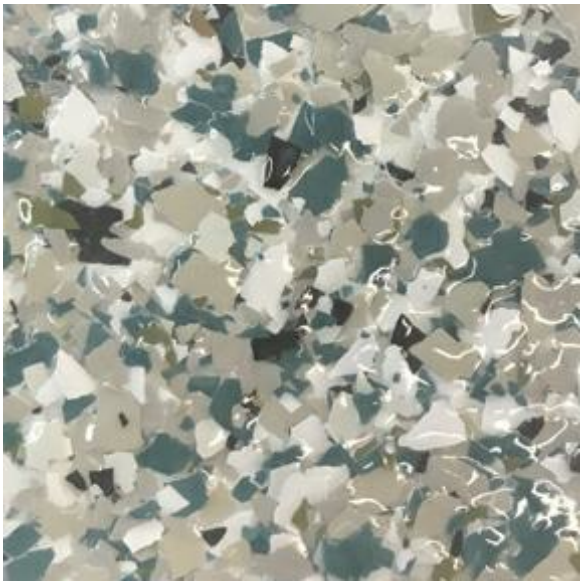
ET-1: TERRAZZO
TERROXY, TM #14-1780

ET-2: TERRAZZO
TERROXY, TM #17-621

RES-1: RESINOUS FLOORING
STONHARD, STONCLAD UR, BEECHWOOD

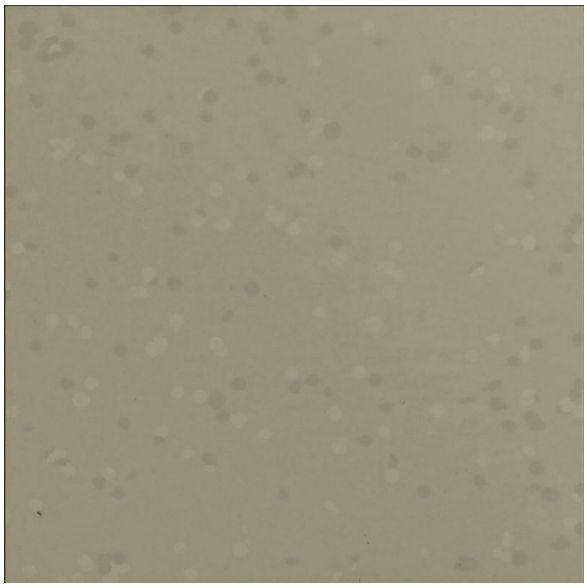


RES-2: RESINOUS FLOORING
STONHARD, STONTEC TRF, SILVER SAGE, SMALL FLAKE



RES-2: RESINOUS FLOORING
STONHARD, STONTEC TRF, SILVER SAGE, LARGE FLAKE

SF-1: SPECIALTY FLOORING
CONNOR SPORTS, ELASTIPLUS, #1019
ARID BRONZE
FOR PHYSICAL THERAPY AREAS



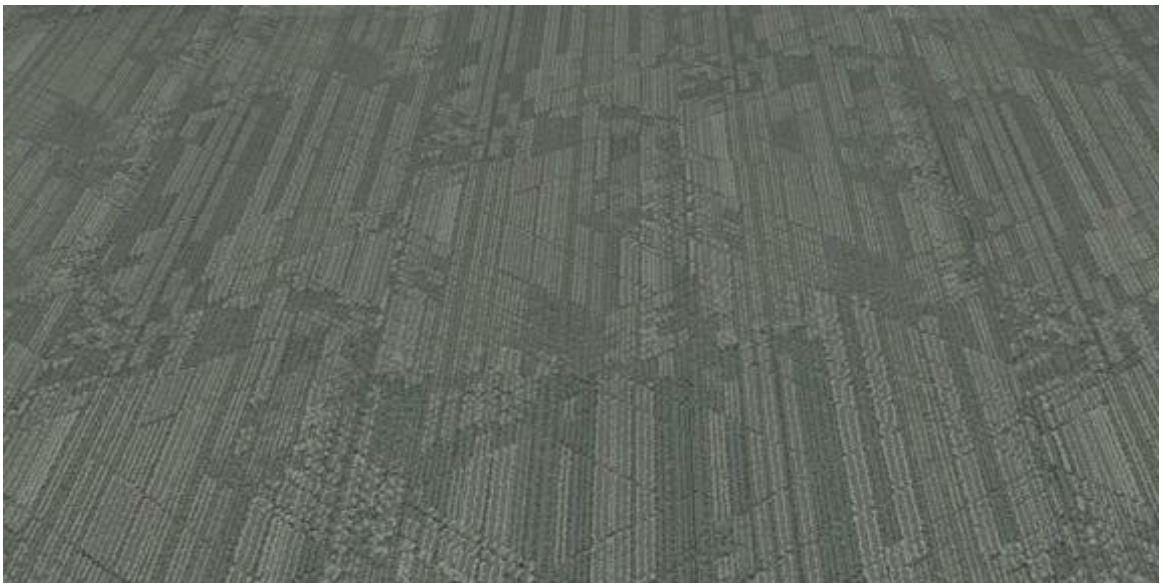
SF-2: SPECIALTY FLOORING (PHYSICAL THERAPY; OPERATING ROOM; PHARMACY)
ECORE, GALAXY RX, #2702 BEAM ME UP BEIGE

SF-3: SPECIALTY FLOORING (PHYSICAL THERAPY; OPERATING ROOM; PHARMACY)
ECORE, GALAXY RX, #2703 PRINCESS GREYA

SF-10: SPECIALTY FLOORING
STONHARD, STONCLAD UT, BEECHWOOD
FOR NUTRITION AREAS

SF-12: SPECIALTY FLOORING
STONHARD, STONRES RTZ, SANTA FE
FOR OPERATING ROOM

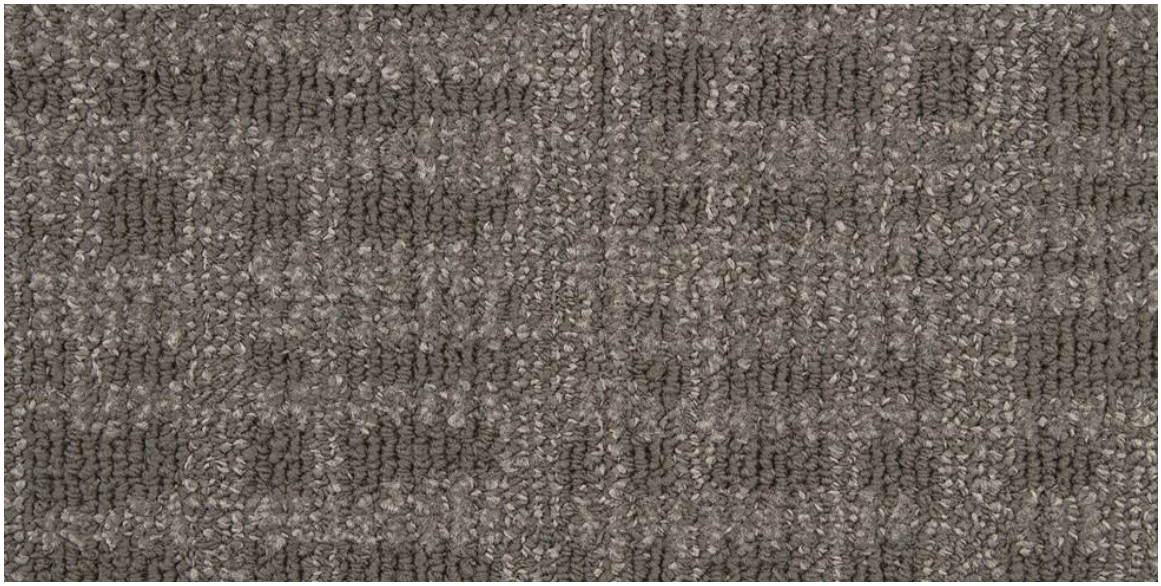
SF-14: SPECIALTY FLOORING
SIKAFLOOR, COMFORTFLOOR, DECORATIVE PRO,
BEIGE #248
FOR PHARMACY



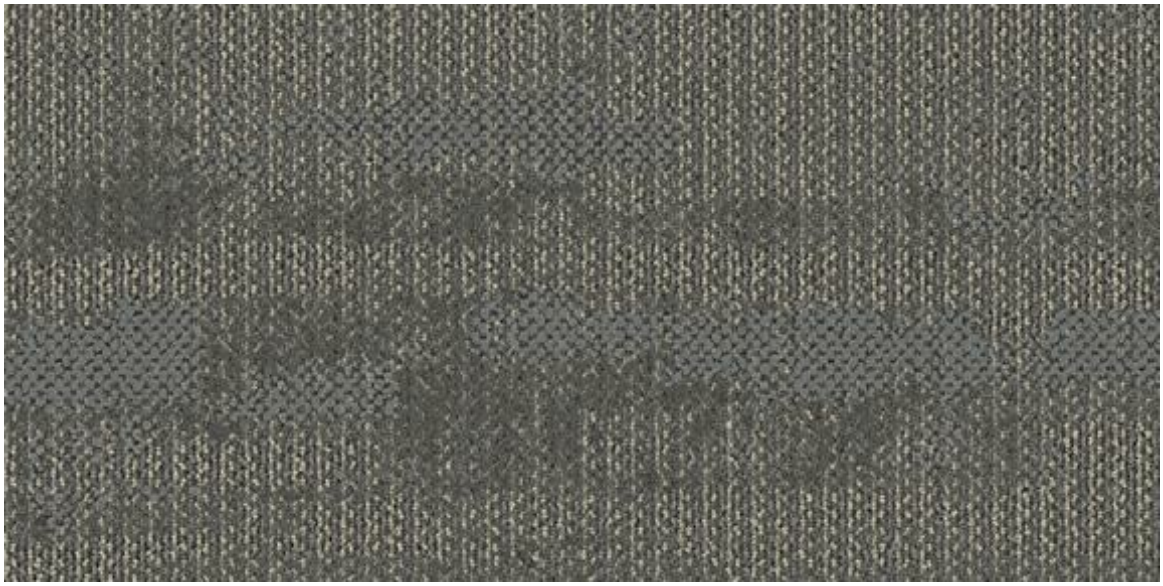
CPT-7: CARPET
MANNINGTON, PORTLAND PROJECT, SUMMIT, #10901 CREST

CPT-7: CARPET
MANNINGTON, PORTLAND PROJECT, SUMMIT, #10901 CREST

CPT-8: CARPET
BENTLEY, ROADSIDE ATTRACTIONS, #802142 RADON HEALTH MINES



CPT-8: CARPET
BENTLEY, ROADSIDE ATTRACTIONS, #802142 RADON HEALTH MINES

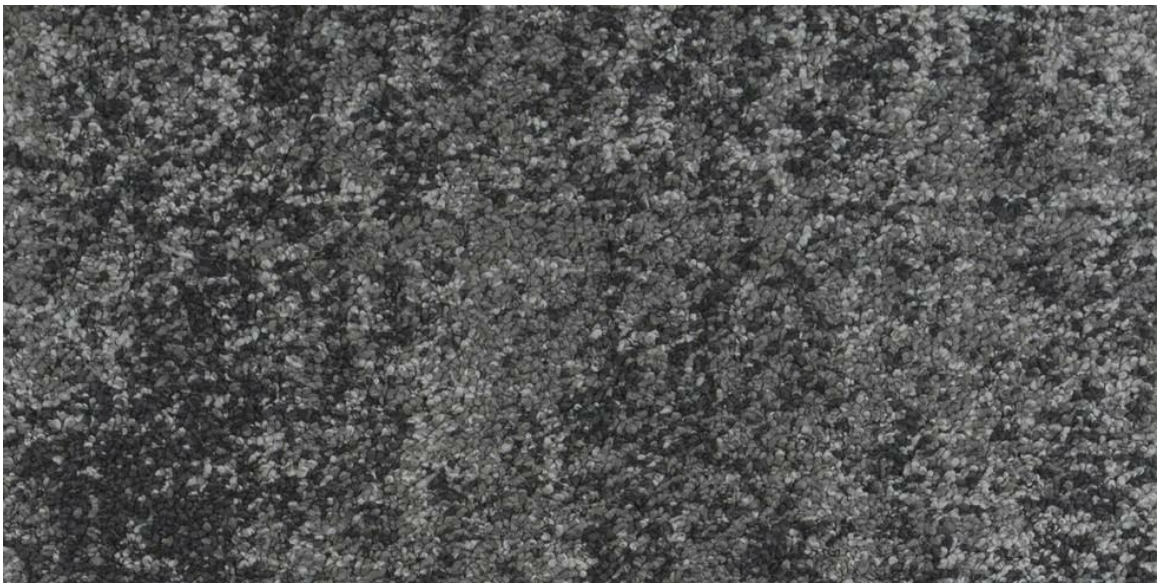


CPT-9: CARPET
MASLAND, DISTRESSED SOLUTIONS, LAVA, #51212 RADIATE

CPT-9: CARPET
MASLAND, DISTRESSED SOLUTIONS, LAVA, #51212 RADIATE

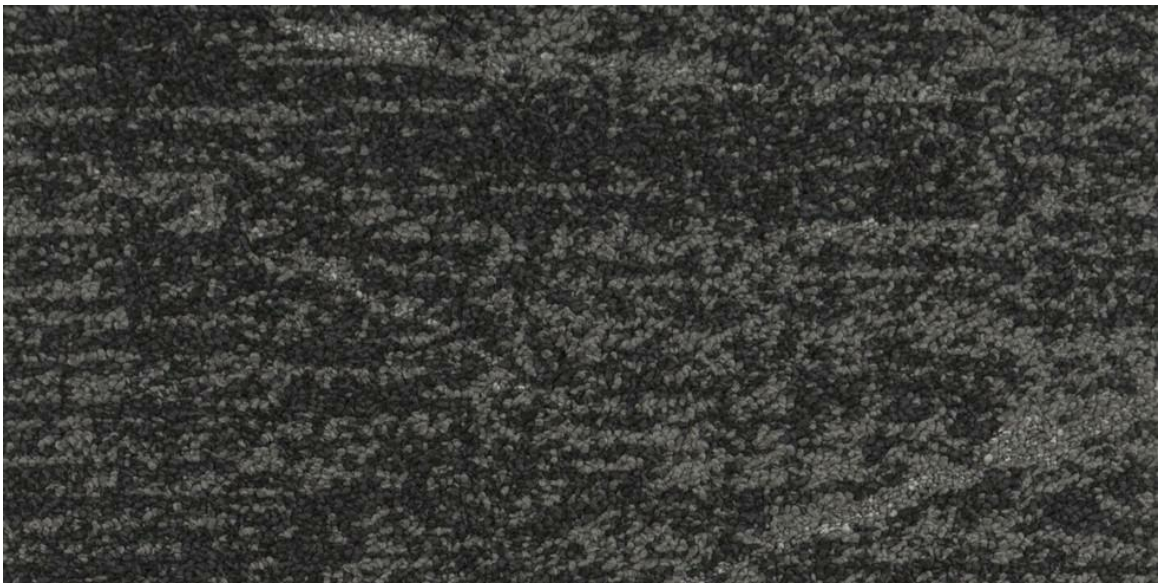
CPT-10: CARPET
BENTLEY, OUTLIER, SUBDIVISION #801678

CPT-10: CARPET
BENTLEY, OUTLIER, SUBDIVISION #801678

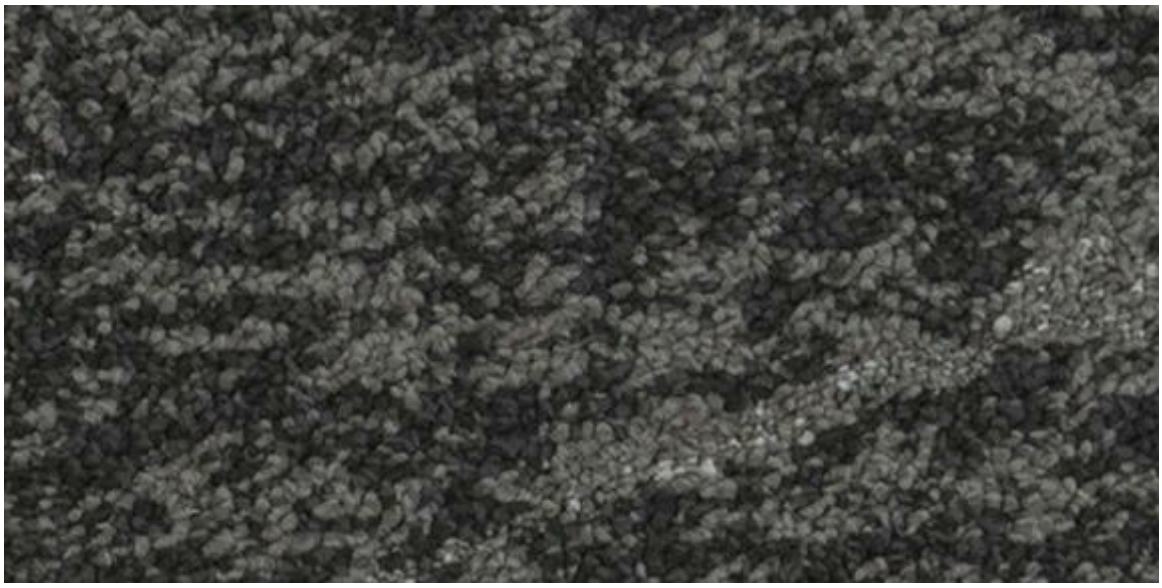


CPT-11: CARPET
BENTLEY, REPOSE, SOCIAL CONDUCT #800221

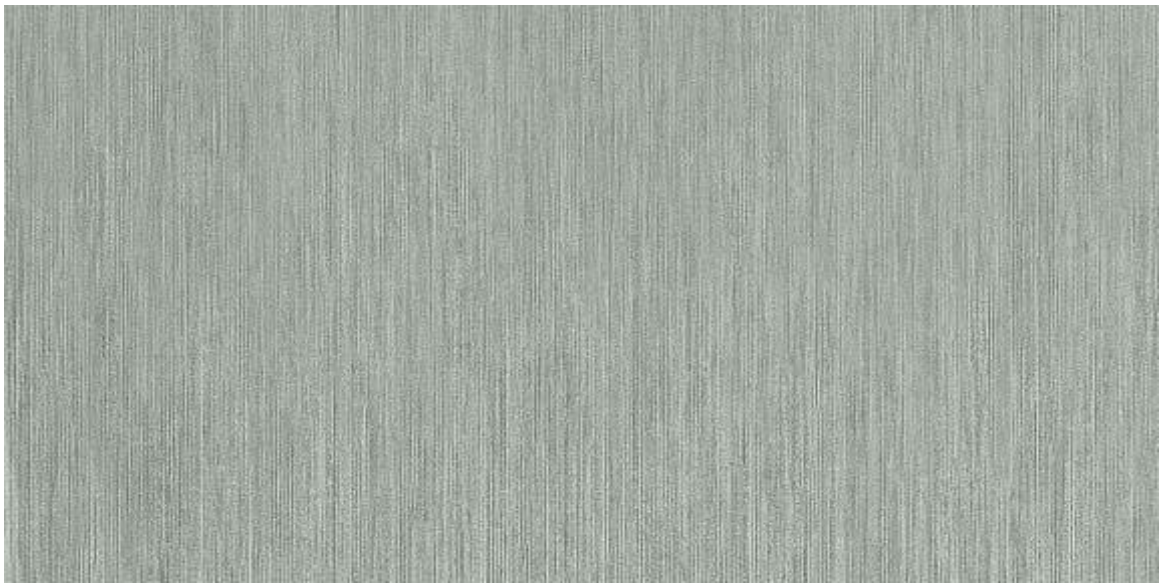
CPT-11: CARPET
BENTLEY, REPOSE, SOCIAL CONDUCT #800221



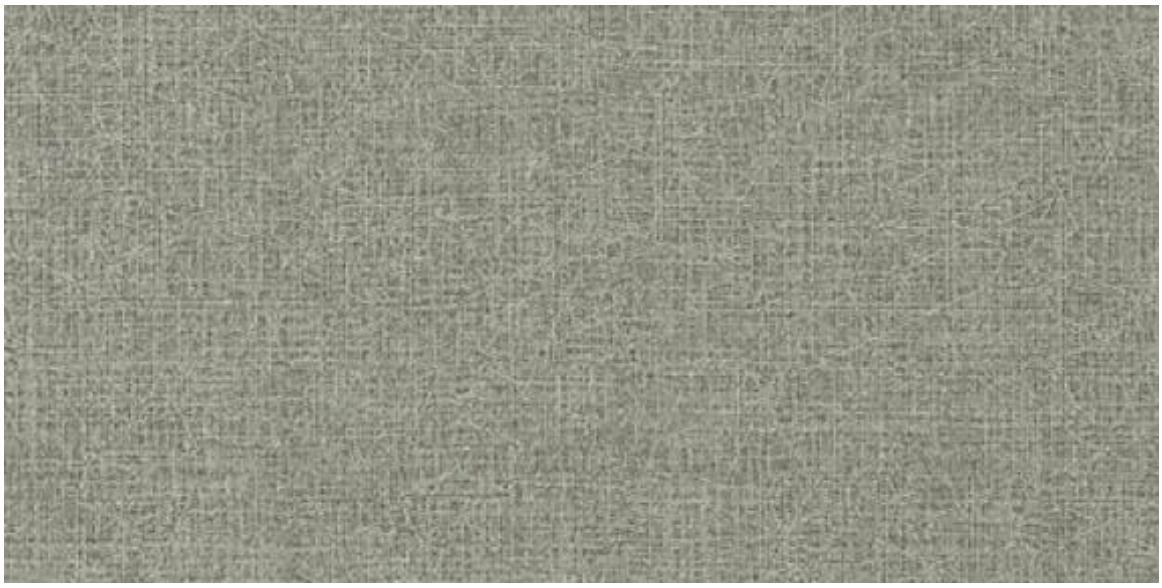
CPT-12: CARPET
BENTLEY, RITUAL, SOCIAL CONDUCT #800221



CPT-12: CARPET
BENTLEY, RITUAL, SOCIAL CONDUCT #800221



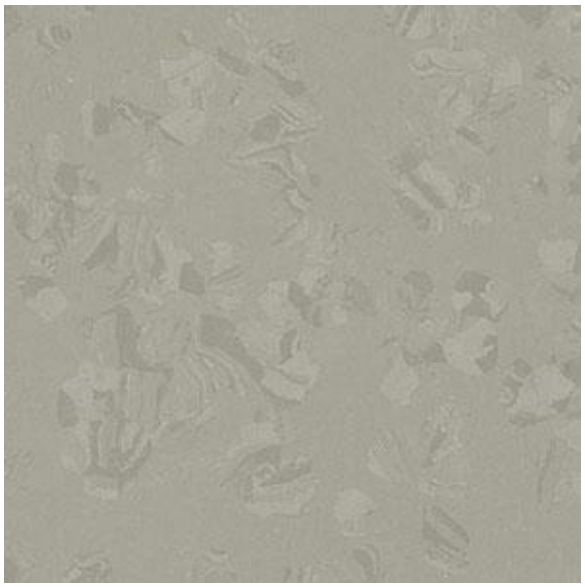
LVT-3: LUXURY VINYL TILE
MANNINGTON, COLOR ANCHOR, STRIDE, #C139 LONDON FOG



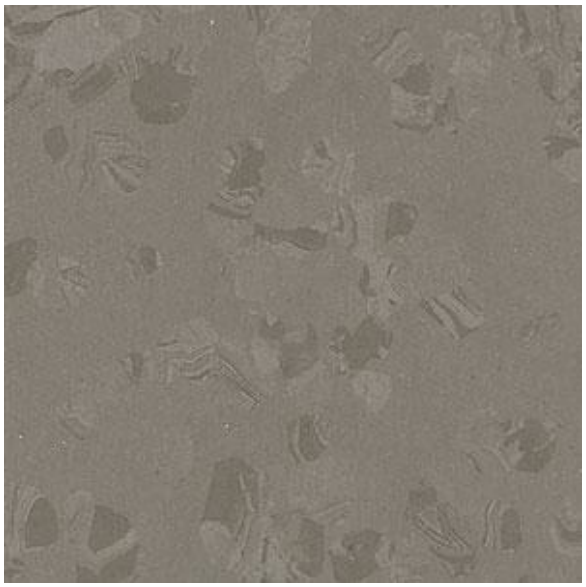
LVT-4: LUXURY VINYL TILE
MANNINGTON, AMTICO, ANTHOLOGY, CITY GRID, #ANT104 INTERACTION

RF-8: RUBBER FLOORING
NORA, ENVIRONCARE, #2930 WINDFLOWER

RF-9: RUBBER FLOORING
NORA, ENVIRONCARE, #2931 SMOKY FENNEL



RF-10: RUBBER FLOORING
NORA, SENTICA, #6520 SNOW DAY



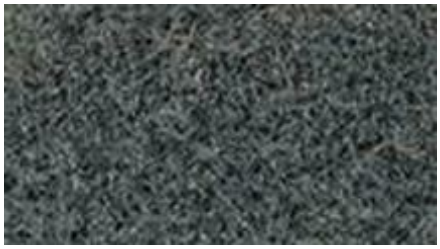
RF-11: RUBBER FLOORING
NORA, SENTICA, #6521 SUNDAY PAPER

RF-12: RUBBER FLOORING
NORA, VALUA, #6708 BEACH WOOD

RF-13: RUBBER FLOORING
NORA, VALUA, #6709 SMOKE

RF-14: RUBBER FLOORING
NORA, ARAGO, #5177 BALANCE

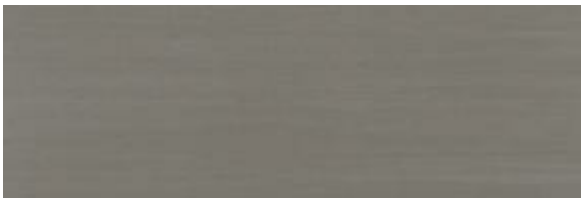
RB-3, RB-4: RUBBER BASE
TS-2: TRANSITION STRIP
JOHNSONITE, #32 PEBBLE



WM-2: WALK OFF MAT
C/S GROUP, PEDIMAT, #9322 SLATE

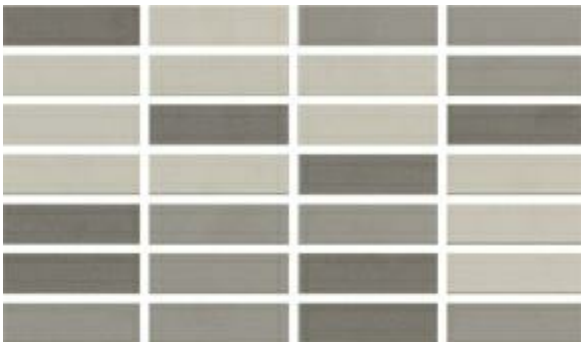
SOLID NEUTRALS

PFT-5: PORCELAIN FLOOR TILE
PWT-5: PORCELAIN WALL TILE
CROSSVILLE, SHADES, ASH AV246



PFT-7: PORCELAIN FLOOR TILE
PWT-7: PORCELAIN WALL TILE
CROSSVILLE, SHADES, THUNDER AV248

PFT-6: PORCELAIN FLOOR TILE
PWT-6: PORCELAIN WALL TILE
CROSSVILLE, SHADES, MIST AV244



PWT-9: PORCELAIN WALL TILE
CROSSVILLE, SHADES, COOL GRAYS
MOSAICS (AV244, AV246, AV248)

PFT-9: PORCELAIN FLOOR TILE
PWT-11: PORCELAIN WALL TILE
CROSSVILLE, ARGENT, A1417 CLEAN SLATE

GRT-5: GROUT
MAPEI, EPOXY GROUT,
#14 BISCUIT; FOR WALL TILE ONLY

GRT-3: GROUT
MAPEI, EPOXY GROUT, #19 PEARL GRAY

GRT-4: GROUT
MAPEI, EPOXY GROUT, #27 SILVER

STONE LOOK

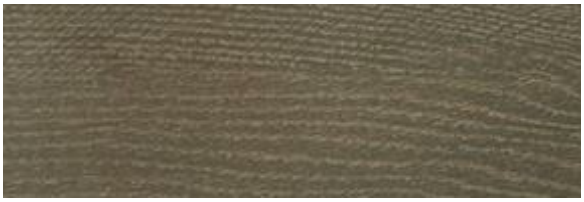
PFT-14: PORCELAIN FLOOR TILE
PWT-16: PORCELAIN WALL TILE
IRIS US, TRAVERTINI AL CONTRO, GRIGIO

FABRIC LOOK

PFT-17: PORCELAIN FLOOR TILE
PWT-19: PORCELAIN WALL TILE
MEDITERRANEA USA, TOUCH, PEARL ESSENCE

WOOD PLANK

PFT-15: PORCELAIN FLOOR TILE
PWT-17: PORCELAIN WALL TILE
CROSSVILLE, NEST, MINDFUL OLIVE #AV364



PFT-16: PORCELAIN FLOOR TILE
PWT-18: PORCELAIN WALL TILE
CROSSVILLE, NEST, SLUMBER OLIVE #AV366

CG-3: CORNER GUARD
CR-2: CRASH RAIL
CHR-2: CRASH RAIL
HR-2: HANDRAIL
VWP-2: WALL PROTECTION
C/S ACROVYN, #314 OZARK

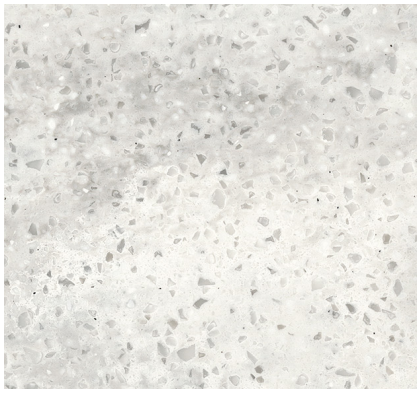
PT-4: PAINT
SHERWIN WILLIAMS,
#SW7015 REPOSE GRAY

PT-5: PAINT
SHERWIN WILLIAMS,
#SW7017 DORIAN GRAY

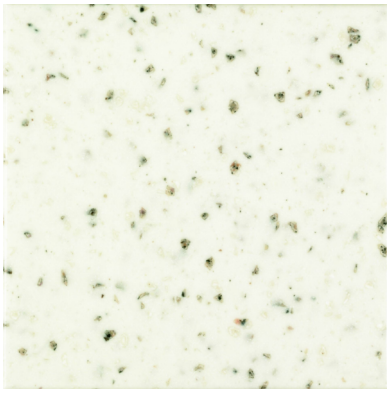
PL-3: PLASTIC LAMINATE
WILSONART, #1500-60 GREY

PL-4: PLASTIC LAMINATE
WILSONART, #4943-60 CLASSIC LINEN

SS-5: SOLID SURFACE
AVONITE, #7710 GULF COAST



SS-6: SOLID SURFACE
CORIAN, ARROWROOT

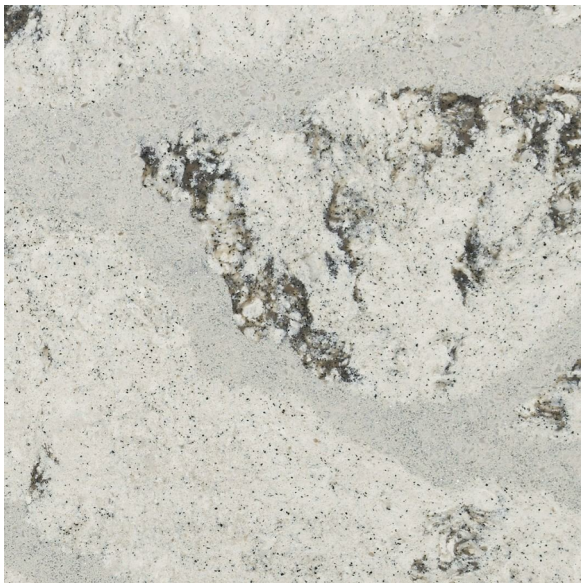


SS-7: SOLID SURFACE
AVONITE, #7713 ALGODON

SS-8: SOLID SURFACE
WILSONART-EOS, GREY

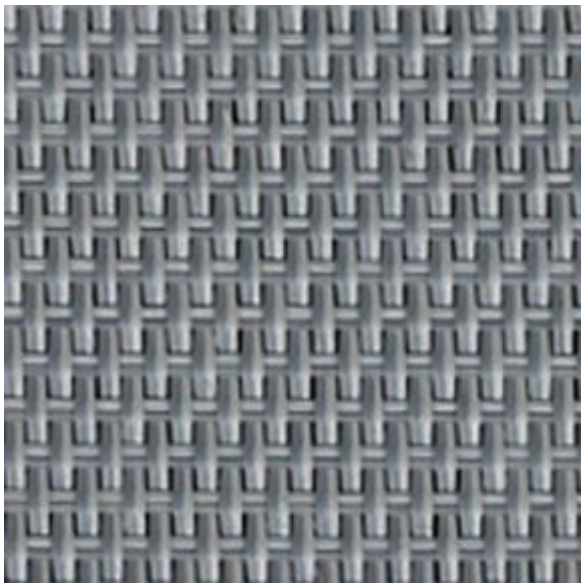
SSM-3: SOLID SURFACE SYSTEMS
CORIAN, EVEREST
TO BE USED AS SHOWER PAN / WALLS

SSM-6: SOLID SURFACE SYSTEMS
AVONITE, #7810 MALT
TO BE USED AS SHOWER PAN / WALLS



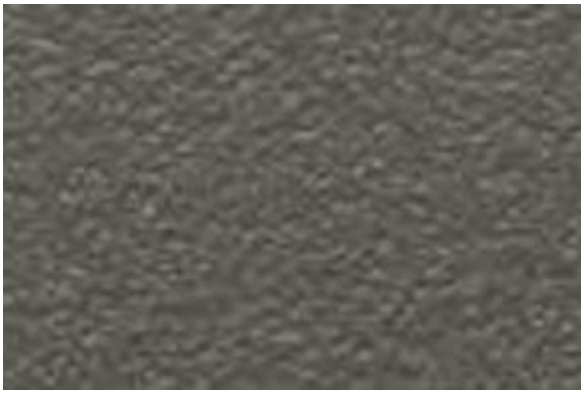
QZP-3: QUARTZ
CAMBRIA, #0356 SUMMERHILL

QZP-4: QUARTZ
CAMBRIA, #0381 SEAGROVE

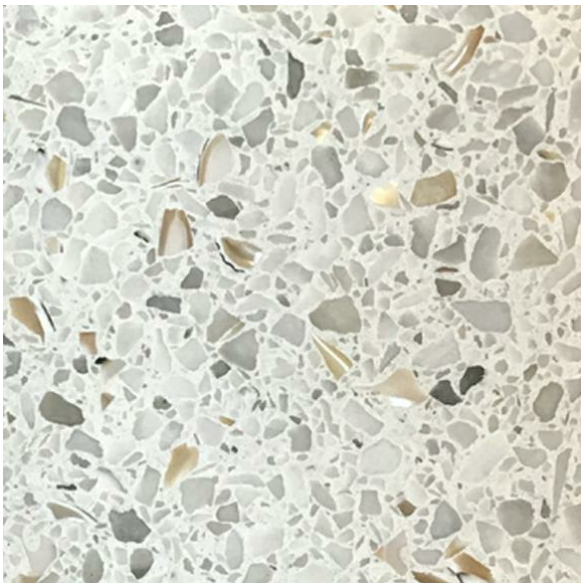


WT-3: WINDOW TREATMENT
MECHOSHADE, ECOVEIL 1350 SERIES,
#1363 GREY

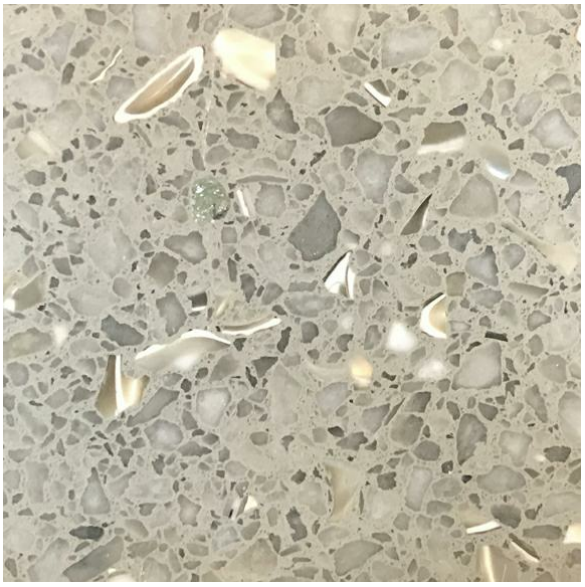
WT-4: WINDOW TREATMENT
MECHOSHADE, 0100 EQUINOX
BLACKOUT, #0105 SILVER



TP-3: TOILET PARTITION
SCRANTON PRODUCTS, HINY HIDERS,
HDPE SHALE, ORANGE PEEL



ET-3: TERRAZZO
TERROXY, TM #18-163



ET-4: TERRAZZO
TERROXY, TM #18-162

RES-3: RESINOUS FLOORING
STONHARD, STONCLAD UR, PEWTER

RES-4: RESINOUS FLOORING
STONHARD, STONTEC TRF, SMOKEY MOUNTAINS, SMALL FLAKE

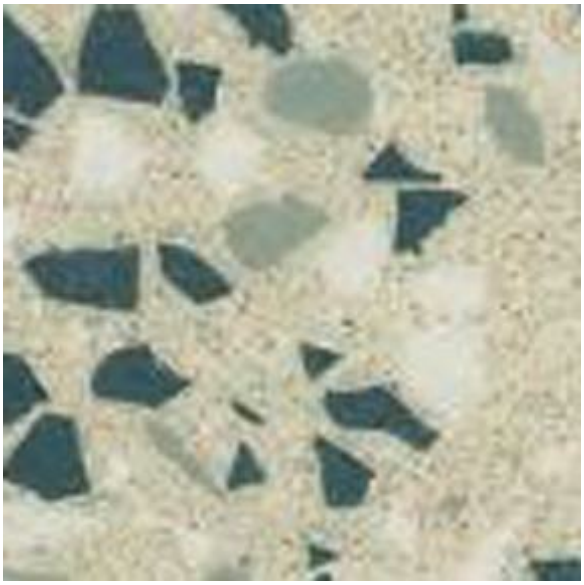
RES-4: RESINOUS FLOORING
STONHARD, STONTEC TRF, SMOKEY MOUNTAINS, LARGE FLAKE

SF-4: SPECIALTY FLOORING
CONNOR SPORTS, ELASTIPLUS
#7001 SILVER MINE
FOR PHYSICAL THERAPY AREAS

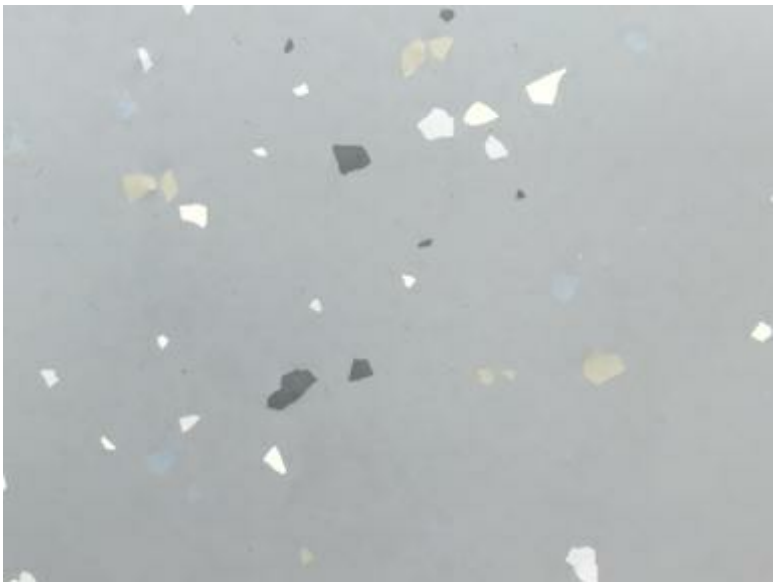
SF-5: SPECIALTY FLOORING (PHYSICAL THERAPY; OPERATING ROOM; PHARMACY)
ECORE, GALAXY RX, #2706 RASTRO GREY

SF-6: SPECIALTY FLOORING (PHYSICAL THERAPY; OPERATING ROOM; PHARMACY)
ECORE, GALAXY RX, #2708 DARK VADAR

SF-11: SPECIALTY FLOORING
STONHARD, STONCLAD UT, PEWTER
FOR NUTRITION AREAS



SF-13: SPECIALTY FLOORING
STONHARD, STONRES RTZ, CANVAS
FOR OPERATING ROOM



SF-15: SPECIALTY FLOORING
SIKAFLOOR, COMFORTFLOOR DECORATIVE PRO, GRAY
FOR PHARMACY

CPT-13: CARPET
MANNINGTON, DESIGN LOCAL, TUCSON, ARROYO, #13165 SEDIMENT

CPT-13: CARPET
MANNINGTON, DESIGN LOCAL, TUCSON, ARROYO, #13165 SEDIMENT

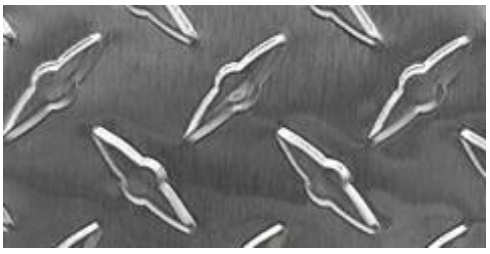
SSM-1: SOLID SURFACE SYSTEM
CORIAN, CAMEO WHITE
TO BE USED AS INTEGRAL SINK

PFT-1: PORCELAIN FLOOR TILE
PWT-1: PORCELAIN WALL TILE
CROSSVILLE, SHADES, VAPOR AV242

SSM-7: SOLID SURFACE SYSTEM
BRADLEY, ANTARCTICA
PRE-FABRICATED VANITY SYSTEM

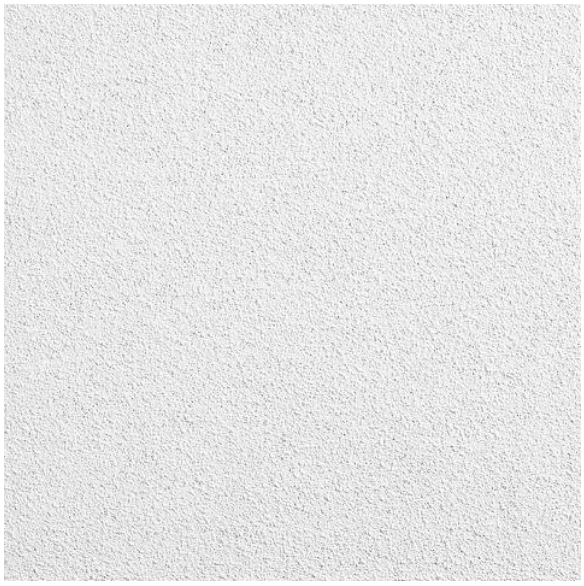
SSM-4: SOLID SURFACE SYSTEM
AVONITE, WHITE #8016
TO BE USED AS INTEGRAL SINK

CG-1: CORNER GUARD
DP-1 DOOR PROTECTION
ACROVYN, STAINLESS STEEL

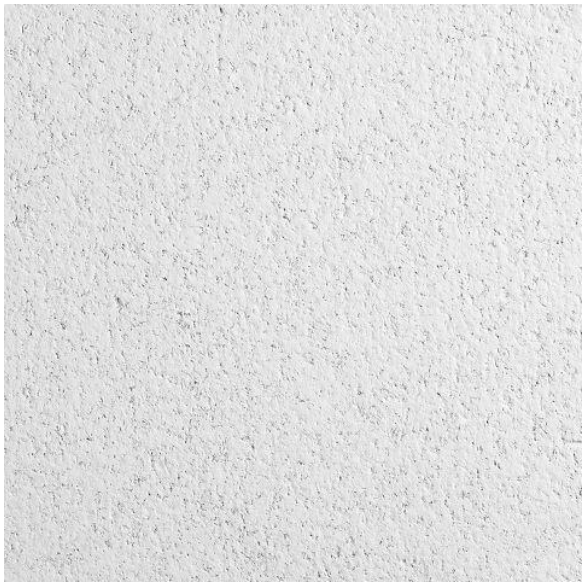


SWP-1: STAINLESS WALL PROTECTION
DIAMOND PLATE

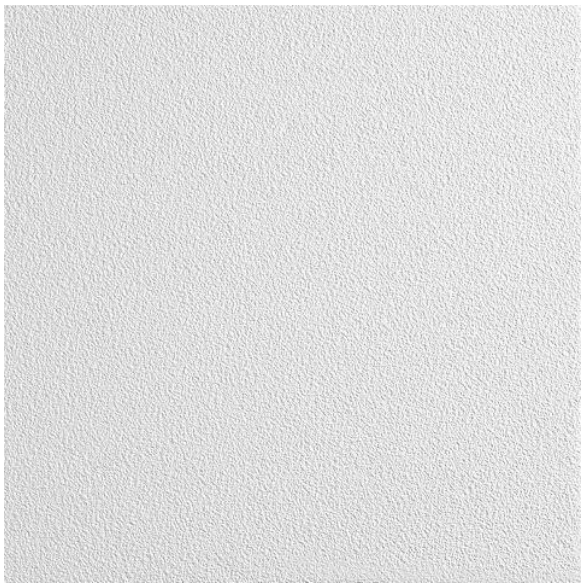
PT-1: PAINT
SHERWIN WILLIAMS, #SW7005 PURE WHITE



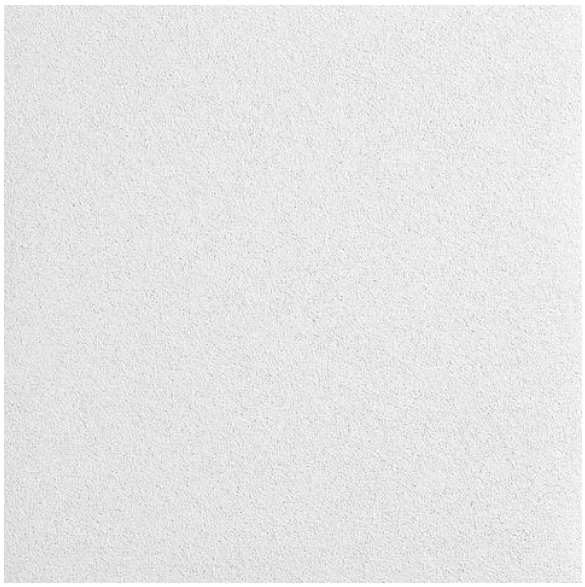
ACT-1: ACOUSTICAL CEILING TILE
ARMSTRONG, ULTIMA, TEGULAR EDGE
#1911 WHITE



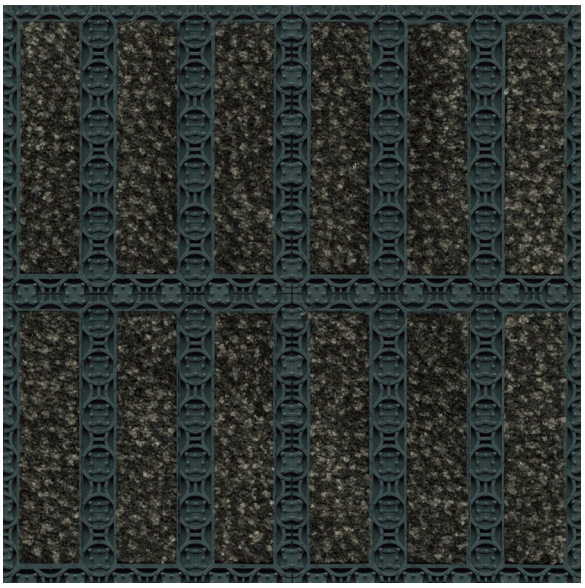
ACT-2: ACOUSTICAL CEILING TILE
ARMSTRONG, FINE FISSURED, SQUARE
EDGE, CERAMAGUARD #605 WHITE



ACT-3: ACOUSTICAL CEILING TILE
ARMSTRONG, CLEAN ROOM VL SQUARE
EDGE, #868 WHITE



ACT-4: ACOUSTICAL CEILING TILE
ARMSTRONG, LYRA PLANT BASED HIGH
CAC, TEGULAR EDGE, #8730PB WHITE

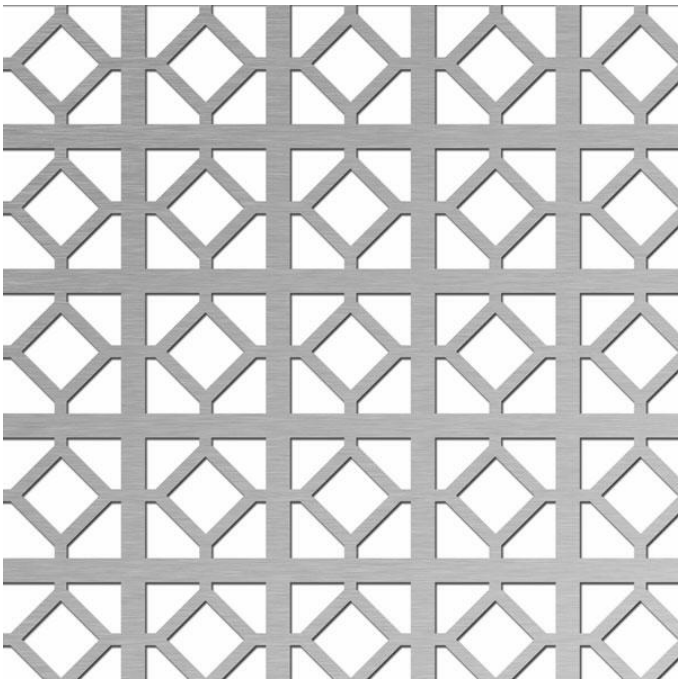


WM-4: WALK OFF MAT
MILLIKEN, ARX COLLECTION, FORMA 2.0, BOUNDARY #FOR144-27

WM-3: WALK OFF MAT
C/S GROUP, PEDIMAT, BLACK RUBBER

TP-1: TOILET PARTITION
BRADLEY, STAINLESS STEEL

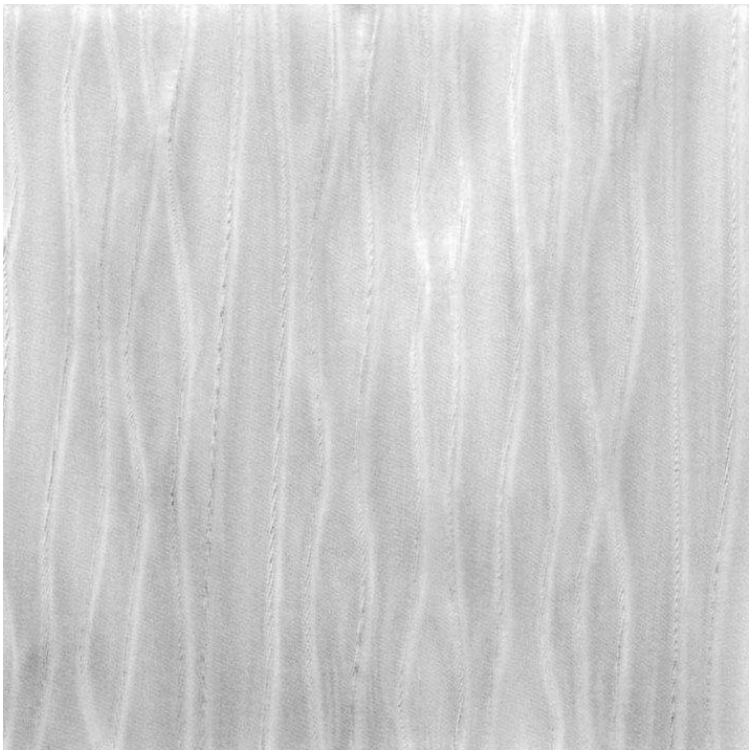
SRP-1: SOLID RESIN PANEL
3FORM, VARIA ECORESIN, HIGHRES IMAGERY, STROLL



SRP-2: SOLID RESIN PANEL
LUMICOR, METALLIC, INTERSECT

SRP-3: SOLID RESIN PANEL
3FORM, VARIA ECORESIN, ARTISAN,
CONNECTION SQUARE PURE

SRP-4: SOLID RESIN PANEL
LUMICOR, TEXTILES, KAURI



SRP-5: SOLID RESIN PANEL
3FORM, VARIA ECORESIN, TEXTURES, WAVE

SRP-6: SOLID RESIN PANEL
3FORM, VARIA ECORESIN, TEXTURES, CRINKLE

SRP-7: SOLID RESIN PANEL
3FORM, VARIA ECORESIN, NATURALS, THATCH

SRP-8: SOLID RESIN PANEL
LUMICOR, NATURAL, MOJAVE

LVT-6: LUXURY VINYL TILE
MANNINGTON, AMTICO WOOD, #AR0W6840 MAPLE

SVF-2: SHEET VINYL FLOORING
TEKNOFLOR, FORESTSCAPES HPD, #88059 NATURAL

SF-8: SPECIALTY FLOORING (PHYSICAL THERAPY; PHARMACY)
ECORE, FOREST RX, #3290 WARM BEECH

WP-2: WALL PANEL
PIONITE FRL, HARDROCK MAPLE #FW327

PL-6: PLASTIC LAMINATE
WILSONART, #10776-60 KENSINGTON MAPLE

WS-2: WOOD STAIN
SHERWIN WILLIAMS, #SW3121-B PEARWOOD

DHR-2: DECORATIVE HAND RAIL
KOROGUARD, BELLALUCENT, WOOD STAIN TO MATCH PL-6, 3FORM RESIN PANEL, TING TING

HR-4: HANDRAIL
VWP-4: VINYL WALL PROTECTION
C/S ACROVYN, SIMULATED WOOD PRODUCT, #372 CLASSIC MAPLE, CHAMELEON

WCT-2: WOOD CEILING TILE
WCP-2: WOOD CEILING PLANK
ARMSTRONG CEILINGS, WOODWORKS, NATURAL VARIATIONS, NATURAL BEECH (NBE)

LVT-5: LUXURY VINYL TILE
MANNINGTON, AMTICO WOOD, #AR0W7450 AMERICAN CHERRY

SVF-1: SHEET VINYL FLOORING
TEKNOFLOR, FORESTSCAPES HPD, #88074 SUNRISE

SF-7: SPECIALTY FLOORING (PHYSICAL THERAPY; PHARMACY)
ECORE, FOREST RX, #3360 MAHOGANY

WP-1: WALL PANEL
PIONITE FRL, OILED
CHERRY #FW624

PL-5: PLASTIC LAMINATE
WILSONART, WILD
CHERRY #7054-60

WS-1: WOOD STAIN
SHERWIN WILLIAMS,
#SW3109-B BRIGHT CHERRY

DHR-1: DECORATIVE HAND RAIL
KOROGUARD, BELLALUCENT, WOOD
STAIN TO MATCH PL-5, 3FORM RESIN
PANEL, TING TING

HR-3: HANDRAIL
VWP-3: VINYL WALL PROTECTION
C/S ACROVYN, SIMULATED WOOD PRODUCT,
#373 AMBER CHERRY, CHAMELEON

WCT-1: WOOD CEILING TILE
WCP-1: WOOD CEILING PLANK
ARMSTRONG CEILINGS, WOODWORKS, NATURAL VARIATIONS, DARK CHERRY (NDC)

LVT-7: LUXURY VINYL TILE
MANNINGTON, AMTICO WOOD, #AR0W7610 CLASSIC WALNUT

SVF-3: SHEET VINYL FLOORING
TEKNOFLOR, FORESTSCAPES HPD, #88067 SEPIA

SF-9: SPECIALTY FLOORING (PHYSICAL THERAPY; PHARMACY)
ECORE, FOREST RX, #9824 AGED OAK

WP-3: WALL PANEL
PIONITE, PRALINES AND CREAM #FW176

PL-7: PLASTIC LAMINATE
WILSONART, #7960-60 STUDIO TEAK

WS-3: WOOD STAIN
SHERWIN WILLIAMS, #SW3134-B WEATHERED TEAK

DHR-3: DECORATIVE HAND RAIL
KOROGUARD, BELLALUCENT, WOOD STAIN TO MATCH PL-7, 3FORM RESIN PANEL, TING TING

HR-5: HANDRAIL
VWP-5: VINYL WALL PROTECTION
C/S ACROVYN, SIMULATED WOOD PRODUCT, #1352 FOSSIL TEAK, CHAMELEON

WCT-3: WOOD CEILING TILE
WCP-3: WOOD CEILING PLANK
ARMSTRONG CEILINGS, WOODWORKS, NATURAL VARIATIONS, WALNUT (NWN)

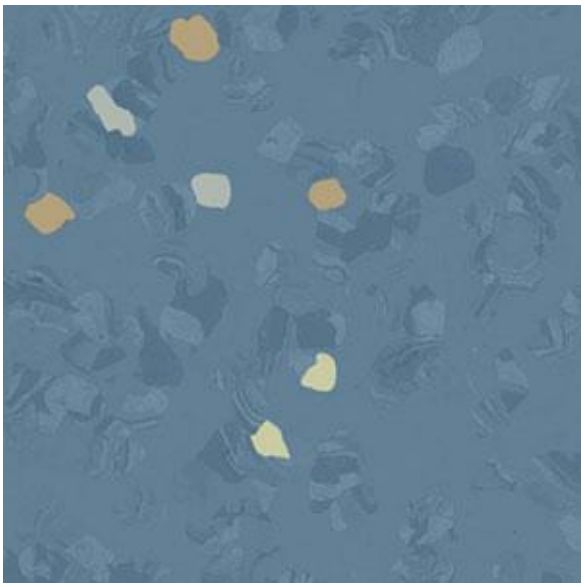
RF-15: RUBBER FLOORING
NORA, ENVIRONCARE, #2958 FALLEN ACORN

RF-16: RUBBER FLOORING
NORA, ENVIRONCARE, #2967 MOOR GRASS

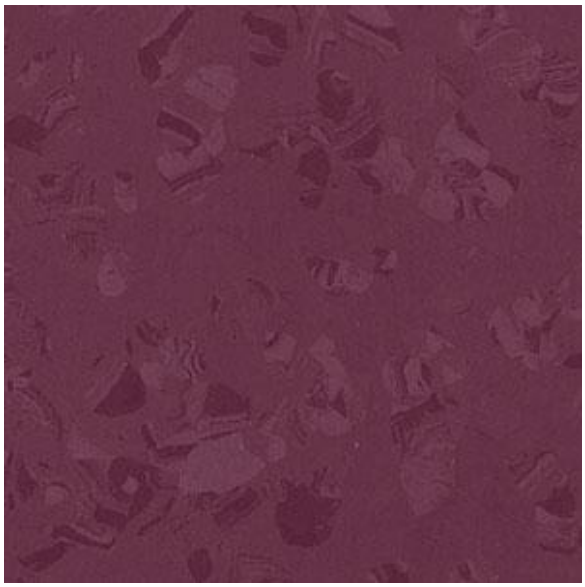
RF-17: RUBBER FLOORING
NORA, ENVIRONCARE, #2949 SAGE

RF-18: RUBBER FLOORING
NORA, ENVIRONCARE, #2954 IRISH MOSS

RF-19: RUBBER FLOORING
NORA, ENVIRONCARE, #2779 EVERGREEN PATH



RF-20: RUBBER FLOORING
NORA, ENVIRONCARE, #2941 CHINA BERRY



RF-21: RUBBER FLOORING
NORA, SENTICA, #6503 INDULGENCE

PT-6: PAINT
SHERWIN WILLIAMS,
#SW7686 HINOKI

PT-7: PAINT
SHERWIN WILLIAMS,
#SW7687 AUGUST MOON

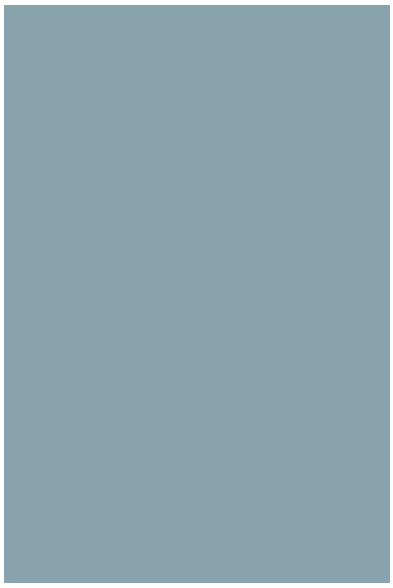
PT-8: PAINT
SHERWIN WILLIAMS,
#SW7695 MESA TAN

PT-9: PAINT
SHERWIN WILLIAMS,
#SW6644 CHAMPAGNE

PT-10: PAINT
SHERWIN WILLIAMS,
#SW6348 REYNARD

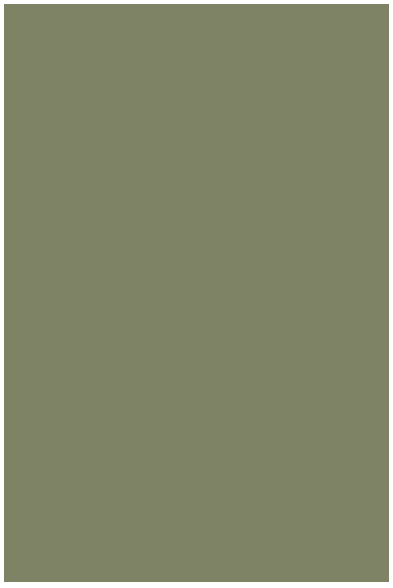
PT-11: PAINT
SHERWIN WILLIAMS,
#SW6349 PENNYWISE

PT-12: PAINT
SHERWIN WILLIAMS,
#SW9149 INKY BLUE

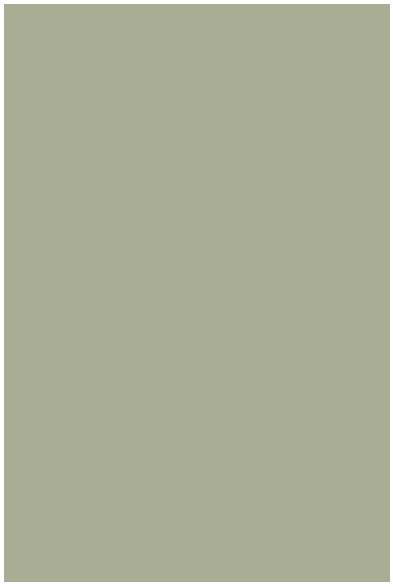


PT-13: PAINT
SHERWIN WILLIAMS,
#SW9147 FAVORITE JEANS

PT-14: PAINT
SHERWIN WILLIAMS,
#SW9144 MOONMIST

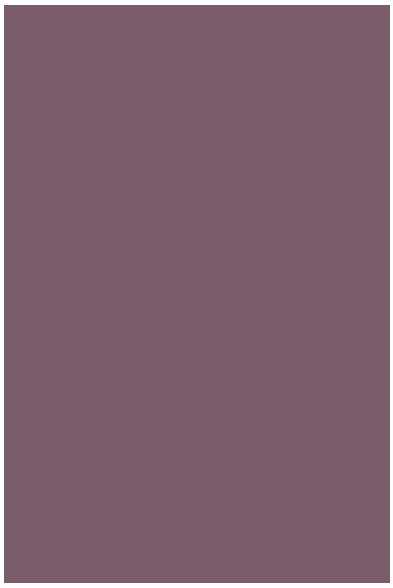


PT-15: PAINT
SHERWIN WILLIAMS,
#SW6179 ARTICHOKE

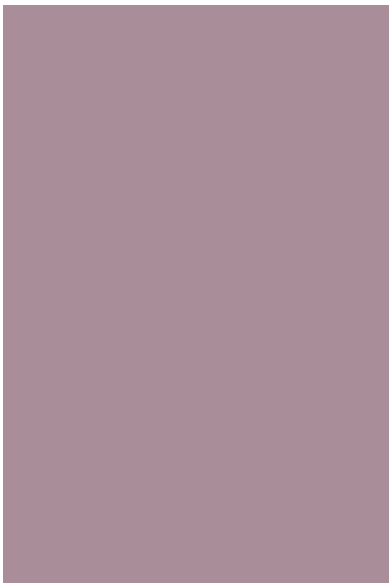


PT-16: PAINT
SHERWIN WILLIAMS,
#SW6178 CLARY SAGE

PT-17: PAINT
SHERWIN WILLIAMS,
#SW6176 LIVEABLE GREEN

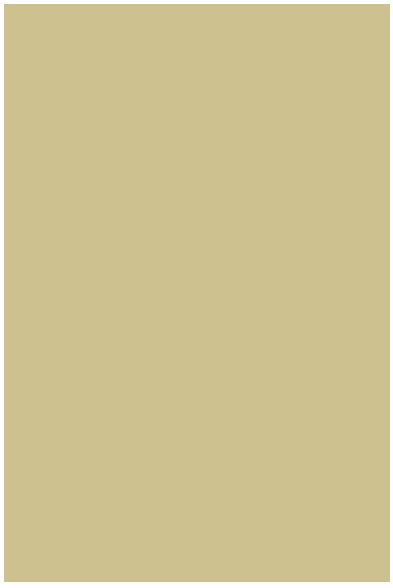


PT-18: PAINT
SHERWIN WILLIAMS,
#SW6285 GRAPE HARVEST

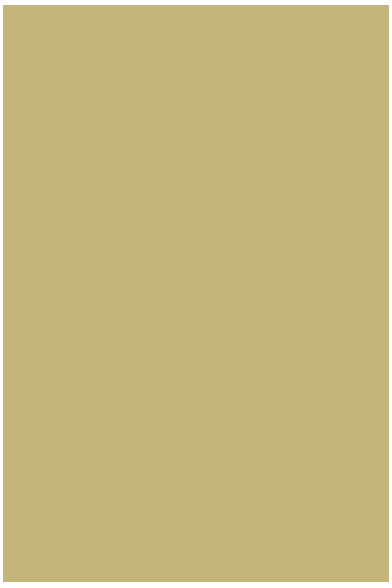


PT-19: PAINT
SHERWIN WILLIAMS,
#SW6283 THISTLE

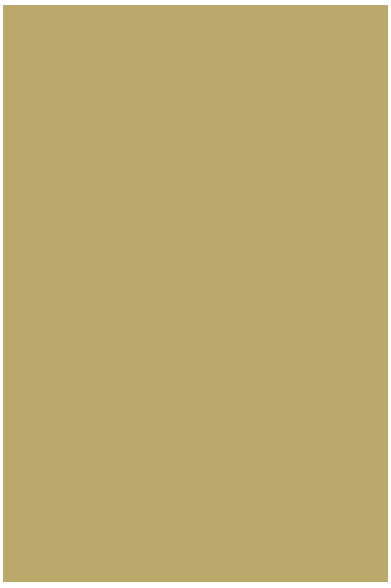
PT-20: PAINT
SHERWIN WILLIAMS,
#SW6281 WALLFLOWER



PT-21: PAINT
SHERWIN WILLIAMS,
#SW6415 HEARTS OF PALM

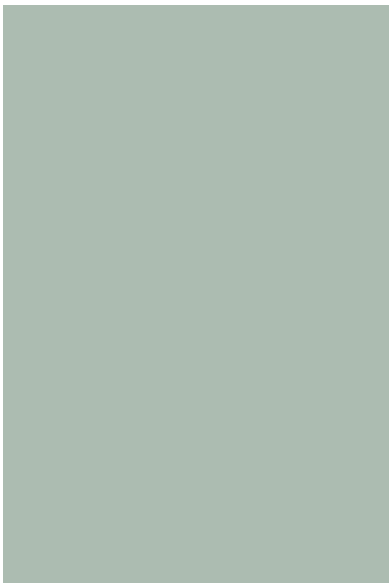


PT-22: PAINT
SHERWIN WILLIAMS,
#SW9029 COOL AVOCADO

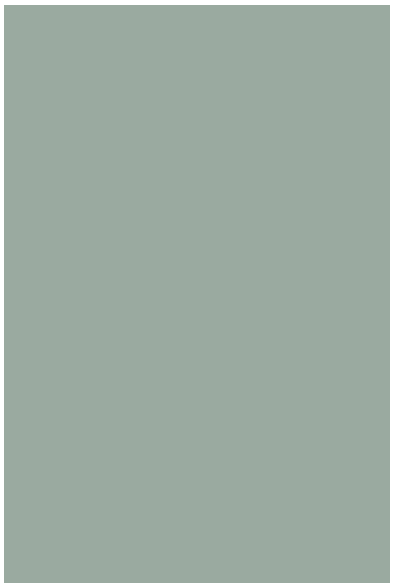


PT-23: PAINT
SHERWIN WILLIAMS,
#SW6416 SASSY GREEN

PT-24: PAINT
SHERWIN WILLIAMS,
#SW6211 RAINWASHED



PT-25: PAINT
SHERWIN WILLIAMS,
#SW6212 QUIETUDE



PT-26: PAINT
SHERWIN WILLIAMS,
#SW6213 HALCYON GREEN