NASSAU COMMUNITY COLLEGE

Nassau Community College Design Guidelines

- Interior Guidelines - CannonDesign
- Site Guidelines - VHB

PREPARED BY:

CANNONDESIGN

Nassau Community College Interior Design Guidelines

The *Nassau Community College Interior Design Guidelines* is a living document established to guide Design Consultants through many phases of renovation and new construction interior projects within the campus. It serves to consolidate and organize the range of institutional knowledge retained by the *Department of Design & Construction*. It is intended to be updated on a regular basis and more current individual sections or supplements will be distributed or posted on an *as-needed* basis.

The *Department of Design and Construction*, under the *Office of Facilities Management*, is responsible for the planning, management and administration of all design and major construction activities at *Nassau Community College*. The Department provides leadership, expertise and project management to capital initiatives, acting as liaison between the College and building professionals from the beginning design phases of a project through the final phases of construction and delivery.

The role of the *Department of Design and Construction* encompasses leading the project team and monitoring the general progress of these capital initiatives, providing state-of-the-art yet sustainable facilities for students, faculty and staff.

Compliance with the *Nassau Community College Interior Design Guidelines* is mandatory for all consultants. Responsibility for any non-compliant design and/or resulting installation falls within the respective consultant's scope of services. It is important that this document is reviewed and understood prior to starting any job on campus.

The information contained within the *Nassau Community College Interior Design Guidelines* is not intended to limit design expression or material selections, but rather guide Designers in ways to expedite project completion within acceptable college guidelines. Durability, maintenance and aesthetics are the primary criteria for materials selection.

All the materials & manufacturers within the different sections have been selected as references only; they exemplify the performance specifications that have been established as minimum requirements by NCC. Exceptions to any design standard herein may be openly discussed and modified if the Designer obtains written approval from the *Department of Design & Construction*. Window treatments and toilet accessories specifications in this document are, however, the college's preferred items.

While *NCC* may not require *LEED* accreditation for small renovation projects, an annotated checklist is to be provided with sufficient back-up documentation as required for specific credits for all rating systems benchmarked during the project.

In addition, new construction and major renovation projects will benchmark against *LEED* Silver Rating. *NCC* will determine if formal project certification will be pursued. If required by the *Department of Design & Construction*, ongoing reports will be delivered at SD, DD 50%, 85% and 100%. These reports might include the Initial Sustainability Goals including benchmarking; projected energy usage; energy impacts & MEP design intent; energy model reports; life cycle cost analysis and annotated LEED checklists.

Questions regarding, content, cost or schedule impact to respective projects are to be directed through the *Department of Design & Construction* before commencement of Design Services. Any comments or improvements to this manual shall be welcome through the Department of Design & Construction, Robert Jarocki, Acting Assistant Vice President for Design & Construction (516)572.9786.

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DIVISION 02

SITE CONSTRUCTION

Division 02 Section 321413

Pre-Cast Concrete Unit Pavers

Product:

Traditional Prest Brick

Manufacturer: Hanover
Corporate Offices / Residential Sales
5000 Hanover Road
Hanover, PA 17331
Voice: (717) 637-0500; toll free: (800) 426-4242; fax: (717) 637-7145
Email: info@hanoverpavers.com

http://www.hanoverpavers.com/index.asp

Or approved equal.

Locations/Applications:

Specialty pedestrian paving material for use in plazas, courtyards, gardens, building entries, and shared primary pedestrian/service ways (pedestrian mall). Intended for use both as sole material and as complimentary material to be used in combination with scored concrete.

Paver/Scored Concrete ratio range:

- Plazas: 100%:0% to 80%:20%
- Courtyards and Gardens: 80%:20% to 60%:40%
- Primary pedestrian ways (12' width or greater), including Pedestrian Malls: 40%:60% to 20%:80%

For all plaza and pedestrian mall/shared pedestrian/service ways pavers shall be set on base designed for vehicular weight bearing.

For courtyard and garden areas not requiring potential vehicular access pavers may be set on non-vehicular weight bearing base.

Product Requirements:

- Concrete pavers to meet or exceed ASTM specifications for concrete paving stones C936082 requiring a minimum compressive strength of 8000psi, maximum absorption of 5% or less at 50 cycles of freeze thaw testing per section ASTM C67
- Square edge
- Vehicular weight bearing as noted above
- Slip resistant
- Uniform size, paving units manufactured to (=/-) 1/16" tolerances
- Resistant to oil spillage and diesel fuel
- ADA compliant

Brick Types:

- Paver Type 1 – Multisided Patriot (hexagonal+square) for use in plaza areas as primary paver, for use as option in courtyard and garden areas.
- Paver Type 2: Prest Brick Traditional (4” x 8” brick) for use in walkways, shared pedestrian/service ways, courtyards, gardens and as accent in plaza areas.

Color:

- Primary – Red/Charcoal Blend
- Accent – Grey – Natural/Charcoal Blend

Finish:

- Natural

HANOVER® GUIDELINE SPECIFICATION
Paving and Surfacing
Prest® Brick

PRODUCT NAME: Hanover® Prest® Brick

MANUFACTURER: Hanover® Architectural Products,
5000 Hanover Road, Hanover, PA 17331
717.637.0500 • Fax 717.637.7145
info@hanoverpavers.com • www.hanoverpavers.com

1 PRODUCT DESIGN:

BASIC USE:
Most any area capable of being paved can utilize Hanover® Prest® Brick pavers. These pressed concrete paving bricks provide a surface equally suited to municipal, residential, and urban projects. Installations will benefit from its appearance, slip resistant properties, and ability to withstand snow removal and freeze thaw conditions. Typical installations include plazas, driveways, courtyards, walkways, parking areas, pool areas, low speed roadways, and tree grid paving.

COMPOSITION AND MATERIALS:
Hanover® Prest® Brick Pavers are made from Portland cement, fine and coarse aggregates. These high density, hydraulically pressed concrete paving units, are manufactured to (+/-) 1/16" tolerances. Each brick is uniform in size, permitting easy installation of any paving pattern. Several styles, sizes, thicknesses, colors and finishes are available.

LIMITATIONS:
Hanover® Traditional® 4" x 8" x 3" size and the 6" x 12" x 4" size are recommended for both pedestrian and low speed vehicular usage when installed in a herringbone pattern. All other styles can be used for both pedestrian and low speed vehicular applications. The Traditional® 12" x 12" and PlankStone® are recommended for pedestrian use only.

2 TECHNICAL DATA:

APPLICATION STANDARD:
Hanover® Prest® Brick pavers meet or exceed ASTM specifications for concrete paving stones C936-82 requiring a minimum compressive strength of 8000 psi, maximum absorption of 5% or less at 50 cycles of freeze thaw testing per section ASTM C67.

PHYSICAL CHARACTERISTICS:
Hanover® Prest® Brick are resistant to oil spillage and diesel fuel. They have been designed with spacers on all four sides providing a uniform 1/16" joint around every brick.

Prest® Brick Styles:

Traditional® Prest® Brick –	rectangular or square in shape, beveled edges; 4" x 8", 6" x 6", 8" x 8", 6" x 12", 12" x 12"
Multisided Prest® Brick –	Patriot®, Cathedral®, Hexagonal, Congressional® and Triad shapes
Appian® Prest® Brick –	antiqued edges, cobbled appearance; 6" x 6", 6" x 9", Mixed, Random, Circle, Fan
Serengeti® Stone –	irregular sides and top surface, rough and rugged; Serengeti® Grande™, 6" x 6", 6" x 9"
Halifax® Flagstone –	wide joint style, cleft surface; Irregular, Mixed, 12" x 12"; 3" thickness
PlankStone® –	narrow and rectangular in shape, beveled edges; 3" x 24", 3" x 18", 3" x 9", 4" thickness
Riven –	face textured to simulate natural riven stone, contoured sides, wide joint style; Riven Viisi™
Olde Hanover® –	look of aged clay brick pavers, contoured sides, wide joint style; 3" x 9"

Prest® Brick Textures/Finishes:

Natural –	close-knit surface, fine grain appearance
Tudor® –	lightly exposed aggregate, surface with a courser texture
Tumbled –	worn stone effect, aged appearance
Chiseled –	slightly chipped surface, rough edges
Square Edge –	smotth surface, non-beveled edge
Scored –	available in Traditional® 4"x 8" size; score is a false joint providing the appearance of a 4"x 4"
Ground –	smooth, but not polished with exposed aggregate, no bevel,1/4" thinner in finished thickness

Hanover® Prest® Brick thicknesses range from 1 1/2" - 4". Not all sizes are available in all thicknesses.

LAMININ® PAVER INFUSION TECHNOLOGY:

Hanover® Prest® Brick pavers covered in this section will be manufactured with Hanover's LAMININ® Paver Infusion Technology. LAMININ® is not a topical surface treatment. LAMININ® is a Molecular Infusion Technology that provides monolithic stability throughout the entire product mass.

Prest® Brick with LAMININ® Paver Infusion Technology provide characteristics to resist:

- Acid rain
- Alkaline
- Efflorescence (results verified per ASTM C-67)
- Ultra Violet Light
- Stains from oils and foods

LAMININ's ability to provide resistance to UV degradation has been tested in accordance with ASTM D-458705, which showed a minimum change in surface appearance after 2,000 hours of ultralight exposure (equivalent of 15-20 years).

3 INSTALLATION:

Interlocking concrete brick pavers are typically installed on a bed of sand conforming to ASTM C 33 or a bituminous setting bed. After units are installed on sand bed, they are vibrated with a high frequency, low amplitude plate vibrator. Units are pressed into sand bed and sand is compacted. Joints are then filled with sand and brick pavers are vibrated until all joints are completely filled. Excess sand is removed.

EDGE RESTRAINTS:

Adequate edge restraints and a properly prepared base are essential to the successful performance of Hanover® Prest® Brick pavers. When utilizing a sand or bituminous setting bed, edge restraints can be wood, steel, PVC, Hanover® RockCurb® or another system specifically designed to restrain concrete pavers.

BASE:

Sand setting bed over a compacted void free granular base is the preferred method for Hanover® Prest® Brick pavers. Alternate installation methods include a bituminous setting bed over a compacted aggregate base or concrete slab. Careful attention must be given to local soils and drainage conditions, type of expected traffic, and municipal requirements.

Base is typically compacted aggregate. Fabric soil separators are recommended for vehicular pavements between the soil subgrade and base materials. Hanover® Prest® Brick may also be installed as an overlay system on existing concrete or asphalt pavements. Filter cloth is recommended over the existing pavement prior to installing brick pavers.

4 AVAILABILITY AND COST

AVAILABILITY:

Hanover® Prest® Brick in stocked colors and blends are readily available in the continental United States. Custom colors are available when quantities permit. For further information call Hanover® Architectural Products, Inc.

COST:

Cost will vary depending upon paver sizes, finish, color and quantity ordered.

5 WARRANTY

Hanover® Architectural Products, Inc. will certify specific pavers to meet or exceed internal standards as well as previously stated ASTM performance standards.

6 MAINTENANCE

Hanover® Prest® Brick require practically no maintenance if installed properly. Degree of soiling and staining will depend on type and amount of use over time. Contact manufacturer for information regarding sealing and cleaning of brick.

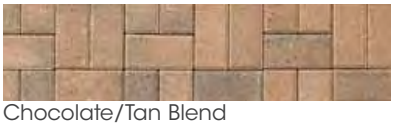
7 TECHNICAL SERVICES

Complete technical information and printed literature from manufacturer.

HANOVER®
Architectural Products
5000 Hanover Road, Hanover, PA 17331
717.637.0500 • fax 717.637.7145
www.hanoverpavers.com

Multisided Prest® Brick

Currently, Hanover® offers five styles of multisided concrete brick. These shapes, ranging from a series of gentle arches to a variation of a rectangular brick with angled sides, create opportunities for the designer. Several of the shapes are available in either 2 3/8" or 3" thickness to accommodate both pedestrian and vehicular applications. Standard colors and a range of blends are available. Some are stocked for immediate delivery. Custom colors, blends and textures can be accommodated when quantities permit.



Chocolate/Tan Blend

Red/Charcoal Blend

Multisided Prest Brick can be ordered in a variety of colors and textures and is not limited to what is shown. Hanover's blended colors consist of several shades and will include some blended and some solid pieces. Color photos shown were prepared with great concern for accuracy. It is suggested that actual samples be requested before specifying.

Multisided Cathedral®

Multisided Triad

- Cathedral®
- Patriot®
- Hexagonal*
- Congressional®*
- Triad*

* Nonstock Item

Please Note: The dimensions stated for product sizes of Hanover® Prest® Brick are nominal. Products are made to fit metric modules.

Multisided Hexagonal

Cathedral®

The Cathedral® Prest® Brick is truly a renaissance design made up of two shapes. The repeating arches blend well with any style of architecture, adding character to the design. Produced in a 3" thickness with a Natural finish, this design can accommodate pedestrian and low speed, residential vehicular traffic. Cathedral® Prest® Brick with Natural finish is stocked in Chocolate/Tan Blend. The 4" x 8" x 3" Traditional® Prest® Brick, which can be used as a border, is available in Charcoal and Chocolate/Tan Blend.

Multisided Cathedral®

Patriot®

The Patriot® Prest® Brick incorporates a true octagon with a square attached as a one piece paver. The effect gives the paving design a very "classic" look. A Patriot Edger is available to square off the installation.

Produced with a Natural finish, Patriot® and Patriot® Edgers are stocked in Chocolate/Tan Blend and Red/Charcoal Blend with a 2 3/8" thickness. A 3" thickness can also be produced. Custom colors are available on special order when quantities permit. Design possibilities are endless, making Patriot® Prest® Brick a good selection for any type of installation.

Multisided Patriot®

For more information, please request Interlocking Concrete Prest® Brick brochure.

Multisided Patriot®

Traditional® Prest® Brick with Square Edge

Hanover's Prest® Brick with Square Edge offer the classic appearance of clay brick pavers. By incorporating rich colors and non-beveled edges, a clay look is achieved while maintaining the desired qualities of concrete brick pavers. With high compressive strengths and low water absorption, Hanover® Traditional® Prest® Brick with a Square Edge are the stronger, more economic choice.

The Square Edge 4" x 8" size is stocked. Others are available as part of a custom order.

- Traditional® 4" x 4"
- Traditional® 4" x 8" *
- Traditional® 6" x 6"
- Traditional® 8" x 8"
- Traditional® 6" x 12"
- Traditional® 12" x 12"

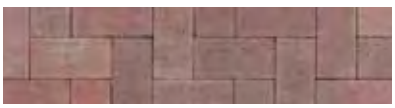
* 4" x 8" is stocked in select colors shown

Traditional® 4" x 8"

The Traditional® 4" x 8" with a Square Edge creates a clean, tailored paving effect. It is stocked with a 2 3/8" thickness in three colors – Quarry Red, Terracotta and Russet Blend. Terracotta and Russet Blend were developed by blending multiple colors, resulting in rich colors similar to clay brick pavers. Competitor products typically use only two colors. Custom colors are available on special request when quantities permit.

Quarry Red

Terracotta



Russet Blend

Refer to pages 55 - 59 for stocked colors, sizes and packaging information. Square Edge can be ordered in a variety of colors and textures and is not limited to what is shown. Hanover's blended colors consist of several shades and will include some blended and some solid pieces. Color photos shown were prepared with great concern for accuracy. It is suggested that actual samples be requested before specifying.

Traditional® 4" x 4" x 3"

Nonstock Item

Manufactured with a 3" thickness, the Traditional® 4" x 4" with a Square Edge as part of a custom order. The 4" x 4" is available in a variety of colors and finishes.

Division 02 Section 321413

Pre Cast Concrete Permeable Pavers

Product:

Permeable Paver

Manufacturer: Hanover
Corporate Offices / Residential Sales
5000 Hanover Road
Hanover, PA 17331
Voice: (717) 637-0500; toll free: (800) 426-4242; fax: (717) 637-7145
Email: info@hanoverpavers.com

http://www.hanoverpavers.com/index.asp

Or approved equal.

Locations/Applications:

Product Requirements:

- Concrete pavers to meet or exceed ASTM specifications for concrete paving stones C936082 requiring a minimum compressive strength of 8000psi, maximum absorption of 5% or less at 50 cycles of freeze thaw testing per section ASTM C67
- Square edge
- Vehicular weight bearing as noted above
- Slip resistant
- Uniform size, paving units manufactured to (=/-) 1/16" tolerances
- Resistant to oil spillage and diesel fuel
- ADA Compliant (for use in pedestrian areas)

Brick Types:

- Type 1: Permeable 4 ½" x 9" Paver for use in pedestrian only and pedestrian/vehicular areas (excluding potential bicycle lanes) 6.94% open space per unit
- Type 2: Aqua-Loc Paver for use in specialty vehicular areas such as drop offs, parking courts, where greater permeability is desired (10.6 % open space)

Color:

- Red/Charcoal Blend
- Grey – Natural/Charcoal Blend

HANOVER® GUIDELINE SPECIFICATION
Paving and Surfacing
Permeable Paving Units

PRODUCT NAME: Hanover® Permeable Paving Units

MANUFACTURER: Hanover® Architectural Products,
5000 Hanover Road, Hanover, PA 17331
717.637.0500 • Fax 717.637.7145
info@hanoverpavers.com • www.hanoverpavers.com

1 PRODUCT DESIGN:

BASIC USE:
Most any area capable of being paved can utilize Hanover® Permeable Paving Units. These pressed concrete paving units provide a surface equally suited to municipal, residential, and urban projects. Installations will benefit from its appearance, slip resistant properties, and ability to withstand snow removal and freeze thaw conditions. Typical installations include plazas, driveways, courtyards, walkways, parking areas, pool areas, low speed roadways, and tree grid paving.

COMPOSITION AND MATERIALS:
Hanover® Permeable Paving Units are made from Portland cement, fine and coarse aggregates. These high density, hydraulically pressed concrete paving units, are manufactured to (+/-) 1/16" tolerances. Each paving unit is uniform in size, permitting easy installation of any paving pattern. Several styles, sizes, thicknesses, colors and finishes are available.

LIMITATIONS:
Hanover® EcoGrid®, Aqua-Loc®, Permeable 4 1/2" x 9" (4 5/8" x 9 1/4") and Permeable 4" x 9" Scored are recommended for both pedestrian and low speed vehicular usage. The Permeable 3 1/4" x 18 is recommended for pedestrian use only.

2 TECHNICAL DATA:

APPLICATION STANDARD:
Hanover® Permeable Paving Units meet or exceed ASTM specifications for concrete paving stones C936-82 requiring a minimum compressive strength of 8000 psi, maximum absorption of 5% or less at 50 cycles of freeze thaw testing per section ASTM C67.

PHYSICAL CHARACTERISTICS:
Hanover® Permeable Paving Units are resistant to oil spillage and diesel fuel. They have been designed with spacers on all four sides providing a uniform joint for water drainage.

Permeable Paving Unit Styles:

EcoGrid® –	Sized at 11 3/4" x 11 3/4" x 4", 39% open space
Aqua-Loc® –	Sized at 4 1/2" x 9" x 3" with a score, 10.6% open space
Permeable 4 1/2" x 9" –	Sized at 4 5/8" x 9 1/4" x 3", ADA Compliant, 6.94% open space
Permeable 4 1/2" x 9" Scored –	ADA Compliant, designed to be installed mechanically
Permeable 3 1/4" x 18" –	Sized at 3 1/4" x 18" x 4", ADA Compliant, pedestrian use only

Permeable Paving Unit Textures/Finishes:

Natural –	close-knit surface, fine grain appearance
Tudor® –	lightly exposed aggregate, surface with a courser texture
Tumbled –	worn stone effect, aged appearance
Chiseled –	slightly chipped surface, rough edges
Square Edge –	smotth surface, non-beveled edge
Scored –	available in Traditional® 4"x 8" size; score is a false joint providing the appearance of a 4"x 4"
Ground –	smooth, but not polished with exposed aggregate, no bevel, 1/4" thinner in finished thickness

Hanover® Permeable Paving Unit thicknesses range from 3" - 4". Not all sizes are available in all thicknesses.

3 INSTALLATION:

Best Management Practices (BMPs) are defined by the EPA as a "technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner." In other words, they are techniques used to manage stormwater and improve water quality. LEED credits can be earned by complying with EPA Best Management Practices. The USGBC addresses stormwater management in two separate credits, one relating to the quantity of water that runs off a building site and other dealing with the quality of the water.

Requirements and regulations are different for each municipality. Contact your municipality for specific installation instructions. An industry professional should be consulted to develop a specification for the individual project in accordance with the municipal requirements.

EDGE RESTRAINTS:

Adequate edge restraints and a properly prepared base are essential to the successful performance of Hanover® Permeable Paving Units. Edge restraints can be steel, PVC, Hanover® RockCurb® or another system specifically designed to restrain concrete pavers.

4 AVAILABILITY AND COST

AVAILABILITY:

Hanover® Permeable Paving Units are readily available in the continental United States. Custom colors are available when quantities permit. For further information call Hanover® Architectural Products, Inc.

COST:

Cost will vary depending upon paver sizes, finish, color and quantity ordered.

5 WARRANTY

Hanover® Architectural Products, Inc. will certify specific pavers to meet or exceed internal standards as well as previously stated ASTM performance standards.

6 MAINTENANCE

Hanover® Permeable Paving Units require practically no maintenance if installed properly. Degree of soiling and staining will depend on type and amount of use over time. Contact manufacturer for information regarding sealing and cleaning of paving units.

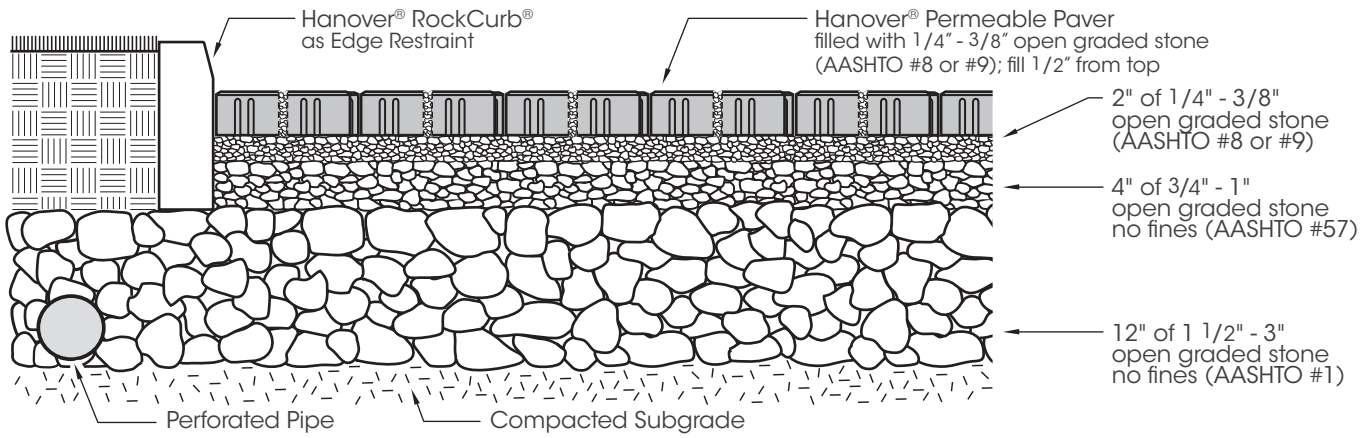
7 TECHNICAL SERVICES

Complete technical information and printed literature from manufacturer.

HANOVER®
Architectural Products
5000 Hanover Road, Hanover, PA 17331
717.637.0500 • fax 717.637.7145
www.hanoverpavers.com

Best Management Practices (BMPs) are defined by the EPA as a "technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner." In other words, they are techniques used to manage stormwater and improve water quality. LEED credits can be earned by complying with EPA Best Management Practices. The USGBC addresses stormwater management in two separate credits, one relating to the quantity of water that runs off a building site and other dealing with the quality of the water. For more information on LEED credits, refer to the page 14.

Permeable Paving Units | Typical Installation



Please Note: Due to variations in native soil types, infiltration rates (Curve) may differ.

When EcoGrid® will be filled with planted vegetation, the installation detail shown is not adequate. If grass is intended, a typical cross section will consist of compacted sub base and a 3/4" to 1" setting bed.

The detail shown above is an example of a typical permeable paver installation. Requirements and regulations are different for each municipality. Contact your municipality for specific installation instructions. An industry professional should be consulted to develop a specification for the individual project in accordance with the municipal requirements.

Pedestrian vs. Vehicular Use Size Comparison

	Definitions	Pedestrian Use	Light Vehicular Use	Moderate Vehicular Use
		use by persons on foot and any mobility impaired persons using a wheelchair	pedestrian use & low speed, low volume residential and light commercial vehicular use	pedestrian use & low speed, moderate volume residential and moderate commercial vehicular use
Permeable Paving Units	EcoGrid®	4"	4"	4"
	Aqua-Loc®	3"	3"	3"
	Permeable 4 1/2" x 9"	3"	3"	3"
	Permeable 4 1/2" x 9" Scored	3"	3"	3"
	Permeable 3 1/4" x 18"	4"	-	-

Please Note: Not all sizes are stocked materials. Some are only available through special order and when quantities permit.

Produced with a 1/16" bevel and hidden spacers, Hanover's Permeable 4 1/2" x 9" meets standards set forth by the Americans with Disabilities Act (ADA). Minimal openings providing a comfortable walking surface while allowing for water percolation. The Permeable 4 1/2" x 9" will provide the project with 6.94% open space allowing water to be infiltrated at a rate of 7" to 8" per hour based on proper installation methods. The Permeable 4 1/2" x 9" can accommodate wheel chair traffic making it the perfect choice for high foot traffic areas such as walkways, plazas and entrance ways. With a 3" thickness and interlocking installation design, heavy low speed vehicular loads can be supported.

Permeable 4 1/2" x 9", Chocolate/Tan; Finish: Tumbled

- ADA Compliant
- Minimal openings for a comfortable walking surface
- 6.94% open space per unit
- Supports heavy low speed vehicular loads
- Sized at 4 5/8" x 9 1/4"
- True rectangular size ratio to achieve interlock stability
- Stocked in Charcoal and Limestone Gray

Sized at 4 5/8" x 9 1/4", the Permeable 4 1/2" x 9" is a true rectangle, providing the correct size ratio to create interlock stability. The 4 1/2" x 9" can be produced with a Natural, Tudor®, Tumbled or Chiseled finish. It is stocked in Limestone Gray and Charcoal with a Natural finish. Hanover's full range of colors is available as a custom order. The Permeable 4 1/2" x 9" combines the beauty of an interlocking paver with the advantages of a permeable paving system.

Permeable 4 1/2" x 9"

Right Photo: Smithsonian's National Zoo, Washington, DC; Size & Color: Permeable 4 1/2" x 9", B91517, Charcoal; Finish: Tudor®, Natural

Hanover's Aqua-Loc® is available in a 4 1/2" x 9" x 3" unit with a score to appear as two 4 1/2" x 4 1/2" x 3" pieces. Aqua-Loc® interlocks for stability and provides open space for drainage aggregate. Aqua-Loc® will provide the project with 10.6% open space allowing water to be infiltrated at a rate of 7" to 8" per hour based on proper installation methods. Made to order in custom colors when quantities permit, Aqua-Loc® can be installed mechanically to save time and reduce costs.

- Sized at 4 1/2" x 9" x 3"
- 10.6% open space
- Infiltration rate of 7"- 8" per hour
- Can be installed mechanically
- Supports moderate vehicular traffic

When used in vehicular parking applications, Aqua-Loc® can work in conjunction with tight-jointed pavers. The tight-jointed pavers can be used to form pedestrian friendly areas such as handicap parking areas, walkways and ramps.

Aqua-Loc®

Please Note: Aqua-Loc® is cubed in a Herringbone design and can be installed mechanically. When installing by hand, use both half and full pieces throughout the entire application.

Left Photo: Office Building, Richmond, VA; Size & Color: 4" x 8", Aqua-Loc®, Red/Charcoal Blend, Antietam; Finish: Natural, Tudor®

Below Photos: Macallen Building, Boston, MA; Developer: Pappas Properties Inc., Boston, MA; Design Architect: Office dA, Boston, MA; Landscape Architect: Landworks Studio, Inc., Boston, MA; Size & Color: Aqua-Loc®, Charcoal, Quarry Red; Finish: Natural, Tudor®

Division 02 Section 321413

Detectable Warning Truncated Domes

Product:

Pre cast Concrete Detectable Warning

Manufacturer: Hanover
Corporate Offices / Residential Sales
5000 Hanover Road
Hanover, PA 17331
Voice: (717) 637-0500; toll free: (800) 426-4242; fax: (717) 637-7145
Email: info@hanoverpavers.com

http://www.hanoverpavers.com/index.asp

Or approved equal.

Locations/Applications:

For use at pedestrian/vehicular interface where curb edge is flush; including base of curb ramps, transition from primary pedestrian mall to primary vehicular drive, transition from plaza edge to vehicular way for example drop off where curb edge is flush. At continuous flush curb edge, consideration should be given to pairing detectable warning with use of bollards.

Product Requirements:

- Concrete pavers to meet or exceed ASTM specifications for concrete paving stones C936 requiring a minimum compressive strength of 8000 psi, maximum absorption of 5% and freeze thaw testing per section ASTM C67. (Pavers manufactured to have minimum compressive strength of 8500 psi with water absorption of 5% or less.)
- Manufactured to 1/8”+/- tolerances
- Non-slip textured surface, non-directional finish
- Withstands snow removal and freeze thaw conditions
- Resistant to oil spillage and diesel fuel
- ADA Compliant

Color:

- Charcoal

HANOVER® GUIDELINE SPECIFICATION

Paving and Surfacing Hanover® Detectable Warning® Pavers

Product Name: Hanover® Detectable Warning® Pavers

Manufacturer: Hanover® Architectural Products,
5000 Hanover Road, Hanover, PA 17331
717.637-0500 • Fax 717.637.7145
info@hanoverpavers.com • www.hanoverpavers.com

1 PRODUCT DESIGN:

Basic Use:
Any pedestrian area requiring the use of Detectable Warning surface can utilize the Hanover® Detectable Warning® Paver. Manufactured in accordance with the requirements set forth in the Americans With Disabilities Act (ADA). Hanover® Detectable Warning® Paver is fabricated with a non-slip texture applied to the surface of the paver. Installations will benefit from its ability to withstand snow removal and freeze thaw conditions. Typical installations include railway platforms, handicap ramps, and as curb indication.

Composition and Materials:
Hanover® Detectable Warning® Pavers are made from Portland Cement, fine and coarse aggregates. Hanover® Detectable Warning® Pavers, high density, hydraulically pressed concrete units, are of a homogeneous mix manufactured to plus or minus 1/8" tolerances and produced by subjecting the concrete mix to a minimum pressure of 1,000 pounds per square inch over the entire surface area. This results in a product with the density and strength of natural stone. A Tudor® finish is a specialized texture designed to be "natural", and practical. It has a non-directional surface finish, which exposes the aggregate delicately, giving that paver a granite-like appearance. Custom specifications can be accommodated.

Limitations:
Not recommended for areas subject to vehicular traffic.

2 TECHNICAL DATA:

Application Standard:
Hanover® Detectable Warning® Pavers meet or exceed ASTM specifications for concrete paving stones C936 requiring minimum compressive strength of 8000 psi, maximum absorption of 5%, and freeze thaw testing per section of ASTM C67. Pavers are manufactured to have a minimum compressive strength of 8500 psi, with water absorption of 5% or less.

Physical Characteristics:
Pavers come in variety of sizes, ranging from 11 3/4" x 11 3/4" to 23 1/2" x 35 3/8" (actual size), as well as a variety of thicknesses ranging from 1 1/4" to 4". Not all sizes come in all thicknesses.

Metric Size	Actual Size	1 1/2"	2"	2 1/4"	2 1/2"	3"	4"
297mm x 297mm	11 3/4" x 11 3/4"	X	X	X	X	X	
597mm x 597mm	23 1/2" x 23 1/2"		X	X	X	X	X
597mm x 747mm	23 1/2" x 29 1/2"		X	X	X	X	
597mm x 897mm	23 1/2" x 35 3/8"		X	X	X	X	

3 INSTALLATION:

Edge Restraint:
Adequate edge restraints and a properly prepared base are essential to the successful performance of Hanover® Detectable Warning® Pavers. When utilizing a bituminous setting bed, edge restraints can be wood, steel, PVC, Hanover® RockCurb®, or other systems specifically designed to restrain concrete pavers.

Base:
Bituminous setting bed over 4 in. thick concrete base slab is the preferred method for Hanover® Detectable Warning® Pavers, however, asphaltic concrete base slab is also acceptable. Alternate installation methods include latex modified mortar setting bed over concrete base slab. Careful attention must be given to local soils and drainage conditions, type of expected traffic, and municipal requirements.

Pavers may also be installed as an overlay system on existing concrete or asphalt pavements. Filter cloth is recommended over the existing pavement prior to installing pavers.

4 AVAILABILITY

Availability:
Hanover® Detectable Warning® Pavers are readily available in the continental United States. For further information call Hanover® Architectural Products, Inc.

Cost:
Cost will vary depending upon paver sizes, finish, color and quantity ordered.

5 WARRANTY

Hanover® Architectural Products, Inc. will certify specific pavers to meet or exceed internal standards as well as previously stated ASTM performance standards.

6 MAINTENANCE

Hanover® Detectable Warning® Pavers require practically no maintenance if installed properly. Degree of soiling and staining will depend on type and amount of use over time. Contact manufacturer for information regarding sealing and cleaning concrete pavers. Hanover® Asphalt Block require practically no maintenance if installed properly. Degree of soiling and staining will depend on type and amount of use over time. Contact manufacturer for information regarding cleaning of Asphalt Block pavers.

7 TECHNICAL SERVICES

Complete technical information and printed literature from manufacturer.

FILING SERVICES

SPEC-DATA
Sweets General Building
LA File

HANOVER®
Architectural Products
5000 Hanover Road, Hanover, PA 17331
717.637.0500 • fax 717.637.7145
www.hanoverpavers.com

Detectable Warning® Pavers

Manufactured in accordance with the requirements set forth in the American Disabilities Act (ADA), Hanover's Detectable Warning® Paver aids partially sighted and blind pedestrians. The top surface has non-slip properties and raised truncated domes. Domes are readily detectable under foot or by cane. Typical installations include railway platforms, handicap ramps or curb and grade changes. Detectable Warning® Pavers are manufactured in several sizes and colors to suit design requirements by contrasting the surrounding pavement and conforming with the ADA Code. Hanover® can also provide a Granite Detectable Warning® Paver as shown on page 17.

Stocked Sizes:

- 11 3/4" x 11 3/4" x 2"
- 23 1/2" x 23 1/2" x 2"

Charcoal

Red 15

Yellow (#M1517)

Please Note: Detectable Warning® Pavers are stocked in the three colors shown. Tudor® finish is available on special order when quantities permit.

For more information, please request Architectural Concrete Prest® Pavers brochure.

Detectable Warning® Pavers

A Specialized Paver for the Visually Impaired Pedestrian

In response to the American Disabilities Act, Hanover® has been working with various government agencies and municipalities to design and provide a paver which would aid the partially sighted and blind pedestrian. The top surface has non-slip properties and raised truncated domes. These are readily detectable under foot, as well as by cane. Persons with visual impairments depend upon environmental cues of potential hazards – ambient sounds and physical elements that can be sensed by a cane or texture changes underfoot. Any pedestrian area requiring the use of a detectable warning surface can utilize the Detectable Warning® Paver. The distinctively textured walking surface can help to warn pedestrians of an impending hazard on the route ahead. Manufactured in accordance with the requirements set forth in the American Disabilities Act (ADA), Hanover´s Detectable Warning® Paver is fabricated with a non-slip texture applied to the surface of the paver. Projects will benefit from its ability to withstand snow removal and freeze thaw conditions. Typical installations include railway platforms, handicap ramps and curb and grade changes. The Detectable Warning® Paver is manufactured in several sizes to suit design requirements and conform to the ADA Code.

Related Products

· Architectural Cast Stone
· Multisided Paver System
· Pavers On-Grade
· Pavers for Pools
· Slateface® Pavers

Related Data

· 4207 – Maintenance Guidelines
· 0801 – 12x12 Detectable Warning®
· 0802 – Paver Laying Patterns (A-F)
· 0803 – 24x24 Detectable Warning®
· 5803 – Paver Data Sheet

Related Data

· 6202 – Prest® Paver Test Report
· 6203 – SRI Values
· 6602 – Detectable Warning® Paver Spec

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Division 02 Section 321723

Crosswalk and Pavement Markings Preformed Thermoplastic

Product:

TrafficPatterns; TrafficScapes

DecoMark; TrafficScapes

Manufacturer: Ennis-Flint
115 Todd Court
Thomasville, NC
336.475.6600
trafficscapes@flinttrading.com; www.ennisflint.com

Or approved equal.

Durable, thermoplastic pavement overlay material suitable for streetscape and traffic calming purposes. The material shall be equally suitable for concrete or asphalt surfaces.

Locations/Applications:

Crosswalk treatment for use at pedestrian crossings within vehicular drive and parking areas, and as an option at campus gateway entries and drop off areas.

Product Requirements:

Composition and Properties:

- Interconnected, surface-applied preformed thermoplastic crosswalk and traffic calming surface for asphalt and concrete.
- 125-mil; interconnected 24”x24” sheets of material
- High skid/slip resistant materials integral to product profile
- Material is resistant to detrimental effects of motor fuels, anti-freeze, lubricants, hydraulic fluids, etc.
- Flush across material surface
- Conforms to cracks, contours of pavement surface
- Designed for Heavy Average Daily Traffic(ADT)
- ADA compliant

Pattern:

- Field – Courtyard TP30
- Border – TP42

Color:

- Heritage Red (Field)
- White (Border)
- Sand (Grout)

DESIGN MANUAL

There are literally hundreds of design combinations for TrafficPatterns® crosswalks and traffic calming surfaces. The purpose of this Design Manual is to provide a visual glance of ideas and suggestions using various combinations of patterns, borders, and colors.

Specifications and CAD drawings are available at www.ennisflint.com and www.CADdetails.com

TrafficPatterns®
A TrafficScapes™ Solution by Ennis-Flint

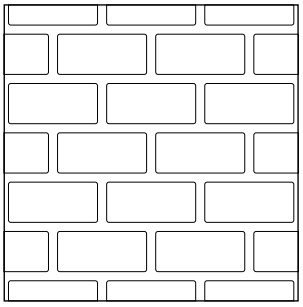
Made of durable preformed thermoplastic pavement marking material, TrafficPatterns® provides a cost-effective alternative to the use of brick and stone pavers because the material is surface applied and virtually maintenance free. The pattern and color combinations of the interconnected sheets allow designers the flexibility to create the ideal crosswalk or traffic calming pattern that complements an overall streetscape design.

Ennis-Flint, the world's leading manufacturer and distributor of preformed thermoplastic pavement marking materials, makes a complete line of products at our U.S. facility which is ISO 9001:2008 certified for design, development, and manufacturing. Ennis-Flint's commitment is reflected in proven quality and customer satisfaction and has been for over 24 years. Ennis-Flint offers pavement markings for use on streets and highways, crosswalks, intersections, parking areas, and many airside and landside uses at airports. From lines, legends, and arrows to traffic calming crosswalks and detectable warnings, Ennis-Flint's products help motorists, cyclists, pilots, and pedestrians move in the right direction…*safely*.

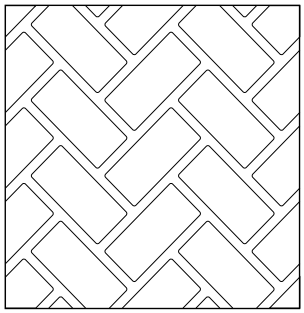
115 Todd Court Thomasville, NC 27360 (336) 475-6600 www.ennisflint.com

PATTERNS & BORDERS

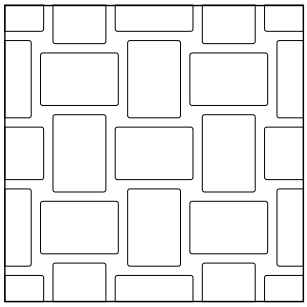
PATTERNS



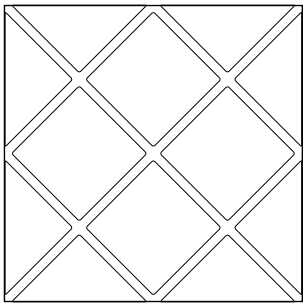
TP21 - Running Bond



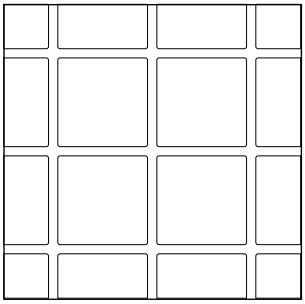
TP22 - Herringbone



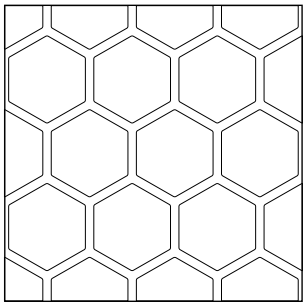
TP24 - Plain Weave



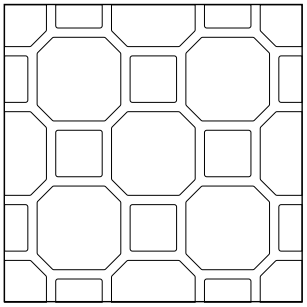
TP26 - Diagonal Tile



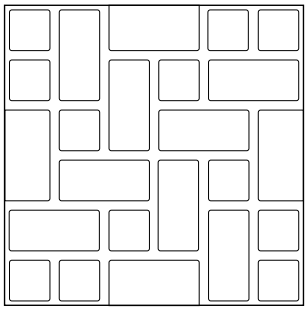
TP27 - Stacked Tile



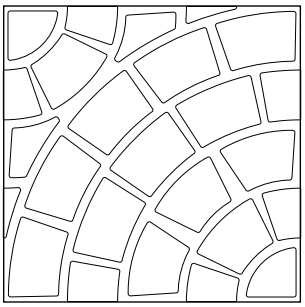
TP29 - Honeycomb



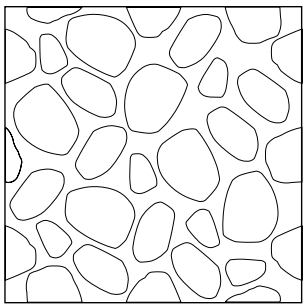
TP30 - Courtyard



TP31 - Ashlar

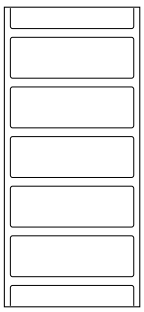


TP32 - Quarter Round

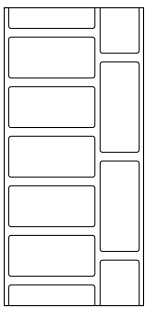


TP33 - Terrazzo

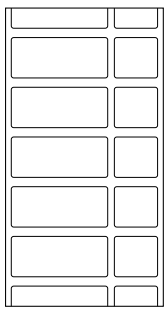
BORDERS



TP36



TP37



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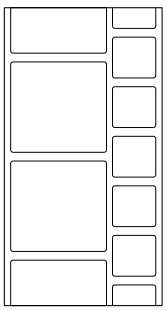

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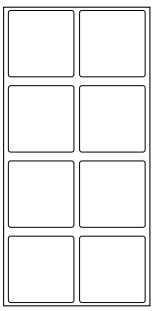
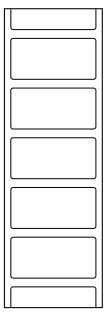
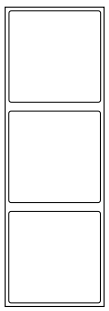


TP40

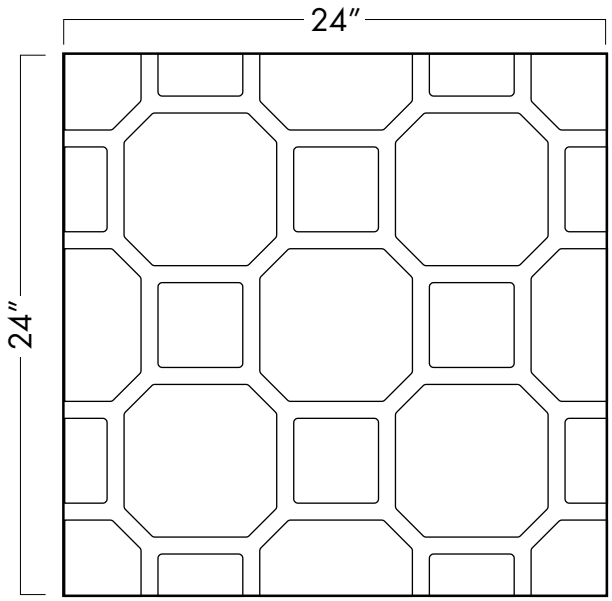


TP41



TP42

COURTYARD - TP30

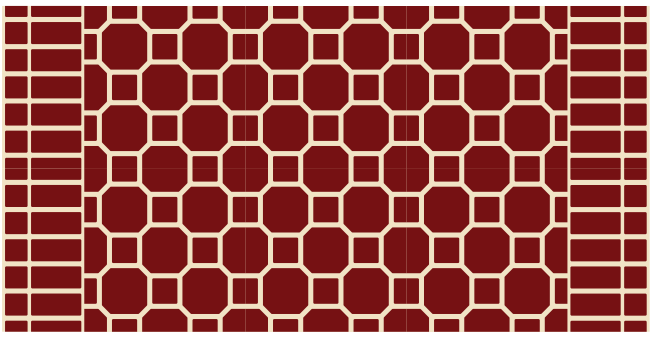


Interconnected preformed thermoplastic pavement marking material combines look of pavers and grout pattern.

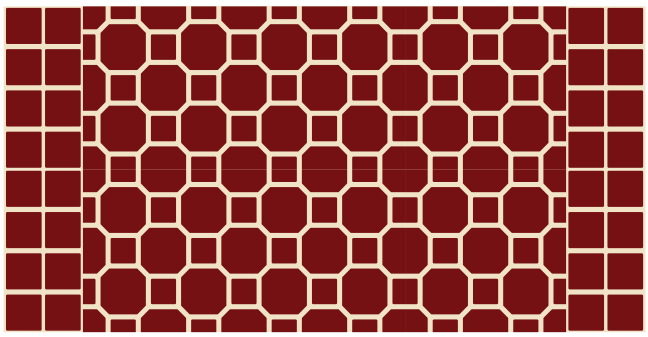
- 2′ x 2′ sheet
- 125-mil thick
- Pattern repeats horizontally and vertically
- 3/4″ grout lines and approximately 6-3/4″ octagonal X 3-3/4″ square pavers with rounded corners
- Surface-applied with infrared heater or propane heat torch
- Applies to asphalt or concrete
- No stamping templates or grids required

Use Courtyard TP30 alone or choose from 7 different border options.

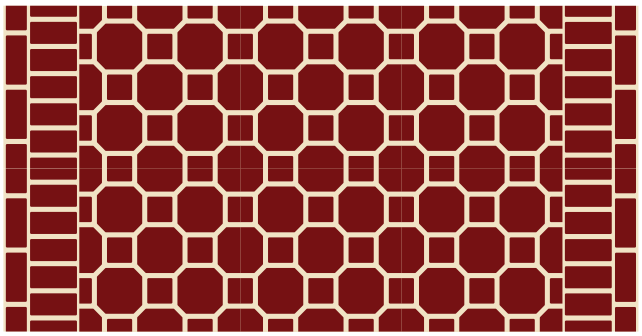
TP30-RBSD - Brick Red pavers, Sand grout — Examples shown below



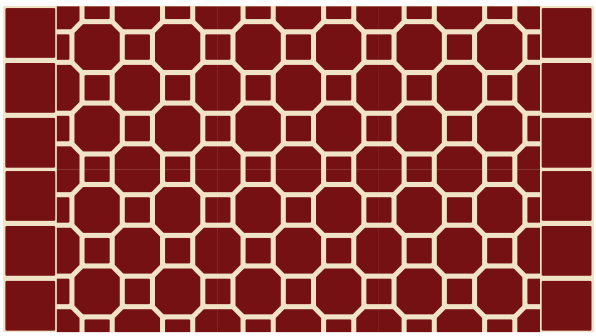
TP30 pattern / **TP38** border



TP30 pattern / **TP40** border



TP30 pattern / **TP37** border



TP30 pattern / **TP42** border

STANDARD COLORS

BLACK

WHITE

SAND

TAN

BRICK RED

COLONIAL BRICK

HERITAGE RED

FIELD GRAY

SONOMA SAND

CINNAMON

SANTA FE CLAY

CHESTNUT

GREY

DARK BRICK RED

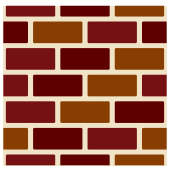
KHAKI

SIENNA

COCOA

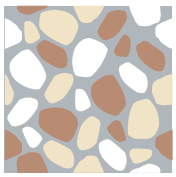
SALMON

PREMIUM COLORS



NATURAL

DUO-TONE
COMBINATION



TRI-TONE
COMBINATION
AVAILABLE IN
TERRAZZO
PATTERN ONLY

Colors may appear different on various monitors and printers. The colors you see on your screen may not be accurate reproduction of the actual preformed thermoplastic material. We have made the colors above as accurately as possible. Upon availability, a color sample may be provided upon request. Extra time may be required for producing samples of less commonly used colors.

SPECIFICATION
INTERCONNECTED PREFORMED THERMOPLASTIC PAVEMENT MATERIAL

1. **USE:** A durable, pavement overlay material suitable for streetscape and traffic calming purposes on public roads and private properties. The material shall be equally suitable for concrete and asphalt surfaces.

1.1. The material must be a resilient preformed thermoplastic product which contains a minimum of thirty percent (30%) intermixed anti-skid/anti-slip elements and where the top surface contains anti-skid/anti-slip elements. These anti-skid/anti-slip elements must have a minimum hardness of 8 (Mohs scale) and meet the following gradation:

Size Gradation		Intermix		Drop - On	
US Mesh	µm	Retained, %	Passing, %	Retained, %	Passing, %
10	2000	0 - 10%	90 - 100%		
12	1700	5 - 25%	75 - 95%		
14	1400	15 - 50%	50 - 85%		
16	1180	15 - 50%	50 - 85%	0 - 5%	95 - 100%
18	1000	10 - 30%	70 - 90%	0 - 10%	90 - 100%
20	850	0 - 5%	95 - 100%	5 - 25%	75 - 95%
25	710	0 - 2%	98 - 100%	15 - 50%	50 - 85%
30	600			15 - 50%	50 - 85%
35	500			5 - 25%	75 - 95%
40	425			0 - 10%	90 - 100%

1.2. The material must be resistant to the detrimental effects of motor fuels, antifreeze, lubricants, hydraulic fluids, etc.

1.3. The material shall be capable of being applied on bituminous and/or portland cement concrete pavements by the use of a handheld heat torch, an infrared heater, or a blue-flame radiant heater. The use of a compactor or similar equipment shall not be necessary. The material must be able to be applied to asphalt and concrete surfaces without preheating the application surface to a specific temperature. The material must be capable of being affixed to green concrete (concrete that has set but not appreciably hardened). The material shall not require the portland cement concrete application areas to be cured or dried out.

1.4. The material must be capable of conforming to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures. It shall not be necessary to use a grid template or to make pattern grooves or other indentations in the asphalt or concrete surface prior to applying the material. It shall not be necessary to inlay the material in grooves or indentations. It shall not be necessary to heat the pavement or application surface to a specific temperature.

1.5. The material is typically supplied in segments measuring 24 in. by 24 in. The material must be factory assembled and interconnected with a compatible material, so that it is unnecessary to assemble the individual "brick" pieces at the jobsite. Certain 24 in. by 24 in. material segments may be rotated to create additional pattern options using standard parts.

1.6. Interchangeable, patterned borders shall be available in either 8 in. or 12 in. wide by 24 in. long sizes, to allow flexibility in design options using standard parts.

1.7. The material must be able to be applied in temperatures down to 45ºF without any special storage, preheating or treatment of the material before application.

1.8. The material must be able to be applied to asphalt and concrete surfaces without using a grid template and without forming a pattern in the application surface. Heating indicators must be evenly distributed on the surface of the material in order to ensure correct application.

1.9. The material must cover the entire application area and be flush across the surface. Once applied, no part of the pavement surface must be visible in the application area.

2. **MANUFACTURING CONTROL AND ISO CERTIFICATION:** The manufacturer must be ISO 9001:2008 certified for design, development and manufacturing of preformed thermoplastic, and provide proof of current certification.

3. **MATERIAL:** Must be composed of an ester modified rosin impervious to degradation by motor fuels, lubricants, etc. in conjunction with aggregates, pigments, binders, and anti-skid/anti-slip elements. Pigments and anti-skid/anti-slip elements must be uniformly distributed throughout the material. The thermoplastic material conforms to AASHTO designation M249, with the exception of the relevant differences due to the material being supplied in a preformed state, being non-reflective, and potentially being of a color different from white or yellow.

3.1. Pigments:

3.1.1. White: The material shall be manufactured with sufficient titanium dioxide pigment to meet FHWA Docket No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected.

3.1.2. Red, Blue, and Yellow: The material shall be manufactured with sufficient pigment to meet FHWA Docket No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected. The pigment system must not contain heavy metals nor any carcinogen, as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.

3.1.3. Other Colors: The pigment system must not contain heavy metals nor any carcinogen, as defined in 29 CFR 1910.1200 in amounts exceeding permissible limits as specified in relevant Federal Regulations.

3.2. Heating indicators: The top surface of the material shall have regularly spaced indents. These indents shall act as a visual cue during application that the material has reached a molten state so satisfactory adhesion and proper embedment of anti-skid/anti-slip material has been achieved, and a post-application visual cue that the application procedures have been followed.

3.3. Skid Resistance: The surface of the preformed thermoplastic material shall contain factory applied anti-skid material with a minimum hardness of 8 (Mohs scale). Upon application the material shall provide a minimum skid resistance value of 60 BPN when tested according to ASTM E 303.

3.4. Slip Resistance: The surface of the preformed thermoplastic material shall contain factory applied anti-skid material with a minimum hardness of 8 (Mohs scale). Upon application the material shall provide a minimum static friction of coefficient of 0.6 when tested according to ASTM C 1028 (wet and dry), and a minimum static coefficient of friction of 0.6 when tested according to ASTM D 2047.

3.5. Thickness: The material must be supplied at a minimum thickness of 125 mil (3.18 mm).

3.6. Environmental Resistance: The material must be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

3.7. Interconnected: The material must consist of interconnected individual pieces of preformed thermoplastic pavement material, which through a variety of colors and patterns, make up the desired design. The individual pieces in each material segment (typically 24 in. by 24 in.) must be factory assembled and interconnected with a compatible material so that in the field it is not necessary to assemble the individual pieces within a material segment. Multiple patterned border segment options shall be available in the material in either 8 in. or 12 in. wide by 24 in. long sizes.

4. **APPLICATION:**

4.1. Asphalt: The material shall be applied using the propane torch method or an infrared heater recommended by the manufacturer. The material must be able to be applied at ambient and road temperatures down to 45ºF without any preheating of the pavement to a specific temperature. A sealer specified by the manufacturer must be applied to the substrate prior to material application to ensure proper adhesion, and to provide reinforcement for larger volumes of material. A thermometer shall not be required during the application process. The pavement shall be clean, dry and free of debris. Supplier must enclose application instructions with each box/package, or make available on website.

4.2. Portland Cement Concrete: The same application procedure shall be used as described under Section 4.1.

5. **PACKAGING:** The preformed thermoplastic material shall be placed in protective plastic film with cardboard stiffeners where necessary to prevent damage in transit. The cartons in which packed shall be non-returnable and shall not exceed 25 in. in length and 25 in. in width, and be labeled for ease of identification. The weight of the individual carton must not exceed fifty (50) pounds. A protective film around the box must be applied in order to protect the material from rain or premature aging.

6. **TECHNICAL SERVICES:** The successful bidder shall provide technical services as required.

7. **PERFORMANCE:** The preformed thermoplastic pavement overlay material shall meet state specifications and be approved for use by the appropriate state agency.

Division 02 Section 321243

Reinforced Lawn

Product:

Grasspave2

Manufacturer: Invisible Structures, Inc.,
1600 Jackson St. Suite 310;
Golden, CO 80401;
Toll Free Tel: 800-233-1510; Tel: 303-233-8383;
Email: request info (sales@invisiblestructures.com); Web: www.invisiblestructures.com.

Or approved equal.

Locations/Applications:

For use in providing fire lane, service/maintenance access in situations where access is not available through paved vehicular drive or paved shared non-vehicular/service way. May be used for full width of access way or in combination with paved shared non-vehicular/service way where the shared way is not sufficiently wide to meet required overall access way width (for example fire lane).

Product Requirements:

Composition

- High density polyethylene (HDPE): 100 percent recycled materials.
- Color: black
- Carbon Black for ultraviolet light stabilization.
- Hydrogrow soil amendment and fertilizer

Performance Properties:

- Maximum Loading Capability: 5721 psi when filled with sand.
- Wheelchair Access testing for ADA Compliance: Passing ASTM F 1951-08.
- Wheelchair Access testing for ADA Compliance: Passing Rotational Penetrometer testing.
- Tensile strength, pull-apart testing: 458 lb. /in from ASTM D638 Modified.
- System Permeability (Grasspave2, sand, base course): 2.63 to 38.55 inches of water per hour.
- Effective Imperviousness (E.I.): 10%.

Invisible Structures, Inc. State of the Earth Innovation!

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Grasspave^2 Technical Specifications

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Grasspave2 Product Specification (CSI Format)

Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) Format, including *MasterFormat* (1995 Edition), *SectionFormat*, and *PageFormat*, contained in the CSI *Manual of Practice*.

The section must be carefully reviewed and edited by the Engineer to meet the requirements of the project and local building code. Coordinate with other specification sections and the drawings.

Delete all "Specifier Notes" when editing this section.

SECTION 32 12 43
POROUS FLEXIBLE PAVING
(Formerly 02795 Porous Paving)

Notes: This section covers Grasspave2 Porous Pavement System from Invisible Structures. The system provides vehicular and heavy load support over grass areas while protecting grass roots from harmful effects of traffic.

The major components of the complete system are the Grasspave2 units, an engineered base course, Hydrogrow soil amendment/fertilizer, sand, and grass from seed, hydromulch, or sod.

Consult Invisible Structures, Inc. for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Porous pavement system.

1.2 RELATED SECTIONS

A. Section [31 20 00 – Earth Moving] [__ __ __ - _____].
B. Section [33 46 00 – Subdrainage] [__ __ __ - _____].
C. Section [32 10 00 – Bases, Ballasts, and Paving] [__ __ __ - _____].

Notes: Edit the following list as required for the project. List other sections with work directly related to the porous pavement system.

D. Section [32 30 00 - Site Improvements] [__ __ __ - _____].
E. Section [32 90 00 Planting] [__ __ __ - _____].
F. Section [32 92 00 – Manufacturers of Turfs and Grasses] [__ __ __ - _____].
G. Section [32 80 00 – Irrigation or Section 32 84 13 – Drip Irrigation] [__ __ __ - _____].

1.3 REFERENCES

A. ASTM F 1951-08 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment.
B. ASTM D 638-10 Standard Test Method for Tensile Properties of Plastics
C. ASTM C 33 Standard Specification for Concrete Aggregates
D. AASHTO M6 Standard Specification for Fine Aggregate for Hydraulic Cement Concrete

1.4 SYSTEM DESCRIPTION

A. The Grasspave2 porous pavement system provides vehicular and pedestrian load support for grass areas, while protecting grass roots from harmful effects of traffic.
B. Major Components of the Complete System
   1. Grasspave2 units, assembled in rolls.
   2. Engineered sand and gravel base course.
   3. Hydrogrow soil amendment and fertilizer, supplied with Grasspave2.

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Project Profiles - Case Studies
Installation Tutorial
Video
Data Sheet (pdf)
What is a Permeable Paver?
Competitive Advantages
Hydrogrow Information
Why Sand in the Root Zone?
White Papers
Roll Sizes
Delineation & Marking
ADA - Wheelchair Access
Material Safety Data Sheet
Warranty

4. Sand fill or USGA greens mix.
5. Selected grass from seed, hydroseeding/hydro-mulching, or sod.
6. Selected topsoil (only for seeded installation).
7. Mulch (needed only for seeded or hydroseeded installations).

C. The Grasspave2 grass paving units, sand, and base course work together to support imposed loading.

D. The Grasspave2 grass paving units, Hydrogrow, and sand fill contribute to vegetation support.

1.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Shop Drawings: Submit design detail showing proper cross-section.

C. Samples: Submit manufacturer's sample of Grasspave2 10" x 10" section of Grasspave2 material.

D. Installation Instructions: Manufacturer's printed installation instructions. Include methods for maintaining installed products.

E. Certificates:

1. Manufacturer signed certificate stating the product is made in the USA.
2. Submit Material Certificates for base course and sand (or USGA mix) fill materials
3. Product certificates signed by the manufacturer certifying material compliance of polyethylene used to make Grasspave2 units.
4. ISO Certificate certifying manufacturer's quality management system is currently registered to ISO 9001:2008 quality standards.

F. LEED Submittals: Provide documentation of how the requirements of Credit will be met:

1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.
3. Description of Grasspave2 in stormwater design to limit the disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from stormwater runoff and eliminating contaminants.
4. Designing elements for Grasspave2 to limit the disruption and pollution of natural water flows by managing stormwater runoff.
5. Documenting the use of Grasspave2 to reduce heat islands to minimize the impact on microclimates and human and wildlife habitats.

G. Substitutions: No material will be considered as an equivalent to the Grasspave2 unit specified herein unless it meets all areas of this specification without exception. Manufacturers seeking to supply what they represent as equivalent material must submit records, data, independent test results, samples, certifications, and documentation deemed necessary by the Specifier to prove equivalency.

H. Manufacturer's Material Certification: Product manufacturers shall provide certification of compliance with all applicable testing procedures and related specifications upon written request. Request for certification shall be submitted by the purchasing agency no later than the date of order placement.

I. Product manufacturers shall also have a minimum of 30 years' experience producing products for porous pavement systems.

J. Manufacturer Quality Certification: ISO Certification certifying manufacturer's quality management system for its Grasspave2 system is currently registered to ISO 9001:2008 quality standards. Any alternate materials submitted shall provide a certification that their porous pavement system manufacturing process is part of an ISO program and a certification will be required specifically stating that their testing facility is certified and in accordance with ISO.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Protect Grasspave2 units/rolls from damage during delivery and store rolls upright, under tarp, to protect from sunlight, when time for delivery to installation exceeds one week.

C. Store Hydrogrow in a dark and dry location

D. Handling: Protect materials during handling and installation to prevent damage

1.7 MAINTENANCE SERVICE

Notes: Once healthy turf has been established, the cell wall structure will have minimal visibility when proper turf maintenance practices are followed.

A. Installer responsible for maintenance of grass plants – water/irrigation, fertilizing, mowing – for one growing season. DO NOT AERATE. See *Grasspave2 Maintenance Guide* from Invisible Structures

B. System to be maintained by _____, after one growing season.

1.8 Project Conditions

A. Maintain environmental conditions within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Do not begin installation of porous pavements until all hard surface paving adjacent to porous pavement areas, including concrete walks and asphalt paving, is completed.

Industry Info

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Stormwater

C. Install turf when ambient air temperatures is at least 55 degrees F (13 degrees C).
D. In cold weather, do not use frozen materials or materials mixed or coated with ice or frost, and do not build on frozen base or wet, saturated or muddy subgrade.
E. Protect partially completed paving against damage from other construction traffic when work is in progress.
F. Adequately water sod or grass seed to assure germination of seed and growth of root system.
G. Grass coverage on the sand-filled Grasspave2 rings must be completed within one week: See *Part 3 Execution*.
H. DO NOT DRIVE, PARK ON, or use Grasspave2 system for two or three mowing cycles until grass root system has matured (about 3 to 4 weeks for sod or 6 to 8 weeks for seeded areas). Any barricades constructed must still be accessible by emergency and fire equipment during and after installation.

1.9 LIMITED WARRANTY

A. Invisible Structures, Inc. (ISI) warrants to its purchasers that all products furnished by ISI will be free from defects in material and/or workmanship.
B. This warranty shall be extended for a period of five (5) years following the date of shipment by ISI.
C. Providing a written claim is presented to ISI within the warranty period and after inspection by ISI showing the materials have failed under this warranty, all defective materials shall be refurnished under this warranty, at no charge, excluding re-installation costs. This in lieu of all other warranties expressed or implied and is the sole warranty extended by ISI.
D. Our liability under this warranty is limited to the refurnishing of materials and does not include any responsibility for incidental, consequential, or other damages of any nature.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Invisible Structures, Inc., which is located at: 1600 Jackson St. Suite 310 ; Golden, CO 80401; Toll Free Tel: 800-233-1510; Tel: 303-233-8383; Email: request info (sales@invisiblestructures.com); Web: www.invisiblestructures.com.
B. Substitutions: Not permitted.

2.2 GRASSPAVE2

A. Composition:
   1. Manufactured in the USA.
   2. High density polyethylene (HDPE): 100 percent recycled materials.
   3. Color: black
   4. Color Uniformity: Uniform color throughout all units rolls.
   5. Carbon Black for ultraviolet light stabilization.
   6. Hydrogrow soil amendment and fertilizer, provided by manufacturer with Grasspave2.
B. Performance Properties:
   1. Maximum Loading Capability: 5721 psi (39,273 kPA) when filled with sand.
   2. Wheelchair Access testing for ADA Compliance: Passing ASTM F 1951-08.
   3. Wheelchair Access testing for ADA Compliance: Passing Rotational Penetrometer testing.
   4. Tensile strength, pull-apart testing: 458 lbf/in from ASTM D638 Modified.
   5. System Permeability (Grasspave2, sand, base course): 2.63 to 38.55 inches of water per hour.
   6. Effective Imperviousness (E.I.): 10%.
C. Dimensions (individual units are assembled and distributed into rolls):
   1. Roll area: From 108 sq ft (10 sq m) to 538 sq ft (50 sq m), in 108 sq ft (10 sq m) increments
   2. Roll Widths: From 3.3 ft (1 m) to 8.2 ft (2.5 m), in 1.6 ft (0.5 m) increments.
   3. Roll Lengths: From 32.8 ft (10m) to 65.6 ft (20 m), in 3.3 ft (1 m) increments.
   4. Roll Weights: From 41 lbs (19kg) to 205 lbs (93kg), in 41 lbs (19 kg) increments.
   5. Unit Nominal Width by Length: 20 inches by 20 inches (0.5 m by 0.5 m) or 40 inches by 40 inches (1 m by 1 m).
   6. Nominal Depth: 1 inch (2.5 cm) – for rolls and individual units.
   7. Unit Weight: 18 oz (510 g) or 5 lbs. (2.27 kg).
   8. Volume Solid: 8 percent.

2.3 SYSTEM MATERIALS

Notes: All measurements are subject to manufacturing tolerances, unless otherwise specified.

A. Base Course: Sandy gravel material from local sources commonly used for road base construction (recycled materials such as crushed concrete or crushed asphalt are NOT acceptable).
   1. Conforming to the following sieve analysis and requirements:
      a. 100 percent passing sieve size 1 inch (25 mm).
      b. 90-100 percent passing sieve size 3/4 inch (19 mm).
      c. 70-80 percent passing sieve size 3/8 inch (9 mm).
      d. 55-70 percent passing sieve size #4.

e. 45-55 percent passing sieve size #10.
f. 25-35 percent passing sieve size #40.
g. 3-8 percent passing sieve size #200.

2. Provide a base course material nearly neutral in pH (range from 6.5 to 7.2) to provide adequate root zone development for turf.
3. Material may be either "pit run" or "crusher run." Avoid using clay based crusher run/pit run. Crusher run material will generally require coarse, well-draining sand conforming to AASHTO M6 or ASTM C 33 to be added to mixture (20 to 30 percent by volume) to ensure long-term porosity.
4. Alternative materials such as crushed shell, limerock, or crushed lava may be used for base course use, provided they are mixed with sharp sand (20 to 30 percent) to ensure long-term porosity, and are brought to proper compaction. Without added sand, crushed shell and limerock set up like concrete and become impervious.
5. Alternative size and/or composition of base course materials should be submitted to Invisible Structures, Inc. (Manufacturer) for approval.

B. Sand Fill for Rings and Spaces Between Rings: Clean sharp sand (washed concrete sand). Choose one of the following:
1. Coarse, well-draining sand, such as washed concrete sand conforming to AASHTO M6 or ASTM C-33.
2. United States Golf Association (USGA) greens, section - sand mix “The Root Zone Mixture.”

C. Turf Conditioner:
1. Hydrogrow a proprietary soil amendment manufactured by Invisible Structures, Inc. and provided with Grasspave2.
2. NO SUBSTITUTIONS.

Notes: Use grass species resistant to wear by traffic generally a Blue/Rye/Fescue mix used for athletic fields in northern climates, and Zoysia, Fescue, or Bermuda types in southern climates. Check with local sod and seed suppliers for preferred mixtures. Dedicated fire lanes can use same grass species used on surrounding turf. Parking applications require greatest wear-resistant species possible, generally available only by seed or hydroseeding/hydro-mulching.

D. Grass – Choose either sod or seed:

1. Sod: [_____]. Use 13 mm (0.5") thick (soil thickness) rolled sod from a reputable local grower. Species should be wear resistant, free from disease, and in excellent condition. Sod shall be grown in sand or sandy loam soils only. Sod grown in soils of clay, silt, or high organic materials such as peat, will not be accepted.
2. Seed: [_____]. Use seed materials, of the preferred species for local environmental and projected traffic conditions, from certified sources. Seed shall be provided in containers clearly labeled to show seed name, lot number, net weight, % weed seed content, and guaranteed % of purity and germination. Pure Live Seed types and amount shall be as shown on plans.
a. Mulch – needed only for hydroseeding: Wood or paper cellulose commercial mulch materials compatible with hydroseeding operations. Mulch depth according to mulch manufacturers’ recommendation. DO NOT use mulch of straw, pine needles, etc., because of their low moisture holding capacity.
b. Topsoil – needed only for seeding, recommended for hydroseeding: Obtain specified topsoil for a light “dusting” (no more than ½” or 13mm) above rings filled with sand for seeding germination.

PART 3 EXECUTION

Notes: For Fire lanes and emergency access, It is recommended that Fire Department inspectors be scheduled to inspect installation of Grasspave2 during preparation of the subbase, installation of the base course, and installation of Grasspave2 units. Most small projects can accommodate these inspections all on the same day. Verify with Fire Department if certificates of inspection are required.

3.1 INSPECTION

A. Examine subgrade and base course installed conditions. Do not start porous paving installation until unsatisfactory conditions are corrected. Check for improperly compacted trenches, debris, and improper gradients.
B. For fire lane installations: prior to installing base course for turf paving, obtain approval of local fire authorities of sub-base.
C. Start of installation constitutes acceptance of existing conditions and responsibility for satisfactory performance. If existing conditions are found unsatisfactory, contact Architect for resolution.

3.2 PREPARATION

Notes: Ensure that subbase materials are structurally adequate to receive designed base course, wearing course, and designed loads. Generally, excavation into undisturbed normal strength soils will require no additional modification. Fill soils and otherwise structurally weak soils may require modifications, such as geotextiles, geogrids, and/or compaction (not to exceed 90%). Ensure that grading and soil porosity of the subbase will provide adequate subsurface drainage

A. Subgrade Preparation:
1. Prepare subgrade as specified in Section 32 10 00. Verify subgrade in accordance with porous paving system manufacturer's instructions.

2. Proper subgrade preparation will enable the Grasspave2 rolls/units to connect properly and remain level and stationary after installation.
3. Excavate area allowing for unit thickness, the engineered base depth (where required), and 0.5 inch (1.25 cm) for depth of sod root zone or topsoil germination area (when applicable).
4. Provide adequate drainage from excavated area if area has potential to collect water, when working with in-place soils that have poor permeability.
5. Ensure in-place soil is relatively dry and free from standing water.
6. Uniformly grade base.
7. Level and clear base of large objects, such as rocks and pieces of wood.

B. Base Preparation:
1. Install Base as specified in Section 32 10 00. Verify engineered base (if required) is installed in accordance with porous paving system manufacturer's instructions.
2. Coordinate base installation and preparation with subdrains specified in Section 33 46 00.
3. If required, place a geotextile separation layer between the natural ground and the 'engineered base'.
4. If required, install the specified sub-drain and outlet according to construction drawings.
5. Coordinate base installation and preparation with irrigation and drip irrigation lines specified in Section 32 80 00 and 32 84 13, respectively.
6. Place engineered base in lifts not to exceed 6 inches (150 mm), compacting each lift separately to 95 percent Modified Proctor.
7. Leave 1 inch (2.5 cm) of depth below final grade for porous paver unit and sand fill and 0.5 inch (1.25 cm) for depth of sod root zone or topsoil germination area (when applicable).

Notes: Delete requirement for on-site manufacturer's field representative if not required

3.3 ON-SITE MANUFACTURER'S FIELD REPRESENTATIVE

A. A qualified Manufacturer's field representative shall be available for a pre-construction meeting via phone or in person and will provide installation videos, design details, installation instructions, and the technical specifications.
B. The time for on-site observation shall be indicated in the Contract Documents and included in the base bid price.

3.4 HYDROGROW INSTALLATION

A. Spread all Hydrogrow mix provided (spreader rate = 4.53 kg per 100 m2 (10 lbs per 1076 ft2) evenly over the surface of the base course with a hand-held, or wheeled, rotary spreader.
B. The Hydrogrow mix should be placed immediately before installing the Grasspave2.

3.5 GRASSPAVE2 INSTALLATION

A. Install the Grasspave2 units by placing units with rings facing up, and using snap-fit connectors, pegs and holes, provided to maintain proper spacing and interlock the units. Units can be easily shaped with pruning shears or knife. Units placed on curves, slopes, and high traffic areas shall be anchored to the base course, using 40d common nails with fender washer, as required to secure units in place. Tops of rings shall be between 6 mm to 13 mm (0.25" to 0.5") below the surface of adjacent hard-surface pavements.
B. Install sand in rings as they are laid in sections by "back-dumping" directly from a dump truck, or from buckets mounted on tractors, which then exit the site by driving over rings already filled with sand. The sand is then spread laterally from the pile using flat bottomed shovels and/or wide "asphalt rakes" to fill the rings. A stiff bristled broom should be used for final "finishing" of the sand. The sand must be "compacted" by using water from hose, irrigation heads, or rainfall, with the finish grade no less than the top of rings and no more than 6 mm (0.25") above top of rings.

3.6 INSTALLATION OF GRASS

A. Grass coverage on the sand-filled rings must be completed within one week. Sand must be re-installed and leveled and Grasspave2 checked for integrity if rings become exposed due to wind, rain, traffic, or other factors. (Choose one paragraph below to meet grass installation method desired.)

Notes: Choose one paragraph below to match grass installation method

1. Preferred method: Hydroseeding/hydro-mulching - A combination of water, seed and fertilizer are homogeneously mixed in a purpose-built, truck-mounted tank. The seed mixture is sprayed onto the site at rates shown on plans and per hydroseeding manufacturer's recommendations. Coverage must be uniform and complete. Following germination of the seed, areas lacking germination larger than 20 cm x 20 cm (8" x 8") must be reseeded immediately. Seeded areas must be fertilized and kept moist during development of the turf plants.). DO NOT DRIVE ON SYSTEM: Hydroseeded/hydro-mulch areas must be protected from any traffic, other than emergency vehicles, for a period of 6 to 8 weeks, or until the root system has penetrated and established well below the Grasspave2 units.
2. Install thin sod directly over sand filled rings, filled no higher than the top of the rings. Sod strips should be placed with very tight joints. Sodded areas must be fertilized and kept moist during root establishment (minimum of 3 weeks). DO NOT DRIVE ON SYSTEM: Sodded areas must be protected from any traffic, other than emergency vehicles, for a

period of 3 to 4 weeks, or until the root system has penetrated and established well below the Grasspave2 units.

3. Install grass seed at rates per grass type. A light "dusting" of commercial topsoil mix, not to exceed 1/2" (25 mm) will be placed above the rings and seed mix to aid germination rates. Seeded areas must be fertilized and kept moist during development of the turf plants.). DO NOT DRIVE ON SYSTEM: Seeded areas must be protected from any traffic, other than emergency vehicles, for a period of 6 to 8 weeks, or until the root system has penetrated and established well below the Grasspave2 units.

B. Adequately water sod or grass seed to assure germination of seed and growth of root system.

3.7 PROTECTION

Notes: Choose one paragraph below to match grass installation method.

A. Seeded areas must be protected from any traffic, other than emergency vehicles, for a period of 4 to 8 weeks, or until the grass is mature to handle traffic.
B. Sodded areas must be protected from any traffic, other than emergency vehicles, for a period of 3 to 4 weeks, or until the root system has penetrated below the Grasspave2 units.

3.8 FIELD QUALITY CONTROL

A. Remove and replace segments of Grasspave2 units where three or more adjacent rings are broken or damaged, reinstalling as specified, so no evidence of replacement is apparent.
B. Perform cleaning during the installation of work and upon completion of the work. Remove all excess materials, debris, and equipment from site. Repair any damage to adjacent materials and surfaces resulting from installation of this work.

3.9 MAINTENANCE

A. Maintain grass in accordance with manufacturer's instructions and as specified in Section 32 92 00 Manufacturers of Turfs and Grasses.
B. Lawn Care: Normal turf care procedures should be followed, including de-thatching.
C. DO NOT AERATE. Aerator will damage the Grasspave2 units. Aeration in not necessary in a sand root zone.
D. When snow removal is required, keep a metal edged plow blade a minimum of ¾ inch (17 mm) above the surface during plowing operations to avoid causing damage to the Grasspave2 units, or
   1. Use a plow blade with a flexible rubber edge, or
   2. Use a plow blade with skids on the lower outside corners set so the plow blade does not come in contact with the units.

END OF SECTION

Rev. April 2013

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site map | privacy statement | © 2007-2011 Invisible Structure, Inc.. – porous pavement, stormwater storage, erosion control, drainage, and beach access mats

Beachrings²

Beachrings², a portable and re-usable plastic boardwalk system, provides an attractive, comfortable, and slip resistant surface for equal access to beaches. Beachrings² also works well for temporary vehicle access over mud and sand.

Draincore²

Draincore² conveyance layer is used for advanced subsurface and green-roof applications. A replacement for antiquated French drains, Draincore² can maximize drainage (58 gpm per foot width) and minimize costs.

Rainstore³

Rainstore³ is the new standard in efficient sub-surface stormwater storage. Rainstore³ is modular and stackable for versatile site design. Rainstore³ is 94% void space and can be designed for detention, retention, or water harvesting for re-use.

Slopetame²

Slopetame²—much more than an erosion control blanket or mat—a completely integrated system of rings, grid, fabric, anchors, and vegetation to control erosion on some of the toughest slopes, channels, swales and more.

Quick Reference Guide for Grasspave² and Gravelpave²

	Grasspave²	Gravelpave²
Description	Connectable ring and grid system	Connectable ring, grid, and integrated fabric
Also Included	Hydrogrow polymer—exclusively for Grasspave²	Geotextile fabric molded to grid (exclusive to Gravelpave²) and anchors
Available in Large, Flexible Rolls	Yes, various sizes—see roll chart page 14	Yes, various sizes—see roll chart page 14
Colors	Black	Black, gray, tan, terra cotta, custom colors extra
Components Needed for System	Base course, sand, labor, sod or seed (irrigation is recommended)	Base course, 1¼″ (3.2cm) of 3/16″ to 3/8″ decorative gravel, and labor
Traffic	Low speed, intermittent to moderate use	Low speed, unlimited use
Compressive System Strength	Filled: 5,721 psi (39,273 kPa); Empty: 2,100 psi (14,470 kPa)	Filled: to 5,721 psi (39,273 kPa) Empty: 2,100 psi (14,470 kPa)
Life Span	60 years	25 years
Recommended Maximum Slope	5% fire lanes, 8% car/light truck, 15-20% golf carts, pedestrian use, and trails	5% fire lanes, 8% car/light truck, 15-20% golf carts, pedestrian use, and trails
Stormwater Storage	Yes	Yes
Clean Pollutants through Bioremediation	Excellent	Good
Air-Conditioning Effect	Yes	No
Heat Island Mitigation	Yes—thermal conductivity, heat storage capacity, density, albedo (.40) and emissivity	Yes–thermal conductivity, heat storage capacity, density, albedo (varies) and emissivity
Reduces Runoff and Non-Point Source Pollution	Yes	Yes
Recycled Content	100% recycled HDPE plastic	100% recycled HDPE plastic, remnant fabric
Erosion Control	Yes	Yes
Airborne Dust Capture and Retention	Excellent	Good
Promotes and Retains Tree Growth	Yes	Yes
Recharges Groundwater	Yes	Yes

Invisible Structures, Inc.

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www.invisiblestructures.com
email: sales@invisiblestructures.com

Gravelpave² and Grasspave² Patent No. 5,250,340
held by William Bohnhoff, ASLA
Copyright © 2006

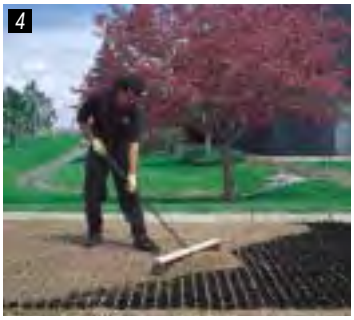
Grasspave^2 Installation—Mats can be rolled out in minutes!

600 m^2 (6,000 sf) per two-person hour! For steps shown below—100 m^2 (1,080 sf) per two-person hour!

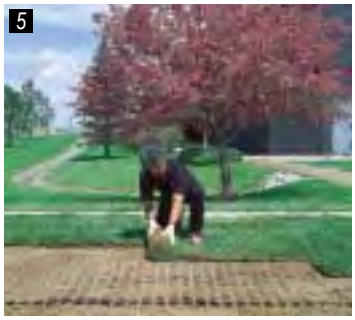
Place and compact sand and gravel base course.

Apply Hydrogrow mixture.

Roll out Grasspave^2.



Fill rings with clean sharp concrete sand.



Hydroseed or lay sod.

Roll sod with heavy roller.

Ready for use after two mowing cycles.

Use a regular lawn mower for maintenance.
Do not aerate!

The Grasspave^2 porous pavement system is comprised of a sandy gravel base course, Hydrogrow polymer-fertilizer mixture, the Grasspave^2 ring and grid structure, sharp concrete sand, and grass seed or sod.

Grasspave^2 Installation Procedures

This installation section is only intended as an overview. Please review our Grasspave^2 Technical Specifications (available at www.invisiblestructures.com or call 800-233-1510) for comprehensive installation instructions.

Excavate a space for the base course as determined by site soils and loading requirements. Place and compact sandy gravel which should be a mixture of clean sharp sand and gravel varying in size but not exceeding 3⁄4 of an inch. To check porosity, use a hose to see that water flows into the base and drains away. Add subsurface drainage as necessary to low spots or locations with poor draining soils. Install irrigation lines and sprinkler heads if necessary.

Apply the Hydrogrow mixture that is included free with your order. Hydrogrow is a mixture of polymer and fertilizer designed especially for our Grasspave^2 system.

Roll out Grasspave^2, aligning the side hole fasteners over the side pegs. The warmth of the sun will relax the plastic so it lays flat. Cut the grid between rings using pruning shears. Incorporate the cut pieces in other areas, as needed, keeping the distance between the rings uniform.

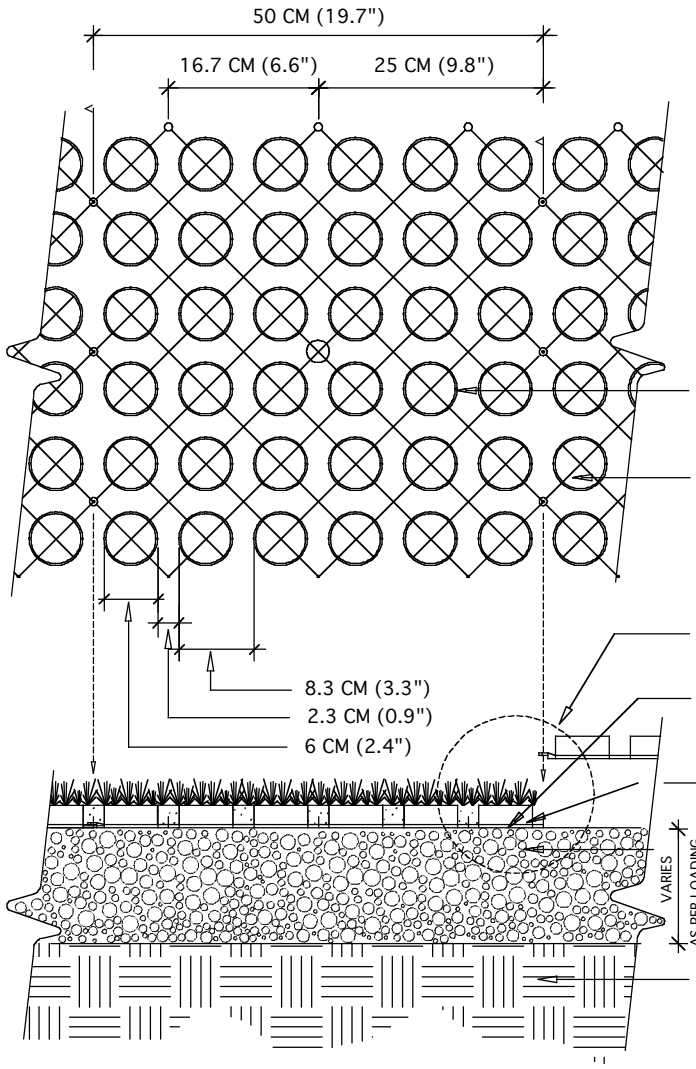
Fill rings with clean sharp concrete sand (AASHTO M6 or ASTM C-33) using large rakes and brooms so that the tops of the rings show when done.

Lay turf over the rings. On warm days, wet the sand first to lower sand temperature and provide moisture for grass roots. Seeding and hydromulching is also an accepted vegetating method at this stage. Repeated hydromulching/seeding may be necessary.

Roll sod with heavy roller to eliminate air pockets and make sure roots are in contact with the sand fill. Water lawn as usual according to climatic requirements.

Whether the area has been seeded or sodded, wait to drive on grass until two mowings have been completed, by which time the root system will be established and the sod pieces locked into place. In an emergency such as the need for fire truck access, grass may be driven on immediately after installation.

Use a regular lawn mower for maintenance. There should be no paver parts protruding through the surface that would damage mowers. Do not aerate!



SPECIFICATIONS

UNIT SIZE - 50 CM X 50 CM X 2.5 CM
(20" X 20" X 1")

AVAILABLE IN 9 STANDARD ROLL SIZES

UNIT WEIGHT - 510 GRAMS (18 OZ.)
OR 2.0 KG (4.5 POUNDS)

STRENGTH - 402 KG/CM $_2$ (5720 PSI)

COLOR - BLACK (STANDARD)

RESIN - HDPE (WITH SOME POST-CONSUMER
RECYCLED CONTENT)

PLAN

GRASSPAVE2 SQUARES

ADJACENT GRASSPAVE2 SQUARES

SEE ENLARGEMENT BELOW

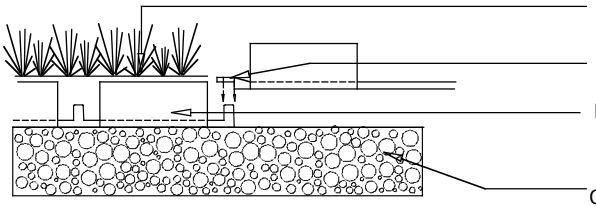
HYDROGROW MIX BELOW RING
SUPPLIED FREE BY MANUFACTURER

RINGS FILLED WITH CONCRETE SAND (CLEAN, SHARP SAND)

– COMPACTED SANDY GRAVEL ROAD BASE
95% MODIFIED PROCTOR DENSITY
- 6 INCHES TO 12 INCHES
(DEPTH OF BASE COURSE TO BE DETERMINED
BY ON-SITE ENGINEER)

COMPACTED SUBGRADE,

SECTION



TOP OF GRASS ROOT MASS 6 MM
(1/4") ABOVE TOP OF RING

GRASSPAVE2 ATTACH WITH
SNAP-FIT FASTENERS

ROOT MASS TO FILL
GRASSPAVE2

COMPACTED SANDY GRAVEL
BASE COURSE

ENLARGEMENT

NOTE: GRASS/PLANT TYPES SHALL BE SPECIFIED BY A LANDSCAPE ARCHITECT OR LANDSCAPE DESIGNER.

TYPICAL GRASSPAVE2 DETAIL

1
1 OF 1

CHOOSE THIS PRODUCT FOR REINFORCING GRASS WEARING SURFACES

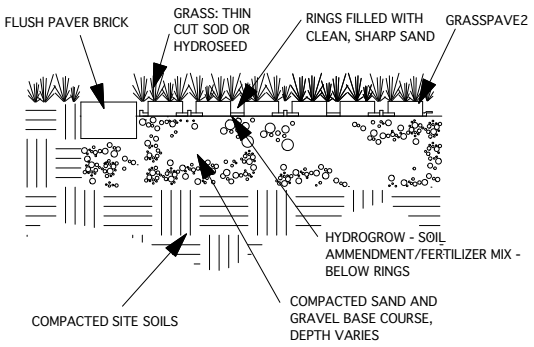
NOT TO SCALE

Invisible
Structures, Inc.

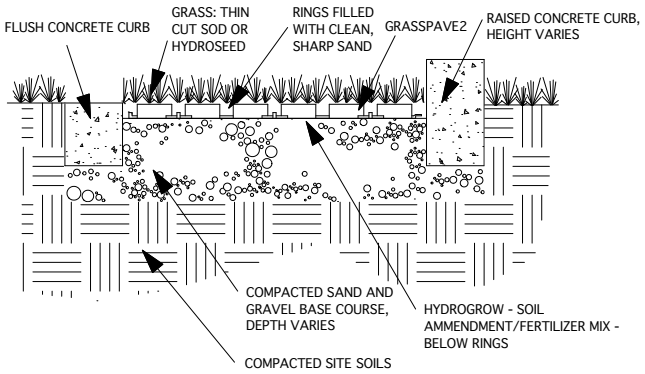
1600 Jackson St., Ste. 310
GOLDEN, COLORADO 80401
800-233-1510 OR 303-233-8383
FAX: 800-233-1522 OR 303-233-8282
www.invisiblestructures.com

GPDET.DWG

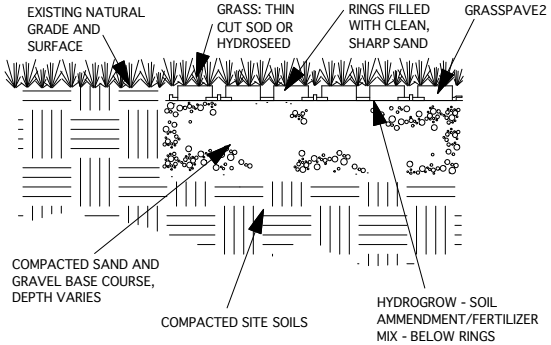
rev. 10/05



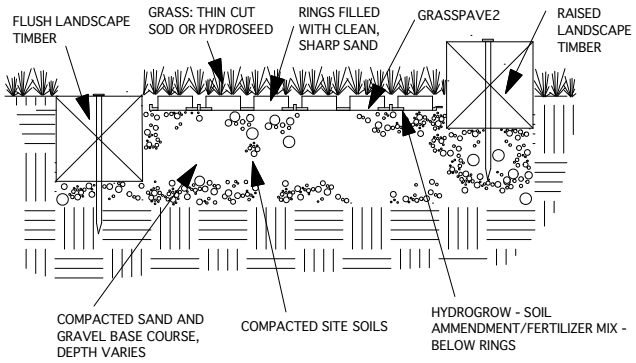
FLUSH BRICK PAVER EDGING



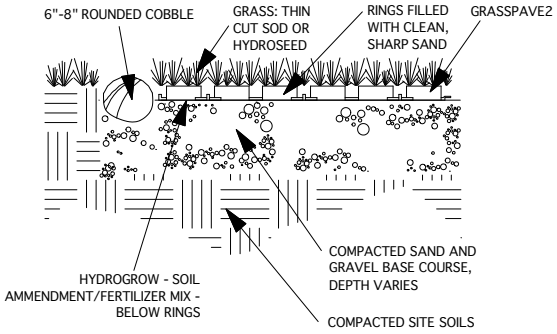
CONCRETE CURB EDGING



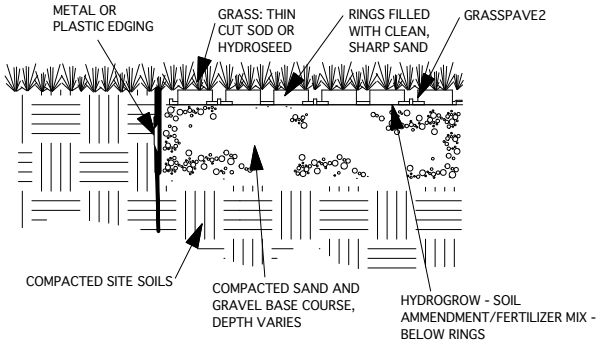
FLUSH, NATURAL (EXISTING) EDGING



LANDSCAPE TIMBER EDGING



COBBLESTONE EDGING



METAL OR PLASTIC EDGING

Grasspave2 Permeable/Porous Paver Edgeing Detail

1

1OF1

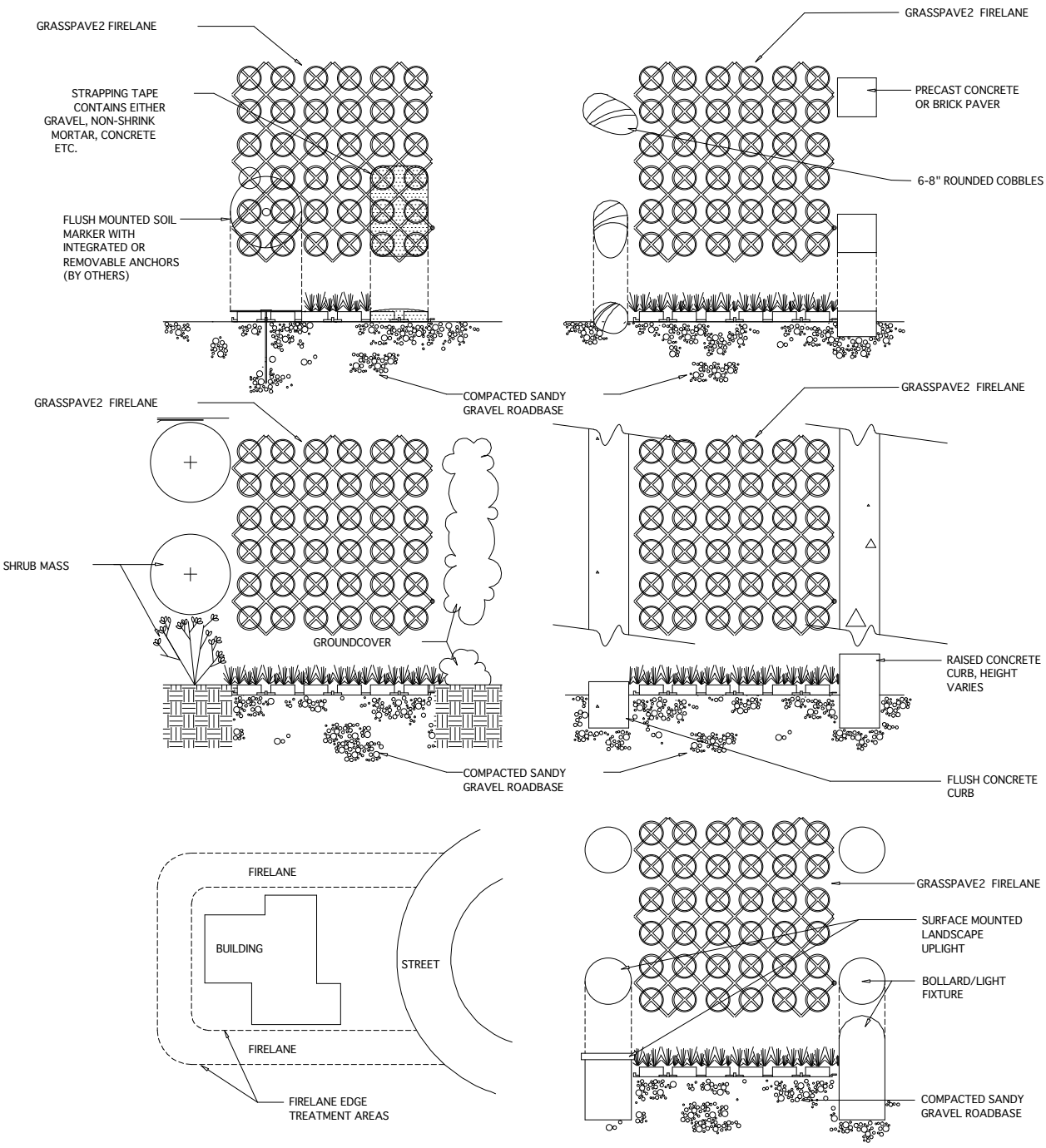
NOT TO SCALE

Use this detail for edging Grasspave2 areas

Invisible Structures, Inc.

GP2EDGING11.dwg

1600 Jackson Street, Suite 310
Golden, CO 80401
800-233-1510 OR 303-373-1234
FAX: 303-373-1223
www.invisiblestructures.com
04/11



NOTE:
THIS DETAIL IS SCHEMATIC IN NATURE. DESIGNER SHALL SPECIFY SPACING AND DESIGN OF EDGE TREATMENTS. SPACING WILL VARY WITH TURF TYPE, SLOPE, FIRE DEPARTMRNT REQUIREMENTS, ETC..

Grasspave2 Firelane Detail

1

1OF1

NOT TO SCALE

Use this detail for delineating a Grasspave2 firelane

Invisible Structures, Inc.
GP2Firelane11.dwg

1600 Jackson Street, Suite 310
Golden, CO 80401
800-233-1510 OR 303-373-1234
FAX: 303-373-1223
www.invisiblestructures.com
rev. 09/2011

Division 02 Section 265600

Lighting – Vehicular and Parking

Product:

Lithonia D-Series

Manufacturer:
Lithonia Lighting
One Lithonia Way
Conyers, GE 30012
Phone: 800.279.8041
www.lithonia.com

Or approved equal.

Locations/Applications:

For use in lighting vehicular drives throughout general campus and parking areas. Use of lower mounting height for fixtures along campus drives and designated travel way through parking area is recommended to better define vehicular circulation and wayfinding, improve quality of night lighting, and establish a scale in keeping with campus buildings and open spaces.

Product Requirements:

Fixture and Luminaire:

- D Series Size 1 (confirm size of fixture, mounting heights)
- LED lamp
- Single fixture on vehicular ways, single or double fixture within parking areas
- Sharp cut-off

Pole:

- Square pole

Color:

- Dark Bronze Finish

Mounting Height

- Vehicular Drive Mounting Height A – 16’ for use along vehicular drives, small parking courts and on-street parking areas
- Large Parking Area Mounting Height B – 22’ for use within larger, perimeter parking areas.-

ARCHITECTURAL COLORS

COLOR OPTIONS

Lithonia

Textured

RAL

Striping

AVAILABILITY BY PRODUCT

Outdoor & Rough Service

Indoor HID

Gotham

RESOURCES

Lithonia colors in Alpha Order

RAL colors in Numerical Order

Custom Color Order Procedures

Custom Color Order Submittal Form

< Back

LITHONIA COLORS

The visualization of the colors on the screen is conditional based on the characteristics of your printer, monitor and its graphics card. This chart is intended as a reference guide only.
Please - always contact a Lithonia representative for an accurate paint chip sample.

Color Chip	ABL Code	Color Name	Part #
	DBL	Black	P13
	DDB	Dark Bronze	P50
	DWH	White	P21
	DNA	Natural Aluminum	P07
	DMB	Medium Bronze	P11
	DSS	Sandstone	P12
	DGC	Charcoal Grey	P32
	DTG	Tennis Green	P33
	DSB	Steel Blue	P49
	DBR	Bright Red	P34

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D-Series Size 1
LED Area Luminaire

Catalog Number

Notes

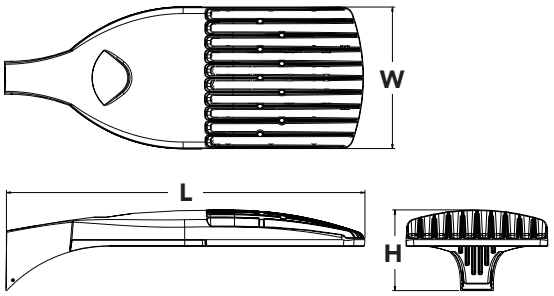
Type

Hit the Tab key or mouse over the page to see all interactive elements.

d-series

Specifications

EPA:	1.2 ft² (0.11 m²)
Length:	33″ (83.8 cm)
Width:	13″ (33.0 cm)
Height:	7-1/2″ (19.0 cm)
Weight (max):	27 lbs (12.2 kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment.

The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing 100 – 400W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

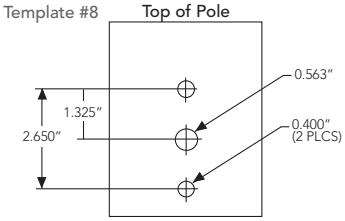
EXAMPLE: DSX1 LED 60C 1000 40K T3M MVOLT SPA DDBXD

DSX1 LED

Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting	Control options	Other options	Finish *(required)*
DSX1 LED	**Forward optics** 30C 30 LEDs (one engine) 40C 40 LEDs (two engines) 60C 60 LEDs (two engines) **Rotated optics** [1] 60C 60 LEDs (two engines)	530 530 mA 700 700 mA 1000 1000 mA (1 A)	30K 3000 K (80 CRI min.) 40K 4000 K (70 CRI min.) 50K 5000 K(70 CRI) AMBPC Amber phosphor converted [2]	T1S Type I short T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium T5VS Type V very short T5S Type V short T5M Type V medium T5W Type V wide	MVOLT [3] 120 [3] 208 [3] 240 [3] 277 [3] 347 [4] 480 [4]	**Shipped included** SPA Square pole mounting RPA Round pole mounting WBA Wall bracket SPUMBA Square pole universal mounting adaptor [5] RPUMBA Round pole universal mounting adaptor [5] **Shipped separately** [6] KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish)	**Shipped installed** PER NEMA twist-lock receptacle only (no controls) [7] DMG 0-10V dimming driver (no controls) [8] DCR Dimmable and controllable via ROAM® (no controls) [9] DS Dual switching [10,11] PIR Motion sensor, 8-15′ mounting height [12] PIRH Motion sensor, 15-30′ mounting height [12] BL30 Bi-level switched dimming, 30% [11,13] BL50 Bi-level switched dimming, 50% [11,13]	**Shipped installed** HS House-side shield [14] WTB Utility terminal block [15] SF Single fuse (120, 277, 347V) [16] DF Double fuse (208, 240, 480V) [16] L90 Left rotated optics [17] R90 Right rotated optics [17]	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

Drilling

Template #8 — Top of Pole



DSX1 shares a unique drilling pattern with the AERIS™ family. Specify this drilling pattern when specifying poles, per the table below.

DM19AS	Single unit	**DM29AS**	2 at 90° *
DM28AS	2 at 180°	**DM39AS**	3 at 90° *
DM49AS	4 at 90° *	**DM32AS**	3 at 120° **

Example: SSA 20 4C **DM19AS** DDBXD

Visit Lithonia Lighting's POLES CENTRAL to see our wide selection of poles, accessories and educational tools.

*Round pole top must be 3.25″ O.D. minimum.

**For round pole mounting (RPA) only.

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [18]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [18]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [18]
SC U	Shorting cap [18]
DSX1HS 30C U	House-side shield for 30 LED unit
DSX1HS 40C U	House-side shield for 40 LED unit
DSX1HS 60C U	House-side shield for 60 LED unit
PUMBA DDBXD U*	Square and round pole universal mounting bracket adaptor (specify finish)
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) [6]

For more control options, visit DTL and ROAM online.

Tenon Mounting Slipfitter**

Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2-3/8″	AST20-190	AST20-280	AST20-290	AST20-320	AST20-390	AST20-490
2-7/8″	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4″	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

NOTES

1. Rotated optics only available with 60C.
2. AMBPC only available with 530mA or 700mA.
3. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
4. Not available with single board, 530mA product (30C 530, or 60C 530 DS). Not available with DCR, BL30 or BL50.
5. Available as a separate combination accessory: PUMBA (finish) U.
6. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8″ mast arm (not included).
7. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Not available with DS option.
8. DMG option for 347v or 480v requires 1000mA
9. Specifies a ROAM® enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347 or 480V. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamservices.net. N/A with BL30, BL50, DS, PIR or PIRH.
10. Requires 40C or 60C. Provides 50/50 luminaire operation via two independent drivers on two separate circuits. N/A with PER, DCR, WTB, PIR, or PIRH.
11. Requires an additional switched circuit.
12. PIR specifies the SensorSwitch SBGR-10-ODP control; PIRH specifies the SensorSwitch SBGR-6-ODP control; see Motion Sensor Guide for details. Dimming driver standard. Not available with DS or DCR.
13. Dimming driver standard. MVOLT only. Not available with DCR.
14. Also available as a separate accessory; see Accessories information.
15. WTB not available with DS.
16. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
17. Available with 60 LEDs (60C option) only.
18. Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Acuity Brands Control.

LITHONIA LIGHTING

One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • www.lithonia.com

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Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	**77°F**	**1.00**
30°C	86°F	1.00
40°C	104°F	0.99

Electrical Load

			Current (A)					
Number of LEDs	Drive Current (mA)	System Watts	120	208	240	277	347	480
30	530	52	0.52	0.30	0.26	0.23	--	--
	700	68	0.68	0.39	0.34	0.30	0.24	0.17
	1000	105	1.03	0.59	0.51	0.45	0.36	0.26
40	530	68	0.67	0.39	0.34	0.29	0.23	0.17
	700	89	0.89	0.51	0.44	0.38	0.31	0.22
	1000	138	1.35	0.78	0.67	0.58	0.47	0.34
60	530	99	0.97	0.56	0.48	0.42	0.34	0.24
	700	131	1.29	0.74	0.65	0.56	0.45	0.32
	1000	209	1.98	1.14	0.99	0.86	0.69	0.50

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

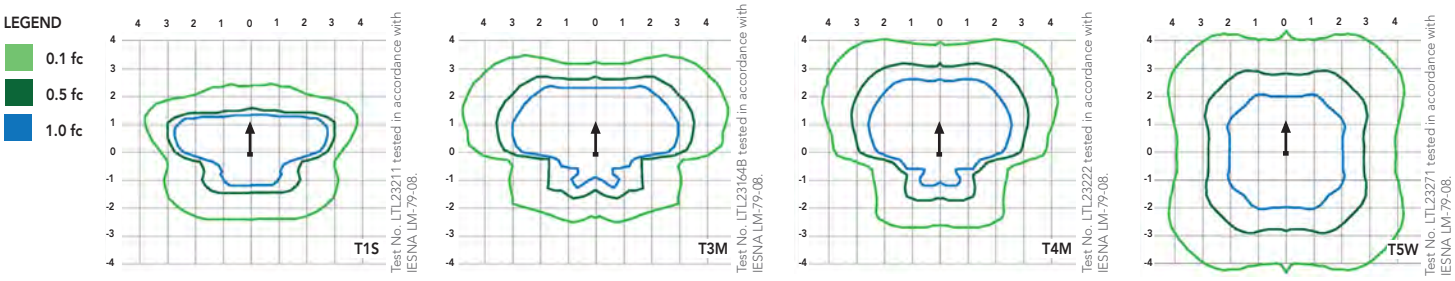
To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	DSX1 LED 60C 1000			
	1.0	0.95	0.93	0.88
	DSX1 LED 60C 700			
	1.0	0.99	0.98	0.96

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Area Size 1 homepage.

Isofootcandle plots for the DSX1 LED 60C 1000 40K. Distances are in units of mounting height (20').



FEATURES & SPECIFICATIONS

INTENDED USE
The sleek design of the D-Series Size 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

CONSTRUCTION
Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (1.2 ft^2) for optimized pole wind loading.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS
Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in standard 4000 K (70 minimum CRI) or optional 3000 K (80 minimum CRI) or 5000 K (70 CRI) configurations. The D-Series Size 1 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine configurations consist of 30, 40 or 60 high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L96/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV or 6kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

INSTALLATION
Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 1 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 1 utilizes the AERIS™ series pole drilling pattern. Optional terminal block, tool-less entry, and NEMA photocontrol receptacle are also available.

LISTINGS
UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C minimum ambient. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY
Five-year limited warranty. Full warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Specifications subject to change without notice.

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/-10%. Contact factory for performance data on any configurations not shown here.

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K (3000 K, 80 minimum CRI)					40K (4000 K, 70 minimum CRI)					50K (5000 K, 70 CRI)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
30C (30 LEDs)	700 mA	68 W	T1S	5,290	1	0	1	78	6,524	2	0	2	96	7,053	2	0	2	104
			T2S	5,540	1	0	1	81	6,833	2	0	2	100	7,387	2	0	2	109
			T2M	5,360	1	0	2	79	6,611	2	0	2	97	7,147	2	0	2	105
			T3S	5,479	1	0	1	81	6,757	1	0	2	99	7,305	2	0	2	107
			T3M	5,452	1	0	2	80	6,724	2	0	2	99	7,269	2	0	2	107
			T4M	5,461	1	0	2	80	6,736	2	0	2	99	7,282	2	0	2	107
			TFTM	5,378	1	0	2	79	6,633	1	0	2	98	7,171	1	0	2	105
			T5VS	5,708	2	0	0	84	7,040	3	0	0	104	7,611	3	0	1	112
			T5S	5,639	2	0	0	83	6,955	2	0	0	102	7,519	3	0	0	111
			T5M	5,710	3	0	1	84	7,042	3	0	1	104	7,613	3	0	2	112
			T5W	5,551	3	0	1	82	6,847	3	0	2	101	7,401	3	0	2	109
	1000 mA	105 W	T1S	7,229	2	0	2	69	9,168	2	0	2	87	9,874	2	0	2	94
			T2S	7,572	2	0	2	72	9,603	2	0	2	91	10,342	2	0	2	98
			T2M	7,325	2	0	2	70	9,291	2	0	2	88	10,005	2	0	3	95
			T3S	7,488	2	0	2	71	9,496	2	0	2	90	10,227	2	0	2	97
			T3M	7,451	2	0	2	71	9,450	2	0	2	90	10,177	2	0	2	97
			T4M	7,464	2	0	2	71	9,467	2	0	2	90	10,195	2	0	2	97
			TFTM	7,351	1	0	2	70	9,323	2	0	2	89	10,040	2	0	3	96
			T5VS	7,801	3	0	1	74	9,894	3	0	1	94	10,655	3	0	1	101
			T5S	7,803	3	0	2	74	9,774	3	0	1	93	10,526	3	0	1	100
			T5M	7,707	3	0	0	73	9,897	3	0	2	94	10,658	4	0	2	102
			T5W	7,586	3	0	2	72	9,621	4	0	2	92	10,363	4	0	2	99
40C (40 LEDs)	700 mA	89 W	T1S	6,876	2	0	2	77	8,639	2	0	2	97	9,345	2	0	2	105
			T2S	7,202	2	0	2	81	9,049	2	0	2	102	9,788	2	0	2	110
			T2M	6,968	2	0	2	78	8,755	2	0	2	98	9,469	2	0	3	106
			T3S	7,122	2	0	2	80	8,948	2	0	2	101	9,679	2	0	2	109
			T3M	7,088	2	0	2	80	8,905	2	0	2	100	9,632	2	0	2	108
			T4M	7,100	2	0	2	80	8,920	2	0	2	100	9,649	2	0	2	108
			TFTM	6,992	1	0	2	79	8,785	2	0	2	99	9,502	2	0	2	107
			T5VS	7,421	3	0	0	83	9,323	3	0	1	105	10,085	3	0	1	113
			T5S	7,331	2	0	0	82	9,210	3	0	1	103	9,962	3	0	1	112
			T5M	7,423	3	0	2	83	9,326	3	0	2	105	10,087	4	0	2	113
			T5W	7,216	3	0	2	81	9,066	4	0	2	102	9,807	4	0	2	110
	1000 mA	138 W	T1S	9,521	2	0	2	69	11,970	2	0	2	87	12,871	3	3	0	93
			T2S	9,972	2	0	2	72	12,558	3	0	3	91	13,481	3	0	3	98
			T2M	9,648	2	0	3	70	12,149	3	0	3	88	13,043	3	0	3	95
			T3S	9,862	2	0	2	71	12,418	2	0	2	90	13,331	2	0	2	97
			T3M	9,814	2	0	2	71	12,358	3	0	3	90	13,267	3	0	3	96
			T4M	9,831	2	0	2	71	12,379	2	0	3	90	13,290	2	0	3	96
			TFTM	9,681	2	0	2	70	12,191	2	0	3	88	13,087	2	0	3	95
			T5VS	10,275	3	0	1	74	12,937	3	0	1	94	13,890	4	0	1	101
			T5S	10,150	3	0	1	74	12,782	3	0	1	93	13,721	3	0	1	99
			T5M	10,278	4	0	2	74	12,942	4	0	2	94	13,894	4	0	2	101
			T5W	9,991	4	0	2	72	12,582	4	0	2	91	13,507	4	0	2	98
60C (60 LEDs)	700 mA	131 W	T1S	10,226	2	0	2	78	12,871	3	0	3	98	13,929	3	0	3	106
			T2S	10,711	2	0	2	82	13,481	3	0	3	103	14,589	3	0	3	111
			T2M	10,363	2	0	3	79	13,043	3	0	3	100	14,115	3	0	3	108
			T3S	10,592	2	0	2	81	13,331	2	0	2	102	14,427	3	0	3	110
			T3M	10,541	2	0	2	80	13,267	3	0	3	101	14,357	3	0	3	110
			T4M	10,559	2	0	2	81	13,290	2	0	3	101	14,382	3	0	3	110
			TFTM	10,398	2	0	3	79	13,087	2	0	3	100	14,163	2	0	3	108
			T5VS	11,036	3	0	1	84	13,890	4	0	4	106	15,032	4	0	1	115
			T5S	10,902	3	0	1	83	13,721	3	0	1	105	14,849	4	0	1	113
			T5M	11,039	4	0	2	84	13,894	4	0	2	106	15,036	4	0	2	115
			T5W	10,732	4	0	2	82	13,507	4	0	2	103	14,617	4	0	2	112
	1000 mA	209 W	T1S	14,017	3	0	3	67	17,632	3	0	3	84	19,007	3	0	3	91
			T2S	14,681	3	0	3	70	18,467	3	0	3	88	19,908	3	0	3	95
			T2M	14,204	3	0	3	68	17,867	3	0	3	85	19,260	3	0	3	92
			T3S	14,518	3	0	3	69	18,262	3	0	3	87	19,687	3	0	3	94
			T3M	14,448	3	0	3	69	18,173	3	0	4	87	19,591	3	0	4	94
			T4M	14,473	3	0	3	69	18,205	3	0	3	87	19,625	3	0	4	94
			TFTM	14,253	2	0	3	68	17,928	3	0	4	86	19,326	3	0	4	92
			T5VS	15,127	4	0	1	72	19,028	4	0	1	91	20,512	4	0	1	98
			T5S	14,943	4	0	1	71	18,797	4	0	1	90	20,263	4	0	1	97
			T5M	15,131	4	0	2	72	19,033	4	0	2	91	20,517	5	0	3	98
			T5W	14,710	4	0	2	70	18,503	5	0	3	89	19,946	5	0	3	95

Note: Available with phosphor-converted amber LED's (nomenclature AMBPC). These LED's produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000 K lumen values and photometric files.

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Division 02 Section 265600

Lighting – Vehicular Roadway

Product:

Philips Hadco LEDGINE LED Teardrop

Luminaire Manufacturer:
Philips Hadco
100 Craftway Drive
Littlestown, PA 17340
www.philips.com

Pole Manufacturer:
Valmont Industries, Inc.
20805 Eaton Avenue
Farmington, MN 55024

Or approved equal.

Locations/Applications:

For use in lighting vehicular drives in designated "historic" area of campus. Use of lower vehicular mounting height for fixtures along campus drives in the designated historic campus area is recommended to better define vehicular circulation and wayfinding, improve quality of night lighting, and establish a scale in keeping with campus buildings and open spaces. Vehicular lighting within the designate historic campus area is intended to complement use of pedestrian lighting within this area and the pedestrian focused quality of these campus drives. As such, use of the "historic" vehicular fixture should be limited to key nodes along the campus drives within this zone – intersections, crosswalks, and entries to primary landscape/pedestrian zones such as plazas spanning roadways – where higher lighting levels are recommended.

Product Requirements:

Fixture and Luminaire:

- LEDGINE LED Teardrop Pendant (TXF9)
- 80 LED Board
- 4000 K color temperature
- UV stabilized acrylic w/optical ribbed globe
- Single fixture arm mounted

Pole:

- Valmont round tapered pole with mounting arm and octagonal finial
- 4" x 6" handhole opening at base for ground connector and flush fitting aluminum door

Color:

- Bronze Finish

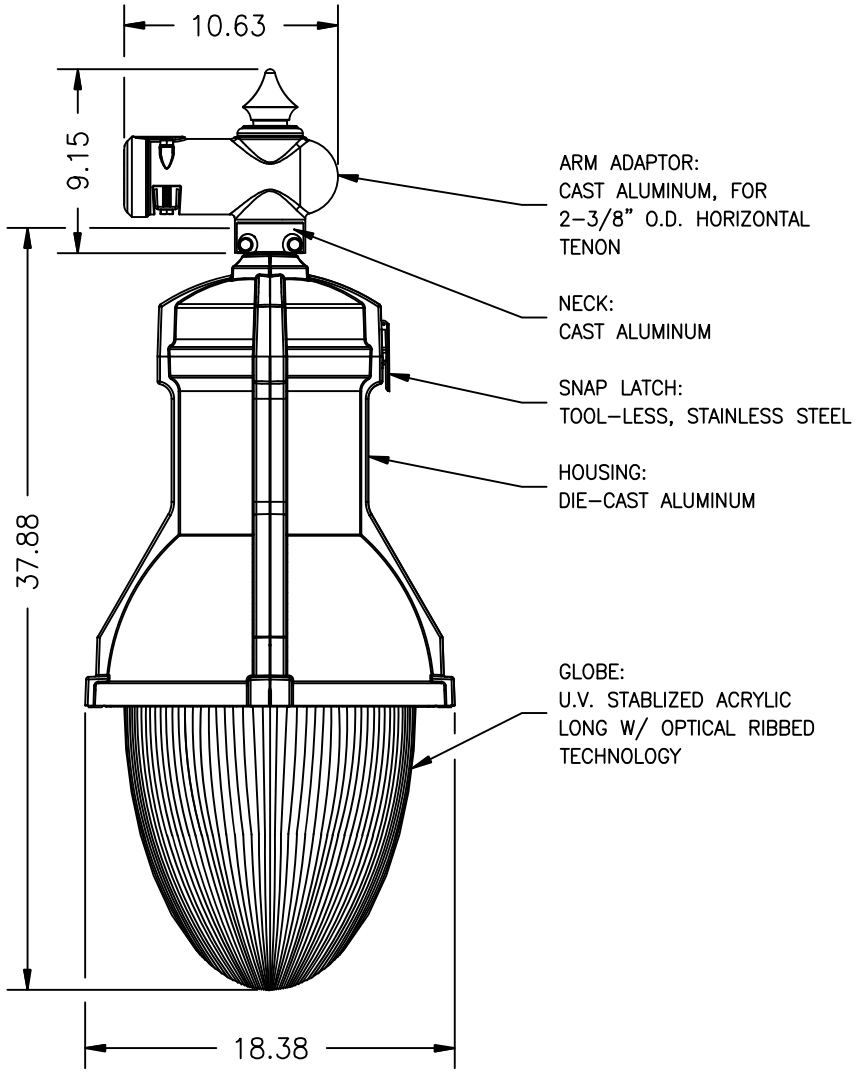
Mounting Height

- Vehicular Drive Pole Height: 24’-8” for use in key locations along vehicular drives within designated “historic” campus area.

Ordering Guide:

C13371A: LUMINAIRE
CA13371: ARM ADAPTOR

Color:
Bronze



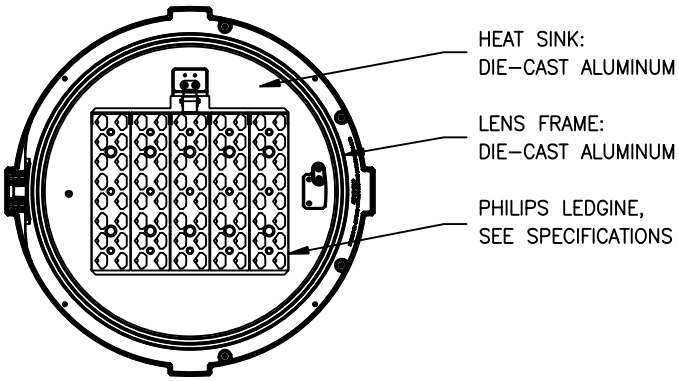
Philips LEDgine Specifications:

- 80, 4000K (neutral) Philips Lumileds Luxeon R LEDs, typical 75 Color Rendering Index (CRI), >65,000 hours of operational life (at 25°C ambient temperature & 70% luman maintenance), injection molded Type III optical plates, IP66 rated LED module.
- Integral Philips Advance Xitanium LED driver, class 1, IP66 rated, 530mA, IntelliVolt 120–277 VAC, 50–60 Hz, RoHS compliant, field replaceable 10kV/10kA surge supression.

Luminaire Certifications:

- UL8750 & UL1598 compliant, ETL & cETL listed to U.S. & Canadian safety standards for wet locations, manufactured to ISO 9001:2008 standards.

Bottom View
w/ Globe Removed



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100 Craftway Drive
Littlestown, Pa 17340
Phone 800–331–4185
Fax 717–359–9289
www.philips.com

PHILIPS HADCO

JOB NAME: Davis Avenue Renovation–Nassau Comm. College

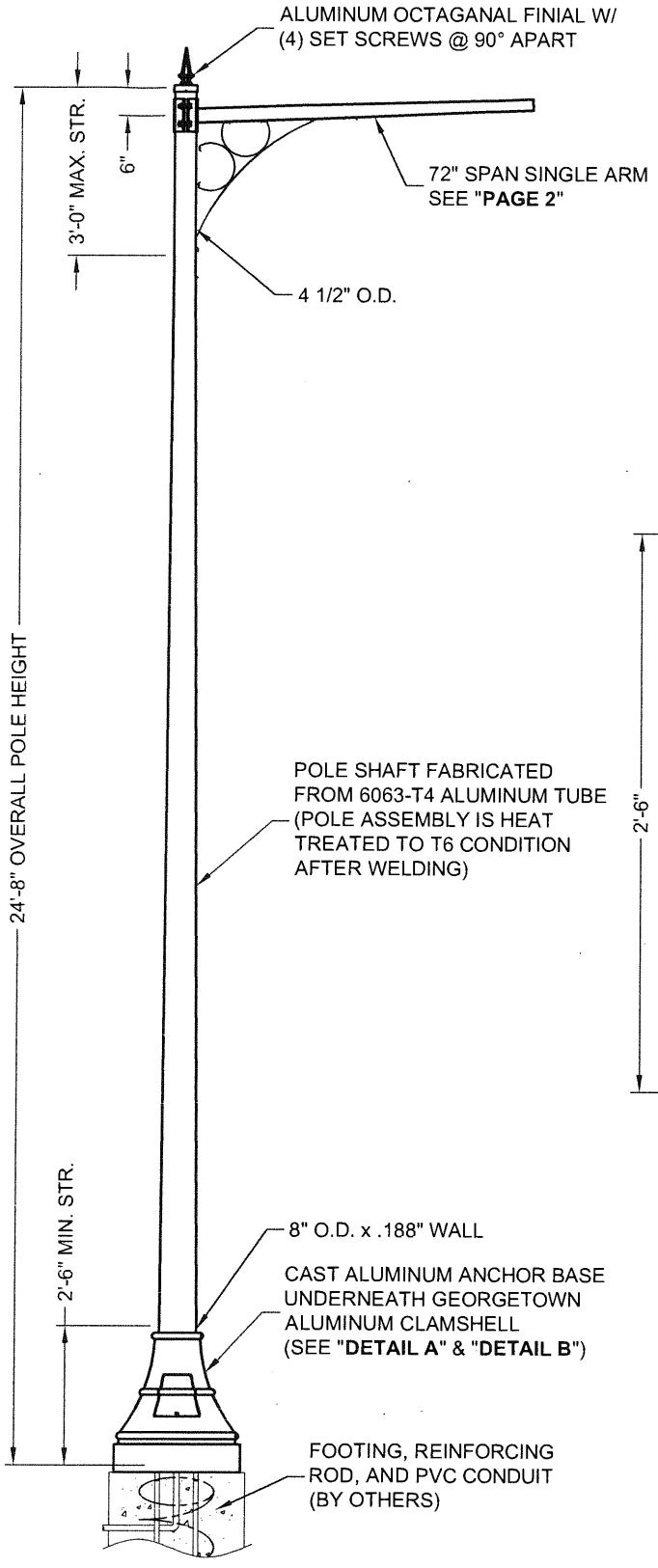
SCALE:	DATE:	DRAWN BY:	DRAWING NUMBER:
1:10	07/07/15	SMK	C13371–DWG02

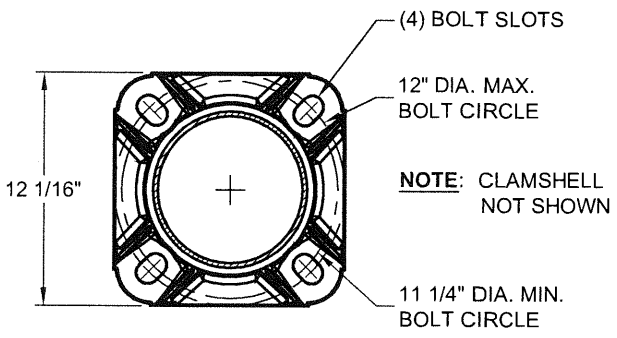
PRODUCT APPROVALS	
HADCO	SDK
CUSTOMER	

REP: Dave Murphy

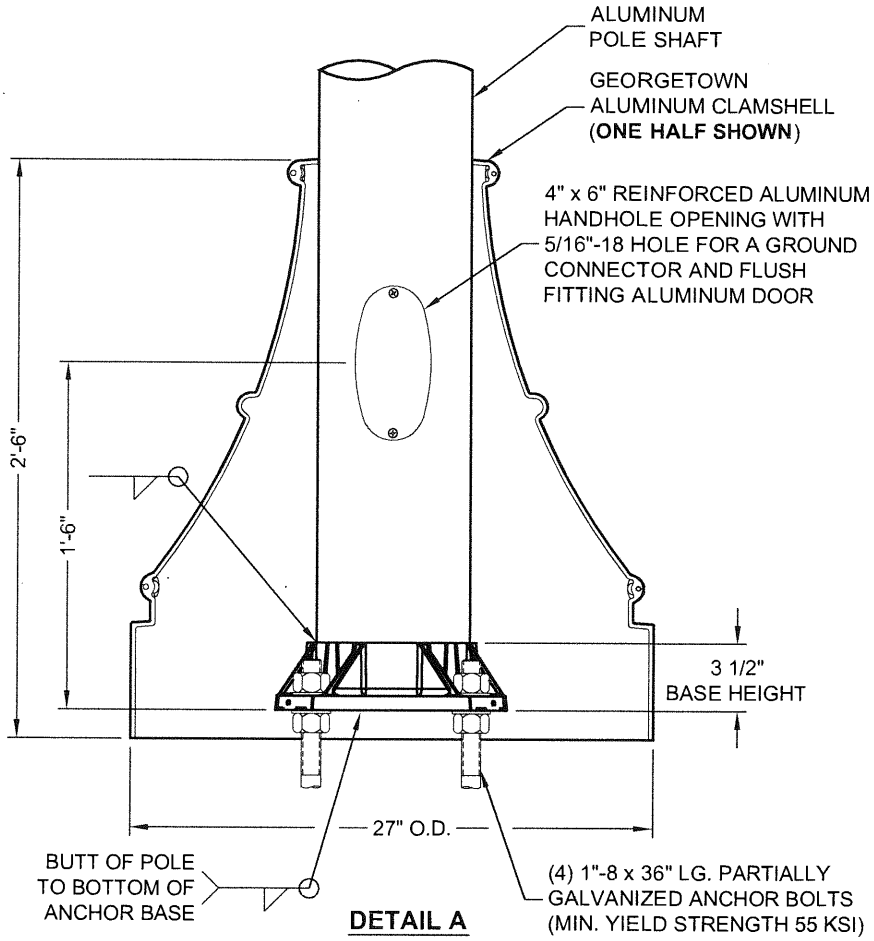
REV: A BY: .

PCN: 15–023 DATE: .





DETAIL B



DETAIL A

POLE RATING (PER AASHTO 2013):
3-SEC GUST WIND SPEED: 120 MPH MAX
EPA (LUMINAIRE): 3.0 SQ. FT. MAX
WEIGHT (LUMINAIRE): 40 LBS MAX

DO NOT SCALE

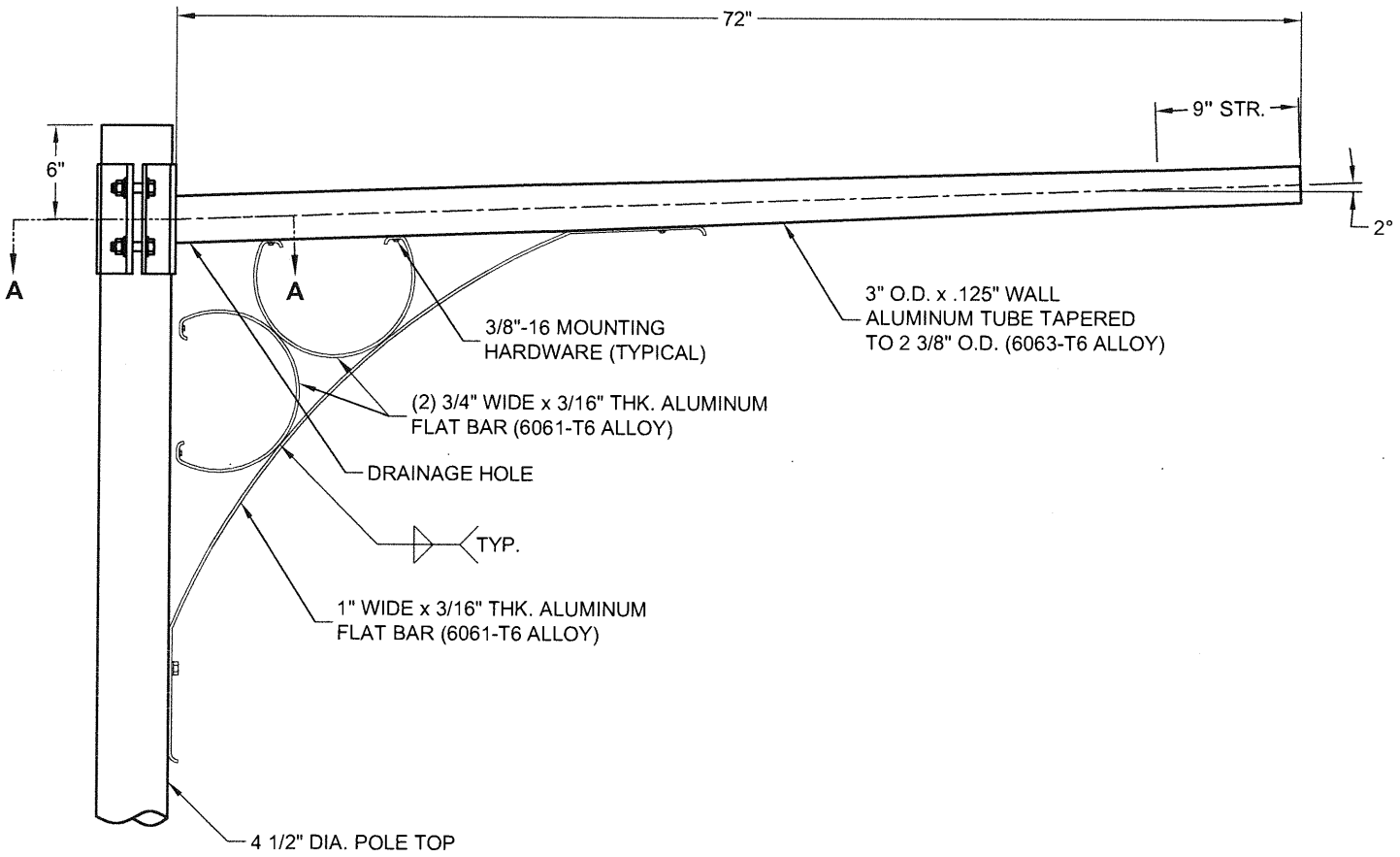
valmont

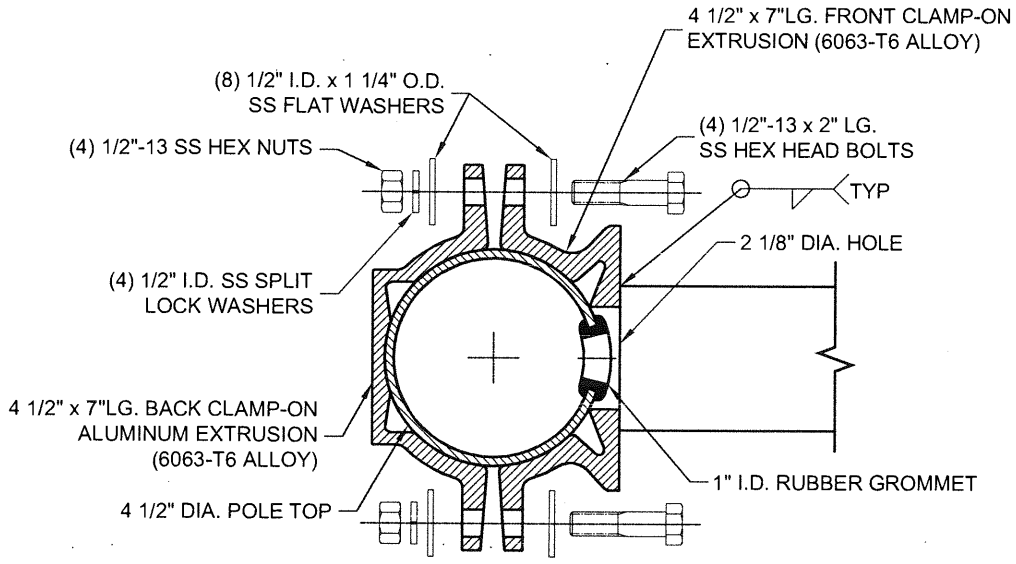
Valmont Industries, Inc. Structures Division
20805 Eaton Ave Farmington, Minnesota 55024-7932
Phone: (651) 463-8990 (800) 899-7577
Fax: (651) 463-3349

CONFIDENTIAL
The information contained in this drawing is privileged and confidential, and may be protected from disclosure. Please be aware that any use or dissemination of this drawing may be subject to legal restriction or sanction.

TITLE:	S ANCHOR BASE POLE
MODEL NO.:	240845806T4
MATERIAL:	ALUMINUM ALLOY
FINISH:	POWDER PAINT - HADCO BRONZE MATCH (SHERWIN WILLIAMS PNS8-30017-C50)
PROJECT:	NASSAU COMMUNITY COLLEGE- DAVIS AVENUE
SOLD TO:	
SHIP TO:	
P.O. NO:	
REP:	DAVE MURPHY & ASSOCIATES
QTY:	4
DWN BY:	KPS
CHK'D BY:	
APPR BY:	MPS
DATE:	07-06-15
DWG NO:	QT13062
PAGE:	1 / 2

REV	DATE	REVISION DESCRIPTION	BY





SECTION A-A

DO NOT SCALE

valmont

Valmont Industries, Inc. Structures Division
20805 Eaton Ave Farmington, Minnesota 55024-7932
Phone: (651) 463-8990 (800) 899-7577
Fax: (651) 463-3349

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TITLE:	S 72" SPAN SINGLE ARM 4.5" C/O
MODEL NO.:	
MATERIAL:	ALUMINUM ALLOY
FINISH:	POWDER PAINT - HADCO BRONZE MATCH (SHERWIN WILLIAMS PNS8-30017-50)
PROJECT:	NASSAU COMMUNITY COLLEGE- DAVIS AVENUE
SOLD TO:	
SHIP TO:	
P.O. NO:	
REP:	DAVE MURPHY & ASSOCIATES
QTY:	4
DWN BY:	KPS
CHK'D BY:	
APPR BY:	MP
DATE:	07-06-15
DWG NO:	QT13062
PAGE:	2 / 2

REV	DATE	REVISION DESCRIPTION	BY

Division 02 Section 265600

Street Sign Bracket and Pole

Product:

Philips Hadco

Manufacturer:
Philips Hadco
100 Craftway Drive
Littlestown, PA 17340
Phone: 717.359.7131
www.philips.com

Or approved equal.

Locations/Applications:

For use in street signing within designated “historic” campus area.

Product Requirements:

Street Sign Bracket Assembly:

- 36” x 9” sign attached to arm w/cast aluminum clamp-on brackets

Pole:

- 4” round, 10’ height aluminum pole with cap and finial
- Pole base to match “historic” campus area Pedestrian Light Pole

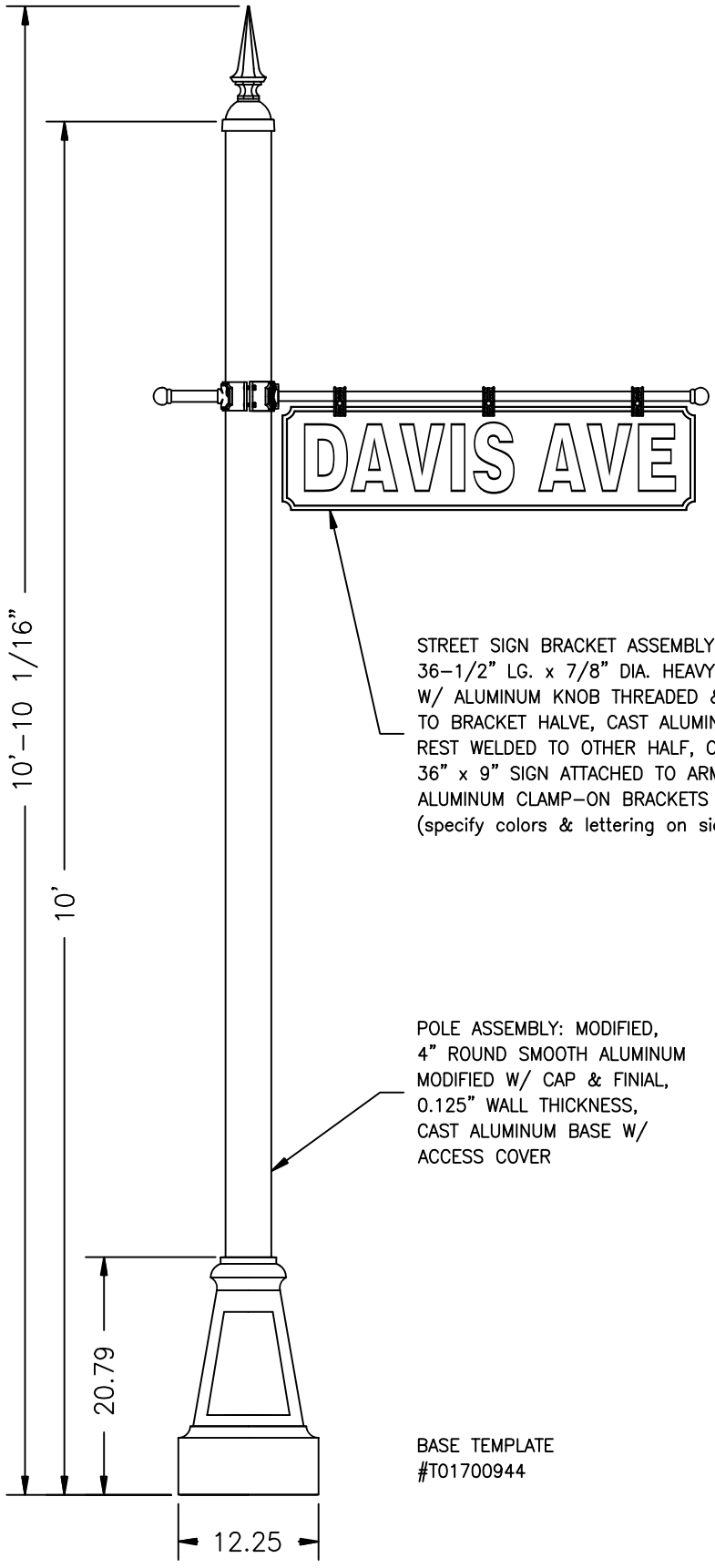
Color:

- Bronze Finish

Ordering Guide:

CA13371A: STREET SIGN BRACKET ASSEMBLY
CP13371A: POLE ASSEMBLY

Color:
Bronze



STREET SIGN BRACKET ASSEMBLY:
36-1/2" LG. x 7/8" DIA. HEAVY WALL PIPE W/ ALUMINUM KNOB THREADED & WELDED TO BRACKET HALVE, CAST ALUMINUM LADDER REST WELDED TO OTHER HALF, CAST ALUMINUM 36" x 9" SIGN ATTACHED TO ARM W/ CAST ALUMINUM CLAMP-ON BRACKETS
(specify colors & lettering on sign)

POLE ASSEMBLY: MODIFIED,
4" ROUND SMOOTH ALUMINUM MODIFIED W/ CAP & FINIAL,
0.125" WALL THICKNESS,
CAST ALUMINUM BASE W/ ACCESS COVER

BASE TEMPLATE
#T01700944

PRODUCT APPROVALS	
HADCO	JAZ
CUSTOMER	

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PHILIPS
HADCO

100 Craftway Drive
Littlestown, Pa 17340
Phone 800-331-4185
Fax 717-359-9289
www.philips.com

JOB NAME:
Davis Avenue Renovation – Nassau Comm. College

DRAWN BY:
H. KUHN

SCALE:	DATE:
1:16	07/31/15

DRAWING NUMBER:
C13371-DWG03

REP:
Dave Murphy

REV: A	PCN: 15-023
BY: .	DATE: .

Division 02 Section 265600

Lighting – Pedestrian

Product:

Lithonia MR1

Manufacturer:
Lithonia Lighting
One Lithonia Way
Conyers, GE 30012
Phone: 800.279.8041
www.lithonia.com

Or approved equal.

Locations/Applications:

For use in lighting pedestrian ways throughout general campus areas including; plazas, walkways, shared pedestrian-service ways, and open spaces.

Product Requirements:

Fixture and Luminaire:

- Type 1: MR1 LED, Omero Family
- Type 2: MRP LED, Omero Family
- LED lamp
- Single fixture mount
- Sharp cut-off

Pole:

- Round pole

Color:

- Dark Bronze Pole with Natural Aluminum Arm and Fixture (e.g. Cluster Plaza)
- Alternative; Natural Aluminum Pole and Fixture (e.g. Life Science Building)

Mounting Height

- General Use Mounting Height A – 12’ for use along pedestrian ways throughout campus.
- Special Use Mounting Height B – 14’ within major plazas where extended open ground plane is desired and poles are minimized, and along primary pedestrian ways where use of mounted banners is potentially desired. (Mounting height of existing pedestrian fixtures within Cluster Plaza to be confirmed.)

MR1 LED
LED Area Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The Omero™ family of luminaires blends a traditional round dayform with contemporary, low-profile styling to accent architectural elements in a variety of applications.

The MR1 LED combines the latest in LED technology with the designer aesthetic of the Omero™ family for stylish, high-performance illumination that lasts. The MR1 LED is ideal for replacing 100-250W metal halide in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Specifications

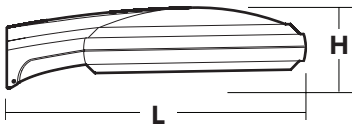
EPA: 0.54 ft² *(0.05 m²)*

Length: 24-1/2" *(62.2 cm)*

Width: 18-5/8" *(47.3 cm)*

Height: 6-3/8" *(16.2 cm)*

Weight (max): 31 lbs *(14.7 kg)*



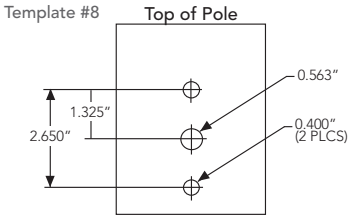
Ordering Information

EXAMPLE: MR1 LED 1 63B350/40K SR5 MVOLT SPA DDBXD

MR1 LED							
Series	**Light Engines**	**Performance Package** [1]	**Distribution**	**Voltage**	**Mounting**	**Options**	**Finish** *(required)*
MR1 LED	1 One engine (49 or 63 LEDs)	**350 mA options:** 49B350/30K 3000K 49B350/40K 4000K 49B350/50K 5000K 63B350/30K 3000K 63B350/40K 4000K 63B350/50K 5000K **530 mA options:** 63B530/30K 3000K 63B530/40K 4000K 63B530/50K 5000K	SR2 Type II SR3 Type III SR4 Type IV SR5 Type V	MVOLT [2] 120 [2] 208 [2] 240 [2] 277 [2] 347 480	**Shipped included** SPA Square pole mounting RPA Round pole mounting WBA Wall bracket	**Shipped installed** PER NEMA twist-lock receptacle only (no controls) DMG 0-10V dimming driver (no controls) [3] SF Single fuse (120, 277, 347V) [4] DF Double fuse (208, 240, 480V) [4] DFL Diffusing lens **Shipped separately** VG Vandal guard [5]	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

Drilling

Template #8



Omero™ shares a unique drilling pattern with the AERIS™ family. Specify this drilling pattern when specifying poles, per the table below.

DM19AS	Single unit	**DM29AS**	2 at 90°
DM28AS	2 at 180°	**DM39AS**	3 at 90°
DM49AS	4 at 90°	**DM32AS**	3 at 120° *

Example: SSA 20 4C **DM19AS** DDBXD

Visit Lithonia Lighting's POLES CENTRAL to see our wide selection of poles, accessories and educational tools.

Tenon Mounting Slipfitter *

Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2-3/8"	AST20-190	AST20-280	AST20-290	AST20-320	AST20-390	AST20-490
2-7/8"	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4"	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

** For round pole mounting (RPA) only.*

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [6]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [6]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [6]
SC U	Shorting cap [6]
MR1VG U	Vandal guard accessory
KMA8 DDBXD U	Mast arm adapter
SPA19/AS DDBXD U	Square pole DM19 to DM19AS adapter
RPA19/AS DDBXD U	Round pole DM19 to DM19AS adapter

For more control options, visit DTL and ROAM online.

NOTES

1. Configured with 4000K (40K) provides the shortest lead times. Consult factory for 3000K (30K) and 5000K (50K) lead times.
2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
3. Not available with 347 or 480V.
4. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
5. Also available as a separate accessory; see Accessories information at left.
6. Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.

LITHONIA LIGHTING

One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • www.lithonia.com

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%. Contact factory for performance data on any configurations not shown here.

LEDs	Drive Current (mA)	Performance Package	System Watts	Dist. Type	40 K (4000 K, 67 CRI)				
					Lumens	B	U	G	LPW
1 (49 LEDs)	350	49B350/--K	59W	SR2	5054	1	0	1	86
				SR3	4594	1	0	1	78
				SR4	4515	1	0	1	77
				SR5	4709	2	0	1	78
1 (63 LEDs)	350	63B350/--K	75W	SR2	6081	1	0	1	81
				SR3	6239	1	0	1	83
				SR4	6069	1	0	1	81
				SR5	6354	3	0	1	85
	530	63B530/--K	108W	SR2	8035	2	0	2	74
				SR3	8243	2	0	2	76
				SR4	8004	2	0	2	74
				SR5	8338	3	0	1	77

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	**77°F**	**1.00**
30°C	86°F	1.00
40°C	104°F	0.99

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **MR1 LED 1 63B530** platform in a **40°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.92	0.87

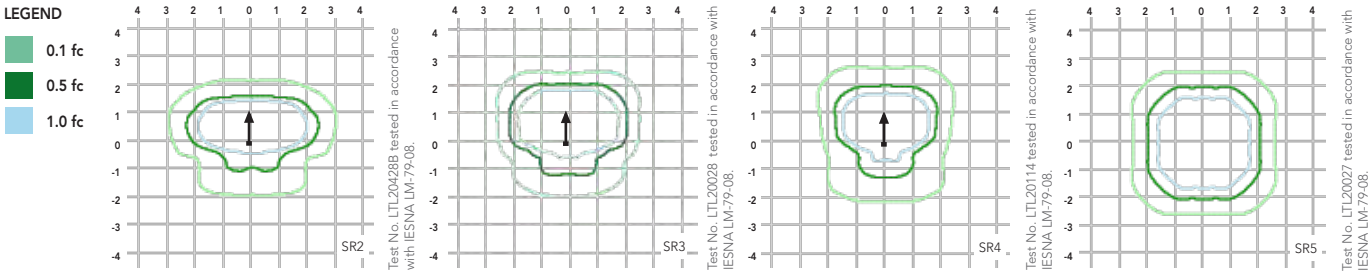
Electrical Load

Light Engines	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
1 (49)	350	59W	0.55	0.32	0.27	0.24	0.19	0.14
1 (63)	350	75W	0.69	0.40	0.35	0.30	0.24	0.17
	530	108W	1.00	0.58	0.50	0.43	0.35	0.25

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's MR1 LED homepage.

Isofootcandle plots for the MR1 LED 1 63B530/40K. Distances are in units of mounting height (20').



FEATURES & SPECIFICATIONS

INTENDED USE
Ideal for parking areas, street lighting, walkways and car lots.

CONSTRUCTION
Single-piece die-cast aluminum housing with nominal wall thickness of .012". Die-cast doorframe has impact-resistant, tempered glass lens (3/16" thick). Doorframe is fully gasketed with one-piece tubular silicone.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum and white. Available in textured and non-textured finishes.

OPTICS
Precision acrylic refractive optics for optimum light distribution through the flat glass lens. Light engines are available in standard 4000K (67 CRI) or optional 3000K (80 CRI) or 5000K (67 CRI) configurations.

ELECTRICAL
Light engine consists of 49 or 63 high-efficacy LEDs mounted to a metal-core circuit board and aluminum heat sink, ensuring optimal thermal management and long life. Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Easily-serviceable surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

INSTALLATION
Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls. The MR1 LED utilizes the AERIS™ series pole drilling pattern.

LISTINGS
CSA certified to U.S. and Canadian standards. IP65 rated. **U.S. Patent No. D556,357.**

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY
Five year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Specifications subject to change without notice.

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MRP LED
LED Area Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

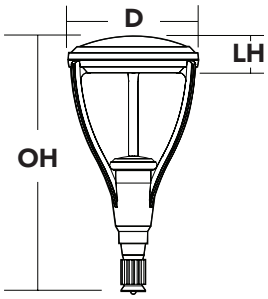
Introduction

The Omero™ family of luminaires blends a traditional round dayform with contemporary, low-profile styling to accent architectural elements in a variety of applications.

The MRP LED combines the latest in LED technology with the designer aesthetic of the Omero™ family for stylish, high-performance illumination that lasts. The MRP LED is ideal for replacing 100-250W metal halide in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Specifications

EPA:	1.125 ft² *(0.105 m²)*
Luminaire Height:	6-3/8″ *(16.2 cm)*
Overall Height:	32″ *(81.3 cm)*
Diameter:	18″ *(45.7 cm)*
Weight (max):	37.5 lbs *(17 kg)*



Ordering Information

EXAMPLE: MRP LED 1 63B350/40K SR5 MVOLT DDBXD

MRP LED							
Series	**Light Engines**	**Performance Package** [1]	**Distribution**	**Voltage**	**Mounting**	**Options**	**Finish** *(required)*
MRP LED	1 One engine (49 or 63 LEDs)	**350 mA options:** 49B350/30K 3000K 49B350/40K 4000K 49B350/50K 5000K 63B350/30K 3000K 63B350/40K 4000K 63B350/50K 5000K **530 mA options:** 49B530/30K 3000K 49B530/40K 4000K 49B530/50K 5000K 63B530/30K 3000K 63B530/40K 4000K 63B530/50K 5000K	SR2 Type II SR3 Type III SR4 Type IV SR5 Type V	MVOLT [2] 120 [2] 208 [2] 240 [2] 277 [2] 347 480	**Shipped included** (blank) Fits 4″OD round pole **Shipped separately** [3] MRPT20 2-3/8″ tenon slipfitter MRPT25 2-7/8″ tenon slipfitter MRPT30 3-1/2″tenon slipfitter MRPT35 4″tenon slipfitter MRPF3 3″OD round pole adapter MRPF5 5″OD round pole adapter [4]	**Shipped installed** PER NEMA twist-lock receptacle only (no controls) DMG 0-10V dimming driver (no controls) [5] SF Single fuse (120, 277, 347V) [6] DF Double fuse (208, 240, 480V) [6] DFL Diffusing lens BL30 Switched dimming, 30% [7] BL50 Switched dimming, 50% [7]	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [8]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [8]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [8]
SC U	Shorting cap [8]
MRPT20 DDBXD U	2-3/8″ tenon slipfitter (specify finish)
MRPT25 DDBXD U	2-7/8″ tenon slipfitter (specify finish)
MRPT30 DDBXD U	3-1/2″ tenon slipfitter (specify finish)
MRPT35 DDBXD U	4″ tenon slipfitter (specify finish)
MRPF3 DDBXD U	3″ OD round pole adapter (specify finish)
MRPF5 DDBXD U	5″ OD round pole adapter (specify finish) [4]

For more control options, visit DTL and ROAM online.

NOTES

1. Configured with 4000K (40K) provides the shortest lead times. Consult factory for 3000K (30K) and 5000K (50K) lead times.
2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options).
3. Also available as a separate accessory; see Accessories information at left.
4. Maximum pole wall thickness is 0.156″.
5. Not available with 347 or 480V.
6. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
7. Requires an additional switched line. Dimming driver standard. MVOLT only.
8. Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.

LITHONIA LIGHTING

One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • www.lithonia.com
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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%. Contact factory for performance data on any configurations not shown here.

Light Engines	Drive Current (mA)	Performance Package	System Watts	Dist. Type	40K (4000K, 67 CRI)				
					Lumens	B	U	G	LPW
1 (49 LEDs)	350	49B350/--K	58 W	SR2	5043	1	3	1	87
				SR3	5024	1	3	1	85
				SR4	5032	1	3	1	85
				SR5	5218	2	3	1	87
1 (63 LEDs)	350	63B350/--K	73 W	SR2	6167	1	3	1	84
				SR3	6408	2	3	1	85
				SR4	6368	1	3	1	85
				SR5	6577	3	3	1	88
	530	63B530/--K	109W	SR2	8269	2	3	2	76
				SR3	8208	2	3	2	76
				SR4	8196	2	3	2	76
				SR5	8671	3	3	1	80

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	**77°F**	**1.00**
30°C	86°F	1.00
40°C	104°F	0.99

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **MRP LED 1 63B530** platform in a **40°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.92	0.87

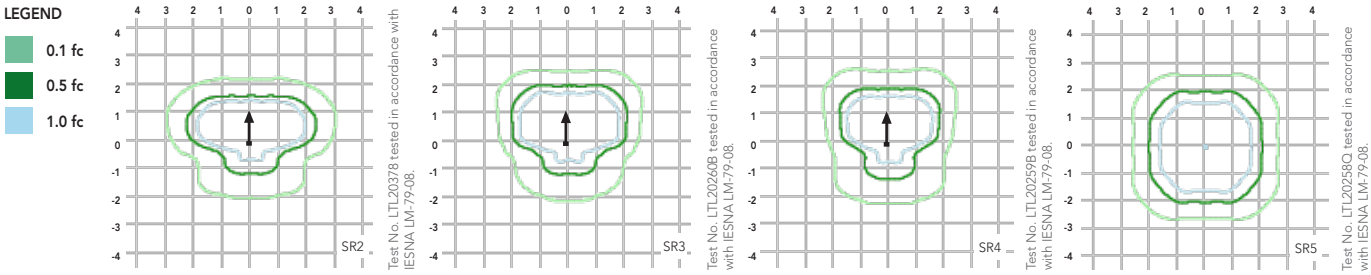
Electrical Load

Light Engines	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
1 (49)	350	58W	0.54	0.31	0.27	0.23	0.19	0.13
1 (63)	350	73W	0.68	0.39	0.34	0.29	0.23	0.17
	530	109W	1.01	0.58	0.50	0.44	0.35	0.25

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's MRP LED homepage.

Isofootcandle plots for the MRP LED 1 63B530/40K. Distances are in units of mounting height (20').



FEATURES & SPECIFICATIONS

INTENDED USE
Streets, walkways, parking lots and surrounding areas.

CONSTRUCTION
Single-piece die-cast aluminum housing with nominal wall thickness of .012". Die-cast top access doorframe has impact-resistant, tempered glass lens (3/16" thick). Doorframe is fully gasketed with one-piece tubular silicone.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum and white. Available in textured and non-textured finishes.

OPTICS
Precision acrylic refractive optics for optimum light distribution through the flat glass lens. Light engines are available in standard 4000K (67 CRI) or optional 3000K (80 CRI) or 5000K (67 CRI) configurations.

ELECTRICAL
Light engine consists of 49 or 63 high-efficacy LEDs mounted to a metal-core circuit board and aluminum heat sink, ensuring optimal thermal management and long life. Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Easily-serviceable surge protection device meets a minimum Category C Low for operation (per ANSI/IEEE C62.41.2).

INSTALLATION
Standard post-top mounting configuration fits into a 4" OD open pole top (round pole only). Multiple options and accessories are available for other mounting needs.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40°C minimum ambient. **U.S. Patent No. D556,357.**

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY
Five year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Specifications subject to change without notice.

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Division 02 Section 265600

Lighting – Pedestrian

Product:

Philips Hadco New London

Manufacturer:
Philips Hadco
100 Craftway Drive
Littlestown, PA 17340
Phone: 717.359.7131
www.philips.com

Or approved equal.

Locations/Applications:

For use in lighting pedestrian ways within designated "historic" campus area.

Product Requirements:

Fixture and Luminaire:

- Philips Hadco New London LED
- 64 LED Board
- 4000 K color temperature
- Single fixture pole top mount

Pole:

- Round tapered pole

Color:

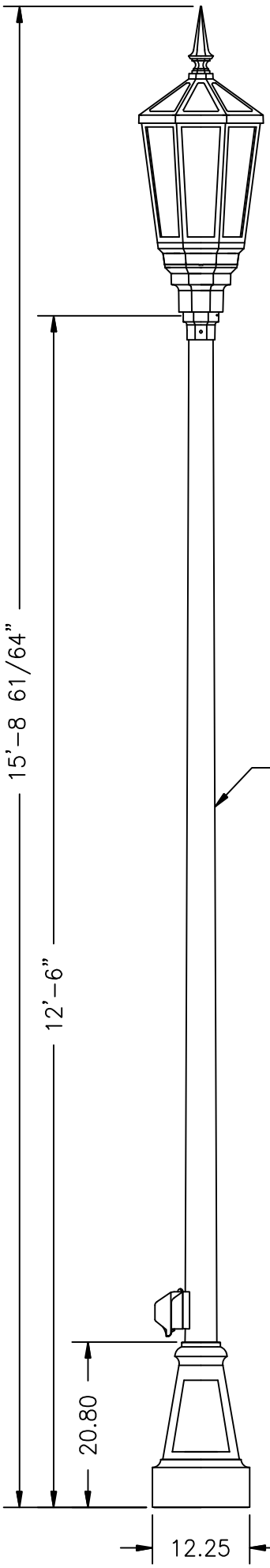
- Bronze Finish

Mounting Height

- General Use Mounting Height A – 12'-6" for use along pedestrian ways throughout campus.
- Special Use Mounting Height B – 14' within major plazas where extended open ground plane is desired and poles are minimized, and along Primary Pedestrian Mall where use of mounted banners is potentially desired.

Ordering Guide:

C13371: LUMINAIRE
CP13371: POLE ASSEMBLY

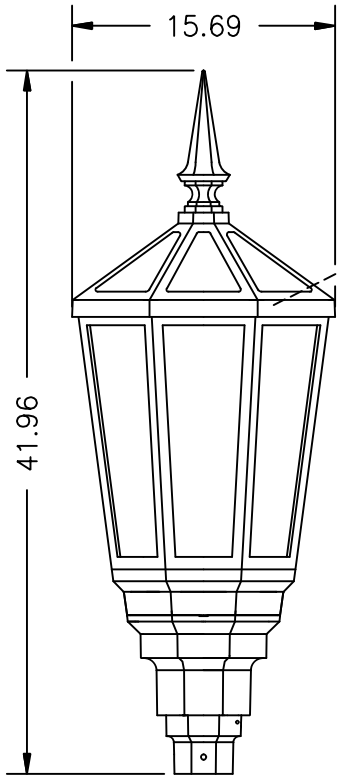


Color:
Bronze

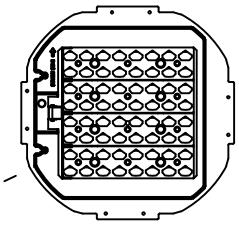
POLE ASSEMBLY: MODIFIED, 4"-3" ROUND SMOOTH TAPERED ALUMINUM, 0.125" WALL THICKNESS, 120V DUPLEX OUTLET W/ IN-USE COVER (aligned w/ house side), CAST ALUMINUM BASE W/ ACCESS COVER

BASE TEMPLATE
#T01700944

Luminaire Detail
Scale 1:12



Philips LEDgine
Mounted in roof



PANELS:
- FROSTED

COLOR:
- BRONZE

PHOTO CONTROL:
- NONE

Philips LEDgine Specifications:

- 64, 4000K (nuetral) Philips Lumileds Luxeon R LEDs, minimum 70 Color Rendering Index (CRI), >100,000 hours of operational life (at 25°C ambiant temperature & 70% lumen maintenance), injection molded Type III optical plates, IP66 rated LED module.
- Philips Advance Xitanium LED driver, class 1, IP66 rated, 350mA, IntelliVolt 120-277 VAC, 50-60 Hz, RoHS compliant, field replaceable 10kA/10kA surge supression.

Luminaire Certifications:

- ETL/cETL listed to U.S. & Canadian safety standards for wet locations, manufactured to ISO 9001:2008 standards, LM79 & LM80 tested.

PRODUCT APPROVALS	
HADCO	SDK
CUSTOMER	

CONFIDENTIAL:
This drawing is confidential and proprietary to Philips Hadco and may not be reproduced without the express written consent of Philips Hadco. Any use hereof or of any of the information or detail herein shall be for the sole benefit of Philips Hadco.

NOTICE:
This drawing is for reference only. Check for latest revision prior to ordering.

PHILIPS
HADCO

100 Craftway Drive
Littlestown, Pa 17340
Phone 800-331-4185
Fax 717-359-9289
www.philips.com

JOB NAME:
Davis Avenue Renovation - Nassau Comm. College

DRAWN BY:
H. KUHN

SCALE:	DATE:
1:20	06/11/15

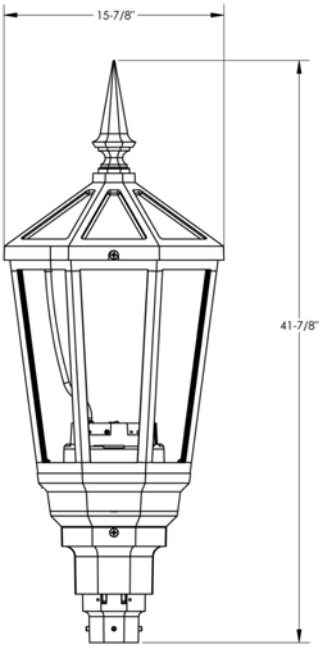
DRAWING NUMBER:
C13371-DWG01

REP:
Dave Murphy

REV: A	PCN: 15-021
BY: .	DATE: .

New London LED (VX8911) Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:



Ordering Guide

Example: VX8911 32 A C 3 N N A 3 A S S

Product Code	VX8911	New London LED	
LED	32	32 LED's	
	48	48 LEDs	*2
	64	64 LED's	*2
	80	80 LED's	*2
Finish	A	Black	
	B	White	
	G	Verde	
	H	Bronze	
	J	Green	
PANELS	C	Clear	
	F	Frosted	
Optics	3	Type III	
	5	Type V	
Photo Control	N	None	
	R	Twist-lock Receptacle	
	E	120 VAC Button Eye	
	H	208/240/277 VAC Button Eye	
	K	347V Button Eye	
Color Temperature	N	4000K	
	C	5700K	*1
Voltage	A	120-277 VAC	
	B	347-480 VAC	*3
Drive Current	3	350 mA	
	5	530 mA	
Dimming Control	A	4 Hrs 25% Reduction	
	B	4 Hrs 50% Reduction	
	C	4 Hrs 75% Reduction	
	D	6 Hrs 25% Reduction	
	E	6 Hrs 50% Reduction	
	F	6 Hrs 75% Reduction	
	G	8 Hrs 25% Reduction	
	H	8 Hrs 50% Reduction	
	J	8 Hrs 75% Reduction	
	Z	Custom Dimming Schedule	
	N	None	
Surge Suppression	S	Standard Built In <3kV	
	A	Additional 10kV/10kA	
Options	S	Spikes	

*1 Consult Factory for 5700K
*2 Only available with 350mA
*3 Dimming not available with 347-480V

Specifications

APPLICATIONS:
This luminaire is the perfect LED solution for traditional street lighting. Other application locations include: residential streets, city streets, campuses and parking lots. This luminaire offers the style of a traditional lantern with today's cutting edge LEDgine technology

LED SPECIFICATIONS:
Refer to IES files for energy consumption and delivered lumens for each option. Based on in-situ thermal testing and data from Philips Lumileds and Philips Advance fixture can be expected to reach 100,000 hours (at >L70 lumen maintenance @ 25°C). The Philips LEDGINE uses Philips Lumileds Luxeon R LEDs. Color temperatures available are ANSI Bins 4000K and 5700K CCT (consult factory for 5700K). Two distributions are available including Type 3 and 5.

ELECTRONIC DRIVER:
The driver included is the Philips Advance XITANIUM LED driver and is available in a 350mA & 530mA drive current. Standard driver offers 0-10V dimming capability and universal voltage input from 120-277VAC or 347-480VAC. Input frequency is 50-60Hz and all XITANIUM drivers are RoHS compliant. The driver has <3kV surge suppression built in, and the 10kV/10kA is included in an additional option. Programmable dimming 0-10V is optional.

Note: Philips reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice.
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HW2

New London LED (VX8911) Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:

HOUSING:
Hinged roof with stainless steel thumb screw. Optional cast aluminum spikes available. 360 low-copper die-cast aluminum alloy . All non-ferrous fasteners prevent corrosion and ensure longer life. Slip Fitter Dimensions: 3" I.D. x 3" deep .

PANELS:
Two panel options. Clear panels are made from a sheet of U.V Stabilized material. Frosted Panels are made from a sheet of U.V. Stabilized injection molded. Panels are attached with a clip and can easily be removed for cleaning

FINISH:
Thermoset polyester powdercoat is electrostatically applied after a five-stage conversion cleaning process and bonded by heat fusion thermosetting. Laboratory tested for superior weatherability and fade resistance in accordance with ASTM B117 specifications. For larger projects where a custom color is required, contact the factory for more information.

CONTROLS:
Wireless dimming options are also available, contact the factory for details. There are 9 standard factory set dimming schedules available. See specification sheet for details. A custom dimming schedule is available by contacting the factory. Built in dyandimmer does not allow for dimming override features.

CERTIFICATIONS:
ETL Listed to U.S. safety standards for wet locations. cETL listed to Canadian safety standards for wet locations. Manufactured to ISO 9001:2008 Standards. Luminaire photometric testing performed in accordance with IESNA LM-79 guidelines. Photometric .ies files that include "LM79" in the file name are verified by an independent NVLAP accredited lab. LEDs tested by an ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines in compliance with EPA ENERGY STAR, extrapolations in accordance with IESNA TM-21. RoHS compliant LEDs and LED drivers.

WARRANTY:
5 year extended warranty

OPTIONS:
Optional integral surge suppression device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground. Enclosure for surge suppression device is constructed of high temperature, flameproof material with an 85°C maximum surface temperature rating. The device consists of a thermally protected transient overvoltage circuit and is designed for use with universal voltage ballasts and drivers.

AWARDS & RECOGNITIONS:
Buy American and ARRA Compliant - commercially available off-the-shelf (COTS) product proudly designed and Made in the U.S.A.

Height :
With Spikes 42" (107cm)

Width:
With Spikes 17 1/2" (44.5cm)

Height :
Without Spikes 42" (107cm)

Width:
Without Spikes 15 3/4" (40cm)

Max. EPA:
2.7 sq. ft.

Max. Weight:
38.5 lbs.

Note: Philips reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice.
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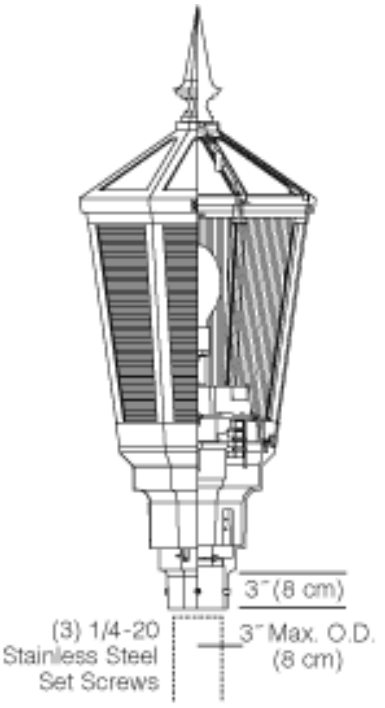
HW2

New London Small (V8915) Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:



Ordering Guide

Example: V8915 A B4 N D 70S E S

Product Code	V8915	New London Small	
Finish	A	Black	
	B	White	
	G	Verde	
	H	Bronze	
	J	Green	
Optics	B4	Type IV Refractive Panels	
	B5	Type V Refractive Panels	
	T3	Type III Cutoff	*1
	T5	Type V Cutoff	*1
Photo Control	N	None	
	B	Button Eye Photo Control	
	R	Twist-lock Receptacle	
Socket	D	Medium	
	G	Mogul	
Wattage	70S	70W HPS	
	100S	100W HPS	
	150S	150W HPS	
	70H	70W MH	*2
	100H	100W MH	*2
	150H	150W PMH	
Voltage	E	120V	
	F	208V	
	G	240V	
	H	277V	
	K	347V	
Options	S	Spikes	

*1 Cutoff optics available with Medium base (D) socket only.
*2 Available with Medium base (D) socket only.
*3 Avaialable with Mogul base (G) socket only.
*4 Not available in 347V (K).

Specifications

HOUSING:
360 low-copper die-cast aluminum alloy . Tool-less lamp access. Hinged roof with stainless steel thumb screw. Tool-less ballast access. Twistlock ballast assembly with quick disconnects for easy maintenance. A weatherproof ballast assembly isolates the ballast from water and heat for longer life. The optional photo control eye or twist-lock receptacle is located in the ballast enclosure for easy access via a removable door. All non-ferrous fasteners prevent corrosion and ensure longer life. Slip Fitter Dimensions: 3" I.D. x 3" deep . Optional cast aluminum spikes available.

FINISH:
Thermoset polyester powdercoat is electrostatically applied after a five-stage conversion cleaning process and bonded by heat fusion thermosetting. Laboratory tested for superior weatherability and fade resistance in accordance with ASTM B117 specifications. For larger projects where a custom color is required, contact the factory for more information.

OPTICAL ASSEMBLY:
Type IV Refractive Panels (Includes internal House Side Shield). Type V Refractive Panels. Optically designed, U.V. stabilized, injection molded, acrylic refractive panels. Type III Cutoff. Type V Cutoff. Precision formed, segmented specular aluminum internal cutoff reflector with horizontal lamp mounting. U.V. stabilized, injection molded, clear acrylic panels. Tool-less removal panels for ease of cleaning.

LAMPING:
MH and HPS Medium base: E17. MH Mogul base: ED28. HPS Mogul base: E23.5.

ELECTRICAL ASSEMBLY:
Twistlock Ballast Assembly with Quick Disconnects for easy maintenance. Ballasts are HPF core and coil. 4kv rated porcelain mini-can base. Nickel-plated screw shell with center contact. 4kv rated mogul base porcelain socket. Nickel-plated screw shell with center contact.

BALLAST:
All HID ballasts are core and coil and regulated with power factors better than 90% (HPF). Ballast provides +/- 5% lamp power regulation with +/- 10% input voltage regulation. Ballasts are factory pre-wired and tested. Metal halide ballasts are capable of starting at -20° F or -30° C and HPS at -40°F or -40°C. NOTE: All ballasts are EISA / Title 20 / Title

Note: Philips reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice.
100 Craftway Drive, Littlestown, PA 17340 | P: +1-717-359-7131 F: +1-717-359-9289 | http://www.hadco.com/ | Copyright 2013 Philips
HW1

New London Small (V8915) Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:

24 compliant where applicable.

CERTIFICATIONS:
ETL Listed to U.S. safety standards for wet locations. cETL listed to Canadian safety standards for wet locations. Manufactured to ISO 9001:2008 Standards.

WARRANTY:
Three-year limited warranty.

Height :
With Spikes 35 1/2" (91cm)

Width:
With Spikes 15 1/2" (39cm)

Height :
Without Spikes 35 1/2" (91cm)

Width:
Without Spikes 14" (36cm)

Max. EPA:
2.30 sq. ft.

Max. Weight:
43 lbs

IESNA Classifications:
Semi Cutoff: Refractive Panels

IESNA Classifications:
Cutoff: Cutoff Optics

Note: Philips reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice.
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HW1

Division 02 Section 265600

Lighting – Bollard

Product:

Lithonia D-Series LED Bollard

Manufacturer:
Lithonia Lighting
One Lithonia Way
Conyers, GE 30012
Phone: 800.279.8041
www.lithonia.com

Or approved equal.

Locations/Applications:

For use as supplemental pedestrian lighting for optional use in pedestrian gathering areas such as plazas, courtyards, gardens, and at drop offs and building entries.

Bollard lighting focuses light at lower levels and provides accent and pattern and to more intimate spaces. As such it is recommended that it be designed for use as a supplement to campus pedestrian pole lighting and architectural building face lighting – both of which are better suited for providing light at the levels useful for illuminating faces. Strategic replacement of existing linear pathway bollard use with pedestrian pole lights is recommended for more effective area lighting and a more cost effective lighting solution.

Product Requirements:

Fixture and Luminaire:

- D-Series Bollard Light
- LED lamp
- Single fixture mount
- 8”diameter round
- 42” height
- Asymmetric and symmetric distribution options
- Extruded aluminum shaft
- Full cut-off luminaire with zero up-lighting
-

Color: (to be determined based on decision regarding pedestrian pole light)

- Dark Bronze
- Alternative; Natural Aluminum

D-Series
LED Bollard

d-series

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

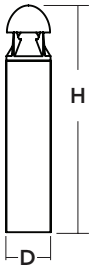
The D-Series LED Bollard is a stylish, energy-saving, long-life solution designed to perform the way a bollard should—with zero uplight. An optical leap forward, this full cut-off luminaire will meet the most stringent of lighting codes. The D-Series LED Bollard's rugged construction, durable finish and long-lasting LEDs will provide years of maintenance-free service.

Specifications

Diameter: 8" Round *(20.3 cm)*

Height: 42" *(106.7 cm)*

Weight (max): 27 lbs *(12.25 kg)*



Ordering Information

EXAMPLE: DSXB LED 16C 700 40K SYM MVOLT DDBXD

DSXB LED								
Series	**LEDs**	**Drive current**	**Color temperature**	**Distribution**	**Voltage**	**Control options**	**Other options**	**Finish** *(required)*
DSXB LED	**Asymmetric** 12C 12 LEDs[1] **Symmetric** 16C 16 LEDs[2]	350 350 mA 450 450 mA [3,4] 530 530 mA 700 700 mA	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted AMBLW Amber limited wavelength [3,4]	ASY Asymmetric [1] SYM Symmetric [2]	MVOLT [5] 120 [5] 208 [5] 240 [5] 277 [5] 347 [4]	**Shipped installed** PE Photoelectric cell, button type DMG 0-10V dim-ming driver (no controls) ELCW Emergency battery backup[6]	**Shipped installed** SF Single fuse (120, 277, 347V) [4,7] DF Double fuse (208, 240V) [4,7] H24 24" overall height H30 30" overall height H36 36" overall height FG Ground-fault festoon outlet L/AB Without anchor bolts L/AB4 4-bolt retrofit base without anchor bolts [8]	DWHXD White DNAXD Natural aluminum DDBXD Dark bronze DBLXD Black DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

Accessories

Ordered and shipped separately.

MRAB U Anchor bolts for DSXB [8]

NOTES

1. Only available in the 12C, ASY version.
2. Only available in the 16C, SYM version.
3. Only available with 450 AMBLW version.
4. Not available with ELCW.
5. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options), or photocontrol (PE option).
6. Not available with 347V. Not available with fusing. Not available with 450 AMBLW.
7. Single fuse (SF) requires 120, 277, or 347 voltage option. Double fuse (DF) requires 208 or 240 voltage option.
8. MRAB U not available with L/AB4 option.

LITHONIA LIGHTING

One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • www.lithonia.com

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Performance Data

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%.

Light Engines	Drive Current	System Watts	3000 K					4000 K					5000 K					Limited Wavelength Amber				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
Asymmetric 3 Engines (12 LEDs)	350	16	715	45	1	0	1	889	56	1	0	1	953	60	1	0	1					
	530	22	985	45	1	0	1	1,239	56	1	0	1	1,334	61	1	0	1					
	700	31	1,263	41	1	0	1	1,588	51	1	0	1	1,712	55	1	0	1					
	Amber 450	16																348	22	1	0	1
Symmetric 4 Engines (16 LEDs)	350	20	923	46	1	0	1	1,161	58	1	0	1	1,251	63	1	0	1					
	530	28	1,274	46	1	0	1	1,603	57	1	0	1	1,726	62	1	0	1					
	700	39	1,634	42	1	0	1	2,055	53	1	0	1	2,215	57	1	0	1					
	Amber 450	20																419	21	1	0	1

Note: Available with phosphor-converted amber LED's (nomenclature AMBPC). These LED's produce light with 97+% >530 nm. Output can be calculated by applying a 0.7 factor to 4000 K lumen values and photometric files.

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.00	0.98	0.97	0.95

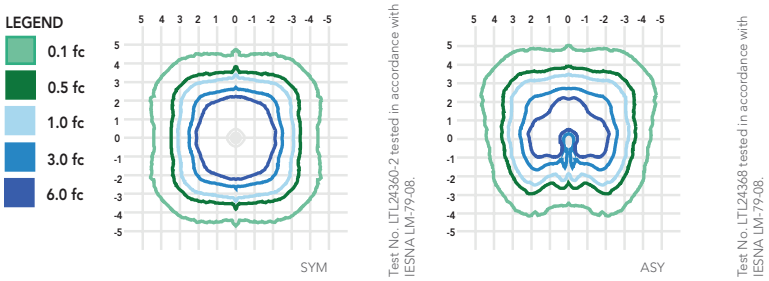
Electrical Load

Light Engines	Drive Current (mA)	System Watts	Current (A) 120	208	240	277	347
12C	350	16W	0.158	0.118	0.114	0.109	0.105
	530	22W	0.217	0.146	0.136	0.128	0.118
	700	31W	0.296	0.185	0.168	0.153	0.139
	Amber 450	16W	0.161	0.120	0.115	0.110	0.106
16C	350	20W	0.197	0.137	0.128	0.121	0.114
	530	28W	0.282	0.178	0.162	0.148	0.135
	700	39W	0.385	0.231	0.207	0.185	0.163
	Amber 450	20W	0.199	0.139	0.130	0.123	0.116

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Bollard homepage.

Isofootcandle plots for the DSXB LED 700 40K. Distances are in units of mounting height (3').



FEATURES & SPECIFICATIONS

INTENDED USE
The rugged construction and maintenance-free performance of the D-Series LED Bollard is ideal for illuminating building entryways, walking paths and pedestrian plazas, as well as any other location requiring a low-mounting-height light source.

CONSTRUCTION
One-piece 8-inch-round extruded aluminum shaft with thick side walls for extreme durability, and die-cast aluminum reflector and top cap. Die-cast aluminum mounting ring allows for easy leveling even in uneven areas and full 360-degree rotation for precise alignment during installation. Three ½" x 11" anchor bolts with double nuts and washers and 3-5/8" max. bolt circle template ensure stability. Overall height is 42" standard.

FINISH
Exterior parts are protected by a zinc-infused super durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering for maximum retention of gloss and luster. A tightly controlled multi-stage process ensures a minimum 3-mil thickness for a finish that can withstand the elements without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS
Two 0% uplight optical distributions are available: symmetrical and asymmetrical. IP66 sealed LED light engine provides smoothly graduated illumination without uplight. Light engines are available in standard 4000 K (>70 CRI) or optional 3000 K (>80 CRI) or 5000 K (67 CRI). Limited-wavelength amber LEDs are also available.

ELECTRICAL
Light engines consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (L95/100,000 hours at 700mA at 25°C). Class 2 electronic drivers are designed for an expected life of 100,000 hours with < 1% failure rate. Electrical components are mounted on a removable power tray.

LISTINGS
CSA certified to U.S. and Canadian standards. Light engines are IP66 rated. Rated for -40°C minimum ambient. Cold-weather emergency battery backup rated for -20°C minimum ambient.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY
Five-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Specifications subject to change without notice.

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Division 02 Section 265600

Lighting – In Pavement Accent

Product:

LED in pavement cube accent light

Manufacturer:
Radiant Lighting
PO Box 2088
Ocean, NJ 07712
Phone: 732.695.0144
www.ledlightingfactory.com

Or approved equal.

Locations/Applications:

For use as specialty accent option within pedestrian gathering areas plazas, courtyards, gardens, covered Cluster walkways, or in relationship to building entry ways.

Product Requirements:

Fixture and Luminaire:

- Porfido series
- Light-weight drive over in pavement fixture
- LED lamp
- Slip-proof tempered glass
- Suitable for outdoor use

Color:

- Blue light
- Alternative White Light

Porfido has been selected for the **ADI DESIGN INDEX** 2002 competing for the "**Compasso d'Oro**" award

design: Pier Filippo Ferrari

Porfido

Signal lighting fixtures

Focus on the range

Lightweight **drive-over lighting fixture**

Maintenance free

Slip-proof **tempered** glass

Available in **different colours**

Fixture for lightweight drive-over applications in high resistance glass that simulates the **floor porfido**, suitable for indoors and outdoors.

Thanks to the considerably long life of the light source (80,000 - 100,000 hours) it can be mounted directly inside masonry.
The **IP68** protection level and the low supply voltage (12Vdc, two control gears are available, 15 or 50 W) allow the fixture to be installed in fountains, streams and ponds.
An electronic circuit inside Porfido guarantees total stability of the light beam (the LED is dc powered), and it is totally immune to any drops in voltage there may be along the supply cables (from 9 to 15Vdc voltage permitted without alterations to the light beam).

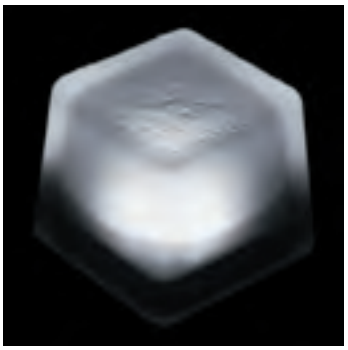
The fixture works with a d.c. voltage and has inverse polarity protection (it will not start if the connection is wrong), it has an input of approximately 300mA.
Porfido's electronic component is **completely** embedded in resin to ensure total waterproofness. The neoprene cable leading out can be buried with no problem.

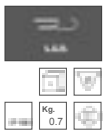
A connecting kit is supplied with a thermoshrinking sheath (with glue inside) for quick and easy waterproof electrical connections. **Parallel connections** are possible; with a 15 W transformer up to 4 porfidi can be powered, 14 with 50 Watts. There is a choice of three different heights in the Porfido for pole version.

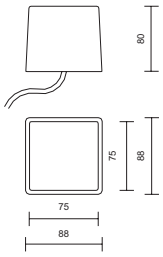
left:
San Biagio di Callalta downtown square (Treviso)

Thanks to the roughness of the **extra thick tempered glass** surface, the Porfido fixture simply disappears during the day, becoming one with the floor.

ground LED signals in tempered glass IP68 **Porfido** 88x88x80







Static load **1,000 Kg**
Maximum transit speed **30 Km/h**
Protection against impacts **IK = 9**

white LED, 3.6W 9÷15v d.c.
fixture without control gear

drive-over recessed fixture 1000 Kg
available in five colours

fixture 76280.00

control gear **_____.__**

amber LED, 3.6W 9÷15v d.c.

fixture **76282.00**

control gear **_____.__**

blue LED, 3.6W 9÷15v d.c.
fixture without control gear

fixture **76281.00**

control gear **_____.__**

green LED, 3.6W 9÷15v d.c.

fixture **76284.00**

control gear **_____.__**

red LED, 3.6W 9÷15v d.c.

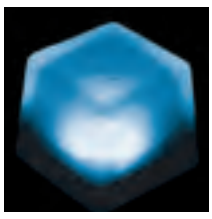
fixture **76285.00**

control gear **_____.__**

white

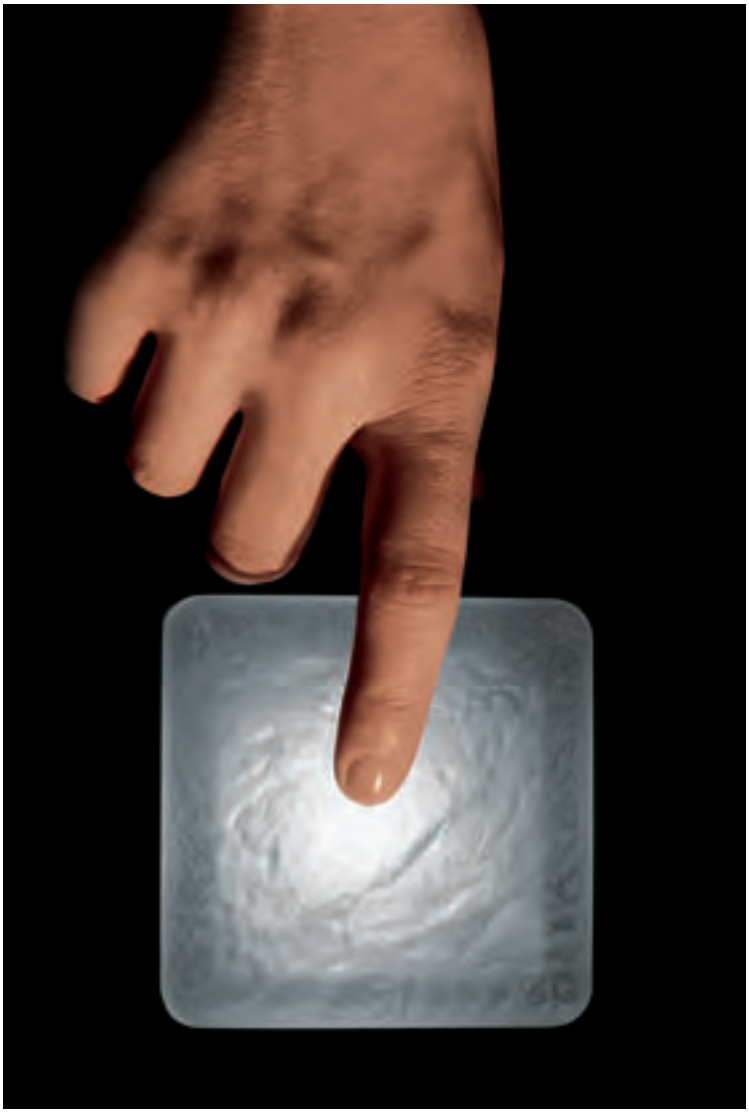
amber

blue



green

red



The top glass can be touched with no problem; its **temperature** does not vary when the fixture is **switched on**.

The d.c. supply **circuit** inside the product guarantees a constant light beam regardless of the supply voltage that can range between 9 and 15 Volt d.c.

The standard product cannot be connected to dimmer systems; dimmerable fixtures can be made on request however.

Division 02 Section 265600

Lighting – Security Fixtures

Product:

ETP-MT/R OP4 Radius Emergency Phone Tower with CCTV Arm
WEBS-WM Wall Mount with Wide-Area Emergency Broadcast System

Manufacturer:
Talk-a-Phone, Co.
7530 North Natchez Avenue
Niles, IL 60714-3804
Phone: 773.539.1100
Email: info@talkaphone.com
www.talkaphone.com

Or approved equal.

Locations/Applications:

Provide at key pedestrian nodes, along pathways, and parking lots. Set minimum distance between security fixtures at 500' minimum.

Wall mounted security lighting to be provided at each NCC building entry.

Standardize all fixtures and replace older units over time.

Product Requirements:

Emergency Phone Tower:

- Tower camera
- VOIP – 500 Series Phone, two buttons (VOIP-500D)
- Color pinhole camera behind faceplate
- Reflective lettering text "EMERGENCY'
- Lighting voltage: 120 VAC

Color:

- Tower color: Safety Orange 04SF
- Reflective Lettering Text: Blue A7822R

Wall Mount with Wide-Area Emergency Broadcast System

- VOIP – 500 Series Phone, two buttons (VOIP-500D)
- Fixed camera - Day/Night camera with Vari-focal lens
- Color pinhole camera behind faceplate
- Fixed camera option includes Day/Night camera with Vari-focal lens
- Reflective lettering text "EMERGENCY'
- Lighting voltage: 110-240VC

Color:

- Wall Mount unit: Safety Orange 04SF
- Reflective Lettering Text: Blue A7822R

TALK A PHONE
Creating Communications Solutions®

ETP-MT/R OP4 – Radius Emergency Phone Tower with CCTV Arm

STANDARD TOWER CONFIGURATION (ETP-MT/R-OP4) $5400 LIST PRICE

Tower Camera

☒ User supplied (Order tower model ETP-MT/R-OP-4)

☐ Sensormatic SpeedDome® color PTZ camera (Order tower model ETP-MT/R-OP-5) (add) $5300

Tower Color (to match a color contact Talk-A-Phone)

☐ Safety Blue ☐ Safety Red ☐ White ☐ Black ☒ Other (Color Chart Paint #) SAFETY ORANGE 045F

Reflective Lettering Text

☒ Emergency ☐ Assistance ☐ Help ☐ None ☐ Other _____

Reflective Lettering Color

☐ White ☐ Black ☐ Red ☒ Other (Color Chart Lettering #) BLUE A 7822R

Lighting Voltage

☒ 120VAC ☐ 24VDC/12VDC/24VAC

PHONE CONFIGURATION (add) LIST PRICE

Analog Phones

☐ One button: "EMERGENCY" (ETP-400)	$655
☐ One button: "TO CALL" (ETP-400C)	$655
☐ Two buttons (ETP-400D)	$710
☐ One button plus keypad (ETP-400K)	$790

ETP-400

ETP-400C

ETP-400D

ETP-400K

VOIP-500 Series Phones

☐ One button: "EMERGENCY" (VOIP-500)	$1595
☐ One button: "TO CALL" (VOIP-500C)	$1595
☒ Two buttons (VOIP-500D)	$1740
☐ One button plus keypad (VOIP-500K)	$1815

VOIP-500

VOIP-500C

VOIP-500D

VOIP-500K

Phone Options (choose as many as you wish)

☐ Voice Identification Option (add V to Analog Phone models; included standard with VOIP-500 Series Phones) $75

☒ Color pinhole camera behind phone faceplate (add –OP3 to Analog Phone models; add –3 to VOIP-500 Series Phones) $600

OPTIONS (add) LIST PRICE

Power Options

☐ Shelf, louvers, other features for wireless/power options (add –OP PCS) $880

Parking Deck Mounting Kit

☐ Galvanized Sandwich plates and bolt kit (ETP-PDMK-4) $375

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TALK A PHONE
Creating Communications Solutions®

WEBS-WM – Wall Mount With Wide-Area Emergency Broadcast System (WEBS®)

STANDARD MOUNT CONFIGURATION (WEBS-WM) $ 3440 LIST PRICE

Wall Mount Color

☐ Brushed Stainless (standard)

☐ Safety Blue ☐ Safety Red ☐ Safety Yellow (add) $200

☒ Other (to match a color contact Talk-A-Phone) SAFETY ORANGE 04SF (call for quote)

Reflective Lettering Text (standard is Emergency)

☒ Emergency ☐ Assistance ☐ Help ☐ None ☐ Other _____

Reflective Lettering Color (standard is Red)

☐ Red ☐ Black ☐ Blue ☐ Yellow

☒ Other (Color Chart Lettering #) BLUE A7872R

Wall Mount Voltage

☒ 110-240VAC ☐ 12VDC

PHONE CONFIGURATION (add) LIST PRICE

Analog Phones

☐ One button: "EMERGENCY" (ETP-400)	$655
☐ One button: "TO CALL" (ETP-400C)	$655
☐ Two buttons (ETP-400D)	$710
☐ One button plus keypad (ETP-400K)	$790

ETP-400

ETP-400C

ETP-400D

ETP-400K

VOIP-500 Series Phones

☐ One button: "EMERGENCY" (VOIP-500)	$1595
☐ One button: "TO CALL" (VOIP-500C)	$1595
☒ Two buttons (VOIP-500D)	$1740
☐ One button plus keypad (VOIP-500K)	$1815

VOIP-500

VOIP-500C

VOIP-500D

VOIP-500K

Phone Options (choose as many as you wish)

☐ Voice Identification Option (add V to Analog Phone models; included standard with VOIP-500 Series Phones) $75

☒ Color pinhole camera behind phone faceplate (add –OP3 to Analog Phone models; add –3 to VOIP-500 Series Phones) $600

OPTIONS (add) LIST PRICE

Built in Camera

☐ Fixed Camera Ready (includes camera opening and bracket, no camera) (add –OP2 to model) $400

☒ Fixed Camera Option (includes Day/Night Camera with Vari-focal lens) (add –OP3 to model) $1460

Mount Options

☐ Pole Mounting Kit (ETP-PMKT) (add) $90

☐ Banding tool for use with Pole Mounting Kit (ETP-PMKT-TOOL) (add) $330

FOR WEBS CONTACT® AND ANALOG PAGING OPTIONS, SEE PAGE 25

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Phone 773.539.1100 • Fax 773.539.1241 • info@talkaphone.com • www.talkaphone.com
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Division 02 Section 129300

Site Furnishings – Bench

Product:

Midtown Bench with Back

Manufacturer:
Keystone Ridge Designs, Inc.
670 Mercer Road
Butler, PA 16001
Phone: 800.284.8208
www.keystoneridgedesigns.com

Or approved equal.

Locations/Applications:

Locate benches along pedestrian areas (minimum walk width 8') and within pedestrian gathering areas including plazas, courtyards, gardens, at building entries, and drop offs. Along walk ways, seating is recommended at minimum of every 200 linear feet.

Within any given area, bench seating shall be of all one type of seating – either with or without seat backs, but shall not be mixed. Similarly within any given area all furnishings shall be of a single color – either Nantucket Blue or Hunter Green – in order to provide visual consistency and unity within campus spaces, as well as establish completeness of design character.

Nantucket Blue is intended as the campus standard color for benches and tables with seating. Hunter green furnishings are intended to be phased out over time. It is recommended that phased "zones" be established for differing colored site furnishings, with priority given to transitioning bench furnishings to Nantucket Blue in the East Campus "Cluster" area. It is recommended that Hunter Green furnishings be relocated as available to West Campus and perimeter areas during the transition.

Benches shall be located to provide ADA compliant clear floor or ground space for wheel chair seating at one end of each bench seat parallel to the short axis of the bench.

Product Requirements:

Midtown Bench with Back

- 6' length
- Bench includes armrests
- Fully welded commercial grade steel construction
- Polyester powder coat finish applied to 7-15 mil thickness
- Free standing, no surface mounting

Color:

- Nantucket Blue

KEYSTONE RIDGE DESIGNS

2014 KEYSHIELD® Color Palette

KEYSTONE RIDGE DESIGNS KEYSHIELD® FINISH

Safeguarded with our trademark KEYSHIELD® powder coating, Keystone Ridge Designs' superb product is further enhanced with a lustrous, durable finish that is unparalleled in product protection. KEYSHIELD® is our stamp of armored excellence that is foremost in site furniture finishes.

- The KEYSHIELD® process involves:
  - Cleaning the substrate
  - Phosphatizing the product in the washing stage
  - Armoring the product in 7-15 mil thickness of color polyester powder coating
- The KEYSHIELD® finish protects each piece of furniture from chipping, cracking and UVA damage
- The strength, durablitiy and quality of the KEYSHIELD® finish is backed by a **three-year warranty**

2014 Standard KEYSHIELD® Color Options

TEXTURED FINISHES

ANTHRACITE • 349/79680

COPPER VEIN • PLRS 90242

VERDI GREEN • SRSS 90079

BRONZE • 39/60020

SPARKLE SILVER • 49/90450

MATTE BLACK • 38/80020

CHAMPAGNE • 349/68780

HUNTER GREEN • RAL 6009

CHOCOLATE • RAL 8028

QUICKSILVER • PCSS/90416

GLOSS BLACK • 38/80010

CHARCOAL • RAL 7022

EVERGREEN • 39/50060

BURGUNDY • RAL 3005

NANTUCKET BLUE • RAL 5005

SAFETY YELLOW is available upon request at no additional charge. Colors may vary slightly due to printing processes. Please call for color samples. An additional 160 custom colors are available upon request.

670 Mercer Road • Butler, PA 16001-1840
Toll-free: 1-800-284-8208 • Phone: 724-284-1213 • Fax: 724-284-1253
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www.keystoneridgedesigns.com

The **MIDTOWN** *Series*

Bench with back

Bench with back is covered by patent no. des. 457,742. All other Midtown pieces are Exclusive By Design™.

Urban elegance with main street appeal defines the Midtown series as an updated classic for landscape design. Modish, smart simplicity allows this series to blend with a bustling city streetscape or a quiet town park. In any environment, the Midtown collection will add functional sophistication.

- Coordinating litter receptacles, ash urns, planters, tables and other furnishings
- Exclusive KEYSHIELD® polyester powder coating finish–our stamp of armored excellence that is foremost in the industry
- Fully assembled unit

Standard Features

- Color: standard KEYSHIELD® powder coat
- Support: bolt down or freestanding

Custom Options

- Color: custom KEYSHIELD® powder coat
- Custom length
- Support: bury extension

Enhancements

- Cushions
- Pillows
- Cast bronze plaques
- Custom laser cut plaques

KEYSTONE RIDGE® DESIGNS

1-800-284-8208

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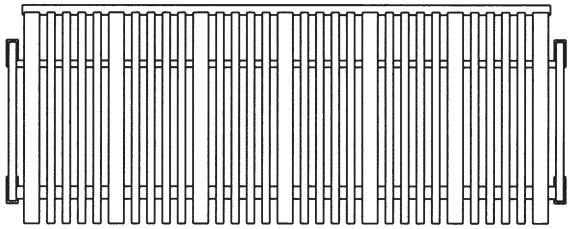

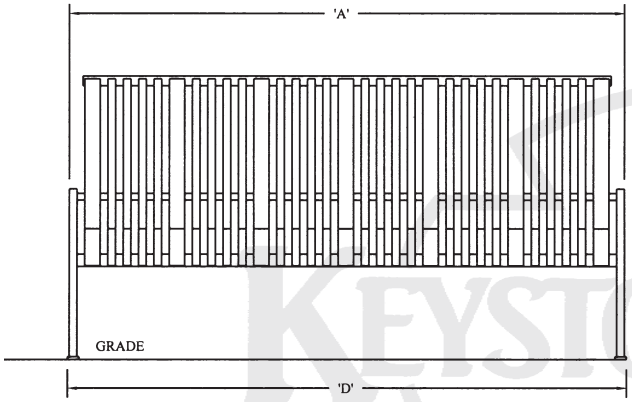

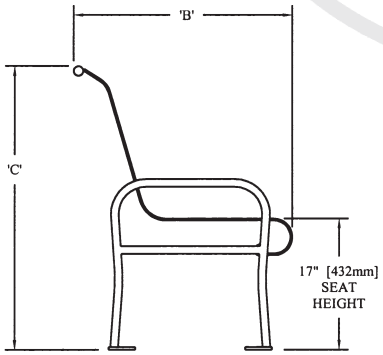

The **MIDTOWN** *Series*

Bench with back

Bench with back is covered by patent no. des. 457,742. All other Midtown pieces are Exclusive By Design™.

KEYSHIELD® Metal Finish

The KEYSHIELD® finish protects each piece of furniture from chipping, cracking, UVA damage and provides unparalleled corrosion resistance. KEYSHIELD® is strength, durability and quality - our assurance of armored excellence. Steel products are finished with a two-coat powder coating process applied to a 7-15 mil thickness. Substrate preparation includes sandblasting to a white finish to remove all surface contaminants, the ultimate degree in powder coat preparation. The raw product then receives a corrosion-inhibiting phosphate coating prior to the application of the powder coating. The first coat applied to the substrate is zinc rich epoxy powder primer used exclusively on sandblasted parts. The second coat is a colored polyester powder coating. Both coats are electrostatically applied and oven cured according to powder coating manufacturing specifications to create a smooth, satin-like finish. The result of this two-coat process is an optimum non-porous armor that defines the Keystone Ridge Designs' stamp of quality. KEYSHIELD® is a registered trademark of Keystone Ridge Designs, Inc.®

Fully Assembled Unit

The Midtown bench with back is manufactured as a fully assembled unit to provide ultimate stability and avoid damage during transit to the site.

Proprietary Statement

Keystone Ridge Designs, Inc.® is proud to offer the design community exceptional site amenities. Due to the time and resources invested in designing, manufacturing and marketing Keystone Ridge Designs' products and services, we pursue design patents, copyrights, trademarks and service marks whenever possible. Any unlawful duplication or misrepresentation of Keystone Ridge Designs' products will be rigorously protected.

KEYSTONE RIDGE® DESIGNS

1-800-284-8208
www.keystoneridgedesigns.com

Item #	Description	Length (D)	Width (B)	Height (C)	Seat Height	Weight
MT24	Midtown bench with back 4'	50 1/2"	28 7/16"	36 13/16"	17"	200 lbs
MT26	Midtown bench with back 6'	72 1/2"	28 7/16"	36 13/16"	17"	225 lbs
MT28	Midtown bench with back 8'	94 1/2"	28 7/16"	36 13/16"	17"	250 lbs

Division 02 Section 129300

Site Furnishings – Table with Seating

Product:

Easton Table Set with Midtown Seats

Manufacturer:
Keystone Ridge Designs, Inc.
670 Mercer Road
Butler, PA 16001
Phone: 800.284.8208
www.keystoneridgedesigns.com
Or approved equal.

Locations/Applications:

Locate tables with seating in courtyard and garden areas, near food service and/or employee break areas.

Within any given area, tables shall be of all one type of seating – either with or without seat backs, but shall not be mixed. Similarly within any given area all furnishings shall be of a single color – either Nantucket Blue or Hunter Green – in order to provide visual consistency and unity within campus spaces, as well as establish completeness of design character.

Nantucket Blue is intended as the campus standard color for tables with seating. Hunter green furnishings are intended to be phased out over time. It is recommended that phased "zones" be established for differing colored site furnishings, with priority given to transitioning table furnishings to Nantucket Blue in the East Campus "Cluster" area. It is recommended that Hunter Green furnishings be relocated as available to West Campus and perimeter areas during the transition.

Accessible table seating shall be provided in accordance with ADA regulations. In areas that are universally accessible, at least one table of three seats with open accessible space shall be provided. As a general guideline, within a given area of table seating a minimum of 5% of table seating shall be accessible; for example, tables to be provided in a minimum ratio of one (1) table of one (3) seats for every five (5) tables overall. ADA requirements shall be confirmed for the specific area and project.

Product Requirements:

Custom Easton Round Table with Midtown Seats:

- 40" round perforated table top
- No umbrella hole
- Fully welded commercial grade steel construction
- Polyester powder coat finish applied to 7-15 mil thickness
- Free standing, no surface mounting

Color:

- Nantucket Blue

Existing

Nantucket Blue

Existing

Hunter Green

The **EASTON** *Series*

Portable table set
Exclusive By Design™

With the flexibility to offer 4, 5 and 6 seat options, the Easton is a distinctive multi-seat solution for parks, courtyards and patios.

- Coordinating benches, litter receptacles, ash urns, planters and other furnishings
- Exclusive KEYSHIELD® polyester powder coating finish–our stamp of armored excellence that is foremost in the industry

Standard Features

- Color: standard KEYSHIELD® powder coat
- Top: round or square powder coated steel
- Seat: with back, flat, without arms, powder coated steel
  4, 5 and 6 seat options
- Support: bolt down or freestanding
- With or without umbrella hole

Custom Options

- Color: custom KEYSHIELD® powder coat
- Top: Corian® solid surface, stainless steel, solid hardwood
- Accessible units

Enhancements

- Umbrella
- Patio heater
- Custom laser cut steel top

CORIAN® Corian® is a DuPont registered trademark for its surfacing material.
Only DuPont makes Corian®.

sunbrella GLEN RAVEN MILLS, INC. Sunbrella® is a registered trademark of Glen Raven Mills, Inc.

KEYSTONE RIDGE DESIGNS®

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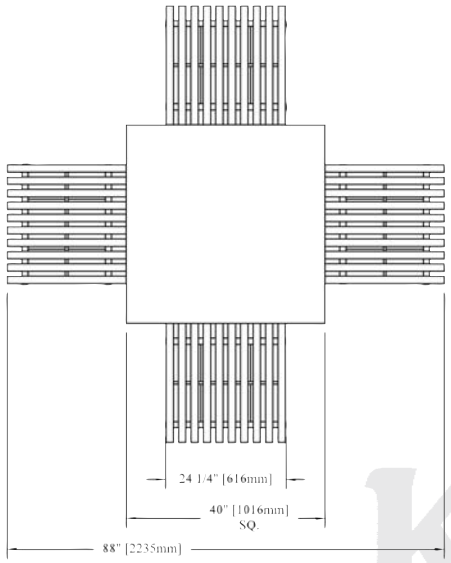
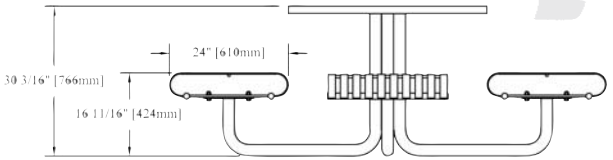
www.keystoneridgedesigns.com

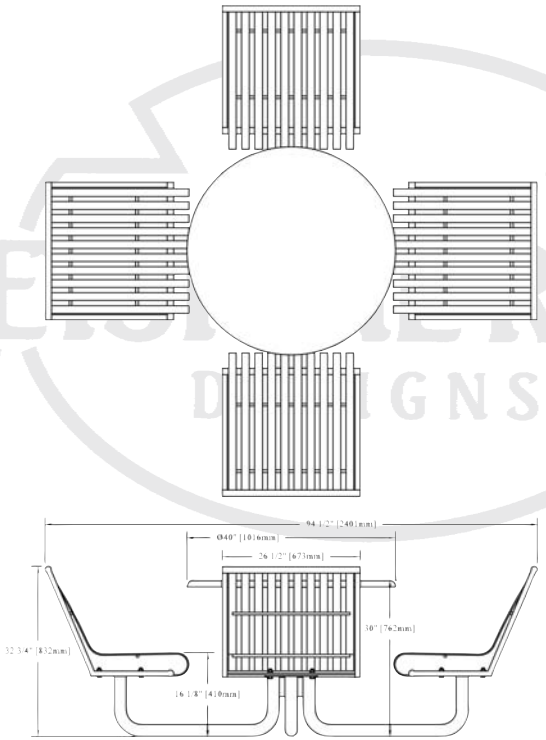
The **EASTON** *Series*

Portable table set

Exclusive By Design™







KEYSHIELD® Metal Finish

The KEYSHIELD® finish protects each piece of furniture from chipping, cracking, UVA damage and provides unparalleled corrosion resistance. KEYSHIELD® is strength, durability and quality - our assurance of armored excellence. Steel products are finished with a two-coat powder coating process applied to a 7-15 mil thickness. Substrate preparation includes sandblasting to a white finish to remove all surface contaminants, the ultimate degree in powder coat preparation. The raw product then receives a corrosion-inhibiting phosphate coating prior to the application of the powder coating. The first coat applied to the substrate is zinc rich epoxy powder primer used exclusively on sandblasted parts. The second coat is a colored polyester powder coating. Both coats are electrostatically applied and oven cured according to powder coating manufacturing specifications to create a smooth, satin-like finish. The result of this two-coat process is an optimum non-porous armor that defines the Keystone Ridge Designs' stamp of quality. KEYSHIELD® is a registered trademark of Keystone Ridge Designs, Inc.®

Fully Assembled Unit

The Easton portable table set is manufactured to provide ultimate stability and avoid damage during transit to the site. Minor assembly is required. Instructions are included with each shipment.

Proprietary Statement

Keystone Ridge Designs, Inc.® is proud to offer the design community exceptional site amenities. Due to the time and resources invested in designing, manufacturing and marketing Keystone Ridge Designs' products and services, we pursue design patents, copyrights, trademarks and service marks whenever possible. Any unlawful duplication or misrepresentation of Keystone Ridge Designs' products will be rigorously protected.

KEYSTONE RIDGE DESIGNS

1-800-284-8208

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Item #	Description	Length	Table Width	Height	Table Height	Weight
EA6-2SQ	Easton portable square table and seats with back	94 3/8"	40"	30"	30"	650 lbs
EA6-2RD	Easton portable round table and seats with back	94 3/8"	40"	30"	30"	650 lbs
EA6-1SQ	Easton portable square table and flat seats	88"	40"	30"	30"	575 lbs
EA6-1RD	Easton portable round table and flat seats	88"	40"	30"	30"	575 lbs

EASTON TABLE SET

PRODUCT DETAILS
With the flexibility to offer 4, 5 and 6 seat options, the Easton is a distinctive multi-seat solution for parks, courtyards and patios.

MATERIALS
Fully-welded commercial-grade steel construction.

FINISH (Color Chart)
Protected by the durable KEYSHIELD® polyester powder coat finish applied to a 7-15 mil thickness.

OPTIONS
Top: round or square, with or without umbrella hole; Seat: with or without back, 4, 5 or 6 seat options available; ADA accessible option available.

Part #	Description	Length	Width	Height	Weight	Price	Downloads
EA6-1	Easton 40" round or square table and 4 flat seats	91 5/8 in.	91 5/8 in.	30 in.	540	$2,160.00	
EA6-1-5	Easton 48" round table and 5 flat seats	98 11/16 in.	93 7/8 in.	30 in.	595	$2,470.00	
EA6-1-6	Easton 60" round table and 6 flat seats	108 in.	105 1/2 in.	30 in.	625	$2,570.00	
EA6-2	Easton 40" round or square table and 4 seats with back	96 3/8 in.	96 3/8 in.	33 in.	540	$2,285.00	
EA6-2-5	Easton 48" round table and 5 seats with back	105 11/16 in.	100 1/2 in.	33 in.	595	$2,675.00	
EA6-2-6	Easton 60" round table and 6 seats with back	114 1/2 in.	112 7/16 in.	33 in.	580	$2,780.00	

COORDINATING PRODUCTS

Easton table set

CUSTOMIZATION OPTIONS

With our made-to-order manufacturing, customization capabilities are endless. Consider custom lengths, heights, colors and curves. Personalize with plaques, laser cuts, nameplates or decals. Add additional arms to benches or customized lids to litter receptacles. Incorporate alternative materials such as wood or recycled plastic. And if all else fails, talk to us about completely original concepts. LEARN MORE

CONTACT US
1-800-284-8208
sales@krdusa.com
670 Mercer Road
Butler, PA 16001

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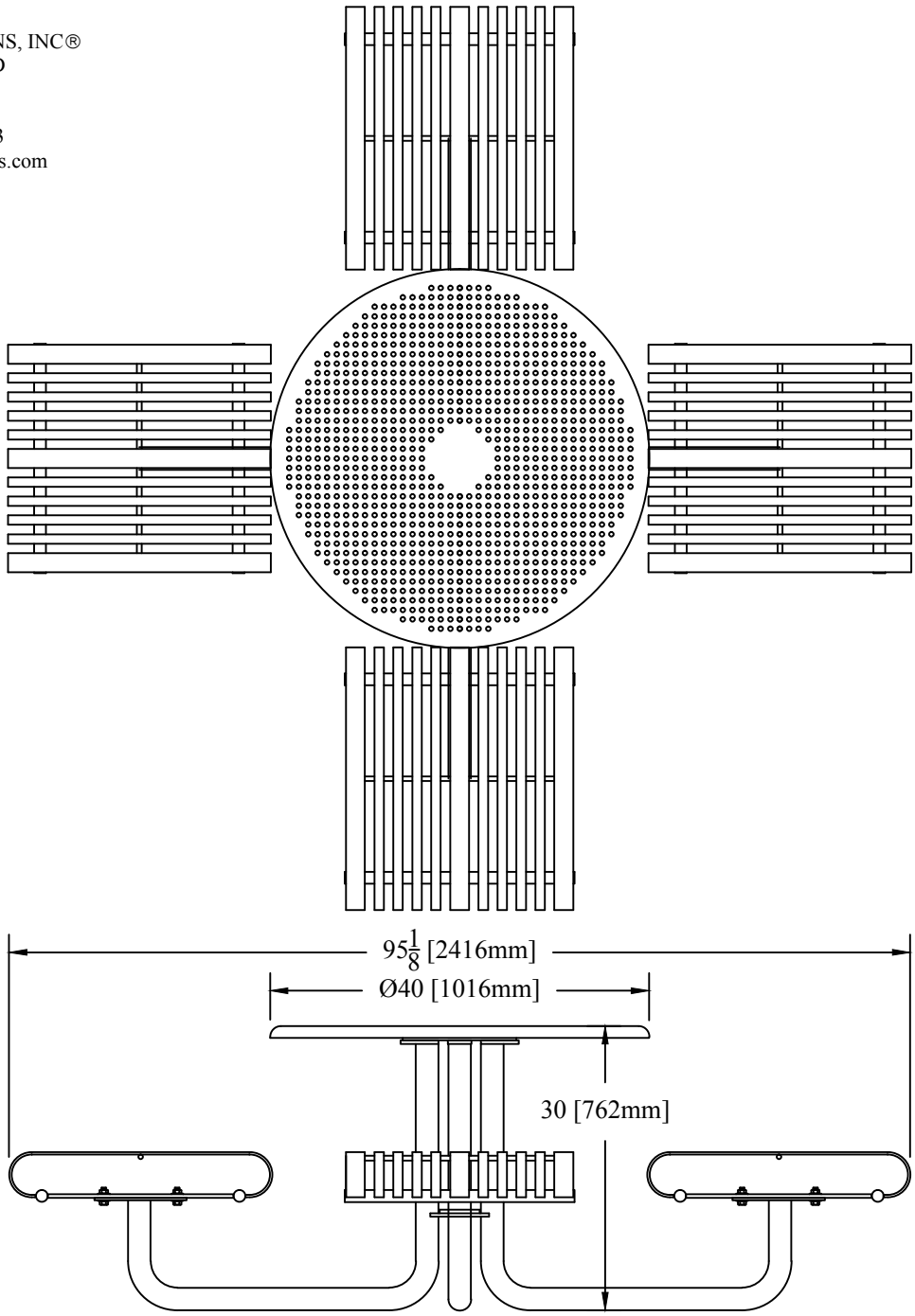

STEEL FINISH KEYSHIELD® POWDER COATING	CUSTOM EASTON ROUND TABLE AND MIDTOWN FLAT SEATS	EXCLUSIVE BY DESIGN™
	PLAN - ELEVATION	SO 11977
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DRAWN BY: B.R.		
DATE: 10-23-13		

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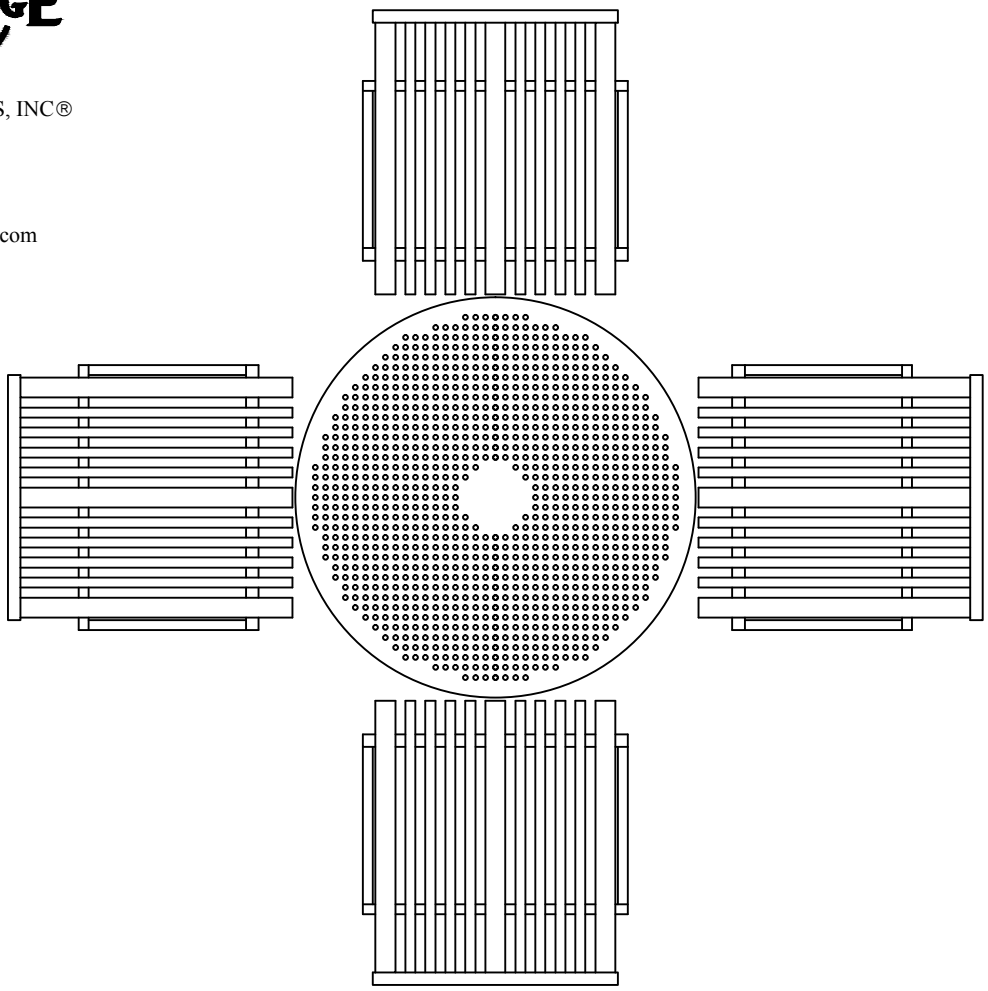

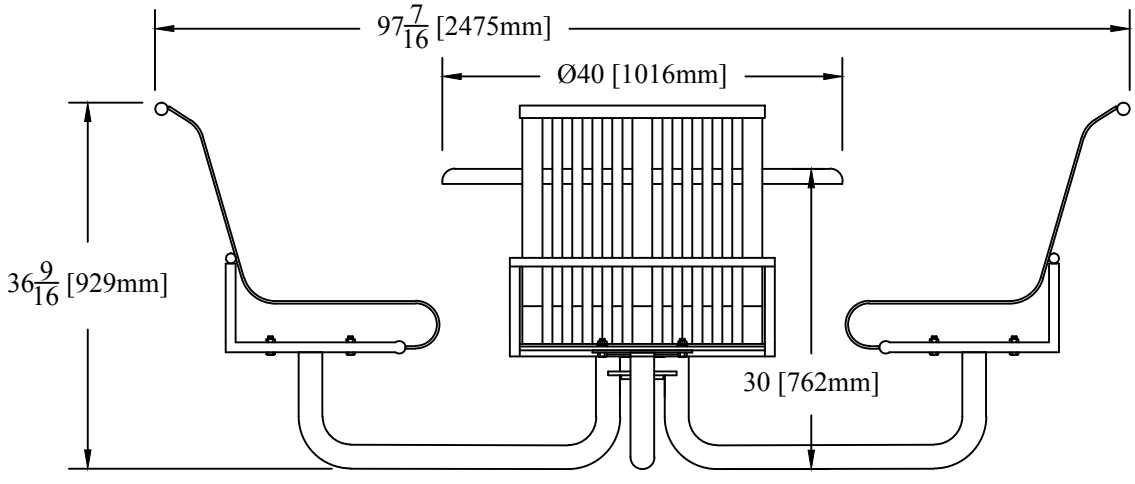

STEEL FINISH KEYSHIELD® POWDER COATING	CUSTOM EASTON ROUND TABLE AND MIDTOWN SEATS W/BACK	EXCLUSIVE BY DESIGN™
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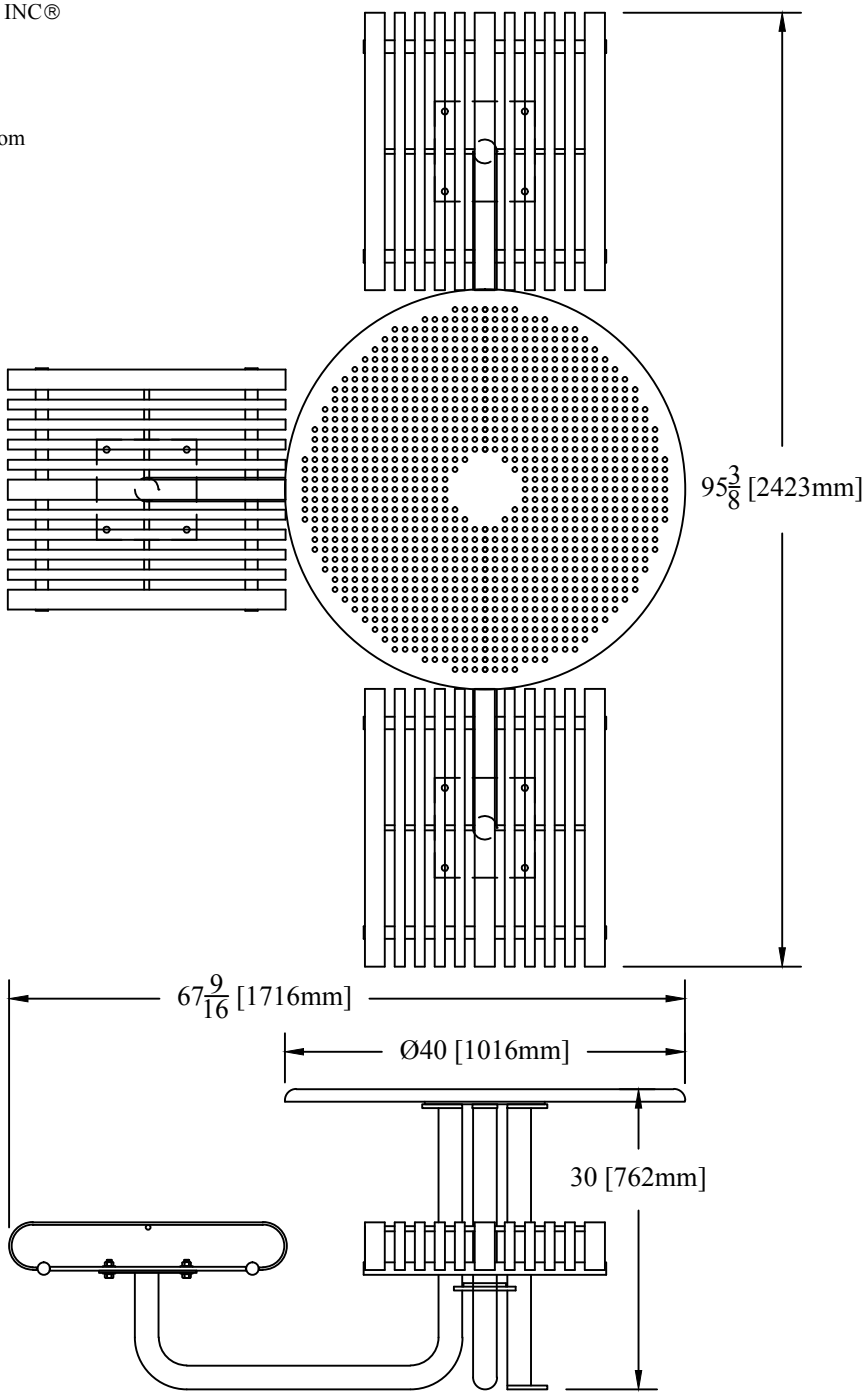

STEEL FINISH KEYSHIELD® POWDER COATING	CUSTOM EASTON ROUND TABLE AND MIDTOWN FLAT SEATS	EXCLUSIVE BY DESIGN™
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DRAWN BY: B.R.		
DATE: 10-23-13		

Division 02 Section 129300

Site Furnishings – Litter/Recycling Receptacle

Product:

Midtown Dual Recycle/Litter Receptacle

Manufacturer:
Keystone Ridge Designs, Inc.
670 Mercer Road
Butler, PA 16001
Phone: 800.284.8208
www.keystoneridgedesigns.com

Or approved equal.

Locations/Applications:

Locate receptacle along active pedestrian areas near intersections and within pedestrian gathering areas including plazas and courtyards, near areas of street furniture especially tables, at major building entries, transition from parking area to campus, bus stops and drop offs. Locations should be convenient for use and litter (deposited and not deposited) monitored to provide guidance on adjusting spacing and location.

Within any given area, receptacle surround shall be of a single color in order to provide visual consistency and unity within campus spaces, as well as establish completeness of design character. Receptacles may be considered "background" furnishings and as such may relate to other "background" furnishing finishes such as those of light poles, bicycle racks, and ash urns

It is recommended that phased "zones" be established for differing colored site furnishings, with priority given to transitioning long-term design furnishing standards in the East Campus "Cluster" area. It is recommended that Hunter Green furnishings be relocated as available to West Campus and perimeter areas during the transition.

Product Requirements:

Midtown Dual Litter/Recycling Receptacle with Doors

- 32 gallon
- Plastic liner/Alternative powder coated galvanized liner
- Fully welded commercial grade steel construction
- Polyester powder coat finish applied to 7-15 mil thickness
- Adjustable legs
- Elevated Lids (Recycling lid Nantucket Blue, Litter Lid to match receptacle)
- Free standing, no surface mounting

Color:

- Nantucket Blue
- Alternative 1: Dark Bronze
- Alternative 2: Light Grey

The **MIDTOWN** *Series*

Litter receptacle
Bench with back is covered by patent no. des. 457,742. All other Midtown pieces are Exclusive By Design™.

Beautify your surroundings with Keystone Ridge Designs' exclusive collection of litter receptacles. The Midtown allows you the freedom to coordinate with a bench series, or mix and match for an eclectic motif.

- Coordinating benches, ash urns, planters, tables and other furnishings
- Exclusive KEYSHIELD® polyester powder coating finish–our stamp of armored excellence that is foremost in the industry
- Fully assembled unit

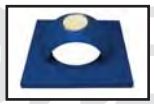
Standard Features
- Color: standard KEYSHIELD® powder coat
- Liner: commercial grade plastic
- Lid: matching flat lid with anti-theft lanyard
- Support: elevated or adjustable

Custom Options
- Color: custom KEYSHIELD® powder coat
- Liner: galvanized or powder coated steel
- Sleeve: KEYSHIELD® powder coat color
- Lid: elevated, elevated ash, dome, ash dome, dome with galvanized door, recycling and trash
- Support: bury extension

Enhancements
- Ash filler
- Ash sifter
- Custom printed decals
- Cast bronze plaques
- Custom laser cut plaques

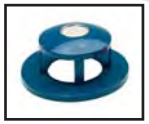
ASH CAPACITY LIDS

Ash Dome


Ash Dome

Ash Dome

Elevated Ash


Elevated Ash

Ash Moat

WEATHER-PROTECTANT LIDS

Elevated

Dome

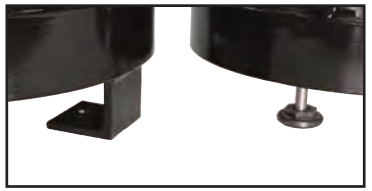
Elevated

Dome, galvanized door

MESSAGE LIDS

Trash Flat

Recycle Flat


Leg options

Recycle Flat

Split recycle/trash

KEYSTONE RIDGE DESIGNS

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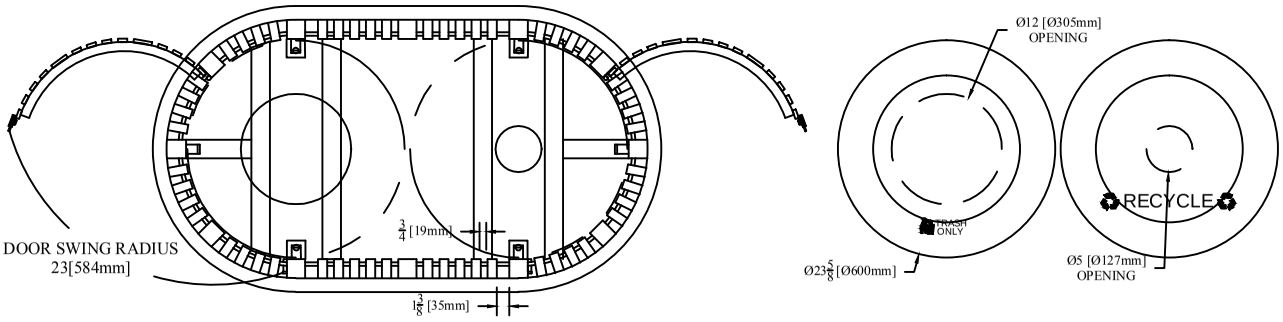

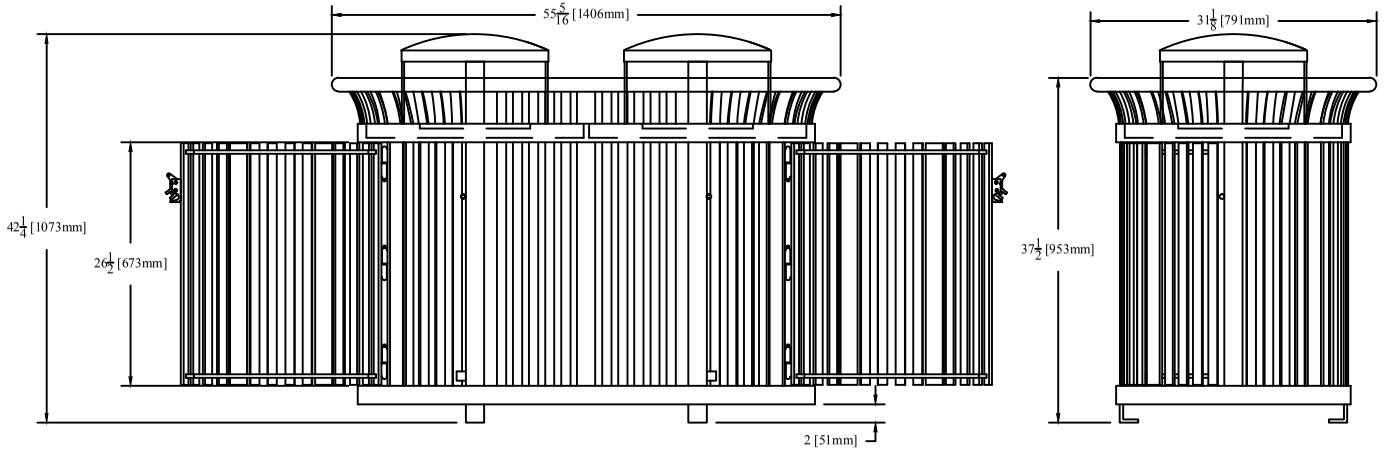

STEEL FINISH KEYSHIELD® POWDER COATING	CUSTOM MIDTOWN 32 GAL DUAL RECEPTACLE WITH DOORS	EXCLUSIVE BY DESIGN™
	ELEVATION - PLAN	SO 11977
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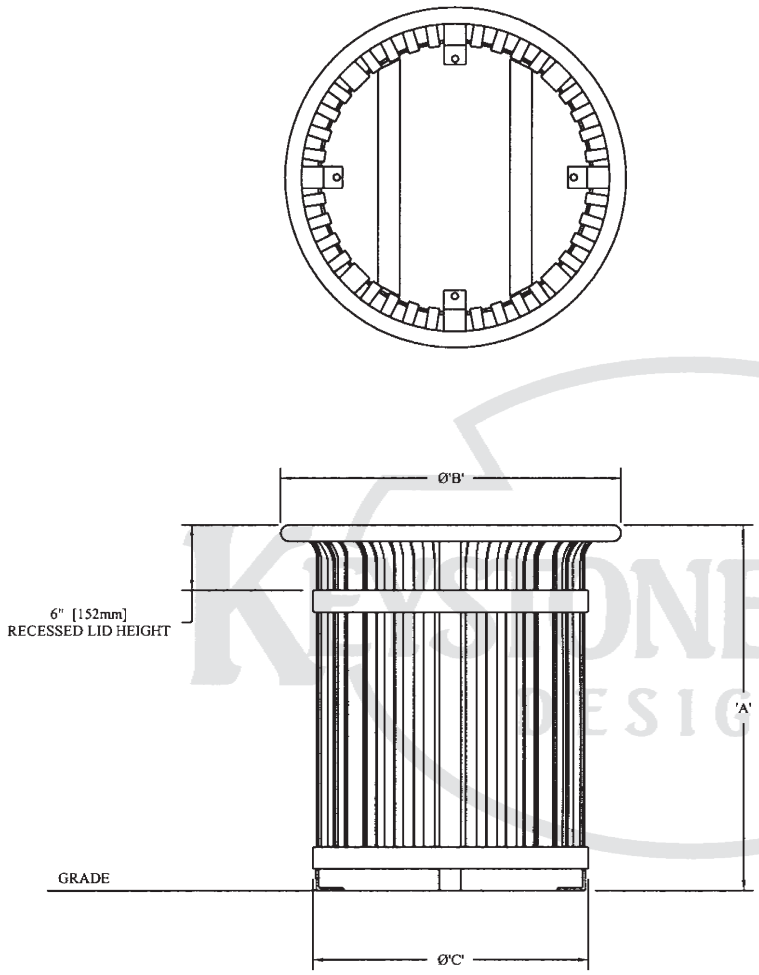
DRAWN BY: B.R.		
DATE: 10-24-13		

The **MIDTOWN** *Series*

Litter receptacle

Bench with back is covered by patent no. des. 457,742. All other Midtown pieces are Exclusive By Design™.



KEYSHIELD® Metal Finish

The KEYSHIELD® finish protects each piece of furniture from chipping, cracking, UVA damage and provides unparalleled corrosion resistance. KEYSHIELD® is strength, durability and quality - our assurance of armored excellence. Steel products are finished with a two-coat powder coating process applied to a 7-15 mil thickness. Substrate preparation includes sandblasting to a white finish to remove all surface contaminants, the ultimate degree in powder coat preparation. The raw product then receives a corrosion-inhibiting phosphate coating prior to the application of the powder coating. The first coat applied to the substrate is zinc rich epoxy powder primer used exclusively on sandblasted parts. The second coat is a colored polyester powder coating. Both coats are electrostatically applied and oven cured according to powder coating manufacturing specifications to create a smooth, satin-like finish. The result of this two-coat process is an optimum non-porous armor that defines the Keystone Ridge Designs' stamp of quality. KEYSHIELD® is a registered trademark of Keystone Ridge Designs, Inc.®

Fully Assembled Unit

The Midtown litter receptacle is manufactured as a fully assembled unit to provide ultimate stability and avoid damage during transit to the site.

Proprietary Statement

Keystone Ridge Designs, Inc.® is proud to offer the design community exceptional site amenities. Due to the time and resources invested in designing, manufacturing and marketing Keystone Ridge Designs' products and services, we pursue design patents, copyrights, trademarks and service marks whenever possible. Any unlawful duplication or misrepresentation of Keystone Ridge Designs' products will be rigorously protected.

KEYSTONE RIDGE DESIGNS

1-800-284-8208

www.keystoneridgedesigns.com

Item #	Description	Diameter (B)	Overall Height Elevated Leg (A)	Overall Height Adjustable Leg	Lid Diameter	Weight
MT3-22	Midtown litter receptacle 22 gal	26"	27 3/4"	26 3/4"	19 1/2"	136 lbs
MT3-32	Midtown litter receptacle 32 gal	31 1/4"	33 1/2"	32 1/2"	23 5/8"	164 lbs
MT3-38	Midtown litter receptacle 38 gal	31 1/4"	33 1/2"	32 1/2"	23 5/8"	175 lbs

Division 02 Section 129300

Site Furnishings – Ash Receptacle

Product:

Midtown Ash Receptacle

Manufacturer:
Keystone Ridge Designs, Inc.
670 Mercer Road
Butler, PA 16001
Phone: 800.284.8208
www.keystoneridgedesigns.com

Or approved equal.

Locations/Applications:

Locate ash receptacle along active pedestrian areas near intersections and within pedestrian gathering areas including plazas and courtyards, near areas of street furniture especially receptacles, at major building entries, transition from parking area to campus, bus stops and drop offs. Locations should be monitored to provide guidance on adjusting spacing and location to prevent discarded cigarette butts and to discourage smoking from particular outdoor areas.

Within any given area, ash receptacles shall be of a single color in order to provide visual consistency and unity within campus spaces, as well as establish completeness of design character. Ash receptacles may be considered "background" furnishings and as such finish color may be chosen to relate to other "background" furnishing finishes such as those of light poles, bicycle racks, and ash urns, rather than benches and tables.

It is recommended that phased "zones" be established for differing colored site furnishings, with priority given to transitioning long-term design furnishing standards in the East Campus "Cluster" area. It is recommended that Hunter Green furnishings be relocated as available to West Campus and perimeter areas during the transition.

Product Requirements:

Midtown Ash Receptacle

- Stainless steel ash insert
- Plastic liner/Alternative powder coated galvanized liner
- Fully welded commercial grade steel construction
- Polyester powder coat finish applied to 7-15 mil thickness
- Adjustable legs
- Free standing, no surface mounting

Color:

- Nantucket Blue
- Alternative 1: Dark Bronze
- Alternative 2: Light Grey

The **MIDTOWN** *Series*

Ash urn
Bench with back is covered by patent no. des. 457,742. All other Midtown pieces are Exclusive By Design™.

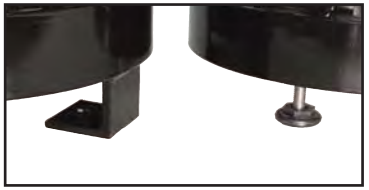
Beautify your surroundings with Keystone Ridge Designs' exclusive collection of ash urns. The Midtown allows you the freedom to coordinate with a bench series, or mix and match for an eclectic motif.

- Coordinating benches, litter receptacles, planters, tables and other furnishings
- Exclusive KEYSHIELD® polyester powder coating finish–our stamp of armored excellence that is foremost in the industry
- Fully assembled unit

Standard Features
- Color: standard KEYSHIELD® powder coat
- Stainless steel ash insert with anti-theft lanyard
- Support: elevated or adjustable

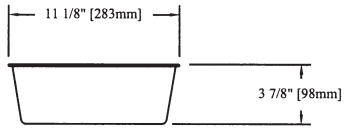
Custom Options
- Color: custom KEYSHIELD® powder coat
- Support: bury extension
- Sleeve: KEYSHIELD® powder coat color

Enhancements
- Ash filler
- Ash sifter

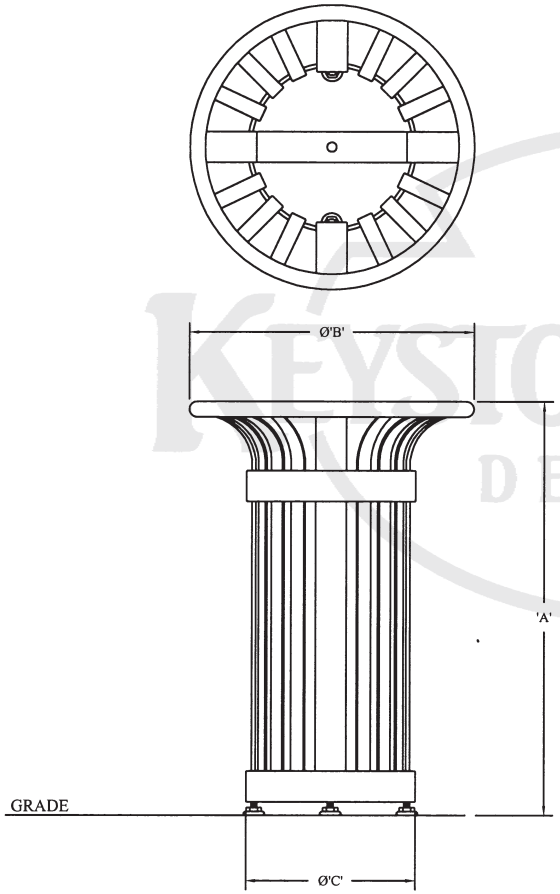


Leg options

1-800-284-8208
www.keystoneridgedesigns.com



ASH TRAY DETAIL



The MIDTOWN *Series*

Ash urn

Bench with back is covered by patent no. des. 457,742. All other Midtown pieces are Exclusive By Design™.

KEYSHIELD® Metal Finish

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Fully Assembled Unit

The Midtown ash urn is manufactured as a fully assembled unit to provide ultimate stability and avoid damage during transit to the site.

Proprietary Statement

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KEYSTONE RIDGE DESIGNS

1-800-284-8208
www.keystoneridgedesigns.com

Item #	Description	Diameter (B)	Overall Height Elevated Leg	Overall Height Adjustable Leg (A)	Weight
MT5	Midtown ash urn	18 1/2"	28"	27"	56 lbs

Division 02 Section 129300

Site Furnishings – Steel Bollard

Product:

DuMor Steel Bollard

Manufacturer:
DuMor, Inc.
P.O. Box 142
Miffletown, PA 17059
800.598.4018
www.dumor.com
sales@dumor.com

Or approved equal.

Locations/Applications:

Locate to protect proposed security gates and electrical cabinets adjacent to roadway/parking lot driveways. For optional use at pedestrian/limited access entry walks to reinforce limited access at interface with dedicated vehicular areas and for circulation control.

Product Requirements:

DuMor Bollard 402

- Steel bollard
- 36” height, 6” square

Color:

- Light Grey

ITEM 455S – STEEL BOLLARD

1. DESCRIPTION:

Under this item the Contractor shall furnish and install new bollards in the location specified on the plans or as directed by the Engineer. In general, bollards shall be installed to protect proposed security gates and electrical cabinets adjacent to roadways/parking lot driveways.

2. MATERIALS:

Steel Bollard –36" high, 6" Square, Steel Bollard, 113 lbs, gray color. This system shall be Model No. 402-36, S-1, manufactured by DuMor, Inc of Miffletown, PA, or approved equal. Sales Representative Contact Info: Site Specialists, Ltd (516-338-1630).

Concrete Footing– Shall conform to the requirements of Item 17A – Class A Concrete for Structures.

3. CONSTRUCTION DETAILS:

a. Install as per manufacturer's specifications and requirements.
b. Contractor shall excavate location to receive concrete foundation of bollard.
c. Concrete footing shall be 24"L x 24"W x 42" D per manufacrurer's details and requirements for embedded units.
d. Steel bollard as dimensioned and specified on the plans will be embedded in wet concrete footing to 42" in height above finished grade as specified herein.
e. Contractor to ensure that the bollard is secure and plum. Exact locations to be determined in the field and as approved by the Engineer.
f. After installation contractor will be responsible for removing excess fill and ensuring smooth transition to surrounding finished grade.

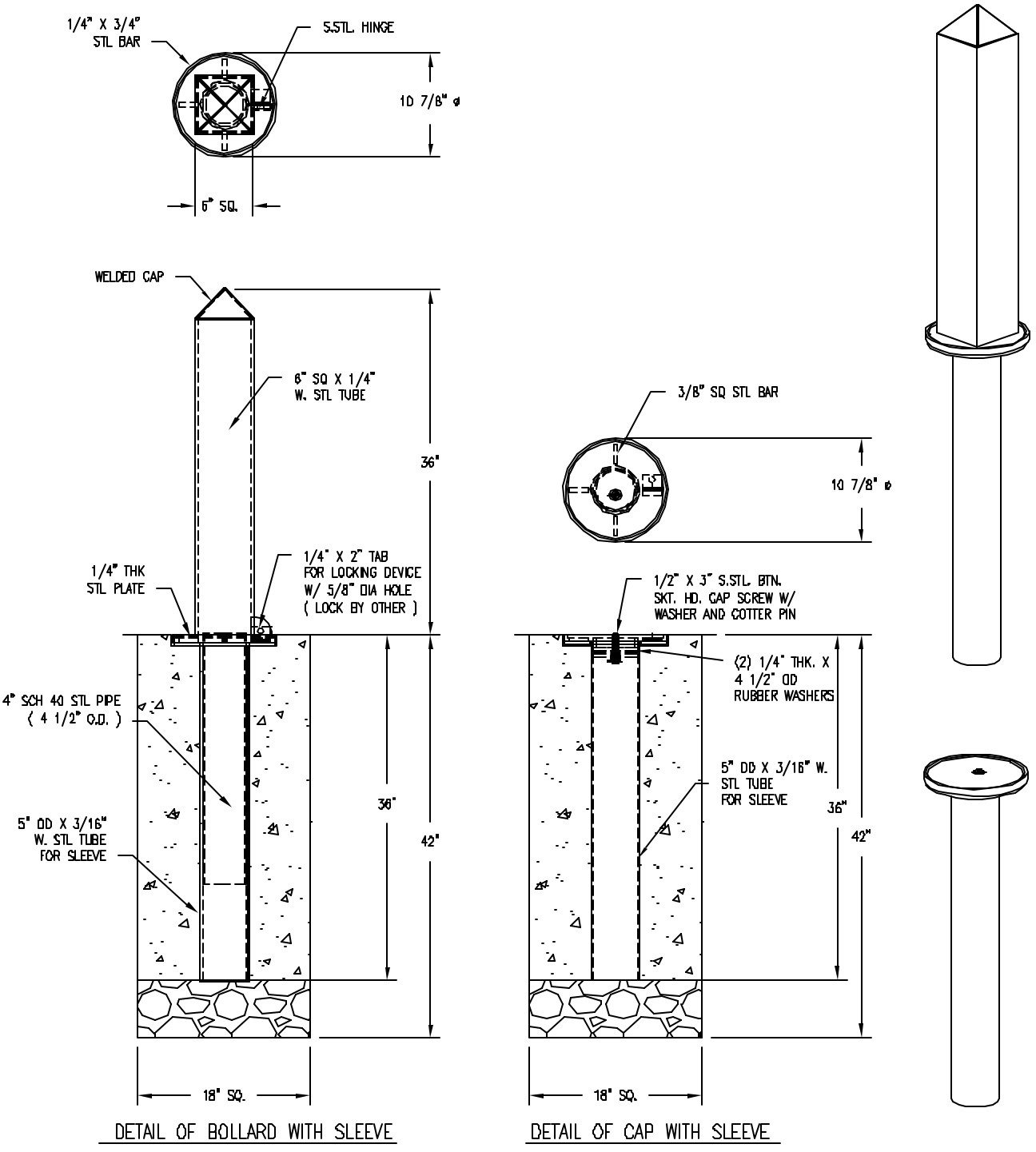
4. METHOD OF MEASUREMENT:

The quantity to be paid for under this item shall be the number of bollards installed in accordance with the plans, specifications and directions of the Engineer.

5. BASIS OF PAYMENT:

The unit price bid shall include the cost of furnishing all labor, materials, equipment and incidentals necessary to complete the work, including excavation and concrete footings.

END OF SECTION



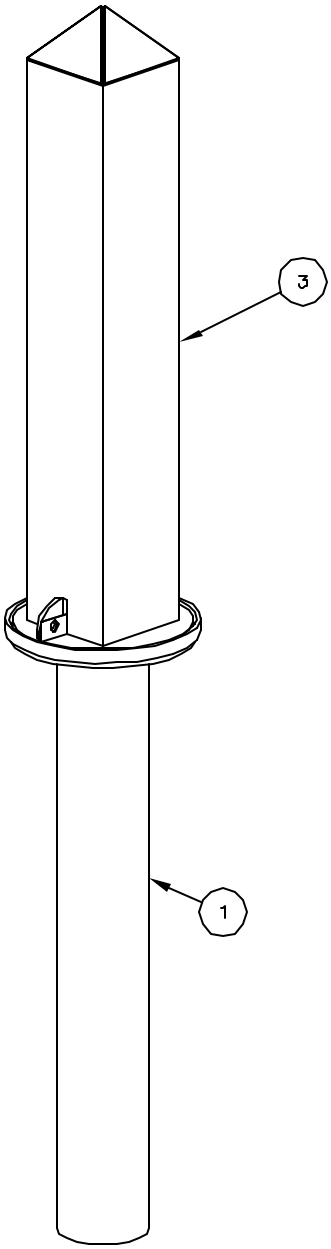
NOTES

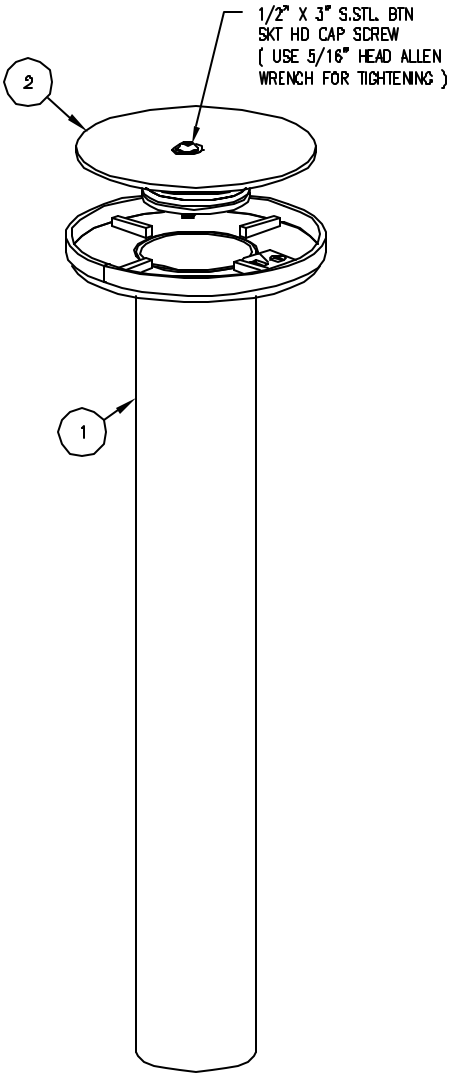
1.) STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.

2.) LOCKING DEVICE PROVIDED BY OTHER.

DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142

SCALE : NONE	TITLE : BOLLARD			
DATE DRAWN : 11/17/05				
DRAWN BY : HMD	REV. B	DRAWING NUMBER 402-36/S-1SL	SHEET 1 OF 2	
DATE REV. : 01/11/07				
REV. BY : ESS				





NOTES:

1. SET SLEEVE INTO FOOTER HOLDING PLUM, SQUARE AND HEIGHT SHOWN.
2. SLIDE BOLLARD INTO SLEEVE AFTER CONCRETE HAS HARDENED. BE SURE TO HAVE HINGE TAB SLIDE INTO BOLLARD BASE PLATE SLOT FOR LOCKING.
3. FOR USE OF CAP. WHEN BOLLARD IS REMOVED, PLACE CAP INTO SLEEVE. TIGHTEN CAP BY USING 1/2" X 3" BUTTON HEAD BOLT. THIS WILL COMPRESS THE RUBBER WASHERS THICKNESS AND EXPAND THE DIAMETER TO FIT SNUG TO SLEEVE.

ITEM	QTY	PART NO	DESCRIPTION
1	1	D-400-02	STL BOLLARD SLEEVE W/ HINGE
2	1	D-400-03	BOLLARD SLEEVE CAP ASSEMBLY
3	1	D-402-36-01/1SL	36" REMOVABLE BOLLARD, EMBED FOR SLEEVE

DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142

SCALE : NONE
DATE DRAWN : 11/17/05
DRAWN BY : HMD
DATE REV. : 01/11/07
REV. BY : ESS

TITLE : BOLLARD

REV. A

DRAWING NUMBER 402-36/S-1SL

SHEET 2 OF 2

Division 02 Section 129300

Site Furnishings – Bicycle Rack

Product:

Swerve Bicycle Rack

Manufacturer:
Dero
504 Malcolm Ave SE
Suite 100
Minneapolis, MN 55414
Phone: 888.337.6729
NY phone: 917.463.3769
www.dero.com

Or approved equal.

Locations/Applications:

Locate to provide convenient bicycle storage – in proximity to major centers of activity and building entries, and at transition between campus perimeter parking to pedestrian zones.

Product Requirements:

Swerve Bicycle Rack

- 1.9” OD schedule 40 pipe
- In ground mount

Color/Finish:

- Stainless Steel

DERO

SWERVE RACK

- High security
- Inexpensive bike parking
- Several mounting options available

The design of the Dero Swerve mirrors the bike frame, thus providing superior bike support while making it easy to secure both the bike frame and wheel with a standard u-lock. Dero Swerve Racks are popular with architects and universities because of their aesthetic design and space efficiency.

DERO
A PLAYCORE Company

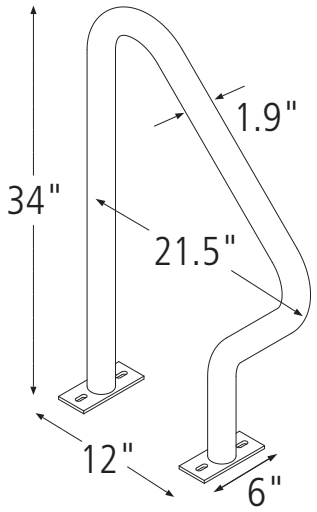
www.dero.com 1.888.337.6729

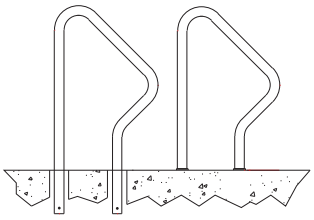
U.S. GREEN BUILDING COUNCIL MEMBER

printed on recycled paper

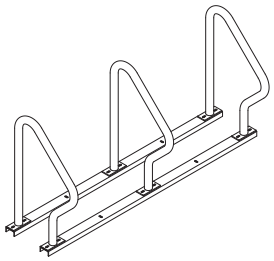
SWERVE RACK

Specifications and Space Use

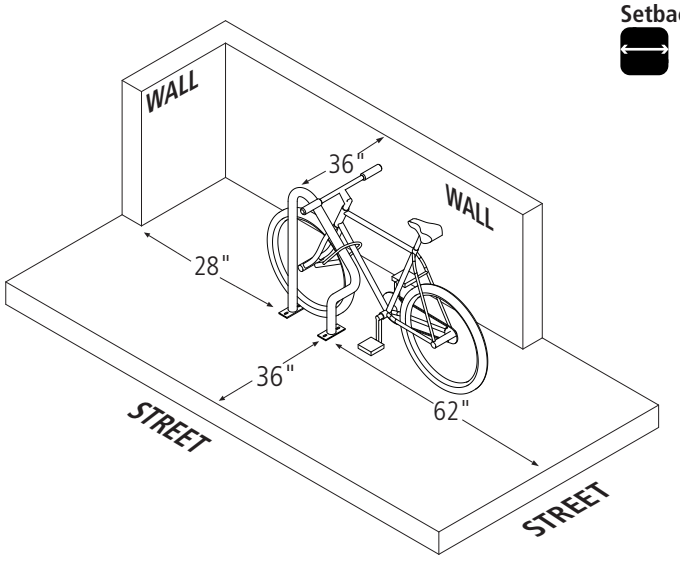




In ground *Surface*



Rail (freestanding)



Product Dero Swerve Rack
As manufactured by Dero Bike Racks

Capacity 2 Bikes

Materials 1.9" OD schedule 40 pipe

Finishes

An after fabrication hot dipped galvanized finish is our standard option. 250 TGIC powder coat colors, thermoplastic coating, PVC dip, and stainless steel finishes are also available as alternate options.

Our powder coat finish assures a high level of adhesion and durability by following these steps:
1. Sandblast
2. Epoxy primer electrostatically applied
3. Final thick TGIC polyester powder coat

Stainless Steel: 304 grade stainless steel material finished in either a high polished shine or a satin finish.

Installation Methods

In ground mount is embedded into concrete base. Specify In Ground Mount for this option.
Foot Mount has two 2.5"x6"x.25" feet with two anchors per foot. Specify Foot Mount for this option.
Rail Mounted Swerves are bolted to two parallel rails which can be left freestanding or anchored to the ground. Rails are heavy duty 3"x1.4"x3/16" thick galvanized mounting rails. Specify Rail Mount for this option.

Space Use and Setbacks

Wall Setbacks:
For Swerves set parallel to a wall:
Minimum: 24"
Recommended: 36"

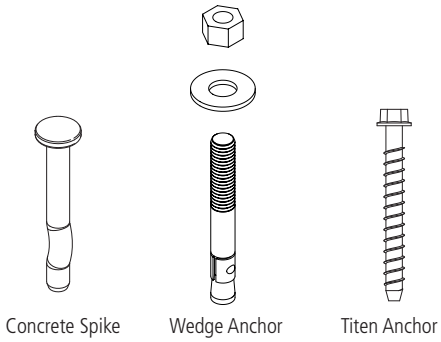
For Swerves set perpendicular to a wall:
Minimum: 28"

Distance Between Racks:
Minimum: 24"
Recommended: 36"

Street Setbacks:
Minimum: 24"
Recommended: 36"

Tools Needed for Installation

Tape Measure
Marker or Pencil
Masonry Drill Bit
Drill (Hammer drill recommended)
Hammer
Wrench 9/16"
Level



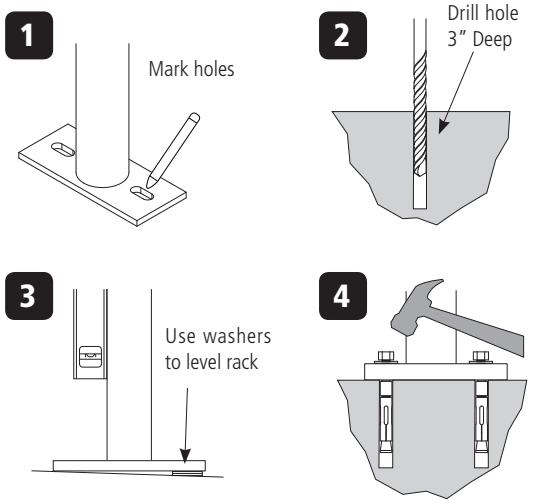
Standard Anchor Types

Recommended Base Materials:

Solid concrete is the best base material for installation. To ensure the proper anchors are shipped with your rack, ask your Dero Rack representative which anchor is appropriate for your application. Be sure nothing is underneath the base material that could be damaged by drilling.

Installation:

3/8" anchors are shipped with the rack. Place the rack in the desired location. Use a marker or pencil to outline the holes of the flange onto the base material. Drill the holes in accordance with the specifications shipped with the anchors. Make sure the holes are at least 3" away from any cracks in the base material. Use washers to level rack if necessary. Tap in anchors and follow your specific anchor instructions provided with the rack.



(Anchors will vary according to install surface)

Tamper Resistant Fasteners

The concrete spike is a permanent anchor. The top of the wedge anchor can also be pounded sideways after installation so that it cannot be removed. Other tamper resistant fasteners are also available for purchase.

When using the special tamper resistant nuts, always set and first tighten the anchors. Once the rack is installed, replace two nuts from the bracket (opposite sides from each other) with the tamper resistant fastener. DO NOT OVERTIGHTEN the tamper resistant nut.

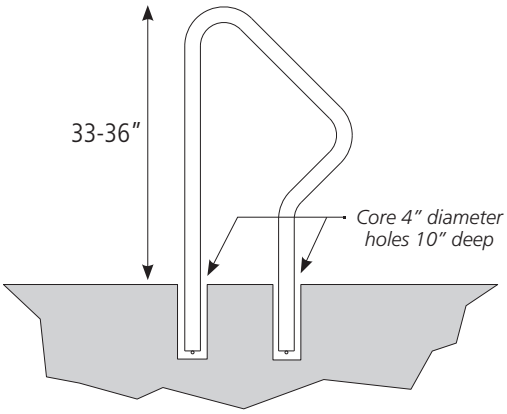
Breakaway Nut *Stainless Tamper-Proof Nut* *Triple-slot Nut*

Concrete Spike

If you have any questions about installation or other features of the Swerve Rack, please call us toll free at 1-800-298-4915

Tools Needed for Installation

Level
Cement mixing tub
Shovel
Trowel
Hole coring machine with 4" bit
Access to water hose
Materials to build brace (see "Install Tip" at bottom of page)



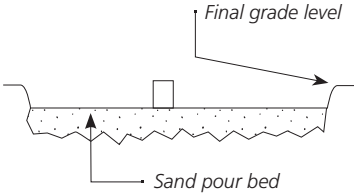
Installing into Existing Sidewalk

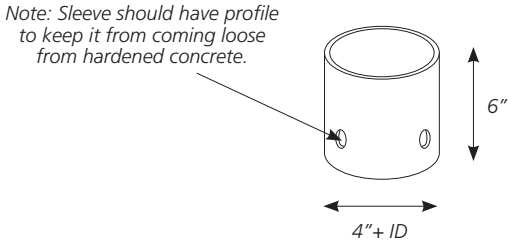
Core holes no less than 3" diameter (4" recommended) and 10" deep into sidewalk. Fill holes with Por-Rok or epoxy grout. Place Swerve Rack into holes, making sure the rack is level. 33"-36" of the Swerve Rack should remain above the surface. If the Swerve Rack is less than 33" high, it will not support the bike adequately. Make sure the rack is level and held in place until the grout has set.

Installing Into a New Sidewalk:

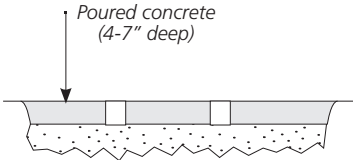
Sleeve Method:

1 Place corrosion resistant sleeve (min. 3" inside diameter) in sand pour bed in exact location where rack will be installed. Make sure top of sleeve is at same level as desired finished concrete surface. Fill sleeve with sand to keep it in place and prevent it from filling with concrete.

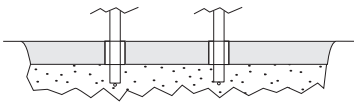




2 Pour concrete and allow to cure.

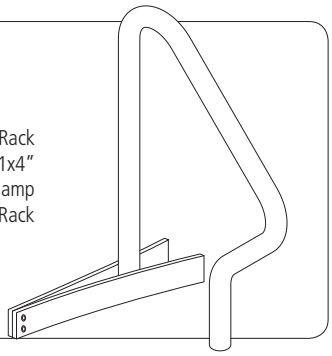


3 After appropriate cure time, dig out sand from sleeves and insert racks, making sure they are level and at the appropriate height. Pour in Por-Rok or epoxy grout and allow to set.



INSTALL TIP

An easy way to brace the Swerve Rack while the grout sets is to bolt two 1x4" boards together at one end and clamp them onto the legs of the Swerve Rack like a clothes pin.



Site Furnishing Elements

Finish Palette Alternatives

Site Furnishing Element	Color			
Base Option	Dark Bronze	Lt Grey Silver	Nantucket Blue	Hunter Green
Vehicular Light and Pole	x			
Pedestrian Light and Pole	x			
Bollard Light	x			
Bench			x	
Table and Seat			x	
Receptacle			x	
Ash Receptacle			x	
Bicycle Rack		x		
Planter		x		
Alt 1				
Vehicular Light and Pole	x			
Pedestrian Light and Pole	x			
Bollard Light	x			
Bench			x	
Table and Seat			x	
Receptacle	x			
Ash Receptacle	x			
Bicycle Rack		x		
Planter		x		
Alt 2				
Vehicular Light and Pole	x			
Pedestrian Light and Pole*		x		
Bollard Light		x		
Bench			x	
Table and Seat			x	
Receptacle		x		
Ash Receptacle		x		
Bicycle Rack		x		
Planter		x		
*Main Plaza lights to remain bronze pole with silver fixture				

KEYSTONE RIDGE DESIGNS

2014 KEYSHIELD® Color Palette

KEYSTONE RIDGE DESIGNS KEYSHIELD® FINISH

Safeguarded with our trademark KEYSHIELD® powder coating, Keystone Ridge Designs' superb product is further enhanced with a lustrous, durable finish that is unparalleled in product protection. KEYSHIELD® is our stamp of armored excellence that is foremost in site furniture finishes.

- The KEYSHIELD® process involves:
  - Cleaning the substrate
  - Phosphatizing the product in the washing stage
  - Armoring the product in 7-15 mil thickness of color polyester powder coating
- The KEYSHIELD® finish protects each piece of furniture from chipping, cracking and UVA damage
- The strength, durablitiy and quality of the KEYSHIELD® finish is backed by a **three-year warranty**

2014 Standard KEYSHIELD® Color Options

TEXTURED FINISHES

ANTHRACITE • 349/79680

COPPER VEIN • PLRS 90242

VERDI GREEN • SRSS 90079

BRONZE • 39/60020

SPARKLE SILVER • 49/90450

MATTE BLACK • 38/80020

CHAMPAGNE • 349/68780

HUNTER GREEN • RAL 6009

CHOCOLATE • RAL 8028

QUICKSILVER • PCSS/90416

GLOSS BLACK • 38/80010

CHARCOAL • RAL 7022

EVERGREEN • 39/50060

BURGUNDY • RAL 3005

NANTUCKET BLUE • RAL 5005

SAFETY YELLOW is available upon request at no additional charge. Colors may vary slightly due to printing processes. Please call for color samples. An additional 160 custom colors are available upon request.

670 Mercer Road • Butler, PA 16001-1840
Toll-free: 1-800-284-8208 • Phone: 724-284-1213 • Fax: 724-284-1253
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www.keystoneridgedesigns.com

ARCHITECTURAL COLORS

COLOR OPTIONS

Lithonia

Textured

RAL

Striping

AVAILABILITY BY PRODUCT

Outdoor & Rough Service

Indoor HID

Gotham

RESOURCES

Lithonia colors in Alpha Order

RAL colors in Numerical Order

Custom Color Order Procedures

Custom Color Order Submittal Form

< Back

LITHONIA COLORS

The visualization of the colors on the screen is conditional based on the characteristics of your printer, monitor and its graphics card. This chart is intended as a reference guide only.
Please - always contact a Lithonia representative for an accurate paint chip sample.

Color Chip	ABL Code	Color Name	Part #
	DBL	Black	P13
	DDB	Dark Bronze	P50
	DWH	White	P21
	DNA	Natural Aluminum	P07
	DMB	Medium Bronze	P11
	DSS	Sandstone	P12
	DGC	Charcoal Grey	P32
	DTG	Tennis Green	P33
	DSB	Steel Blue	P49
	DBR	Bright Red	P34

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DIVISION 06

WOOD, PLASTICS, AND COMPOSITES

CANNONDESIGN

Millwork Hardware

1. Butt Hinges: 2-3/4-inch (70-mm), 5-knuckle steel hinges made from 0.095-inch- (2.4-mm-) thick metal, and as follows:
   - Semiconcealed Hinges for Flush Doors: BHMA A156.9, B01361.
   - Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521, equivalent to No. 1592-4 Interleaf Casework Hinge by Stanley Hardware, or approved equal.
2. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 170 degrees of opening, self-closing, equivalent to the following:
   - Blumm No. 71 6580 with Plate 173H9100
   - Grass No. 3903VZ with mounting plate 10761
   - Hafele No. 329.07.654 with plate
3. Exposed Barrel Hinge: Recessed Cup, 180 degree to 270 degree swing, with height and lateral adjustment, complying with BHMA A 156.9, nickel finish.
   - Hafele: Aximat 300 Hinge
   - Grass: Institutional Hinge 9603 with dowelled cup
   - Hetal: MB-0310 and MB-8010
4. Wire Pulls: Back mounted, BHMA A156.9, B02011 solid brass, 4 inches (100 mm) long, 5/16 inch (8 mm) in diameter, equivalent to the following:
   - No. 4484 by Stanley Hardware.
   - No. MC-4024 by Epco Hardware.
   - No. 6208 by National Lock and Cabinet Hardware.
5. Catches: Magnetic catches, BHMA A156.9, B03141, Grade 1, with clear anodized aluminum case and impregnated floating rubber magnet, zinc plated strike, slotted screw holes in case and off-center hole in strike, equivalent to No. SP41 or SP45 by Stanley Hardware, or approved equal.
6. Catches: Magnetic catches with slim-line plastic case, steel magnet and strike equivalent to NO. 246.50.708 or No. 246.50.100 by Hafele, or approved equal.
   - Provide one catch for doors up to 36-inches (914 mm) in height, and a minimum of two catches for doors greater in height.
7. Adjustable Shelf Standards and Supports:
   - BHMA A156.9, B04071; with shelf rests, B04081 for end-mounted cabinet shelving, equivalent to No. 255-256 by Knape and Vogt Manufacturing Co.
   - BHMA A156.9, B04102; with shelf brackets, B04112 for back-mounted wall shelving, equivalent to the following:
     - Heavy-duty: No. 87-187 by Knape and Vogt Manufacturing Co., or approved equal. Provide K&V No. 104-103 Series Back and Front Shelf Rests at each bracket, or approved equal.
     - Extra Heavy-duty: No. 85-185, Double-Slot by Knape and Vogt Manufacturing Co.,or approved equal.
8. Shelf Rests: BHMA A156.9, B04013; metal or metal, two-pin type with shelf hold-down clip.
9. Counter Support Brackets: 6063 T6 “T” shaped extruded aluminum bracket with MIG welding across 45-degree miters and back.
   - Load Capacity: 450 pounds per bracket minimum.
   - Finish: Custom powder coat finish as selected by Architect from manufacturer’s full range.
   - Product: “Rakks Counter Support Bracket” by the Rangine Corporation.

Millwork Hardware (continued)

10. Drawer Slides: BHMA A156.9, B05111; Side-mounted, full-extension, all ball bearing zincplated steel drawer slides with hold-in detent, rated for indicated loads, and equivalent to the following:
    - Drawers 6-inches (152mm) or less in depth and up to 16-inches (406mm) in width:
        - Model 3832SC, 100 lb./pr. (45kg) load rating, telescoping, self-closing movement, by Accuride International, or approved equal.
    - Drawers 6-inches (152 mm) or less in depth and up to 24-inches (610 mm) in width:
        - Model 7432, 100 lb./pr. (45kg) load rating, progressive movement, by Accuride International, or approved equal.
11. Drawers over 6-inches (152mm) in depth and up to 42-inches (1067mm) in width:
    - Model 3640, 200lb./pr. (90 kg) load rating, sequential movement, by Accuride International, or approved equal.
12. Plastic Slides for Sliding Glass Doors: BHMA A156.9, B07063, equivalent to Series 2412 Track and Upper Guides by Knape and Vogt Mfr. Co., or approved equal.
13. Door and Drawer Locks:
    - Door and Drawer Locks: Multi-function pin tumbler cam locks suitable for specific projectapplications. All brass construction with 26D-Dull Chrome finish, equivalent to “No.C8103 by National Lock Co.,” or approved equal. Provide two stamped brass keys perlock. Locks to be capable of 850 key changes.
14. All locks shall be keyed alike within each room and masterkeyed, including locks on under-counter refrigerators. Locks on inner and outer doors of narcotics cabinets shall be keyed separately.
15. Grommets for Cable Passage through Countertops: [1-1/4-inch (32-mm)][2-inch (51-mm)] <Insert size> OD,[brown][black]<Insert color>, molded-plastic grommets and matching plastic caps with slot for wire passage.
    - Product: Subject to compliance with requirements, provide “[OG][SG]Series” by Doug Mockett & Company, Inc.
16. Paper Slots: [12 inches (305 mm)][17 inches (432 mm)] long by 1-3/4 inches (45 mm) wide by 1 inch (25 mm) deep;[brown][black]<Insert color>, molded-plastic, paper-slot liner with 1/4-inch (6.4-mm) lip. In subparagraph below, “Model CP-2” is 12-inch (305-mm) slot; “Model CP-1” is 17-inch (432-mm) slot.
    - Product: Subject to compliance with requirements, provide “Model[CP-2][CP-1]” by Doug Mockett & Company, Inc.
17. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
    - Dark, Oxidized, Satin Bronze, Oil Rubbed: BHMA 613 for bronze base; BHMA 640 for steel base; match Architect’s sample.
    - Bright Brass, Clear Coated: BHMA 605 for brass base; BHMA 632 for steel base.
    - Satin Brass, Blackened, Bright Relieved, Clear Coated: BHMA 610 for brass base; BHMA 636 for steel base.
    - Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
    - Bright Chromium Plated: BHMA 625 for brass or bronze base; BHMA 651 for steel base.
    - Satin Stainless Steel: BHMA 630.
18. For concealed hardware, provide manufacturer’s standard finish that complies with product class requirements in BHMA A156.9, unless otherwise indicated
19. Keyboard Trays: Undercounter-hung, sliding keyboard tray with fully concealed slides, removable palm rest, extra-wide tray with ample mousing area, built-in cable management, removable mouse pad allowing for left or right-handed mousing, typing surface held in-place when in use or stored, adjustable mounting brackets capable of inboard or outboard mounting.
    - Acceptable Products: Subject to compliance with requirements, provide products equivalent to Model “CBERGP-Tray 200” by Accuride, or approved equal.

High Pressure Laminate

Related Masterspec: Division 6, 064219 - Plastic-Laminate-Faced Wood Paneling
Division 12, 123623.13 - Plastic-Laminate-Clad Countertops

Product: Formica Laminate or approved equal

- General Purpose Grade 10/HGS to be used for interior horizontal or vertical surfaces
- Post Forming Laminate Grade 12/HGP to be used for interior horizontal or vertical surfaces requiring 1/2” or greater outside radiused edges and/or 3/16” cove radii
- Post Forming Laminate Grade 20/VGP to be used for interior vertical surfaces requiring 3/8” or greater outside radiused edges

Locations/Applications: Millwork

Product Requirements: Product must meet or exceed minimum requirements for the following-

- LD3.3 Test (light resistance)
- LD3.4 Test (stain resistance)
- LD3.6 Test (high temperature resistance)
- LD3.8 Test (ball impact resistance)
- LD3.13 Test (water resistance-cylces)

Codes and Specifications- product must meet or exceed requirements for the following-

- ASTM E-84
- U.S. Federal Specification, LP-508-H, Style D, Type I, Class 1
- U.S. Military Specification, MIL-P-17171E(SH), Type I
- FMVSS 302
- NSF Standard 35
- ASTM-G22 Approved

Environmental-

- GREENGUARD Certification strongly encouraged

FORMICA® LAMINATE BY FORMICA GROUP
TECHNICAL DATA (GENERAL PUPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20)

PRODUCT DESCRIPTION

Melamine-impregnated decorative surface papers are combined with phenolic-treated kraft paper and consolidated in a press at high pressures. The sheet back is sanded to maintain a uniform thickness and facilitate bonding.

COLORS AND FINISH

Formica® Brand Laminate sheets (horizontal general purpose grade 10/HGS) are available in a broad selection of designs and colors. Standard finishes for each pattern are detailed in the *Formica Corporation - National Product Guide* (Form No. 02-034W). Not all finishes are available in all Solid Colors / Patterns / Woodgrains. Polished finish (-90) is not recommended for heavy-duty horizontal surfaces.

Formica Brand Laminate sheets (horizontal post-forming grade 12/HGP and vertical post-forming grade 20/VGP) are available in a broad selection of designs and colors. Standard finishes for each pattern are detailed in the *Formica Corporation - National Product Guide* (Form No. 02-034W). Not all finishes are available in all Solid Colors / Patterns / Woodgrains. Polished finish (-90) is not recommended for heavy-duty horizontal surfaces.

RECOMMENDED APPLICATION

Grade 10/HGS

Formica Brand Laminate – general purpose grade 10/HGS is intended for application to interior horizontal or vertical surfaces where design, appearance, quality, durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

Grade 12/HGP

Formica Brand Laminate – post-forming laminate grade 12/HGP is intended for application to interior horizontal or vertical surfaces requiring 1/2" (12.7mm) or greater outside radiused edges, and/or 3/16" (4.8mm) cove radii, where design, appearance, quality,
durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

Grade 20/VGP

Formica Brand Laminate – post-forming grade 20/VGP is intended for application to interior vertical surfaces requiring 3/8" (9.5mm) or greater outside radiused edges, where design, appearance, quality, durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

FABRICATION AND ASSEMBLY

LIMITATIONS

Formica Brand Laminate is designed for interior use only. Do not adhere directly to plaster, drywall (gypsum board), or concrete. Do not use in areas exposed to temperatures exceeding 275°F (135°C) or for exterior applications. When using Grade 20, **finished panel widths should not exceed 24" (610mm) maximum,** unless the adhesive system is a rigid set adhesive like PVA (wood glue). We do not recommend contact adhesive for Grade 20 panels wider than 24" (610mm). When using Grade 20-90 gloss finish on a panel application, there will be a degree of telegraphing on the surface. Formica recommends using Grade 10-90 or 12-90 gloss for these applications.

MACHINING LOW SHEEN LAMINATE SHEETS

Formica Brand Laminate with low sheen surfaces are subject to marring. Fabricating with peel coat on surface (if applicable) is recommended. Router base should be clean and free of burrs and debris. Table saws should be clean, flat, and free of burrs.

STORAGE

Formica Brand Laminate should be stored horizontally, with a caul board or other protective sheet placed on top to protect the material from possible damage. The material should be protected from moisture, and should never be stored in contact with the floor or an outside wall. Optimum conditions for storage are approximately 75°F (24°C), and 45% to 55% relative humidity.

PRECONDITIONING

Prior to fabrication, allow laminate sheet and substrate to acclimate for at least 48 hours at the same ambient conditions. Optimum conditions are approximately 75°F (24°C), and relative humidity of 45% to 55%. Provisions should be made for the circulation of air around the materials.

SUBSTRATES

Formica Brand Laminate sheet should be bonded to an appropriate substrate, such as #45 density particleboard (ANSI A208.1 - 1999), or Medium Density Fiberboard (MDF). Due to the potential for stress cracking, shrink-back, and surface telegraphing problems, the use of plywood is strongly discouraged and not recommended. The substrate should be sanded smooth, and should be clean, free of oil or grease, and uniform in thickness.

Formica Brand Laminate sheet (grade 10/HGS) can be bonded to metal substrates using contact adhesive (see recommendations below, under Adhesives). Refer to Formica® Laminate Brief - Veneered to Metal Substrates for General Information, Materials, Conditions and Methods. Formica Corporation does not warranty this particular application.

FORMICA® LAMINATE BY FORMICA GROUP
TECHNICAL DATA (GENERAL PUPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20) CONTINUED

ADHESIVES

Contact, semi-rigid (PVAc), or rigid (urea, resorcinol) adhesives may be used. Follow the adhesive manufacturer's recommendations. Certain combinations of finish, substrate, and adhesive can cause telegraphing.

When bonding Formica Brand Laminate sheet (grade 10/ HGS) to metal substrates using contact adhesive, use Formica brand flammable solvent-based #155 or non-flammable solvent-based #120M contact adhesives. Do not use water-based or SBR types of contact adhesive when bonding laminate sheets to metal substrates.

ASSEMBLY

Material, equipment, and workmanship should conform to the Formica Corporation recommended standard practices, conditions, procedures, and recommendations as specified by ANSI/ NEMA LD3-2005, Architectural Woodwork Quality Standards and ANSI 161.2-1998 Standards.

Formica Brand Laminate sheets (grade 10, 12, and 20) can be sawed, drilled, routed, and fabricated using standard carbidetipped cutting tools.

Holes for screws or bolts should be drilled oversized.

Panel assemblies should be laminated with the appropriate backing sheet to minimize warpage. Formica backing sheets (grade 91/BKV or 92/BKH) are recommended for less critical applications. Optimum balancing is obtained by bonding the same surface laminate on both sides of the assembly with the same adhesive. Always align sanding marks in the same direction.

All inside corners of cutouts must be radiused as large as possible, 1/8" (3.18mm) minimum, to avoid stress cracking. The edges and corners should be routed, sanded, or filed smooth and free of chips or nicks. Panels fabricated using metal substrates, which are more dimensionally stable than wood-based materials, should be installed in a framing system, which captures the perimeter of the panel yet allows for the normal dimensional movement of the laminate. This is to protect the panel edge and prevent edge lifting or separation from the substrate, which can occur under dry conditions.

TECHNICAL DATA

Performance compliance of Formica Brand Laminate General purpose grade 10 and Post-forming grades 12 and 20

ANSI / NEMA STANDARDS PUBLICATION — LD3-2005

PHYSICAL PROPERTIES	LD3 TEST	10/HGS
Appearance	3.1	No ABC Defects
Light Resistance	3.3	Slight
Cleanability	3.4	20 (max.)
Stain Resistance	3.4	
Reagents 1 - 10		No Effect
Reagents 11 - 15		Moderate
Boiling Water Resistance	3.5	No Effect
High Temperature Resistance	3.6	Slight
Ball Impact Resistance - in	3.8	50 (min.)
- mm		1270 (min.)
Radiant Heat Resistance - sec	3.10	125 (min.)
Dimensional Change	3.11	
Machine Direction - %		0.50 (max.)
Cross Direction - %		0.90 (max.)
Wear Resistance - cycles	3.13	400 (min.)

PHYSICAL PROPERTIES	LD3 TEST	12/HGP	20/VGP
Appearance	3.1	No ABC Defects	No ABC Defects
Light Resistance	3.3	Slight	Slight
Cleanability	3.4	20 (max.)	20 (max.)
Stain Resistance	3.4		
Reagents 1 - 10		No Effect	No Effect
Reagents 11 - 15		Moderate	Moderate
Boiling Water Resistance	3.5	Slight	Slight
High Temperature Resistance	3.6	Slight	Slight
Ball Impact Resistance - in	3.8	30 (min.)	20 (min.)
- mm		762 (min.)	508 (min.)
Radiant Heat Resistance - sec	3.10	100 (min.)	80 (min.)
Dimensional Change	3.11		
Machine Direction - %		1.1 (max.)	1.1 (max.)
Cross Direction - %		1.4 (max.)	1.4 (max.)
Wear Resistance - cycles	3.13	400 (min.)	400 (min.)
Formability - in	3.14	5/8	1/2
- mm		16	12
Blister Resistance - sec	3.15	55	40

FORMICA® LAMINATE BY FORMICA GROUP
TECHNICAL DATA (GENERAL PUPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20) CONTINUED

FIRE TEST DATA – ASTM E-84

Formica Corporation conducts and maintains an active fire testing program to provide code regulators, architects, and designers with current information on a variety of panel assemblies. Fire test data using Formica® Brand Laminate sheets (grades 10/HGS, 12HGP, and 20/VGP) is available upon request. Contact Formica® Technical Services at 1-800-FORMICA™ (option 2) or 513-786-3578 for assistance.

CODES AND SPECIFICATIONS

FORMICA BRAND LAMINATE
(GENERAL PURPOSE — GRADE 10/HGS / HORIZONTAL APPLICATION)

U.S. Federal Specification, LP-508-H, Style D, Type I, Class 1
U.S. Military Specification, MIL-P-17171E(SH), Type I
FMVSS 302
NSF Standard 35
ASTM-G22 Approved
City of New York, Board of Standards and Appeals, MEA No. 326-86M
GREENGUARD CERTIFICATION

FORMICA BRAND LAMINATE
(POST-FORMING — GRADE 12/HGP / HORIZONTAL APPLICATION)

U.S. Federal Specification, LP-508-H, Style D, Type II, Class 1
FMVSS 302
NSF Standard 35
City of New York, Board of Standards and Appeals, MEA No. 327-86M
GREENGUARD CERTIFICATION

FORMICA BRAND LAMINATE
(POST-FORMING — GRADE 20/VGP / VERTICAL APPLICATION)

U.S. Federal Specification, LP-508-H, Style D, Type II, Class 2
CFR Part 3280 Manufacturing Home Construction and Safety Standards
FMVSS 302
NSF Standard 35
GREENGUARD CERTIFICATION

SIZES

Sheet widths: 36" (914mm), 48" (1219mm), 60" (1524mm)
Sheet lengths: 96" (2438mm, 120" (3048mm), 144" (3658mm)

THICKNESS

	TYPICAL THICKNESS	NEMA THICKNESS RANGE
Grade 10 (HGS)	.045" (1.1mm)	.043" - .053" (1.08mm - 1.32mm)
Grade 12 (HGP)	.035" (0.9mm)	.034" - .044" (0.88mm - 1.12mm)
Grade 20 (VGP)	.026" (0.7mm)	.024" - .032" (0.6mm - 0.8mm)

WEIGHT PER SQUARE FOOT

Grade 10/HGS: 0.324 pounds
Grade 12/HGP: 0.252 pounds
Grade 20/VGP: 0.180 pounds

TO ORDER FORMICA BRAND LAMINATE SAMPLES, PLEASE CALL

U.S.: 1-800-FORMICA™ (select option 1)
Canada: 1-800-363-1405 for ZIP-CHIP service

HOW TO SPECIFY

Surface (and appropriate backing sheet) shall be Formica Brand Laminate by Formica Group, Cincinnati, Ohio.

COLOR NUMBER
COLOR NAME
GRADE
FINISH
SIZE

USE AND CARE

Refer to *Formica Brand Laminate Use and Care Guide* – Form No. YLT 02358w for specific details.

Formica Brand Laminate sheet may be cleaned with a damp cloth and mild detergent.

If in doubt about the suitability of a particular cleaner or detergent, check with its manufacturer. Use of abrasive cleaners, powders, scouring pads, steel wool, sandpaper, etc., can damage the finish of the decorative surface and are not recommended.

Acid or alkaline-based cleaners, compounds, etc., will mar, etch, corrode, and permanently discolor the decorative surface of laminate. Never use these materials on laminate, nor allow bottles, rags, etc., contaminated with them to contact the surface. Accidental spills or splatters from these harsh materials should be wiped off immediately, and the area cleaned thoroughly with a damp cloth.

LIMITED WARRANTY

Formica Corporation expressly warrants that, for a period of one (1) year from the date of first sale, these products will be reasonably free of defects in materials and workmanship, and that when properly handled and fabricated, will conform, within accepted tolerance, to applicable manufacturing specifications. Colors subject to dye lot variations. This limited warranty only applies to Formica Brand Laminate which is stored, handled, fabricated and installed in the manner recommended by Formica Corporation. Due to the variety of uses and applications to which Formica Brand Laminate may be put, **FORMICA CORPORATION CAN MAKE NO WARRANTY THAT THIS PRODUCT IS SUITABLE FOR ANY PARTICULAR PURPOSE AND CAN MAKE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OTHER THAN THOSE SET FORTH ABOVE.**

DISCLAIMER OF WARRANTIES

THE WARRANTIES SET FORTH HEREIN OR IN FORMICA CORPORATION'S WARRANTY DOCUMENTS WITH RESPECT TO A PRODUCT ARE THE ONLY WARRANTIES MADE BY FORMICA CORPORATION IN CONNECTION WITH THESE PRODUCTS, AND ARE EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. PRODUCTS SOLD BY FORMICA CORPORATION ARE SOLD ONLY TO THE SPECIFICATIONS SPECIFICALLY SET FORTH BY FORMICA CORPORATION IN WRITING. FORMICA CORPORATION'S SOLE OBLIGATION FOR A REMEDY TO BUYER SHALL BE REPAIR OR REPLACEMENT OF NON-CONFORMING PRODUCTS, OR AT THE OPTION OF FORMICA CORPORATION, RETURN OF THE PRODUCT AND REFUND OF THE PURCHASE PRICE. BUYER ASSUMES ALL RISK WHATSOEVER AS TO THE RESULT OF THE USE OF THE PRODUCTS PURCHASED, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES.

LIMITATION OF LIABILITY

No claim by buyer of any kind, including claims for indemnification, whether as to quality or amount of products delivered or for non-delivery of products, shall be greater in amount than the purchase price of the products in respect of which damages are claimed. **IN NO EVENT SHALL FORMICA CORPORATION BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL, RELIANCE, EXEMPLARY, OR CONSEQUENTIAL DAMAGES OR COVER, OR LOSS OF PROFIT, REVENUE OR USE, IN CONNECTION WITH, ARISING OUT OF, OR AS A RESULT OF, THE SALE, DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS SOLD HEREUNDER, OR FOR ANY LIABILITY OF BUYER TO ANY THIRD PARTY WITH RESPECT THERETO. BUYER SHALL INSPECT FOR NONCONFORMITY PROMPTLY UPON RECEIPT.** Failure by buyer to give Formica Corporation written notice of claim within 30 days from date of delivery or, in the case of non-delivery from the date fixed for delivery, shall constitute a waiver by buyer of all claims in respect of such products.

High Pressure Laminate

Related Masterspec: Division 6, 064116 - Plastic-Laminate-Faced Wood Architectural Cabinets
Division 12, 123623.13 - Plastic-Laminate-Clad Countertops

Product: Formica Laminate or approved equal

- General Purpose Grade 10/HGS to be used for interior horizontal or vertical surfaces
- Post Forming Laminate Grade 12/HGP to be used for interior horizontal or vertical surfaces requiring 1/2” or greater outside radiused edges and/or 3/16” cove radii
- Post Forming Laminate Grade 20/VGP to be used for interior vertical surfaces requiring 3/8” or greater outside radiused edges

Locations/Applications: Millwork

Product Requirements: Product must meet or exceed minimum requirements for the following-

- LD3.3 Test (light resistance)
- LD3.4 Test (stain resistance)
- LD3.6 Test (high temperature resistance)
- LD3.8 Test (ball impact resistance)
- LD3.13 Test (water resistance-cylces)

Codes and Specifications- product must meet or exceed requirements for the following-

- ASTM E-84
- U.S. Federal Specification, LP-508-H, Style D, Type I, Class 1
- U.S. Military Specification, MIL-P-17171E(SH), Type I
- FMVSS 302
- NSF Standard 35
- ASTM-G22 Approved

Environmental-

- GREENGUARD Certification strongly encouraged

FORMICA® LAMINATE BY FORMICA GROUP
TECHNICAL DATA (GENERAL PUPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20)

PRODUCT DESCRIPTION

Melamine-impregnated decorative surface papers are combined with phenolic-treated kraft paper and consolidated in a press at high pressures. The sheet back is sanded to maintain a uniform thickness and facilitate bonding.

COLORS AND FINISH

Formica® Brand Laminate sheets (horizontal general purpose grade 10/HGS) are available in a broad selection of designs and colors. Standard finishes for each pattern are detailed in the *Formica Corporation - National Product Guide* (Form No. 02-034W). Not all finishes are available in all Solid Colors / Patterns / Woodgrains. Polished finish (-90) is not recommended for heavy-duty horizontal surfaces.

Formica Brand Laminate sheets (horizontal post-forming grade 12/HGP and vertical post-forming grade 20/VGP) are available in a broad selection of designs and colors. Standard finishes for each pattern are detailed in the *Formica Corporation - National Product Guide* (Form No. 02-034W). Not all finishes are available in all Solid Colors / Patterns / Woodgrains. Polished finish (-90) is not recommended for heavy-duty horizontal surfaces.

RECOMMENDED APPLICATION

Grade 10/HGS

Formica Brand Laminate – general purpose grade 10/HGS is intended for application to interior horizontal or vertical surfaces where design, appearance, quality, durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

Grade 12/HGP

Formica Brand Laminate – post-forming laminate grade 12/HGP is intended for application to interior horizontal or vertical surfaces requiring 1/2" (12.7mm) or greater outside radiused edges, and/or 3/16" (4.8mm) cove radii, where design, appearance, quality,
durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

Grade 20/VGP

Formica Brand Laminate – post-forming grade 20/VGP is intended for application to interior vertical surfaces requiring 3/8" (9.5mm) or greater outside radiused edges, where design, appearance, quality, durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

FABRICATION AND ASSEMBLY

LIMITATIONS

Formica Brand Laminate is designed for interior use only. Do not adhere directly to plaster, drywall (gypsum board), or concrete. Do not use in areas exposed to temperatures exceeding 275°F (135°C) or for exterior applications. When using Grade 20, **finished panel widths should not exceed 24" (610mm) maximum,** unless the adhesive system is a rigid set adhesive like PVA (wood glue). We do not recommend contact adhesive for Grade 20 panels wider than 24" (610mm). When using Grade 20-90 gloss finish on a panel application, there will be a degree of telegraphing on the surface. Formica recommends using Grade 10-90 or 12-90 gloss for these applications.

MACHINING LOW SHEEN LAMINATE SHEETS

Formica Brand Laminate with low sheen surfaces are subject to marring. Fabricating with peel coat on surface (if applicable) is recommended. Router base should be clean and free of burrs and debris. Table saws should be clean, flat, and free of burrs.

STORAGE

Formica Brand Laminate should be stored horizontally, with a caul board or other protective sheet placed on top to protect the material from possible damage. The material should be protected from moisture, and should never be stored in contact with the floor or an outside wall. Optimum conditions for storage are approximately 75°F (24°C), and 45% to 55% relative humidity.

PRECONDITIONING

Prior to fabrication, allow laminate sheet and substrate to acclimate for at least 48 hours at the same ambient conditions. Optimum conditions are approximately 75°F (24°C), and relative humidity of 45% to 55%. Provisions should be made for the circulation of air around the materials.

SUBSTRATES

Formica Brand Laminate sheet should be bonded to an appropriate substrate, such as #45 density particleboard (ANSI A208.1 - 1999), or Medium Density Fiberboard (MDF). Due to the potential for stress cracking, shrink-back, and surface telegraphing problems, the use of plywood is strongly discouraged and not recommended. The substrate should be sanded smooth, and should be clean, free of oil or grease, and uniform in thickness.

Formica Brand Laminate sheet (grade 10/HGS) can be bonded to metal substrates using contact adhesive (see recommendations below, under Adhesives). Refer to Formica® Laminate Brief - Veneered to Metal Substrates for General Information, Materials, Conditions and Methods. Formica Corporation does not warranty this particular application.

FORMICA® LAMINATE BY FORMICA GROUP
TECHNICAL DATA (GENERAL PUPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20) CONTINUED

ADHESIVES

Contact, semi-rigid (PVAc), or rigid (urea, resorcinol) adhesives may be used. Follow the adhesive manufacturer's recommendations. Certain combinations of finish, substrate, and adhesive can cause telegraphing.

When bonding Formica Brand Laminate sheet (grade 10/ HGS) to metal substrates using contact adhesive, use Formica brand flammable solvent-based #155 or non-flammable solvent-based #120M contact adhesives. Do not use water-based or SBR types of contact adhesive when bonding laminate sheets to metal substrates.

ASSEMBLY

Material, equipment, and workmanship should conform to the Formica Corporation recommended standard practices, conditions, procedures, and recommendations as specified by ANSI/ NEMA LD3-2005, Architectural Woodwork Quality Standards and ANSI 161.2-1998 Standards.

Formica Brand Laminate sheets (grade 10, 12, and 20) can be sawed, drilled, routed, and fabricated using standard carbidetipped cutting tools.

Holes for screws or bolts should be drilled oversized.

Panel assemblies should be laminated with the appropriate backing sheet to minimize warpage. Formica backing sheets (grade 91/BKV or 92/BKH) are recommended for less critical applications. Optimum balancing is obtained by bonding the same surface laminate on both sides of the assembly with the same adhesive. Always align sanding marks in the same direction.

All inside corners of cutouts must be radiused as large as possible, 1/8" (3.18mm) minimum, to avoid stress cracking. The edges and corners should be routed, sanded, or filed smooth and free of chips or nicks. Panels fabricated using metal substrates, which are more dimensionally stable than wood-based materials, should be installed in a framing system, which captures the perimeter of the panel yet allows for the normal dimensional movement of the laminate. This is to protect the panel edge and prevent edge lifting or separation from the substrate, which can occur under dry conditions.

TECHNICAL DATA

Performance compliance of Formica Brand Laminate General purpose grade 10 and Post-forming grades 12 and 20

ANSI / NEMA STANDARDS PUBLICATION — LD3-2005

PHYSICAL PROPERTIES	LD3 TEST	10/HGS
Appearance	3.1	No ABC Defects
Light Resistance	3.3	Slight
Cleanability	3.4	20 (max.)
Stain Resistance	3.4	
Reagents 1 - 10		No Effect
Reagents 11 - 15		Moderate
Boiling Water Resistance	3.5	No Effect
High Temperature Resistance	3.6	Slight
Ball Impact Resistance - in	3.8	50 (min.)
- mm		1270 (min.)
Radiant Heat Resistance - sec	3.10	125 (min.)
Dimensional Change	3.11	
Machine Direction - %		0.50 (max.)
Cross Direction - %		0.90 (max.)
Wear Resistance - cycles	3.13	400 (min.)

PHYSICAL PROPERTIES	LD3 TEST	12/HGP	20/VGP
Appearance	3.1	No ABC Defects	No ABC Defects
Light Resistance	3.3	Slight	Slight
Cleanability	3.4	20 (max.)	20 (max.)
Stain Resistance	3.4		
Reagents 1 - 10		No Effect	No Effect
Reagents 11 - 15		Moderate	Moderate
Boiling Water Resistance	3.5	Slight	Slight
High Temperature Resistance	3.6	Slight	Slight
Ball Impact Resistance - in	3.8	30 (min.)	20 (min.)
- mm		762 (min.)	508 (min.)
Radiant Heat Resistance - sec	3.10	100 (min.)	80 (min.)
Dimensional Change	3.11		
Machine Direction - %		1.1 (max.)	1.1 (max.)
Cross Direction - %		1.4 (max.)	1.4 (max.)
Wear Resistance - cycles	3.13	400 (min.)	400 (min.)
Formability - in	3.14	5/8	1/2
- mm		16	12
Blister Resistance - sec	3.15	55	40

FORMICA® LAMINATE BY FORMICA GROUP
TECHNICAL DATA (GENERAL PUPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20) CONTINUED

FIRE TEST DATA – ASTM E-84

Formica Corporation conducts and maintains an active fire testing program to provide code regulators, architects, and designers with current information on a variety of panel assemblies. Fire test data using Formica® Brand Laminate sheets (grades 10/HGS, 12HGP, and 20/VGP) is available upon request. Contact Formica® Technical Services at 1-800-FORMICA™ (option 2) or 513-786-3578 for assistance.

CODES AND SPECIFICATIONS

FORMICA BRAND LAMINATE
(GENERAL PURPOSE — GRADE 10/HGS / HORIZONTAL APPLICATION)

U.S. Federal Specification, LP-508-H, Style D, Type I, Class 1
U.S. Military Specification, MIL-P-17171E(SH), Type I
FMVSS 302
NSF Standard 35
ASTM-G22 Approved
City of New York, Board of Standards and Appeals, MEA No. 326-86M
GREENGUARD CERTIFICATION

FORMICA BRAND LAMINATE
(POST-FORMING — GRADE 12/HGP / HORIZONTAL APPLICATION)

U.S. Federal Specification, LP-508-H, Style D, Type II, Class 1
FMVSS 302
NSF Standard 35
City of New York, Board of Standards and Appeals, MEA No. 327-86M
GREENGUARD CERTIFICATION

FORMICA BRAND LAMINATE
(POST-FORMING — GRADE 20/VGP / VERTICAL APPLICATION)

U.S. Federal Specification, LP-508-H, Style D, Type II, Class 2
CFR Part 3280 Manufacturing Home Construction and Safety Standards
FMVSS 302
NSF Standard 35
GREENGUARD CERTIFICATION

SIZES

Sheet widths: 36" (914mm), 48" (1219mm), 60" (1524mm)
Sheet lengths: 96" (2438mm, 120" (3048mm), 144" (3658mm)

THICKNESS

	TYPICAL THICKNESS	NEMA THICKNESS RANGE
Grade 10 (HGS)	.045" (1.1mm)	.043" - .053" (1.08mm - 1.32mm)
Grade 12 (HGP)	.035" (0.9mm)	.034" - .044" (0.88mm - 1.12mm)
Grade 20 (VGP)	.026" (0.7mm)	.024" - .032" (0.6mm - 0.8mm)

WEIGHT PER SQUARE FOOT

Grade 10/HGS: 0.324 pounds
Grade 12/HGP: 0.252 pounds
Grade 20/VGP: 0.180 pounds

TO ORDER FORMICA BRAND LAMINATE SAMPLES, PLEASE CALL

U.S.: 1-800-FORMICA™ (select option 1)
Canada: 1-800-363-1405 for ZIP-CHIP service

HOW TO SPECIFY

Surface (and appropriate backing sheet) shall be Formica Brand Laminate by Formica Group, Cincinnati, Ohio.

COLOR NUMBER
COLOR NAME
GRADE
FINISH
SIZE

USE AND CARE

Refer to *Formica Brand Laminate Use and Care Guide* – Form No. YLT 02358w for specific details.

Formica Brand Laminate sheet may be cleaned with a damp cloth and mild detergent.

If in doubt about the suitability of a particular cleaner or detergent, check with its manufacturer. Use of abrasive cleaners, powders, scouring pads, steel wool, sandpaper, etc., can damage the finish of the decorative surface and are not recommended.

Acid or alkaline-based cleaners, compounds, etc., will mar, etch, corrode, and permanently discolor the decorative surface of laminate. Never use these materials on laminate, nor allow bottles, rags, etc., contaminated with them to contact the surface. Accidental spills or splatters from these harsh materials should be wiped off immediately, and the area cleaned thoroughly with a damp cloth.

LIMITED WARRANTY

Formica Corporation expressly warrants that, for a period of one (1) year from the date of first sale, these products will be reasonably free of defects in materials and workmanship, and that when properly handled and fabricated, will conform, within accepted tolerance, to applicable manufacturing specifications. Colors subject to dye lot variations. This limited warranty only applies to Formica Brand Laminate which is stored, handled, fabricated and installed in the manner recommended by Formica Corporation. Due to the variety of uses and applications to which Formica Brand Laminate may be put, **FORMICA CORPORATION CAN MAKE NO WARRANTY THAT THIS PRODUCT IS SUITABLE FOR ANY PARTICULAR PURPOSE AND CAN MAKE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OTHER THAN THOSE SET FORTH ABOVE.**

DISCLAIMER OF WARRANTIES

THE WARRANTIES SET FORTH HEREIN OR IN FORMICA CORPORATION'S WARRANTY DOCUMENTS WITH RESPECT TO A PRODUCT ARE THE ONLY WARRANTIES MADE BY FORMICA CORPORATION IN CONNECTION WITH THESE PRODUCTS, AND ARE EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. PRODUCTS SOLD BY FORMICA CORPORATION ARE SOLD ONLY TO THE SPECIFICATIONS SPECIFICALLY SET FORTH BY FORMICA CORPORATION IN WRITING. FORMICA CORPORATION'S SOLE OBLIGATION FOR A REMEDY TO BUYER SHALL BE REPAIR OR REPLACEMENT OF NON-CONFORMING PRODUCTS, OR AT THE OPTION OF FORMICA CORPORATION, RETURN OF THE PRODUCT AND REFUND OF THE PURCHASE PRICE. BUYER ASSUMES ALL RISK WHATSOEVER AS TO THE RESULT OF THE USE OF THE PRODUCTS PURCHASED, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES.

LIMITATION OF LIABILITY

No claim by buyer of any kind, including claims for indemnification, whether as to quality or amount of products delivered or for non-delivery of products, shall be greater in amount than the purchase price of the products in respect of which damages are claimed. **IN NO EVENT SHALL FORMICA CORPORATION BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL, RELIANCE, EXEMPLARY, OR CONSEQUENTIAL DAMAGES OR COVER, OR LOSS OF PROFIT, REVENUE OR USE, IN CONNECTION WITH, ARISING OUT OF, OR AS A RESULT OF, THE SALE, DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS SOLD HEREUNDER, OR FOR ANY LIABILITY OF BUYER TO ANY THIRD PARTY WITH RESPECT THERETO. BUYER SHALL INSPECT FOR NONCONFORMITY PROMPTLY UPON RECEIPT.** Failure by buyer to give Formica Corporation written notice of claim within 30 days from date of delivery or, in the case of non-delivery from the date fixed for delivery, shall constitute a waiver by buyer of all claims in respect of such products.

DIVISION 08

OPENINGS

CANNONDESIGN

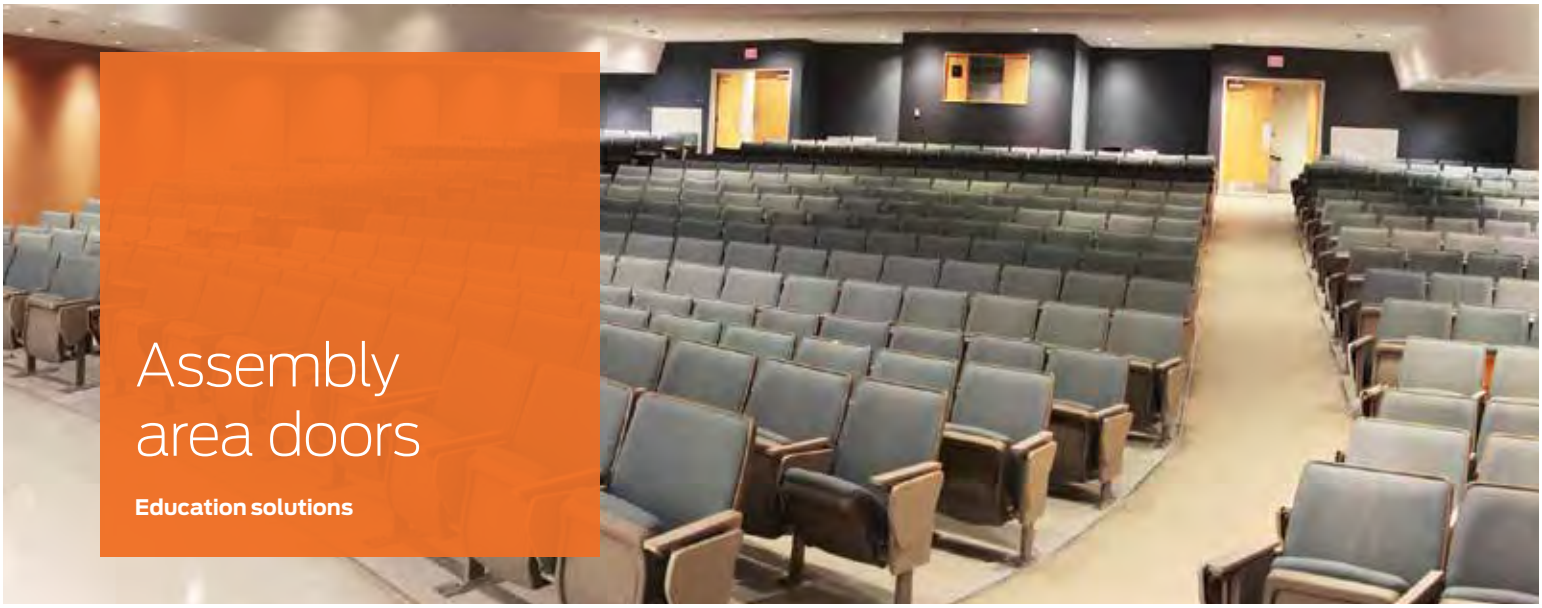
Assembly Area Doors

Product: Allegion or approved equal

Locations/Applications: Assembly areas

Product Requirements:

- Free ingress and egress
- Doors can be secured after hours; access gained by a valid key
- Free egress at all times
- Exit devices wired to the fire alarm system
- Exit device latch bolts extend upon signal from fire alarm system
- Quiet Electric Latch Retraction exit device
- Auto openers (ADA compliant)



Assembly area doors

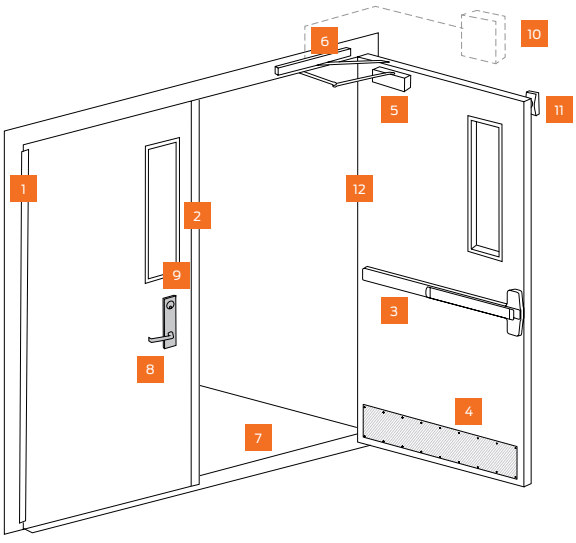
Education solutions

Whether it's an auditorium, cafeteria or assembly hall, double doors in high traffic areas must often accommodate big crowds and stand up to hard use.

And while assembly areas must be accessible on a regular basis, they must also be able to close and latch quickly and reliably when the need arises.

Assembly area door operational requirements:

- Doors are normally unlocked during the day
- Free ingress and egress
- Doors are secured after hours
- Access is gained by valid key
- Free egress is available at all times
- Exit devices are wired to the fire alarm system
- Exit device latchbolts extend upon signal from fire alarm system



Standard features
Building and safety codes vary, but assembly area double doors typically include the following:

1. Ives continuous hinges
2. Von Duprin removable mullion
3. Von Duprin fire exit hardware with electric latch retraction
4. Ives kickplate
5. LCN door closer
6. Glynn-Johnson hold open
7. Threshold with weather strip
8. Von Duprin lever trim
9. Schlage rim cylinder
10. Von Duprin power supply with fire alarm input
11. LCN hold open magnet
12. Electronic power transfer

Innovative solutions for assembly area doors

Assembly area doors must enable free traffic flow, while also serving as a physical barrier against fire and unauthorized access.

Von Duprin® QEL (Quiet Electric Latch Retraction) exit device

- The QEL option provides electronic control of an exit device and is ideally suited for environments where limited operational noise is desired.
- The specially designed exit device leverages quiet technology to reduce the noise generated by opening and closing the door.
- QEL is an option for 98/99 Series (including XP), 94/95 Series and 33A/35A Series devices.
- The QEL is able to automatically adjust latch throw and pull.
- The QEL also includes on-board installation and troubleshooting.

LCN® auto operators

- Since 1876, LCN has been the leader in the door control.
- LCN products include ADA-compliant automatic door operators, surface and concealed door closers and electronic accessories.
- LCN automatic operators, the proven standard in schools for over 20 years, are easily retrofitted into existing doors and frames.
- LCN low energy electrohydraulic and pneumatic automatic operators have a heavy duty closer with a slow opening function.
- LCN's electromechanical automatic operators utilize a motor gearbox and control box to perform the opening and closing.

Note: These security solutions are designed only as a guide and do not take into consideration local codes and regulations that may be in place. Please contact your local Allegion representative to design a specification to meet your unique needs.

Von Duprin®
QEL exit device

LCN®
auto operators

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- Speak with a sales associate about our solutions, grant funding or seamless integration with your one card system

Visit **www.allegion.com/us/industries/education**

- Access our online security and safety self-assessment tools
- Find information about our products and services
- Review case studies about how schools and universities are providing easy access and egress for their students while keying in on security

About Allegion

Allegion (NYSE: ALLE) creates peace of mind by pioneering safety and security. As a $2 billion provider of security solutions for homes and businesses, Allegion employs more than 8,000 people and sells products in more than 120 countries across the world. Allegion comprises 27 global brands, including strategic brands CISA®, Interflex®, LCN®, Schlage® and Von Duprin®. For more, visit **www.allegion.com.**

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Classroom Doors

Product: Allegion or approved equal

Locations/Applications: Classrooms

Product Requirements:

- Doors can be locked or unlocked during the day per school requirement, but should always be closed
- Doors can be secured after hours; access gained by a valid key
- Free egress at all times
- Lockdown achieved without exiting classroom
- Three distinct classroom lockdown solutions:
  - Centralized lockdown
  - Local remote lockdown
  - Manual lockdown

Classroom doors

Education solutions

Every school has several security zones, each with a unique set of requirements and openings. Classrooms are the innermost security zone in a school.

Three distinct classroom lockdown solutions:

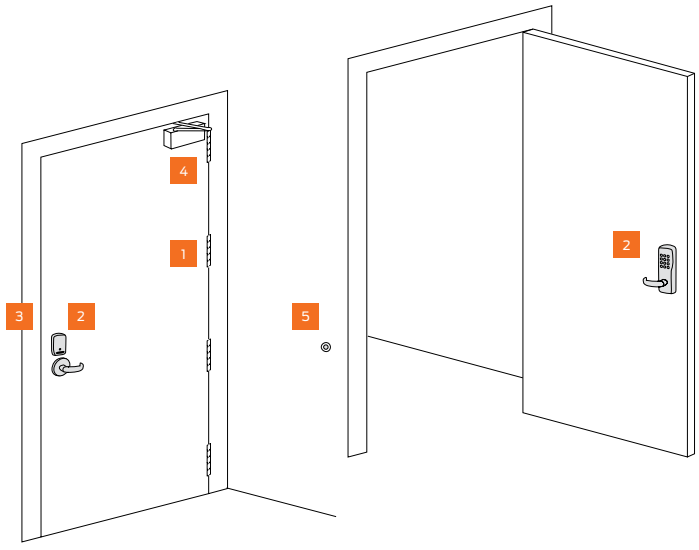
Centralized lockdown: Simultaneous building-wide lockdown controlled by an individual using access control software

Local remote lockdown: A standalone electronic solution activated by a fob within proximity of the door

Manual lockdown: Relies on an individual to be at the door with the right key in hand during a lockdown situation

Classroom door—remote lockdown operational requirements:

- Doors can be locked or unlocked during the day per school requirement, but should always be closed
- Doors are secured after hours
- Access when door is locked is gained by a valid credential or key
- Free egress is available at all times
- Lockdown achieved without exiting classroom



Standard features
In most applications and most institutional settings a basic classroom door—remote lockdown package includes these standard features:

1. Ives hinges
2. Schlage CO-220 classroom lock with remote fob and indicator
3. Ives door silencer
4. LCN door closer
5. Ives door stop

Innovative solutions for secure classroom lockdown

Allegion offers you an array of products designed exclusively to provide swift and seamless lockdown of a classroom in an emergency situation.

Centralized lockdown

- Schlage® AD-400 wireless networked locks utilize patent-pending Wake-Up On Radio™ technology to enable lockdown in seconds.
- Schlage® AD-300 hardwired networked locks also enable centralized lockdown, and offer many features that can be monitored by access control software.
- The AD-Series was designed on an open architecture platform so that it can easily be integrated into virtually any access control system via Wiegand, Clock & Data or RS-485.

Remote local lockdown

- The Schlage® CO-220 standalone classroom security lock with remote fob allows for immediate local lockdown.
- Lockdown can be initiated for up to 10 doors in range by pressing the button on the fob, which can be worn around the neck or wrist.
- When activated, the visual indicator on the interior of the lock illuminates providing verification that the door is secured.

Manual lockdown

- The Schlage® L-Series mortise lock with 180º visual indicator allows one to view the door lock status from across the room.
- Standard on the Schlage® ND-Series classroom security lock, the ND Indicator rose provides at-a-glance instructions for securing the door from inside the room.

Note: These security solutions are designed only as a guide and do not take into consideration local codes and regulations that may be in place. Please contact your local Allegion representative to design a specification to meet your unique needs.

Schlage® AD-400 wireless networked lock

Schlage® CO-220 electronic lock with keyfob

Schlage® L-Series and ND-Series mechanical locks

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- Review case studies about how schools build the foundation of security and safety

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Corridor Doors

Product: Allegion or approved equal

Locations/Applications: Corridors

Product Requirements:

- Doors normally held open
- Magnetic holders are wired to the fire alarm system
- Magnetic door holder releases upon a signal from the fire alarm system

Corridor doors

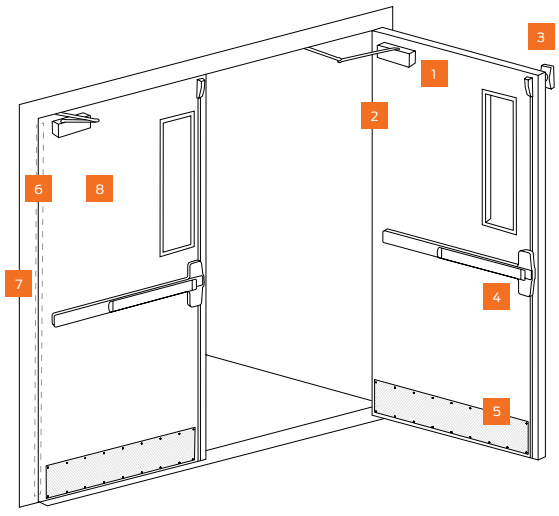
Education solutions

Corridor doors are among the most common openings in school buildings. Placed at high traffic areas, corridor doors link academic areas to large spaces such as gyms, auditoriums or lecture halls. Additionally, they serve as a barrier from one area of a building to another.

They face daily abuse and constant use, so reliable operation is just as critical as the ability to lock down the multiple security zones in your building after hours or in an emergency.

Cross corridor door operational requirements:

- Doors are normally held open
- Magnetic holders are wired to the fire alarm system
- Magnetic door holders release upon a signal from the fire alarm system



Standard features
Building and safety codes may vary, but most corridor doors include these standard features:

1. LCN door closer
2. Von Duprin power transfer
3. LCN magnetic holder
4. Von Duprin fire exit device
5. Ives kick plate
6. Ives continuous hinge
7. Steelcraft hollow metal frame
8. Steelcraft door

Innovative solutions from our architectural hardware specialists

Allegion offers experience and expertise that dates back to the first "panic release bar" in 1908—a device we designed after a theatre fire claimed nearly 600 lives simply because a door wouldn't open from the inside. Today, that needless loss remains part of the underpinning current that motivates our team of professionals to construct security solutions that meet the needs of commercial facilities of varying sizes and functions.

We offer a full range of specification writing services

We believe in the quality and craftsmanship of our products. But if they aren't properly incorporated into a building their full value goes unrealized. Allegion products are not only designed to complement your architectural vision, but also to function in a way that suits the operational and security needs of a facility.

Here are just a few of the ways we can help:

- Prepare a complete hardware specification
- Review and comment on hardware submittals
- Offer AIA-certified training on codes, technology, and product installation and maintenance
- Consult on necessary building codes to ensure fire/life safety and accessibility requirements are met
- Review building programming, product options and potential conflicts with security issues

Note: These security solutions are designed only as a guide and do not take into consideration local codes and regulations that may be in place. Please contact your local Allegion representative to design a specification to meet your unique needs.

Start with Allegion

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- Speak to a specification writer about building standards, code compliance or specification assistance
- Speak with a sales associate about our solutions, grant funding or seamless integration with your one card system

Visit **www.allegion.com/us/industries/education**

- Access our online security and safety self-assessment tools
- Find information about our products and services
- Review a case study about how a high school simplified maintenance and enhanced security with the concealed vertical cable exit device

About Allegion

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Emergency Exit Doors

Product: Allegion or approved equal

Locations/Applications: Emergency Exits

Product Requirements:

- Door is normally locked
- Access is gained by a valid credential
- Free egress is available at all times

Emergency exit doors

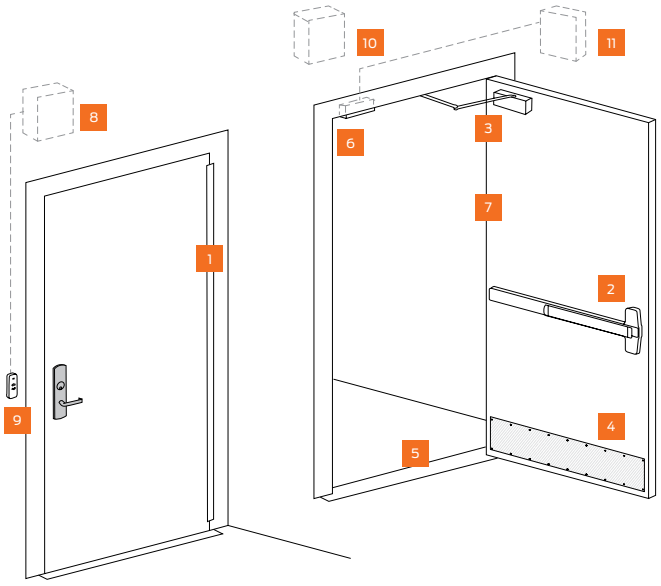
Education solutions

Perimeter emergency exits must allow for free egress at all times. Yet, as exterior doors they also serve as critical points for maintaining building security.

Emergency exits must meet all building codes, as well as ADA and fire and life safety requirements.

Emergency exit door operational requirements:

- Door is normally locked
- Access is gained by a valid credential
- Free egress is available at all times



Standard features

Building and safety codes may vary, but most emergency exit doors will include the following:

1. Ives continuous hinges
2. Von Duprin exit device with trim
3. LCN door closer
4. Ives kick plate
5. Threshold with weather strip
6. Schlage door position switch
7. Electric power transfer
8. Power supply
9. aptiQ reader
10. Access control panel
11. Alarm panel monitor

Innovative solutions for emergency exit doors

Von Duprin and LCN products are designed to perform flawlessly in any setting and are backed by the best after-sales service in the business. It's this commitment to design, performance and technology that ensures you can stand behind our products too.

Von Duprin® PS900 Series

- The PS914 is designed with high in rush current for powering electrified panic devices, and includes a constant output rating at both 12v and 24v settings, universal 120 VAC to 240 VAC input, and a new fire alarm interface.
- Installation is simplified with the PS914 using a flat mounting design and polarized locking connectors for option boards.
- The Von Duprin PS900 Series offers a wide breath of power supplies and accessories for enhanced flexibility and functionality.

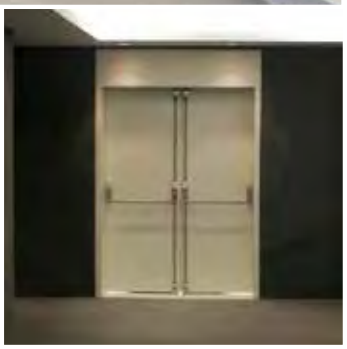
Von Duprin® exit devices

- For over 100 years Von Duprin has set the standard for quality and innovation in the world of exit devices.
- As inventor of the panic bar, Von Duprin has a long-standing history as a leader in quality, durability and security with a wide range of exit devices and outside trim operations.

LCN® door closers

- In openings that are subject to high use and abuse, it's all important—fire and life safety, security, ADA accessibility and design.
- LCN closers are the toughest, smoothest and most reliable door closers in the business.

Note: These security solutions are designed only as a guide and do not take into consideration local codes and regulations that may be in place. Please contact your local Allegion representative to design a specification to meet your unique needs.



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Visit **www.allegion.com/us/industries/education**

- Access our online security and safety self-assessment tools
- Find information about our products and services
- Review case histories about the importance of fire and life safety, including the story of the historic fire that led to the invention of the panic bar exit device

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High Security Data, Asset and Lab Doors

Product: Allegion or approved equal

Locations/Applications: Labs and other high security locations

Product Requirements:

- Door is normally secured
- Access is gained by a valid credential or keypad
- Free egress is available at all times

High security data, asset and lab doors

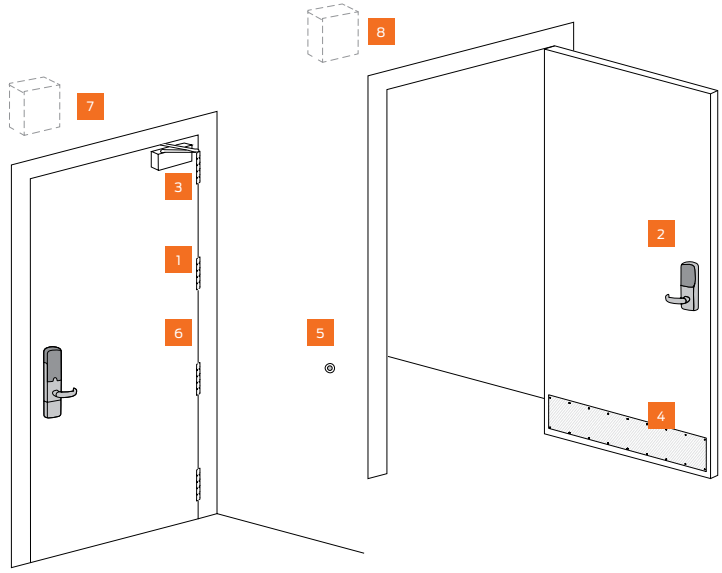
Education solutions

Restricted areas like laboratories, records offices and server equipment rooms typically have a limited number of users, but require a very high level of security to protect private, dangerous or expensive materials, goods or information.

In the education setting, these doors also require quick, reliable lockdown, while still meeting local and state building codes for fire and life safety.

High security door operational requirements:

- Door is normally secured
- Access is possible by valid credential or keypad
- Free egress is available at all times



Standard features

Every door is different, but a basic high security door hardware package includes these standard features:

1. Ives hinges
2. Schlage wireless electronic lock
3. LCN door closer
4. Ives kickplate
5. Ives door stop
6. Ives silencers
7. Panel interface module
8. Access control panel

Innovative solutions for high security openings

An effective high security door is the result of the right products and technology at work. Allegion recommends:

aptiQ™ smart cards

- Smart cards employ MIFARE and MIFARE DESFire™ EV1 technology, making them an ideal credential for high security openings.
- These cards can also store data about the user, and integrate with other systems in place at a school or university for services like cashless vending.
- aptiQ smart cards operate on a 13.56 MHz frequency, and utilize high security encryption to provide optimum security for your data.

Schlage® Wireless AD-400 Series

- The AD-Series wireless locks combine all the components required for a complete access control system into one integrated design that includes the electrified lock, credential reader, request-to-enter/-exit sensors, door position switch and more.
- The AD-400 utilizes patent-pending Wake-Up On Radio™ technology to enable real-time centralized lockdown of a school.
- It can be customized with a variety of credential readers, including keypad, magnetic stripe or multi-technology for proximity and smart cards.
- The AD-Series was designed on an open architecture platform so that it can easily be integrated into virtually any access control system via Wiegand, Clock & Data or RS-485.

Note: These security solutions are designed only as a guide and do not take into consideration local codes and regulations that may be in place. Please contact your local Allegion representative to design a specification to meet your unique needs.

aptiQ™ smart cards

Schlage® AD-400 locks

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- Speak with a sales associate about our solutions, grant funding or seamless integration with your one card system

Visit **www.allegion.com/us/industries/education**

- Access our online security and safety self-assessment tools
- Find information about our products and services
- Review a case study about how a community college got the upper hand on security

About Allegion

Allegion (NYSE: ALLE) creates peace of mind by pioneering safety and security. As a $2 billion provider of security solutions for homes and businesses, Allegion employs more than 8,000 people and sells products in more than 120 countries across the world. Allegion comprises 27 global brands, including strategic brands CISA®, Interflex®, LCN®, Schlage® and Von Duprin®. For more, visit **www.allegion.com.**

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Secure Main Entry Doors

Product: Allegion or approved equal

Locations/Applications: Main Entrance

Product Requirements:

- Doors can be locked or unlocked during the day
- Doors are secured after hours; Access is gained by a valid credential, key or staff release
- Free egress is available at all times

Secure main entry doors

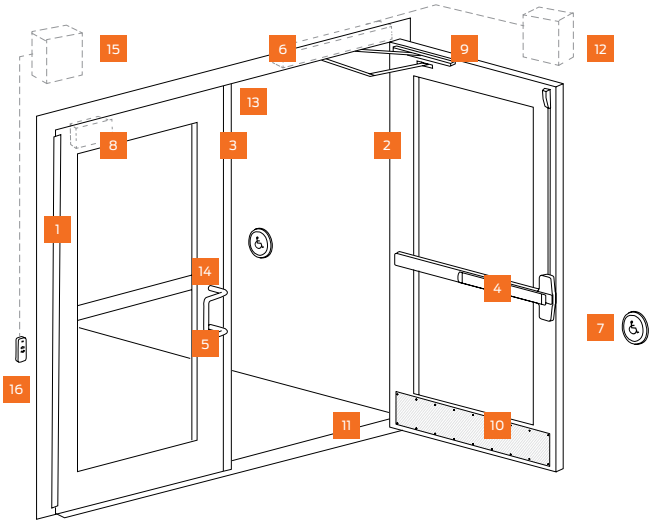
Education solutions

Building entrances in schools and residence halls are typically high traffic openings that must manage the access and egress of visitors in a controlled manner to ensure security by restricting movement throughout the building.

Many schools create a vestibule at the main entrance to provide an additional layer for perimeter security. The design automatically funnels visitors into a main office before granting them access to other parts of the building. At least one opening must comply with accessibility requirements, and every door must provide egress at all times. Certain opening and building conditions may require the use of automatic operators.

Secure main entry door operational requirements:

- Doors are either locked or unlocked during the day
- Doors are secured after hours
- Access is gained by a valid credential, key or staff release
- Free egress is available at all times



Standard features

Building and safety codes may vary, but most building secure main entrance doors include these standard features:

1. Ives continuous hinges
2. Von Duprin power transfer
3. Von Duprin removable mullion
4. Von Duprin exit hardware with electric latch retraction
5. Ives door pull
6. LCN automatic operator
7. LCN actuator
8. LCN closer
9. Glynn-Johnson overhead stops
10. Ives kick plates
11. Threshold with weather strip
12. Von Duprin power supply
13. Schlage cylinder for mullion
14. Schlage rim cylinder for exit device
15. Access control system
16. aptiQ reader

Innovative solutions for secure main entry doors

aptiQ™ features cutting-edge security technology that functions with a number of different credential types. Our solutions are transforming basic access control products into all-in-one solutions to give schools security plus convenience.

aptiQ™ Multi-technology Readers

- aptiQ Multi-technology Readers interface with magnetic stripe cards, proximity cards and aptiQ smart cards using MIFARE® and MIFARE DESFire™ EV1.
- aptiQ readers can also read the card serial numbers of a variety of smart cards from other manufacturers.
- aptiQ readers are NFC-compatible and communicate with NFC-enabled phones using aptiQmobile technology whenever you're ready to take that step.

aptiQ™ smart cards

- Smart cards employ advanced security features that make them an ideal credential for high security openings.
- Credentials like smart cards prevent unauthorized access because they can't be duplicated without authorization.
- These cards can also store data about the user, and integrate with other systems in place at a school or university for services like cashless vending.

Note: These security solutions are designed only as a guide and do not take into consideration local codes and regulations that may be in place. Please contact your local Allegion representative to design a specification to meet your unique needs.

aptiQ™ multi-technology readers

aptiQ™ smart cards

Start with Allegion

Call **877-671-7011**

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Unrestricted Main Entry Doors

Product: Allegion or approved equal

Locations/Applications: Main Entrance

Product Requirements:

- Doors can be locked or unlocked during the day
- Doors are secured after hours; Access is gained by a valid credential, key or staff release
- Free egress is available at all times

Unrestricted main entry doors

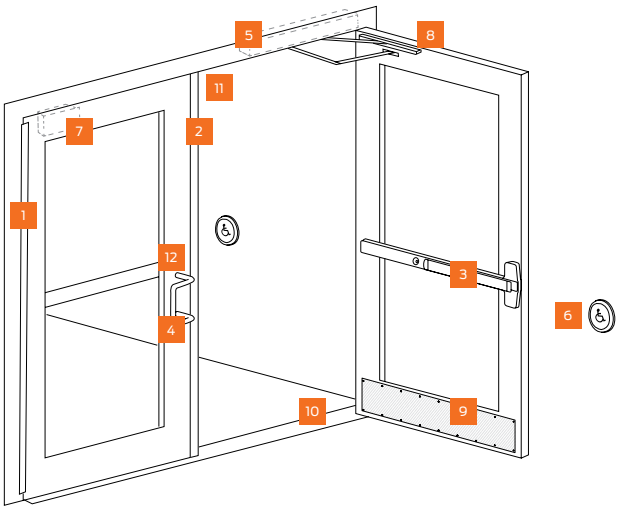
Education solutions

Perimeter entrances in schools are typically high-traffic openings that must balance the need for access control and lockdown with accessibility and freedom of movement.

At least one opening must comply with disability requirement. Every door must provide egress at all times. What's more, older buildings may present a host of challenges when electronic solutions are needed. Certain opening and building conditions may require the use of automatic operators.

Unrestricted main entry door operational requirements:

- Doors normally unlocked during day; locked after hours
- Access gained by a valid credential, key or staff release
- Free egress available at all times



Standard features
Building and safety codes may vary, but most building main entrance doors include these standard features:

1. Ives continuous hinges
2. Von Duprin removable mullion
3. Von Duprin exit hardware with cylinder dogging
4. Ives door pull
5. LCN automatic operator
6. LCN actuator
7. LCN closer
8. Glynn-Johnson overhead stops
9. Ives kick plates
10. Threshold with weather strip
11. Schlage cylinder for mullion
12. Schlage rim cylinder for exit device

Innovative solutions for unrestricted main entry doors

Allegion security products and solutions are present in schools across the U.S. School facility managers trust our products and innovations to provide safe access and egress, while also addressing security threats. Allegion has a solution for every school security challenge.

Schlage® Everest™ 29 patented key system

- Patent restricted keyways such as Everest 29 have an exclusive undercut design that can only be duplicated by authorized locksmiths.
- Everest 29 keys work by lifting the check pin when the key is inserted into the cylinder, allowing the key to turn and the lock to open.
- This patented interaction between the key and the cylinder is protected through 2029 and ensures the integrity of the system at every opening.
- Multiple levels of security ensure that you get the right solution throughout your facility or campus.
- The new Everest 29 patent enables a key blank that is backwards compatible to legacy Everest keyways allowing Everest 29 keys to work with existing Everest systems aiding the key system migration process.

Note: These security solutions are designed only as a guide and do not take into consideration local codes and regulations that may be in place. Please contact your local Allegion representative to design a specification to meet your unique needs.

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Stairwell Doors

Product: Allegion or approved equal

Locations/Applications: Main Entrance

Product Requirements:

- Free egress is available at all times
- Access with credential on pull side
- Upon fire alarm, lever unlocks

Stairwell doors

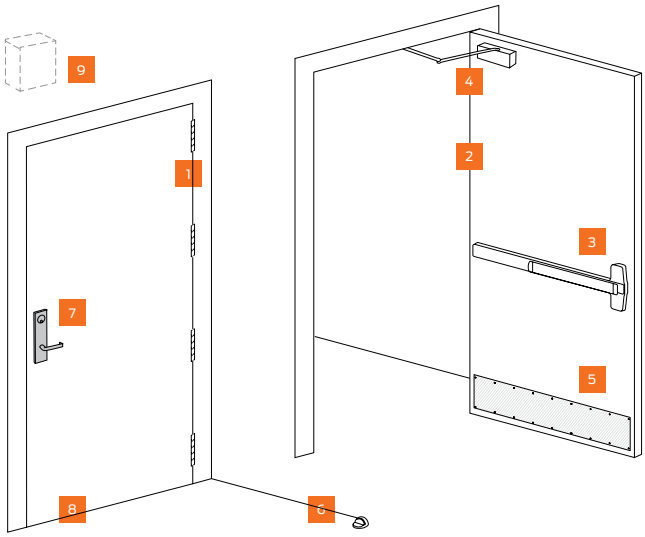
Education solutions

High traffic areas such as stairwell doors have unique access control needs due to fire and life safety codes. In an emergency, stairwell doors allow people quick access to the safest route of egress.

Most codes now require that stairwell doors unlock on fire alarm, but remain positively latched. However, after hours or in buildings that have floors with higher security needs, stairwell doors should also serve as a critical point for access control.

Stairwell door operational requirements:

- Free egress available at all times
- Access with credential on pull side
- Upon fire alarm, lever unlocks



Standard features
Building and safety codes may vary, but most stairwell doors with re-entry include these standard features:

1. Ives hinges
2. Von Duprin power transfer
3. Von Duprin electrified fire exit hardware
4. LCN closer
5. Ives kick plate
6. Ives floor stop
7. Schlage rim cylinder
8. Smoke seal
9. Power supply with fire alarm input

Innovative solutions for stairwell doors

In educational buildings, the security of a stairwell with re-entry is a critical component of an overall approach to safety and security.

Ives® accessories

- For more than 120 years, Ives has produced a full line of premium hinges, pivots, flush bolts, strikes, door trim, pulls, protection plates, lock guards and many other hardware accessories.
- Crafted from the finest materials, all Ives products feature classic designs that add style and functionality to a facility.
- Ives hardware is designed to coordinate with plumbing, lighting and cabinet accessories.

Steelcraft® doors and frames

- No other manufacturer offers as robust selection of steel doors and frames as Steelcraft.
- Steelcraft doors seamlessly integrate with a variety of Schlage, LCN and Von Duprin door hardware.
- The doors are designed to never warp, crack, peel or bow, and have been proven throughout the world in both operation and physical testing of all types.
- Steelcraft offers options for fire rating, tornado and hurricane resistance, as well as ATFP anti-blast resistance.

Note: These security solutions are designed only as a guide and do not take into consideration local codes and regulations that may be in place. Please contact your local Allegion representative to design a specification to meet your unique needs.

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- Review case studies about fire and life safety compliance in residence halls

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DIVISION 09

FINISHES

CANNONDESIGN

Exposed Tee System - 15/16”

Product: Prelude XL Exposed Tee System - 15/16” or approved equal

Locations/Applications: Varies

Product Requirements:

- FireGaurd recommended
- High Warranty recommended
- Product with high recycled content recommended

PRELUDE® XL® and PRELUDE XL High Recycled Content (HRC)

15/16" Exposed Tee System

10-YEAR Availability

UP TO 63% RECYCLED CONTENT
armstrong.com/greengenie

LEED® waste mgmt recycled content local* materials

*LOCATION DEPENDENT

KEY SELECTION ATTRIBUTES

- **Seismic Rx®** Suspension System saves time and money; Armstrong offers an ICC-ES approach to installations (ESR-1308)
- **PeakForm®** profile increases strength and stability for improved performance during installation
- **SuperLock™²** main beam clip is engineered for a strong, secure connection and fast accurate alignment confirmed with an audible click; easy to remove/relocate
- Hot dipped galvanized coating inhibits red rusting better than electrogalvanized or painted systems
- 10-Year Limited System Warranty; 30-Year Limited Ceiling Systems Warranty when used with **HumiGuard® Plus** products
- **FastSize™** main beams and cross tees can be ordered with special sizing and route spacing for your project needs in one carton minimums with two week lead times
- Rotary-stitched during manufacture for additional torsional strength and extra stability during installation
- XL² staked-on end detail provides secure locked connection; easy to remove, reuse, and relocate
- Fire Guard™ options offer UL design fire-rated performance
- Some items available in metric sizes

TYPICAL APPLICATIONS

- Retail
- Offices
- Education
- Hospitality
- Healthcare

NEW Blizzard White powder-coated finish coordinates with Optima®, Ultima®, Calla™, and Lyra™ ceiling panels for a clean, seamless, monolithic installed visual.

VISUAL SELECTION

PERFORMANCE

Item No.◆	Face Profile	Description	Dimensions (Inches)	Route Spacing	Load Test Data (Lbs./Lin. Ft.) L/360	L/240	Fire Guard™	Seismic Category	Packaging Pcs./Ctn.	Lin. Ft./Ctn.
Prelude XL (Red Numbers are Fire Guard Items)					4 Ft.	5 Ft.	Dots represent high level of performance.			
☐ **7301**_ ◆	15/16"	12' HD Main Beam	144 x 15/16 x 1-11/16"	6" O.C.	16.73	8.73	–	•	20	240
☐ **7301HRC**							–	•	20	240
☐ **8301**							•	•	20	240
☐ **7300**_ _ ❖	15/16"	12' ID Main Beam	144 x 15/16 x 1-11/16"	6" O.C.	13.5	6.35	–	–	20	240
☐ **8300**_ _ ◆							•	–	20	240
☐ **7305**_ _ ❖	15/16"	140" HD Main Beam	140 x 15/16 x 1-11/16"	10" O.C.	10.73	8.73	–	–	20	233
☐ **7306**_ _ ❖	15/16"	132" HD Main Beam	132 x 15/16 x 1-11/16"	10", 30", 50", 56", 76", 96", 116", 122"	16.73	8.73	–	•	20	220
☐ **7307**_ _ ❖	15/16"	126" HD Main Beam	126 x 15/16 x 1-11/16"	10", 30", 50", 70", 90", 110", 116"	–	–	–	•	20	210
☐ **7302**_ _ ❖	15/16"	10' ID Main Beam	120 x 15/16 x 1-11/16"	6" O.C.	13.5	6.35	–	–	20	200
☐ **XL7380**_ _ ❖	15/16"	8' Cross Tee	96 x 15/16 x 1-11/16"	12" O.C.	12.12**	–	–	•	20	160
☐ **XL7390**_ _ ❖	15/16"	6' Cross Tee	72 x 15/16 x 1-11/16"	12" O.C.	12.24*	–	–	•	20	120
☐ **XL7357**_ _ ❖	15/16"	5' Cross Tee	60 x 15/16 x 1-11/16"	6" O.C.	–	7.61	–	•	60	300
☐ **XL7358**_ _ ❖	15/16"	5' Cross Tee	60 x 15/16 x 1-11/16"	20" O.C.	–	7.61	–	•	60	300
☐ **XL7341**_ _ ❖	15/16"	4' Cross Tee	48 x 15/16 x 1-11/16"	12" O.C.	16.89	–	–	•	60	240
☐ **XL7341HRC**							–	•	60	240
☐ **XL8341**							•	•	60	240
☐ **XL7340**_ _ ❖	15/16"	4' Cross Tee	48 x 15/16 x 1-11/16"	12" O.C.	12.25	–	–	•	60	240
☐ **XL8340**_ _ ◆							•	•	60	240
☐ **XL7342**_ _ ◆	15/16"	4' Cross Tee	48 x 15/16 x 1-1/2"	12" O.C.	7.8	–	–	•	60	240
☐ **XL7348**_ _ ❖	15/16"	4' Cross Tee	48 x 15/16 x 1-3/8"	12" .	6.78	–	–	•	60	240
☐ **XL7330**_ _ ◆	15/16"	3' Cross Tee	36 x 15/16 x 1-11/16"	–	20.3 @ 3'	–	–	•	60	180
☐ **XL7378**_ _ ❖	15/16"	30" Cross Tee	30 x 15/16 x 1-3/8"	–	16.54 @ 2.5'	–	–	•	60	150
☐ **XL7328**_ _ ◆	15/16"	2' Cross Tee	24 x 15/16 x 1-3/8"	–	36.0 @ 2'	–	–	•	60	120
☐ **XL8323**_ _ ◆							•	•	60	120
☐ **XL8320HRC**	15/16"	2' Cross Tee	24 x 15/16 x 1-11/16"	–	61.33 @ 2'	–	–	•	60	120
☐ **XL8320**							•	•	60	120
☐ **XL7368**_ _ ❖	15/16"	20" Cross Tee	20 x 15/16 x 1-3/8"	–	36.0 @ 1.67'	–	–	•	60	100
☐ **XL7398**_ _ ❖	15/16"	18" Cross Tee	18 x 15/16 x 1-3/8"	–	–	–	–	•	60	90
☐ **XL7318**_ _ ❖ NEW	15/16"	1' Cross Tee	12 x 15/16 x 1-3/8"	–	36.0 @ 1'	–	–	•	120	120
☐ **FastSize™**	15/16"	Main beams L: 36" - 144" / Cross tees L: 6" - 144" / Route spacing 3" from ends, 6" thereafter							Varies	Varies

* Simple Span
** Hanger Wire Support Mid-Span
◆ Items available in Standard, Premium, Wood Look, and Blizzard White powder-coated finish
❖ Items available in Blizzard White powder-coated finish only
When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., 7301HA – Haze)

ASTM Class
HD - Heavy-duty
ID - Intermediate-duty
LD - Light-duty

NOTE: Additional Prelude XL items for TechZone™ Ceiling Systems are listed in the TechZone Technical Guide (BPCS-4486). Available online at armstrong.com/techzone

PRELUDE® XL® and PRELUDE XL High Recycled Content (HRC)

15/16" Exposed Tee System

VISUAL SELECTION — PACKAGING

Item No.◆	Description	Length	(A) Flange	(B) Flange	(C) Flange	Pcs./ Ctn.	Lin. Ft./ Ctn.
Suggested Wall Moldings and Shadow Moldings							
☐ **7800_ _**◆ ☐ **7800HRC**	12' Hemmed Angle Molding	144"	7/8"	7/8"	–	30	360
☐ **7808_ _**❖	10' Hemmed Angle Molding	120"	2"	2"	–	10	100
☐ **780812_ _**❖	12' Hemmed Angle Molding	144"	2"	2"	–	10	120
☐ **7807**	10' Hemmed Angle Molding	120"	2"	1"	–	10	100
☐ **7875_ _**❖	10' Shadow Molding	120"	3/4"	15/16"	1/2"	30	300
☐ **7877_ _**❖***	10' Shadow Molding	120"	15/16"	15/16"	1/4"	30	300
☐ **7878_ _**❖***	10' Shadow Molding	120"	15/16"	15/16"	3/8"	30	300
☐ **7897_ _**❖***	10' Shadow Molding	120"	15/16"	15/16"	1/2"	30	300

*** Suitable for IBC Category D,E,F installations using Armstrong Seismic Rx® and BERC2 Clip
◆ Items available in Standard, Premium, Wood Look, and Blizzard White powder-coated finish
❖ Items available in Blizzard White powder-coated finish only
When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., 7301HA – Haze)

MAXIMUM FIXTURE WEIGHT

Configuration A	Configuration B	Item No.	Fixture A	Fixture B	Planning Module A	Planning Module B	Hanger Spacing A	Hanger Spacing B	Maximum Weight A	Maximum Weight B
Main Beam to Main Beam – Drawing Key: Main beam (↑) Cross tee (···) Hanger wire (✦)										
		7300/8300/7302 **7301/8301**	24" x 48" 24" x 48"	24" x 48" 24" x 48"	48" x 48" 48" x 48"	48" x 48" 48" x 48"	48" 48"	48" 48"	69.27 lbs. 72.32 lbs.	49.27 lbs. 72.32 lbs.
		7300/8300/7302 **7301/8301**	12" x 48" 12" x 48"	12" x 48" 12" x 48"	48" x 48" 48" x 48"	48" x 48" 48" x 48"	48" 48"	48" 48"	54.26 lbs. 100.0 lbs.	47.17 lbs. 63.32 lbs.
		7300/8300/7305 **7301/8301**	24" x 48" 24" x 48"	20" x 60" 20" x 60"	60" x 60" 60" x 60"	60" x 60" 60" x 60"	48" 48"	48" 48"	56.47 lbs. 56.47 lbs.	43.21 lbs. 65.46 lbs.

Main beams tested as follows: 7300 tested at 13.0 lbs./LF to 1/360 of 4' span; 7301 tested at 16.5 lbs./LF to 1/360 of 4' span.

Cross Tee to Cross Tee – Drawing Key: Main beam (↑) Cross tee (···) Hanger wire (✦)										
		XL8340/XL7340 **XL7342** **XL8341/XL7341**	24" x 48" 24" x 48" 24" x 48"	24" x 24" 24" x 24" 24" x 24"	64" x 60" 64" x 60" 64" x 60"	48" x 48" 48" x 48" 48" x 48"	48" 48" 48"	48" 48" 48"	69.27 lbs. 40.89 lbs. 81.67 lbs.	80.55 lbs. 52.26 lbs. 100.0 lbs.
		XL8340/XL7340 **XL8341/XL7341**	24" x 48" 24" x 48"	12" x 48" 12" x 48"	48" x 48" 48" x 48"	48" x 48" 48" x 48"	48" 48"	48" 48"	49.27 lbs. 72.32 lbs.	42.17 lbs. 63.32 lbs.

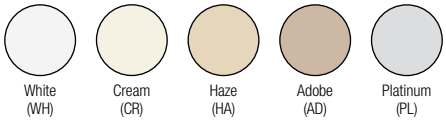
Fixtures weighing more than 56 lbs. should be independently supported. Fixture weight is based on single fixture only. For end-to-end fixtures or other configurations not shown, consult your Armstrong representative.
NOTE: The above data is based on 48" hanger wire spacing, board weight of 1 lb./SF, maximum deflection of tees not to exceed 1/360 of the span, and suspension system installed in accordance with ASTM C636.

PRELUDE® XL® and PRELUDE XL High Recycled Content (HRC)

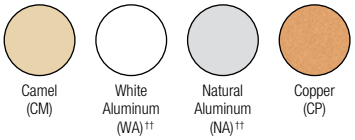
15/16" Exposed Tee System

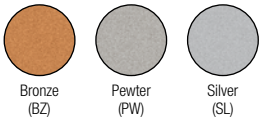
COLOR AND FINISH SELECTION

Standard



Premium





Powder-coated Finish❖

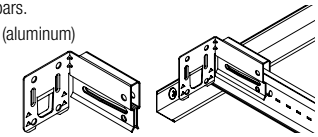
Wood Look Finishes

†† Capping only
††† Peel-off protective film on exposed surfaces to protect from scuffing or marking during installation
NOTE: Items 8300, XL8340, XL8323 available in Black (BL) or White (WH) only.
❖ Items available in powder-coated finish
When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., 7301HA – Haze)

ACCESSORIES

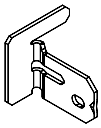
BERC2 – 2" Beam End Retaining Clip – Allows you to create a code compliant Seismic D, E, F ceiling installation while eliminating the need to use 2" wall molding or spreader bars.

ALBERC2 (aluminum)



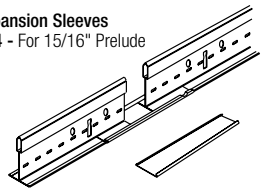
200 pcs/bucket

STAC – Single Tee Adapter Clip – Used to create code compliant non-seismic and seismic C and D, E, F off-module main beam to cross tee connections.



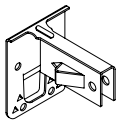
120 pcs/bucket

Expansion Sleeves
ES4 - For 15/16" Prelude



200 pcs/bucket

GCWA – Grip Clip Wall Attachment – Joins main beam or cross tee to wall molding via locking barbs without pop rivets or screws.

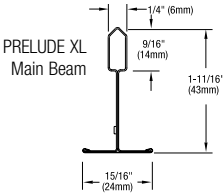


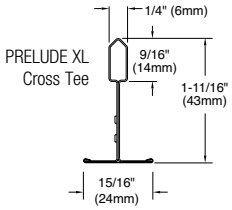
250 pcs/bucket

DETAILS

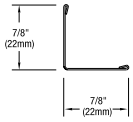
PRELUDE XL Main Beam

PRELUDE XL Cross Tee

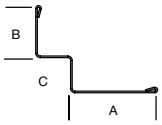




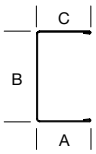
7/8" Hemmed Angle Molding



Shadow Molding



Channel Molding



SEISMIC PERFORMANCE

Main Beams
7301, 7301HRC, 7306, 7307, 8301

Minimum Lbs. To Pull Out Compression/Tension
335.0
330.0

Cross Tees
All XL cross tees exceed 300 lbs. in both compression and tension.

ICC Reports
For areas under ICC jurisdiction, see ICC evaluation report number ESR-1289 for allowable values and/or conditions of use concerning the suspension system components listed on this page. The report is subject to reexamination, revisions, and possible cancellation.

PHYSICAL DATA

Material
Hot dipped galvanized steel

Surface Finish
Baked polyester paint or powder coated

Face Dimension
15/16"

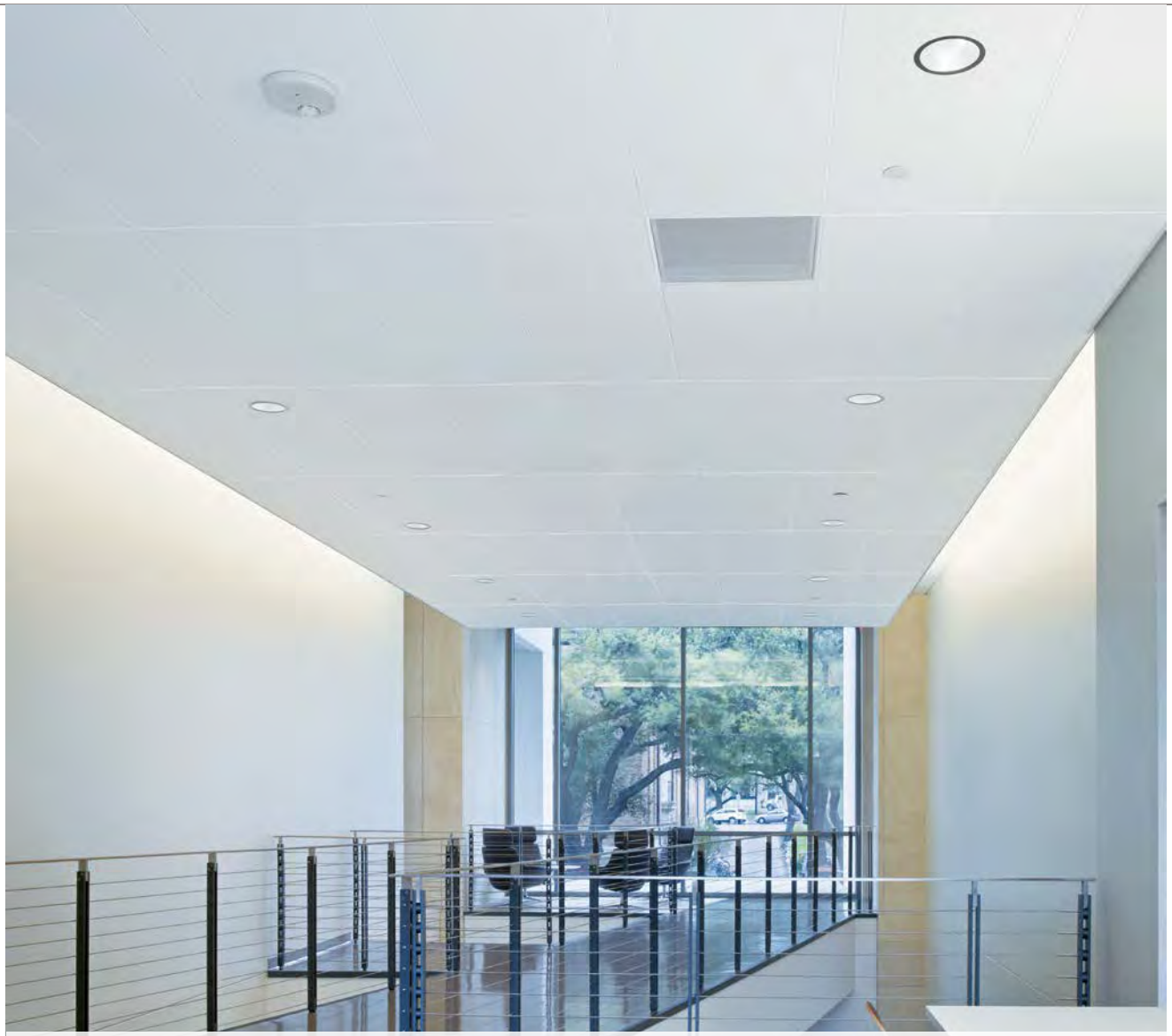
Profile
Exposed tee

Cross Tee/Main Beam Interface
Override

End Detail
Main Beam: Staked-on clip
Cross Tee: Staked-on clip

Duty Classification
Intermediate or Heavy-duty

PRELUDE® XL® and PRELUDE XL High Recycled Content (HRC) Blizzard White – Powder-coated Finish



Optima® Tegular 24" x 72" with Interlude® suspension system featuring Blizzard White powder-coated finish

NOW AVAILABLE – BLIZZARD WHITE POWDER-COATED FINISH

- Choose the new Blizzard White powder coated finish for a clean, monolithic installed visual that looks great with Optima, Ultima®, Calla™, and Lyra™ ceiling panels.

TechLine℠ / 1 877 ARMSTRONG
1 877 276 7876

armstrong.com/suspensionsystem

BPCS-3344-814

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Exposed Tee System - 9/16”

Product: Suprafine XL Exposed Tee System - 9/16” or approved equal

Locations/Applications: Varies

Product Requirements:

- FireGaurd recommended
- High Warranty recommended
- Product with high recycled content recommended

SUPRAFINE® XL® and ML & SUPRAFINE XL High Recycled Content (HRC)

9/16" Exposed Tee System

10-YEAR Availability

63% RECYCLED CONTENT
armstrong.com/greengenie

LEED® ✓ waste mgmt ✓ recycled content ✓ local* materials

*LOCATION DEPENDENT

KEY SELECTION ATTRIBUTES

- **Seismic Rx®** Suspension System saves time and money; Armstrong offers an ICC-ES approach to installations (ESR-1308)
- **PeakForm®** profile increases strength and stability for improved performance during installation
- **SuperLock™²** main beam clip is engineered for a strong, secure connection and fast, accurate alignment confirmed with an audible click; easy to remove/relocate
- Hot dipped galvanized coating inhibits red rusting better than electrogalvanized or painted systems
- Cross tees available in ML and XL² (staked-on end detail); provides secure locked connection; easy to remove, reuse, and relocate
- Some items available in metric sizes
- 1-11/16" web height keeps components vertical and stable at light fixture interface
- 10-Year Limited System Warranty; 30-Year Limited Ceiling Systems Warranty when used with **HumiGuard® Plus** products
- NEW **FastSize™** main beams and cross tees can be ordered with special sizing and route spacing for your project needs in one carton minimums with two week lead times
- Fire Guard™ options offer UL design fire-rated performance

TYPICAL APPLICATIONS

- Offices
- Hospitality
- Healthcare
- Education
- Retail

NEW Blizzard White powder-coated finish coordinates with Calla™, Optima®, Ultima®, and Lyra™ ceiling panels for a clean, seamless, monolithic installed visual.

NEW Available in coordinating Colorations™ colors.

VISUAL SELECTION

Item No.◆	Face Profile	Description	Route Spacing	Dimensions (Inches)	Hanger Spacing* Lbs./Lin. Ft.		PERFORMANCE Fire Guard™	PERFORMANCE Seismic Category	PACKAGING Pcs./ Ctn.	PACKAGING Lin. Ft./ Ctn.
Suprafine XL and Suprafine XL High Recycled Content (Red Numbers are Fire Guard Items)					4 Ft.	5 Ft.	Dots represent high level of performance.			
☐ **7501_ _**◆❖	9/16"	12' HD Main Beam	6" O.C.	144 x 9/16 x 1-11/16"	16.86	10.62	–	●	20	240
☐ **7501HRC**							–	●	20	240
☐ **8501**							●	●	20	240
☐ **7500_ _**❖	9/16"	12' ID Main Beam	6" O.C.	144 x 9/16 x 1-11/16"	12.75	5.74	–	–	20	240
☐ **8500**							●	–	20	240
☐ **7502_ _**❖	9/16"	10' ID Main Beam	6" O.C.	120 x 9/16 x 1-11/16"	12.75	5.74	–	–	20	200
☐ **XL7580_ _**❖	9/16"	8' Cross Tee	12" O.C.	96 x 9/16 x 1-11/16"	12.73**	–	–	●	20	160
☐ **XL7590_ _**❖	9/16"	6' Cross Tee	12" O.C.	72 x 9/16 x 1-11/16"	12.73**	–	–	●	20	120
☐ **XL7558_ _**❖	9/16"	5' Cross Tee	6", 20", 30"	60 x 9/16 x 1-11/16"	–	5.80	–	●	60	300
☐ **XL7541HRC**	9/16"	4' Cross Tee	–	48 x 9/16 x 1-11/16"	12.73	–	–	●	60	240
☐ **XL7540_ _**◆❖	9/16"	4' Cross Tee	12" O.C.	48 x 9/16 x 1-11/16"	10.34	–	–	●	60	240
☐ **XL8540**							●	●	60	240
☐ **XL7549_ _**❖	9/16"	4' Cross Tee	–	48 x 9/16 x 1-11/16"	16.42	–	–	●	60	240
☐ **XL7530_ _**❖	9/16"	3' Cross Tee	–	36 x 9/16 x 1-11/16"	–	–	–	●	60	180
☐ **XL7570_ _**❖	9/16"	30" Cross Tee	–	30 x 9/16 x 1-11/16"	28.67	–	–	●	60	150
☐ **XL7520_ _**◆❖	9/16"	2' Cross Tee	–	24 x 9/16 x 1-11/16"	51.83	–	–	●	60	120
☐ **XL7520HRC**							–	●	60	120
☐ **XL8520**							●	●	60	120
☐ **XL7510_ _**❖	9/16"	1' Cross Tee	–	12 x 9/16 x 1-11/16"	51.83	–	–	●	120	120
NEW ☐ **FastSize™**	9/16"	Main beams L: 36" - 144" / Cross tees L: 6" - 144" / Route spacing 2" from ends, 4" thereafter							Varies	Varies

* Simple Span
** Wire at 4'
◆ Items available in Standard, Premium, and Blizzard White powder-coated finish
❖ Items available in Blizzard White powder-coated finish only
When specifying or ordering Colorations, Standard, Premium, and Blizzard White, add the two-letter suffix to the end of the item number (e.g., 7301HA – Haze)

ASTM Class
HD - Heavy-duty
ID - Intermediate-duty
LD - Light-duty

NOTE: Additional Suprafine XL items for TechZone Integrated Ceiling Systems are listed in the TechZone Technical Guide (BPCS-4486). Available online at armstrong.com/techzone

SUPRAFINE® XL® and ML & SUPRAFINE XL High Recycled Content

9/16" Exposed Tee System

VISUAL SELECTION							PERFORMANCE		PACKAGING	
Item No.❖	Face Profile	Description	Route Spacing	Dimensions (Inches)	Hanger Spacing* Lbs./Lin. Ft. 4 Ft.	5 Ft.	Fire Guard™ Dots represent high level of performance.	Seismic Category DEF	Pcs./ Ctn.	Lin. Ft./ Ctn.
Suprafine XL items for TechZone™ Ceiling Systems										
☐ **7504**_ _❖	9/16"	120" HD Main Beam	15", 42", 48", 75", 102", 108"	120 x 9/16 x 1-11/16"	12.75	10.62	–	•	20	200
☐ **7505**_ _❖	9/16"	100" HD Main Beam	2", 26", 50", 74", and 98"	100 x 9/16 x 1-11/16"	–	–	–	•	20	166
☐ **7507**_ _❖	9/16"	144" HD Main Beam	15", 36", 42", 63", 84", 90", 11",132", 138"	144 x 9/16 x 1-11/16"	–	–	–	•	20	240
☐ **7508**_ _❖	9/16"	132" HD Main Beam	10", 30", 50", 56", 76", 96", 116", 122"	132 x 9/16 x 1-11/16"	–	–	–	•	20	220
☐ **TZXL7556**_ _❖	9/16"	56" Cross Tee	–	56 x 9/16 x 1-11/16"	–	–	–	•	60	280
☐ **XL7564**_ _❖	9/16"	54" Cross Tee	6", 27", 48"	54 x 9/16 x 1-11/16"	–	–	–	•	60	270
☐ **XL7562**_ _❖	9/16"	42" Cross Tee	–	42 x 9/16 x 1-11/16"	12.34	–	–	•	60	210
☐ **XL7528**_ _❖	9/16"	28" Cross Tee	–	28 x 9/16 x 1-11/16"	–	–	–	•	60	140
☐ **XL7561**_ _❖	9/16"	21" Cross Tee	–	21 x 9/16 x 1-11/16"	–	–	–	•	60	105
☐ **XL7506**_ _❖	9/16"	6" Cross Tee	–	6 x 9/16 x 1-11/16"	–	–	–	•	240	120
Suprafine ML										
☐ **ML7540**_ _❖	9/16"	4' Cross Tee	–	48 x 9/16 x 1-11/16"	10.34	–	–	–	60	240
☐ **ML7520**_ _❖	9/16"	2' Cross Tee		24 x 9/16 x 1-11/16"	51.80	–	–	–	60	120

* Simple Span

❖ Items available in Blizzard White powder-coated finish only
When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., 7301HA – Haze)

ASTM Class
HD - Heavy-duty
ID - Intermediate-duty
LD - Light-duty

Item No.	Description	Length	(A) Flange	(B) Flange	(C) Flange	Pcs./ Ctn.	Lin. Ft./ Ctn.
Suggested Wall Moldings and Shadow Moldings (Additional molding options available. See catalog pgs. 269-270)							
☐ **7808**_ _❖	10' Hemmed Angle Molding	120"	2"	2"	–	10	100
☐ **7804**_ _❖	12' Hemmed Angle Molding	144"	9/16"	7/8"	–	30	360
☐ **7804HRC**	12' Hemmed Angle Molding	144"	9/16"	7/8"	–	30	360
☐ **7835**	10' Channel Molding	120"	7/8"	1-3/4"	3/8"	20	200
☐ **7873**_ _❖	10' Shadow Molding	120"	9/16"	15/16"	3/8"	30	300
☐ **7874**_ _❖	10' Shadow Molding	120"	9/16"	15/16"	1/4"	30	300
☐ **7878**_ _❖***	10' Seismic Shadow Molding	120"	15/16"	15/16"	3/8"	30	300

*** Suitable for IBC Category D,E,F installations using Armstrong Seismic Rx® and BERC2 Clip

MAXIMUM FIXTURE WEIGHT

Configuration A	Configuration B	Item No.	Fixture A	Fixture B	Planning Module A	Planning Module B	Hanger Spacing A	Hanger Spacing B	Maximum Weight A	Maximum Weight B
Main Beam to Main Beam – Drawing Key: Main beam (↑) Cross tee (···) Hanger wire (✦)										
		8500/7500/7502	24" x 48"	24" x 48"	48" x 48"	48" x 48"	48"	48"	73.36 lbs.	57.07 lbs.
		7501	24" x 48"	24" x 48"	48" x 48"	48" x 48"	48"	48"	100 lbs.	70.8 lbs.
		7500/7502	12" x 48"	12" x 48"	48" x 48"	48" x 48"	48"	48"	68 lbs.	44 lbs.
		7501	12" x 48"	12" x 48"	48" x 48"	48" x 48"	48"	48"	85 lbs.	61 lbs.
Cross Tee to Cross Tee – Drawing Key: Main beam (↑) Cross tee (···) Hanger wire (✦)										
		XL7540	24" x 48"	24" x 24"	48" x 48"	48" x 48"	48"	48"	55 lbs.	6 lbs.
		XL7541	24" x 48"	24" x 24"	48" x 48"	48" x 48"	48"	48"	73 lbs.	84 lbs.
		ML7540	24" x 48"	24" x 24"	48" x 48"	48" x 48"			65.71 lbs.	76 lbs.
		ML7540	24" x 48"	12" x 48"	48" x 48"	48" x 48"	48"	48"	46 lbs.	–
		XL7541	24" x 48"	12" x 48"	48" x 48"	48" x 48"	48"	48"	52 lbs.	–

Main beams tested as follows: 7500 tested at 12.7 lbs./lin. ft. to 1/360 of 4' span; 7501 tested at 16.86 lbs./lin. ft. to 1/360 of 4' span; 8500 tested at 13.3 lbs./lin. ft. to 1/360 of 4' span. 48" cross tee tested at 10.34 lbs./lin. ft. to 1/360 of 4' span.

Cross tees tested as follows: 48" cross tee tested at 10.34 lbs./lin. ft. to 1/360 of 4' span.
Fixtures weighing more than 56 lbs. should be independently supported. Light fixture clips are required at all fixture locations.
Fixture weight is based on single fixture only. For end-to-end fixtures or other configurations not shown, consult your Armstrong representative.
NOTE: The above data is based on 48" hanger wire spacing, board weight of 1 lb./sq. ft., maximum deflection of tees not to exceed 1/360 of the span, and suspension system installed in accordance with ASTM C636.
** To derive maximum lbs/sf, divide the on-center spacing of the component into the lbs/lf given in the load test data table.

SUPRAFINE® XL® and ML & SUPRAFINE XL High Recycled Content

9/16" Exposed Tee System

COLOR AND FINISH SELECTION

Standard

White (WH) · Cream (CR) · Haze (HA) · Adobe (AD) · Platinum (PL) · Tech Black (BL) Coordinates with Colorations Black (BK) · Silver Grey (SG) · Gun Metal Grey (MY) · Silver Satin (SA)

Premium

Camel (CM) · Bronze (BZ)

Powder-coated Finish❖

NEW Blizzard White (ZW)

NEW **Colorations™ (Coordinates with Calla™ Colorations Panels and Axiom Trim)**

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) · Custom Sherwin Williams (SW)

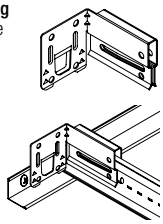
To see Ultima® and Optima® Create! and RAL colors, visit armstrong.com/createcolors.
Custom colors are available with a Sherwin-Williams® 4-digit color code from the Duration or Harmony flat interior paint families (Code SW _ _ _ _)

ACCESSORIES

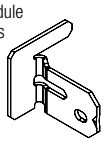
BERC2 – 2" Beam End Retaining Clip – Allows you to create a code compliant Seismic D, E, F ceiling installation while eliminating the need to use 2" wall molding or spreader bars.

ALBERC2 (aluminum)

200 pcs/bucket

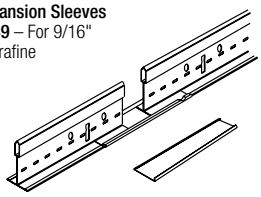


STAC – Single Tee Adapter Clip – Used to create code compliant non-seismic and seismic C and D, E, F off-module main beam to cross tee connections.



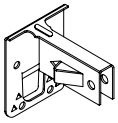
120 pcs/bucket

Expansion Sleeves ES49 – For 9/16" Suprafine



200 pcs/bucket

GCWA – Grip Clip Wall Attachment – Joins main beam or cross tee to wall molding via locking barbs without pop rivets or screws.

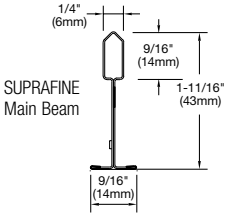


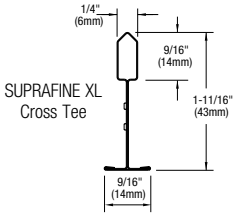
250 pcs/bucket

DETAILS

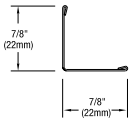
SUPRAFINE XL Cross Tee

SUPRAFINE ML Cross Tee

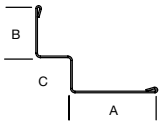




7/8" Hemmed Angle Molding



Shadow Molding



SEISMIC PERFORMANCE

Main Beams
7501, 7501HRC, 7504, 7505, 7507
Minimum Lbs. To Pull Out Compression/Tension
335.0

Cross Tees
XL7558, XL7540, XL7549, XL7520, XL7510, XL8520, XL7570, XL7590, XL7580, XL8540, XL7541,753032, 752032, ML7540, ML7520

Minimum Lbs. To Pull Out Compression/Tension
352.0, 130.0

ICC Reports
For areas under ICC jurisdiction, see ICC evaluation report number ESR-1308 for allowable values and/or conditions of use concerning the suspension system components listed on this page. The report is subject to reexamination, revisions, and possible cancellation.

PHYSICAL DATA

Material
Hot dipped galvanized steel

Surface Finish
Baked polyester paint or powder coated

Face Dimension
9/16"

Profile
Exposed tee

Cross Tee/Main Beam Interface
XL – Override
ML – Flush fit

End Detail
Main Beam: Staked-on clip
XL Cross Tee: Staked-on clip
ML Cross Tee:
Staked-on hook clip

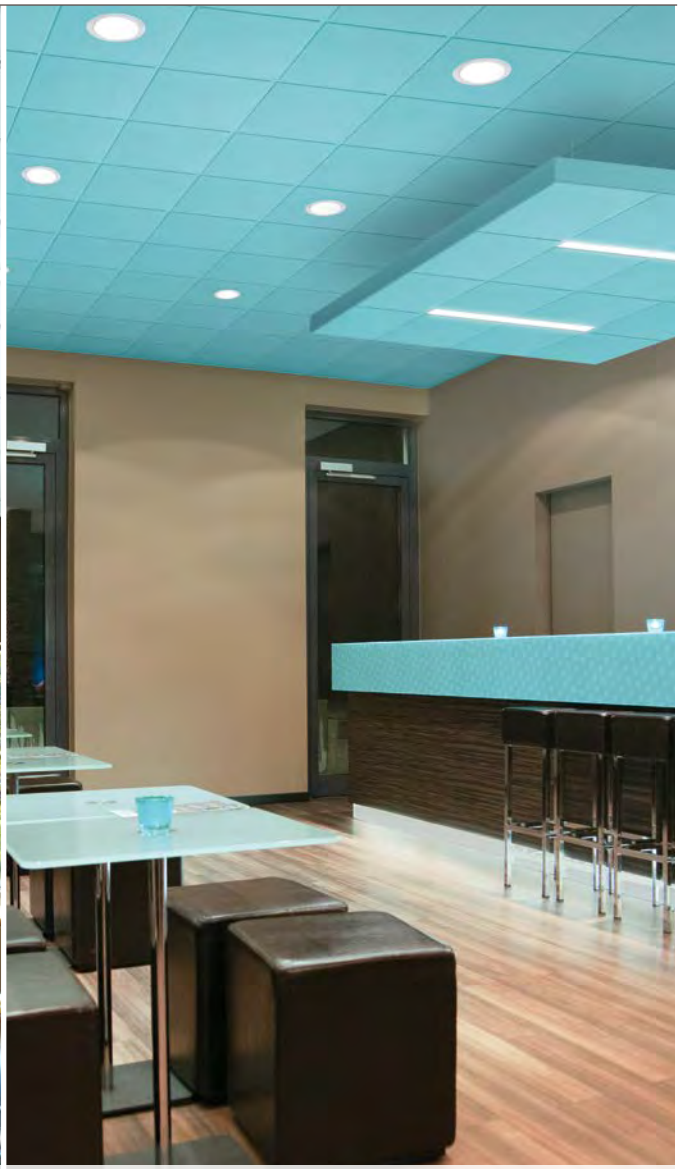
Duty Classification
Intermediate or Heavy-duty

SUPRAFINE® XL® and ML &
SUPRAFINE XL High Recycled Content (HRC)

9/16" Exposed Tee System

INTEGRATED SYSTEMS

Calla™ Blizzard White



Colorations™ Reef

BLIZZARD WHITE POWDER-COATED FINISH

Choose the new Blizzard White powder coated finish on a wide variety of suspension systems and Axiom trim, for a clean monolithic installed visual that looks great with Calla™, Lyra™, Optima®, and Ultima® ceiling panels.

COLORATIONS INTEGRATED COLOR SYSTEM

Colorations integrated color system gives your everything you need to create a complete color coordinated ceiling system:

– 13 standard colors, plus custom Sherwin Williams® colors
– 24" x 24" Calla Beveled Tegular panels
– 9/16" Suprafine Suspension System
– Axiom Trim (Classic, Vector, Knife Edge, Moldings and Column Rings)
– Use any Colorations color in a custom Formations cloud kit

TechLine℠ / 1 877 ARMSTRONG
1 877 276 7876

armstrong.com/suspensionsystem

BPCS-3077-614

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GWB

Product: GWB or other hard ceilings are discouraged where communication or other low voltage cabling is to be installed. Where this occurs access doors or hard conduit runs are to be provided as required to allow installation of cable.

Locations/Applications: Limited

Product Requirements: When using GWB, please be sure to use the appropriate Level:

- Level 0: to be used in temporary construction or whenever the final decoration has not been determined.
- Level 1: to be used in areas where the assembly would generally be concealed or in building service corridors, and other areas not normally open to public view.
- Level 2: to be used in areas where gypsum board is used as a substrate for tile; may be specified in garages, warehouse storage or other similar areas where surface appearance is not of primary concern.
- Level 3: to be used in appearance areas which are to receive heavy- or medium-texture (spray or hand applied) finishes before final painting, or where heavy-grade wallcoverings are to be applied as the final decoration.
- Level 4: to be used where flat paints, light textures, or wallcoverings are to be applied.
- Level 5: to be used where paint is specified or where severe lighting conditions occur.

Recommended Levels of Gypsum Board Finish

GA-214-10ε

DRYWALL FINISHING COUNCIL

AWCI

PDCA PAINTING AND DECORATING CONTRACTORS of AMERICA

CISCA Ceilings & Interior Systems Construction Association

GYPSUM ASSOCIATION

The Finishing & Decorating of Gypsum Board Surfaces

For many years contract documents describing how gypsum board walls and ceilings should look prior to final decoration with paints and other wallcoverings have included nonspecific terms such as "industry standards" and "workmanlike finish." And, for as many years, wall and ceiling contractors have tried to fulfill their obligations by providing the finish conditions envisioned but not truly described.

As a means of resolving a common problem, in 1990 four major trade associations concerned with the manufacture, erection, finish, and decoration of gypsum board wall and ceiling systems developed an industry-wide Recommended Levels of Gypsum Board Finish. This document is intended to assist specification writers, architects, contractors, and building owners to more precisely describe the finish of walls and ceilings prior to the application of paints and other wallcoverings, to encourage competitive bidding of suitably finished surfaces, and to enhance the appearance of the final decorative treatment and thereby enlist a satisfied client.

Because the joints and fasteners must be concealed with fill and finish coats of joint compound, it is impossible to achieve a finished surface that is a flat plane. Instead, the joints and fasteners are finished with graduated arcs designed to prevent recesses or ridges that result in distinct shadows in critical light.

The finish of gypsum board walls and ceilings for specific final decoration is dependent on a number of factors. A primary architectural consideration is the location of the surface and the degree of decorative treatment desired. Painted and unpainted surfaces in warehouses and other areas where appearance is normally not critical may simply require the taping of wallboard joints and "spotting" of fastener heads. Blemish-free, smooth, monolithic surfaces often intended for painted and decorated walls and ceilings in habitated structures, ranging from single-family dwellings through monumental buildings, require additional finishing prior to the application of the final decoration.

Other factors to be considered in determining the level of finish of the gypsum board surface are (1) the type and angle of surface illumination (both natural and artificial lighting), and (2) the paint and method of application or the type and finish of wallcovering material specified as the final decoration. Critical lighting conditions, paints with sheen levels other than flat, and thin wallcoverings require a higher level of gypsum board finish than do heavily textured surfaces which are subsequently painted or surfaces which are to be decorated with heavy grade wallcoverings. Once all of the factors have been evaluated, specifications can be written in specific terms and responsible contractors are better prepared to present their most competitive bid.

The accompanying consensus document is presented by the Association of the Wall and Ceiling Industry (AWCI), Ceiling & Interior Systems Construction Association (CISCA), Drywall Finishing Council (DWFC), Gypsum Association (GA), and Painting and Decorating Contractors of America (PDCA) as a guide. The members of these trade organizations are dedicated to providing the best possible job for the most reasonable cost. By incorporating the appropriate sections of this recommended specification into the project documents the architect, general contractor, and building owner can better anticipate the final appearance of the decorated wall and ceiling system.

Recommended

I. SCOPE. This recommended specification describes various levels of finish of gypsum board surfaces prior to the application of specific types of final decoration. The recommended level of finish of gypsum board wall and ceiling surfaces varies with the final decoration to be applied and can also be dependent on their location in a structure and the type of illumination striking the surface. Each recommended level of finish is described with typical applications.

II. TERMINOLOGY. The following definitions are applicable to this document.

Accessories - Metal or plastic beads, trim, or moulding used to protect or conceal corners, edges, or abutments of the gypsum board construction.

Critical Lighting - Strong sidelighting from windows or surface- mounted light fixtures. syn severe lighting. See "comments" section of this document.

Drywall Primer - A paint material specifically formulated to fill the pores and equalize the suction difference between gypsum board surface paper and the compound used on finished joints, angles, fastener heads, and accessories and over skim coatings. See "comments" section of this document.

Joint Photographing - The shadowing of the finished joint areas through the surface decoration. syn telegraphing.

Skim Coat - Either a thin coat of joint compound trowel applied, or a material manufactured especially for this purpose and applied in accordance with manufacturer's recommendations, over the entire surface.

Spotting - To cover fastener heads with joint compound.

Texture - A decorative treatment of gypsum board surfaces.

Texturing - Regular or irregular patterns typically produced by applying a mixture of joint compound and water, or proprietary texture materials including latex base texture paint, to a gypsum board surface previously coated with drywall primer. See "comments" section of this document.

III. LEVELS OF FINISH. The following levels of finish are established as a guide for specific final decoration. The minimum requirements for each level shall be as described herein.

Level 0:

No taping, finishing, or accessories required.

This level of finish may be useful in temporary construction or whenever the final decoration has not been determined.

Level 1:

All joints and interior angles shall have tape set in joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.

Frequently specified in plenum areas above ceilings, in attics, in areas where the assembly would generally be concealed or in building service corridors, and other areas not normally open to public view. Accessories optional at specifier discretion in corridors and other areas with pedestrian traffic.

Levels of Gypsum Board Finish

Some degree of sound and smoke control is provided; in some geographic areas this level is referred to as “fire-taping.” Where a fire-resistance rating is required for the gypsum board assembly, details of construction shall be in accordance with reports of fire tests of assemblies that have met the fire-rating requirement. Tape and fastener heads need not be covered with joint compound.

Level 2:

All joints and interior angles shall have tape embedded in joint compound and wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. Fastener heads and accessories shall be covered with a coat of joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable. Joint compound applied over the body of the tape at the time of tape embedment shall be considered a separate coat of joint compound and shall satisfy the conditions of this level.

Specified where gypsum board is used as a substrate for tile; may be specified in garages, warehouse storage or other similar areas where surface appearance is not of primary concern.

Level 3:

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. One additional coat of joint compound shall be applied over all joints and interior angles. Fastener heads and accessories shall be covered with two separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges. Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of final finishes. See painting/wallcovering specification in this regard.

Typically specified in appearance areas which are to receive heavy- or medium-texture (spray or hand applied) finishes before final painting, or where heavy-grade wallcoverings are to be applied as the final decoration. This level of finish is not recommended where smooth painted surfaces or light to medium wallcoverings are specified.

Level 4:

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. Two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound shall be applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges. Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of final finishes. See painting/wallcovering specification in this regard.

This level should be specified where flat paints, light textures, or wallcoverings are to be applied.

In critical lighting areas, flat paints applied over light textures tend to reduce joint photographing. Paints with sheen levels other than flat and enamel paints are not recommended over this level of finish.

The weight, texture, and sheen level of wallcoverings applied over this level of finish should be carefully evaluated. Joints and fasteners must be adequately concealed if the wallcovering material is lightweight, contains limited pattern, has a gloss finish, or any combination of these finishes is present. Unbacked vinyl wallcoverings are not recommended over this level of finish.

Level 5:

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. Two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound shall be applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. A thin skim coat of joint compound trowel applied, or a material manufactured especially for this purpose and applied in accordance with manufacturer's recommendations, applied to the entire surface. The surface shall be smooth and free of tool marks and ridges. Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of finish paint. See painting specification in this regard.

This level of finish is highly recommended where paint is specified or where severe lighting conditions occur.

This highest quality finish is the most effective method to provide a uniform surface and minimize the possibility of joint photographing and of fasteners showing through the final decoration.

IV. COMMENTS:

Skim Coat. A skim coat of joint compound is intended to conceal small imperfections in joints and on the surface of the gypsum board, smooth the texture of the paper, minimize differences in surface porosity, and create a more uniform surface to which the final decoration can be applied.

A "skim coat" is essentially a "film" of joint compound and is not a readily measurable thickness. There is no specific mil thickness that constitutes a proper skim coat. A skim coat is described in the foregoing text as being "trowel applied" with the intent being that the consistency (viscosity) of the joint compound be such that it can be applied by a trowel. Other tools may be used for application so long as the trowel consistency is achieved.

The objective of the application is to achieve total coverage of the entire surface with the skim coat. This is typically accomplished by delivering the compound to the surface and using a drywall broad knife to force the compound into the surface pores and imperfections while shearing off excess compound from the surface.

A skim coat will not approximate a plastered surface. Once the skim coat dries, the gypsum board paper may show through and the treated joints, filled voids, and spotted fastener heads will likely be visible.

Critical (Severe) Lighting Areas. Wall and ceiling areas abutting window mullions or skylights, long hallways, or atriums with large surface areas flooded with artificial and/or natural lighting are a few examples of critical lighting areas. Strong sidelighting from windows or surface-mounted light fixtures may reveal even minor surface imperfections. Light striking the surface obliquely, at a very slight angle, greatly exaggerates surface irregularities. If critical lighting cannot be avoided, the effects can be minimized by skim coating the gypsum board surfaces, by decorating the surface with medium to heavy textures, or by the use of draperies and blinds which soften shadows. In general: paints with sheen levels other than flat, enamel and dark paint finishes highlight surface defects; textures hide minor imperfections.

Manufacturer Recommendations. The recommendations of individual manufacturers of gypsum board, joint tapes and compounds, accessories, drywall primers, wallcoverings, adhesives, texture materials, and paints may vary from what is recommended herein and as such are not a part of this recommended specification.

Drywall Primer. Applied as a first coat to the entire prepared gypsum board surface with brush, roller, or spray, prior to decoration. Where final appearance is critical, the application of high quality high solids, drywall primer will minimize most decorating problems.

For finish paints:

A good quality, white, latex drywall primer formulated with higher binder solids, applied undiluted, is typically specified for new gypsum board surfaces prior to the application of texture materials and latex wall paints. An alkali and moisture-resistant primer and a tinted enamel undercoat may be required under enamel paints. Consult with the finish paint manufacturer for specific recommendations.

For wallcoverings:

White, self-sizing, water base, "universal" (all purpose) wallcovering primers have recently been introduced into the marketplace for use on new gypsum board surfaces. These products are claimed to minimize damage if wallcoverings are subsequently removed, bind poor latex paint, allow hanging over glossy surfaces and existing vinyls, hide wall colors, and to be water washable.

Texturing. Texture material is applied by brush, roller, spray, or trowel, or a combination of these tools, depending on the desired result. Textured wall surfaces are normally overpainted with the desired finish; overpainting of textured ceiling surfaces may not be deemed necessary where an adequate amount of material is applied to provide sufficient hiding properties. A drywall primer may not be required under certain proprietary texture materials; consult with the manufacturer of the texture materials for specific recommendations.

Tool Marks and Ridges. A smooth surface may be achieved by lightly sanding or wiping joint compound with a dampened sponge. Care shall be exercised to ensure that the nap of the gypsum board facing paper is not raised during sanding operations. For additional information on the finishing of gypsum board surfaces consult ASTM Standard C 840.

V. RESOURCES:

Designers and specifiers are encouraged to consult the following reference documents:

ASTM C11, *Standard Terminology Relating to Gypsum and Related Building Materials and Systems*. ASTM International, West Conshohocken, PA.

ASTM C 840, *Standard Specification for Application and Finish of Gypsum Board*. ASTM International, West Conshohocken, PA.

GA-216, *Application and Finishing of Gypsum Panel Products, 2010*. Gypsum Association, Hyattsville, MD

Master Painters Glossary, Painting and Decorating Contractors of America, St.Louis, MO.

Contact one of the following associations for additional assistance or copies of this recommended specification:

Association of the Wall and Ceiling Industry
513 West Broad Street, Suite 210
Falls Church, VA 22046-3257
Telephone: (703) 538-1600
www.awci.org

Ceilings & Interior Systems Construction Association
405 Illinois Avenue, Unit 2B
St. Charles, Illinois 60174
Telephone: (630) 584-1919
www.cisca.org

Drywall Finishing Council
www.dwfc.org

Gypsum Association
6525 Belcrest Road, Suite 480
Hyattsville, Maryland 20782
Telephone: (301) 277-8686
www.gypsum.org

Painting and Decorating Contractors of America
1801 Park 270 Drive, Suite 220
St. Louis, MO 63146
Telephone: (314) 514-7322
www.pdca.com

NOTICE

All of the statements, opinions, specifications and recommendations on levels of gypsum board finish contained in this publication are for general information purposes only and are not intended to imply that these are the only materials, procedures, processes, or methods which are available or suitable.

By publishing this document, the cosponsoring trade associations, and their member companies, individually or collectively, make no express or implied warranty or other representation as to the quality, characteristics, or suitability of the materials or techniques described herein, and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose which may arise by operation of law or otherwise.

This document may be revised or withdrawn from circulation at any time. The status of the document should be verified by the user prior to following any recommendations contained herein. To verify that you have the most current version of the document, access the Gypsum Association website at www.gypsum.org.

GWB (Wet Areas)

Product: AquaBloc Gypsum Wallboard

Locations/Applications: Bathroom Ceilings

Product Requirements:

- Product provides a moisture resistant base for the adhesive application of ceramic or plastic tile and plastic-faced wall panels in limited wet areas, e.g., bathrooms, powder rooms, kitchens, laundry, and utility rooms
- Product should be comprised of 100% recycled green face paper, treated to resist moisture; a water-resistant gypsum core, and a sturdy liner back paper also treated to resist moisture
- Product must have a moisture resistant core for use in fire-rated assemblies as an option
- Contain no asbestos and no detectable levels of formaldehyde

Specifications- product must meet or exceed requirements for the following-

- ASTM 1396 (water absorption)
- Federal Specification SS-L-30D Type VII (1/2” non-rated moisture resistant core)
- Federal Specification SS-L-30D Type VII Grade X (5/8” Type X moisture resistant core)
- ASTM C 840
- Gypsum Association GA-216
- ASTM E 84 (Surface Burning)
- Flame Spread - 0
- Smoke Developed - 0

Environmental-

- UL Environment’s GREENGUARD GOLD Certification recommended

Submittal 09 29 00

American Gypsum
3811 Turtle Creek Blvd., #1200
Dallas, TX 75219
214-530-5500
www.americangypsum.com

Technical Information
1-800-545-6302 ext. 5607

AquaBloc® Gypsum Wallboard

AQUABLOC®

AMERICAN GYPSUM Made in the USA AMERICAN GYPSUM

Panel resistente al aqua

DESCRIPTION

AquaBloc® gypsum wallboard is a specially processed product, intended to provide a moisture resistant base for the adhesive application of ceramic or plastic tile and plastic-faced wall panels in limited wet areas, e.g., bathrooms, powder rooms, kitchens, laundry, and utility rooms. AquaBloc is manufactured using a 100% recycled green face paper, treated to resist moisture; a water-resistant gypsum core, and a sturdy liner back paper also treated to resist moisture. (The water-resistant face paper is tinted green so as to make it easily distinguishable from traditional wallboard) The face paper is folded around the long edges to reinforce and protect the core, with the ends being square-cut and finished smooth. Long edges of the panels are tapered so joints can be treated in a normal manner where AquaBloc extends beyond the tiled area.

AquaBloc is available in: 1/2" panels with a non-rated moisture resistant core and a 5/8" FireBloc (Type X) moisture resistant core for use in fire-rated assemblies.

American Gypsum products contain no asbestos and no detectable levels of formaldehyde.

GREENGUARD CERTIFIED
FROM UL ENVIRONMENT

AquaBloc® gypsum wallboard has achieved UL Environment's GREENGUARD GOLD Certification. GREENGUARD Certified products are scientifically proven to meet some of the world's most rigorous, third-party chemical emissions standards, helping reduce indoor air pollution and the risk of chemical exposure while aiding in the creation of healthier indoor environments.
For more information, visit www.ul.com/gg.

BASIC USES

AquaBloc gypsum wallboard was designed to provide a moisture resistant base for the adhesive application of ceramic or plastic tile in limited wet areas, e.g., bathrooms, kitchens, laundry, and utility rooms. This panel may be extended beyond the area to be tiled, and finished with traditional joint treatment finishes. AquaBloc gypsum wallboard is designed for direct attachment by screws and or nails to wood framing, screws to metal framing and can be used in fire rated assemblies.

With joints covered, AquaBloc gypsum wallboard will resist the passage of smoke. For additional information on smoke barriers, refer to Gypsum Association publication, "Building and Inspecting Smoke Barriers" (GA-618), which can be found at www.americangypsum.com under "Technical Data" - click on Gypsum Association Literature.

LIMITATIONS

AquaBloc gypsum wallboard is intended for interior applications only.

Avoid exposure to temperatures exceeding 125°F (52°C), e.g., located adjacent to wood burning stoves and or heating appliances.

Not to be used in areas with direct exposure to water or continuous high humidity, e.g., tiled tub and shower surrounds, saunas, steam rooms, gang showers or indoor swimming pools. Eliminate sources of moisture immediately.

Avoid excessive or continuous exposure to moisture during delivery, storage, handling and installation. Eliminate sources of moisture immediately.

AquaBloc gypsum wallboard is a nonstructural product and should not be used as a nailing base.

Not to be used in exterior ceiling applications. Exterior Soffit wallboard is recommended for protected exterior ceilings structures.

Spacing of wall framing should not exceed 24"o/c.

Resilient channels are not recommended where tile or similar finish is to be applied to AquaBloc.

AquaBloc gypsum wallboard that is to receive tile or other surfacing which may act as a vapor retarder shall not have a vapor retarder placed behind the panel. A single layer of asphalt impregnated felt, #15 or less, applied as part of the wall system, shall not be considered a vapor retarder.

On wall applications, maintain a gap of 1/4" between the bottom edges or ends of the panels and floors, or any other horizontal surface where water could accumulate.

Gypsum board adhesively applied to framing members shall not be used as a base to receive tile.

STORAGE AND HANDLING

Gypsum board does not generate or support the growth of mold when it is properly transported, stored, handled, installed, and maintained. However, mold spores are present everywhere and when conditions are favorable; mold can grow on practically any surface. GYPSUM BOARD MUST BE KEPT DRY to prevent the growth of mold.

Gypsum board must be stored in an area that protects it from adverse weather conditions, condensation, and other forms of moisture. Job site conditions that can expose gypsum board to water or moisture must be avoided. Gypsum board must be protected during transit with a weather-tight cover in good condition. Plastic shipping bags are intended to provide protection during transit only and must be promptly removed upon arrival of the load. Failure to remove the shipping bag can increase the likelihood of developing conditions favorable to the growth of mold.

Gypsum board that has visible mold growth must not be used. For additional information, refer to Gypsum Association publication, "Guidelines for the Prevention of Mold Growth on Gypsum Wallboard" (GA-238).

Gypsum board must be stored off the ground and under protective cover. Sufficient risers must be used to assure support for the entire length of the wallboard to prevent sagging.

AQUABLOC®

Made in the USA

AMERICAN GYPSUM

Panel resistente al aqua

STORAGE & HANDLING

Gypsum board must be delivered to the job site as near to the time it will be used as possible. Individuals delivering gypsum board to jobsites should ensure that it is carried, not dragged, to place of storage/installation to prevent damage to finished edges.

Gypsum board shall always be stacked flat - NEVER on edge or end. Gypsum board stacked on edge or end is unstable and presents a serious hazard should it accidentally topple. Gypsum board should be placed so weight is evenly distributed and the floor is not overloaded.

GOOD BUILDING PRACTICES

Installation - The building temperature shall be maintained at not less than 50ºF (10ºC) for adhesive application of gypsum board, during joint treatment, texturing, and decoration. When a temporary heat source is used the temperature shall not be more than 95°F (35°C) in any given room or area. Adequate and continuous ventilation shall be provided in the working area during the installation and the drying or curing period.

The design professional has the ultimate responsibility for location of control joints.

In areas to receive the tile, no blocking is required when studs are spaced 16”o/c. When studs exceed 16“o/c, locate one row of blocking approximately 1” above the top of the tub or shower receptor and at gypsum board horizontal joints in areas to receive tile. Blocking shall be provided at all interior corners. Fasten AquaBloc to framing members with nails or screws spaced a maximum of 8”o/c.

Tile adhesive for the application of tile or like material applied to AquaBloc shall be water resistant and must meet the requirements of ANSI A136.1, Type 1, or as specified by the surfacing material manufacturer. Using a water resistant tile adhesive, caulk all corners and openings before application of tile or like material. All nail and or screws heads that are to be decorated with tile or like material shall be covered with the same tile adhesive (ANSI A136.1, Type 1).

Do not apply drywall joint compound to the joints or fasteners that are to be tiled. All joints beyond the area to be tiled may be treated in a conventional manner using tape and drywall joint compound.

Regular gypsum board shall be permitted to be used as a base for tile in dry areas.

Decoration – For areas outside of the tiled areas, the design professional, contractor and or owner shall review Gypsum Association’s bulletin GA-214, “Recommended Levels of Gypsum Board Finish”, in order to specify the proper level of drywall finishing needed to assure the desired results.

For best painting results in areas outside of the tiled areas, all surfaces, including joint compound, should be clean, dust-free and not glossy. To equalize the porosities between the face paper and joint compound and improve fastener and joint concealment, the surface shall be primed and sealed with a full-bodied drywall primer before texturing or final decoration. The selection of the proper paint to give the specified or desired finished characteristics is the responsibility of the design professional, contractor and or owner.

Gypsum board that is to have a wall covering applied to it should be prepared and primed as described for painting.

APPLICABLE STANDARDS

Water Absorption	<5% (ASTM 1396)
Manufacturing	ASTM C 1396 Federal Specification SS-L-30D Type VII (1/2” non-rated moisture resistant core) Federal Specification SS-L-30D Type VII Grade X (5/8” Type X moisture resistant core)
Installation	ASTM C 840 Gypsum Association GA-216
Surface Burning Characteristics	ASTM E 84 Flame Spread 0 Smoke Developed 0

PRODUCT DATA

SIZES

Thickness	Widths	Lengths	Edge Type	UL Type
1/2” (12.7mm)	4’ (1219mm)	8’ - 12’ (2438mm – 3658mm)	Tapered	
5/8” (15.9mm)	4’ (1219mm)	8’ - 12’ (2438mm – 3658mm)	Tapered	AGX-1, AGX-11

Special lengths or edges may be available on special order. Consult your American Gypsum sales representative for details.

Thermal Resistance “R” Value 1/2” = 0.50
5/8” = 0.61

FIRE RESISTANCE RATINGS

Fire rated assemblies are specified from tests performed by independent laboratories. These designs are made up of specific materials in a precise configuration. When choosing construction details to meet certain fire resistance requirements, care must be taken to insure that each component of the selected assembly is the one specified in the test and are assembled in accordance with the requirements of the design.

SUBMITTAL APPROVALS

Job Name: _____

Contractor: _____ Date: _____

Ceramic Tile

Product: Daltile Glazed Ceramic “Parkway” or approved equal

Locations/Applications: Restroom Walls

Product Requirements:

- Matte Finish
- Approved for Commercial Use
- Water Absorption Rate of less than 20% (C373)
- Breaking Strength of 120 lbs or greater (C648)
- Scratch Hardness of 4.0 or greater (MOHS)
- Chemical Resistant (C650)

GLAZED CERAMIC

PARKWAY™

daltile®

DESIGN WITH CONFIDENCE™

PARKWAY™ | GLAZED CERAMIC

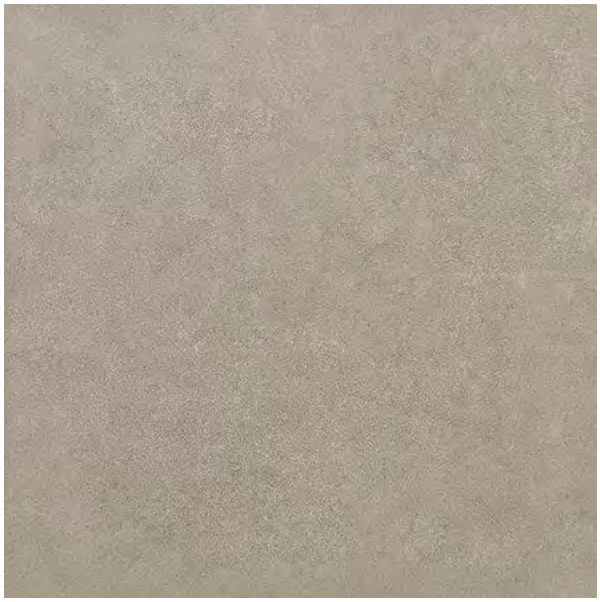
floor • wall • countertop

Floor Tile

CREAM PK95

BEIGE PK96

BROWN PK97



GRAY PK98

Wall Tile

CREAM PK95

BEIGE PK96

BROWN PK97

GRAY PK98

PARKWAY™ GLAZED CERAMIC

SIZES

		SQ.FT. CARTON	PCS. PER CARTON
24 x 24 Floor Tile	(23-5/8" x 23-5/8") (60.0 cm x 60.0 cm)	16.00	4
18 x 18 Floor Tile	(17-13/16" x 17-13/16") (45.25 cm x 45.25 cm)	17.65	8
13 x 13 Floor Tile	(13-1/16" x 13-1/16") (33.2 cm x 33.2 cm)	16.47	14
12 x 24 Floor Tile	(11-11/16" x 23/5/8") (29.7cm x 60.0 cm)	12.00	6
9 x 12 Wall Tile	(8-15/16" x 11-15/16") (22.7 cm x 30.3 cm)	11.25	15
6 x 6 Wall Tile	(6" x 6") (15.2 cm x 15.2 cm)	12.5	50

RESIDENTIAL USAGE

FLOORS	WALLS	COUNTERTOPS	EXTERIOR PATIOS	EXTERIOR POOL DECKS
F*	W	C	EP*	ED

*Floor tile only.

Suitable for exterior applications in non-freezing climates when proper installation methods are followed.

COMMERCIAL USAGE

	INTERIOR			EXTERIOR	
	RESIDENTIAL	LIGHT COMMERCIAL	COMMERCIAL	RESIDENTIAL	COMMERCIAL
Floors/Patios*	✓	✓		✓	
Walls/Backsplashes	✓	✓	✓	✓	✓
Countertops	✓	✓	✓	✓	✓
Pool Decking					
Pool Linings	✓	✓	✓	✓	✓

*Floor tile only.

Suitable for exterior applications in non-freezing climates when proper installation methods are followed.

NOTES

Water, oil, grease, etc. create slippery conditions. Floor applications with exposure to these conditions require extra caution in product selection. Not for use on ramps.

For additional information, refer to "Factors to Consider" at http://daltile.com/factors-to-consider.cfm.

Since there is shade variation in all fired ceramic products, the tile and trim supplied for your particular installation may not match these samples. Final selection should be made from actual tiles and trim and not from tile and trim samples or color reproductions. Manufactured in accordance with ANSI A137.1 standards.

Special consideration needs to be given when installing tiles 20" and larger. Please refer to www.daltile.com/LargeTiles for more information.

TRIM

TYPE	NUMBER	SIZE	PCS. PER CARTON
Floor Bullnose	S-43E9	3 x 13	30
Wall Bullnose	S-4669	6 x 6	50
Wall Bullnose	S-4309	3 x 9	54
Wall Bullnose Corner	SCRL-4669	6 x 6	50
Wall Bullnose Corner	SN-4309	3 x 3	32
Quarter Round	A-106	1 x 6	152
Quarter Round Corner	UC-106	1 x 1	40

SHADE VARIATION

MEDIUM (V2)
Color variation within each tile.

INSTALLATION

THICKNESS	GROUT JOINT RECOMMENDATION
5/16"	3/16" Floor, 1/16" Wall

DYNAMIC C.O.F. (WET) : 2

The higher the rating, the higher the slip resistance.

1	< 0.42
2	≥ 0.42 (Floor only)

STATIC C.O.F. (WET) : 2

1	0.50 - 0.59
2	≥ 0.60 (Floor only)

DURABILITY : 3

Floor wear resistance	
1	Residential Bathrooms
2	All Residential Areas
3	All Residential / Light Commercial
4	All Residential / Commercial

TEST RESULTS

	ASTM#	FLOOR RESULT	WALL RESULT
Water Absorption	C373	3.0 - 4.0%	< 20.0%
Breaking Strength	C648	> 250 lbs	120 - 230 lbs
Scratch Hardness	MOHS	7.0	4.0 - 6.5
Chemical Resistance	C650	Resistant	Resistant
Dynamic C.O.F.	A137.1	Wet: ≥ 0.42	- -
Static C.O.F.	C1028	Wet: ≥ 0.60 Dry: ≥ 0.70	- -
Abrasion Resistance	C1027	3	- -

Dynamic C.O.F. (Wet) value as measured by the DCOF AcuTest℠ helps to assess a product's suitability for a commercial environment. For more information, visit our website at www.daltile.com/DCOF.

Porcelain Tile

Product: Stone Source “Architech” or approved equal

Locations/Applications: Restroom Floors

Product Requirements:

- Matte Finish
- Minimum Size: 12” x 12”
- Approved for Heavy Traffic Commercial Use
- Water Absorption Rate of less than 0.1% (ISO 10545-3)
- Breaking Strength of 1700 or greater (ISO 10545-4)
- Scratch Hardness of less than 150 (ISO 10545-6)
- Chemical Resistant (ISO 10545-13: UA ULA UHA)
- Coefficient of Friction: DIN 51130: R10, R11
- Recycled content encouraged

Create Pdf

Architech
by Floor Gres

Description
Architech is a series of through-body porcelain tiles, by Floor Gres, one of the leading Italian manufacturers of porcelain tile. Developed to support modern, minimalist design, this series is comprised of ten solid colors, seven tiles sizes and three finishes. Three of the colors in the series meet the requirements set by the LEED® building rating system and may be used to earn LEED MR Credits 4.1 and 4.2. Tiles in these colors have been certified by Bureau Veritas. Mineral, 51.2% recycled content; Forest, 50.7% recycled content and Mauve, 30.8% recycled content.

Architech can be used in conjunction with the Florim Color System by Floor Gres, to create many different color combinations. The Florim Color System allows architects and designers to utilize other Floor Gres collections that share consistent tile sizing and color palettes.

Colors + Finishes
Differentiated by its consistent color across textures and tile sizes, the Architech palette features subtle shade variation ranging from light beige to warm greys and dark browns. The series includes ten colors. Each color is offered in a matte, polished and bush-hammered finish.

Sizes
Architech is stocked in:
Mineral - Matte: 16"x32" (15.75"x31.50")
Ash Gray - Matte: 16"x32" (15.75"x31.50")

See below for special order size availability. Mosaic and listello patterns, trim pieces, and stair treads are also available.

Applications
Architech is a highly durable material requiring low maintenance. Tiles are suitable for interior and exterior walls and floors, including heavy-traffic commercial flooring applications.

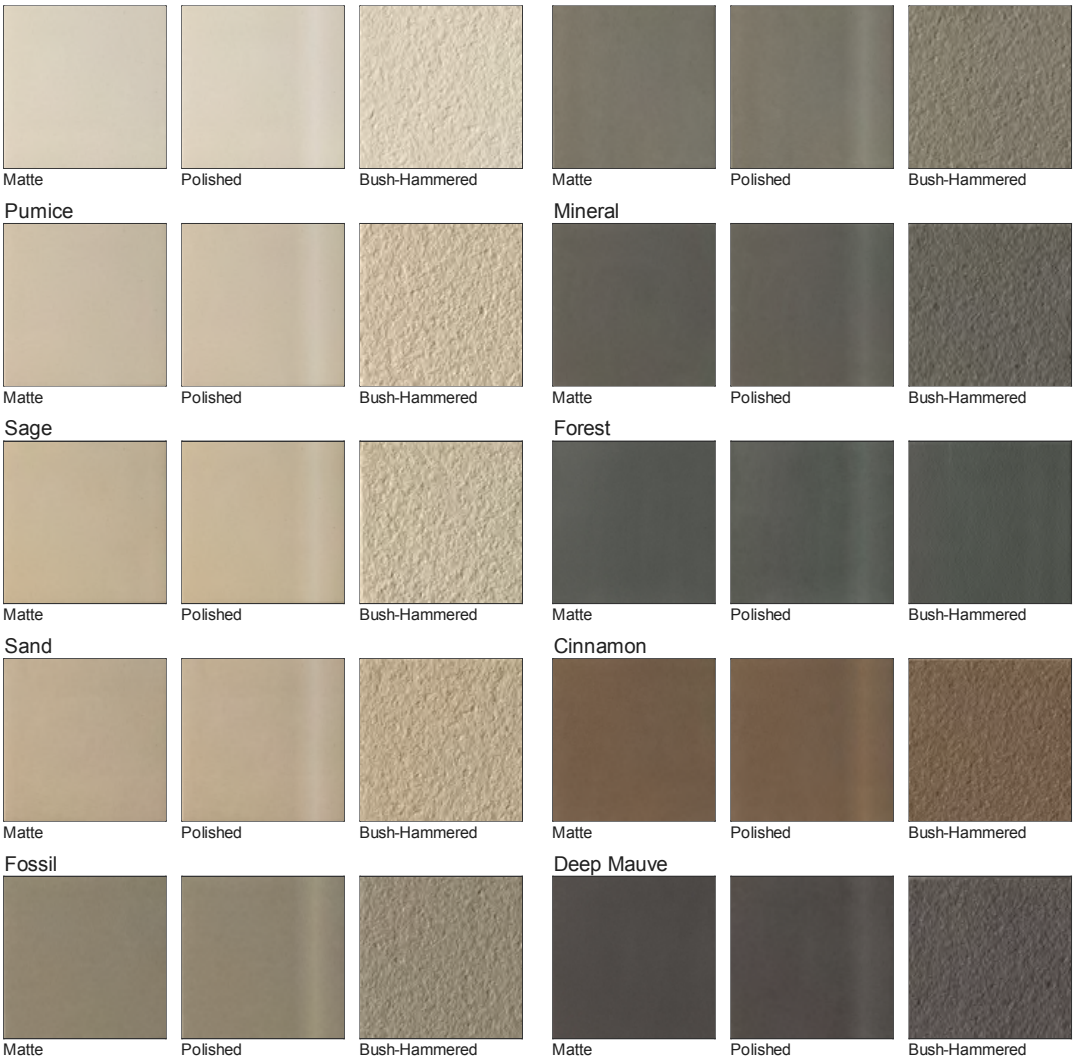
Technical Specs
Water Absorption – ISO 10545-3: <.1%
Thickness: 3/8″
Recommended Grout Line: 1/8″
Breaking Strength – ISO 10545-4: >1700
Scratch Hardness – ISO 10545-6: <150
Thermal Shock Resistance - ISO 10545-9: Resistant
Frost Resistance - ISO 10545-12: Resistant
Chemical Resistance - ISO 10545-13: UA ULA UHA
Stain Resistance - ISO10545-14: 4
Coefficient of Friction – DIN 51130: R10 (Matte), R11 (Bush-hammered)

Installation + Maintenance
Tiles can be installed using standard installation methods for thinset adhesives. A grout joint of 1/8" or greater is recommended. Use high quality adhesive from manufacturers such as Laticrete and Mapei, following manufacturers' recommendations, depending on conditions. Clean with a neutral detergent.

Colors + Finishes
Click on the photo to see a larger image.

Bone

Ashgrey



Sizes Available

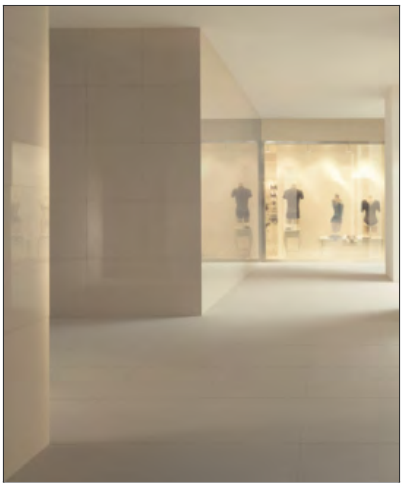
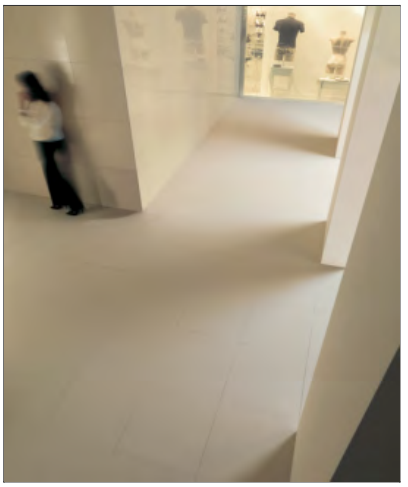
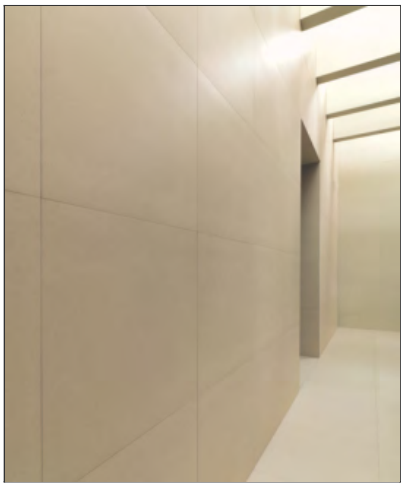
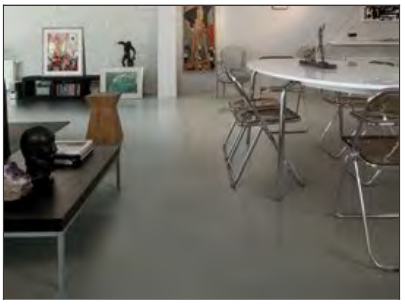
Nominal Sizes		4"x24"	8"x32"	16"x32"	24"x24"	24"x48"	Listello Sfalsato	Mosaic
Tile Thickness		10mm						5x5cm 2"x2"
Bone	Matte	▪	▪	▪	▪	▪		▪
	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	
Pumice	Matte	▪	▪	▪	▪	▪		▪
	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	
Sage	Matte	▪	▪	▪	▪	▪		▪
	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	
Sand	Matte	▪	▪	▪	▪	▪		▪
	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	
Fossil	Matte	▪	▪	▪	▪	▪		▪
	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	
Ashgrey	Matte	▪	▪	▪	▪	▪		▪
	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	
Mineral	Matte	▪	▪	▪	▪	▪		▪
	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	
Forest	Matte	▪	▪	▪	▪	▪		▪
	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	
	Matte	▪	▪	▪	▪	▪		▪

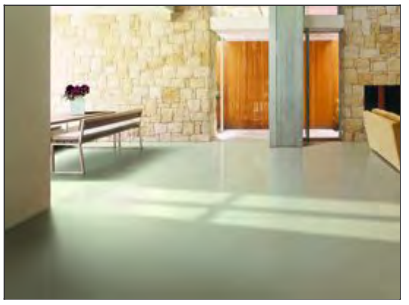
Cinnamon	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	
Deep Mauve	Matte	▪	▪	▪	▪	▪		▪
	Polished			▪	▪	▪		
	Bush-Hammered			▪	▪		▫	

* Actual sizes as follows: 4"x24" (3.94"x23.62")
8"x32" (7.87"x30.50") 16"x32" (15.75"x31.50")
24"x24" (23.62"x23.62") 24"x48" (23.62"x47.24")

Installations

Click on the photo to see a larger image.



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Create Pdf

SAGE

FINISH: POLISHED

Product photography and samples are to be used as a general guide. Color as well as percentage, size and shape of markings will vary. Sizes are nominal, not actual.

RELATED INFORMATION:

SERIES OVERVIEW
View all colors, series details and installation images.

MATERIAL CONSIDERATIONS
Explains what to expect with materials. IF YOU READ NOTHING ELSE, READ THIS.

INVENTORY OVERVIEW
Defines material options and availability.

APPLICATIONS GUIDE
Lists the materials most commonly used in each application.

CARE + MAINTENANCE
Gives guidelines for ensuring that materials last over time.

TECHNICAL PERFORMANCE SPECS
Defines criteria we use to rate the performance of our materials.

SERIES: Architech
MATERIAL: Porcelain Tile
COLOR RANGE: Beige/Taupe

INVENTORY				
Availability	Type	Nominal Size	Thickness	Finish
Special Order	Tile	16"x32"	10mm	Polished
Special Order	Tile	24"x24"	10mm	Polished
Special Order	Listello Mosaic			

STOCK - Items are generally in stock in select sizes. Inventory levels vary.
LIMITED STOCK - Boutique items. Available in smaller quantities due to material demand and availability.
QUICK SHIP - Items are available in quantities up to 2,000 SF and are available to ship in 7 business days or less.
SPECIAL ORDER - Items are not in stock. Lead time vary. Ask your sales consultant for details.

Refer to Inventory Overview PDF for "Availability" descriptions.

APPLICATIONS							
Exterior Cladding	Exterior Pavers	Interior Walls	Interior Floors	Kitchen Countertops	Other Countertops	Wet Areas	Traffic
Yes	Yes	Yes	Yes	No	No	Yes	Heavy Commercial

Refer to Applications Guide PDF for descriptions and most commonly used materials by application.

CARE + MAINTENANCE					
Pre-Grouting Protection	Initial Cleaning	Protection Natural Effect	Protection Color Enhancing	Standard Maintenance	Special Maintenance
NA	Deterdek/Fila CR10	NA	NA	Fila Cleaner	Fila PS/87

Refer to Care + Maintenance PDF for descriptions and cleaning instructions.

IMPORTANT INFORMATION ABOUT THIS MATERIAL
Developed to support modern, minimalist design, the Architech series is comprised of ten solid colors, seven tiles sizes and three finishes. Three of the colors in the series meet the requirements set by the LEED

	TECHNICAL PERFORMANCE SPECS
Rating	ABRASION RESISTANCE (The ability of a material to resist surface wear.)
High	This material has relatively high abrasion resistance. It rates as a 7 or higher on the Mohs scale. Quartzite or granite typically fall into this range. This material is less likely to scratch than marble, limestone, onyx, slate, etc.
Rating	ABSORPTION (The relative porosity of a material.)
Low	This material is virtually non-porous. No sealer is required and it is less likely to stain.
Rating	ACID SENSITIVITY (The likelihood of a material reacting to acidic foods or liquids.)
Minimal	This material is minimally sensitive to acids. It will not acid etch or lose its surface sheen when exposed to acidic liquids such as lemons or tomatoes.
Rating	FREEZE-THAW (The ability of a material to withstand freeze-thaw cycles in exterior applications.)
All Exteriors	Due to this material's Minimal or Moderate Absorption rating, its Abrasion Resistance rating, color fastness and tensile strength, this material is suitable for all exterior applications where freeze-thaw cycles are a concern. Use TCNA standards for setting in exteriors and consult an engineer regarding

	fastening systems and tensile strength required for your project.

Refer to Technical Performance Specs PDF for descriptions of criteria.

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Quarry Tile

Product: Daltile Quarry Tile or approved equal

Locations/Applications: Food Preparation

Product Requirements:

- Approved for Commercial Use
- Water Absorption Rate of less than 3% (C373)
- Breaking Strength of greater than 350 lbs (C648)
- Scratch Hardness of 7.0 (MOHS)
- Chemical Resistant (C650)
- Dynamic Coefficient of Friction: Greater than/equal to .42
- Recycled content encouraged

QUARRY TILE™

These unglazed quarry tiles are naturally stain- and slip-resistant, and are available with an abrasive grain for even greater traction.

Field tile

RED BLAZE 0Q40 (1)

BLAZE FLASH 0Q41 (2)

ARID GRAY 0Q42 (2)

ARID FLASH 0Q48 (2)

(1), (2), (3) Indicate price groups, (1) being the least expensive
All colors are available in abrasive grain 6 x 6.
Only 0Q40 and 0Q41 are available in abrasive grain in 4 x 8.
Double abrasive available on field tile in all colors on a special order basis.

GREEN SQUARED CERTIFIED

PRE CONSUMER RECYCLED MATERIALS

MADE IN THE U.S.A.

EXTERIOR PRODUCT

daltile®
DESIGN WITH CONFIDENCE™

QUARRY TILE™

SIZES

		SQ. FT. CARTON	PCS. PER CARTON
6 x 6 Field Tile	(6" x 6") (15.2 cm x 15.2 cm)	11.00	44
4 x 8 Field Tile*	(4" x 8") (10.2 cm x 20.3 cm)	10.76	50

* Available in Red Blaze 0Q41 and Red Blaze Flash 0Q41 only.

RESIDENTIAL USAGE

FLOORS	WALLS	COUNTERTOPS	EXTERIOR PATIOS	EXTERIOR POOL DECKS
F	W	C	EP	ED*

* Abrasive grain only.

COMMERCIAL USAGE

	INTERIOR			EXTERIOR	
	RESIDENTIAL	LIGHT COMMERCIAL	COMMERCIAL	RESIDENTIAL	COMMERCIAL
Floors/Patios	✓	✓	✓	✓	✓*
Walls/Backsplashes	✓	✓	✓	✓	✓
Countertops	✓	✓	✓	✓	✓
Pool Decking*	✓	✓	✓	✓	✓
Pool Linings	✓	✓	✓	✓	✓

Suitable for freezing and non-freezing climates when proper installation methods are followed. Suitable for industrial installations requiring high compressive strength.

*Abrasive grain only in non-freezing climates.

INSTALLATION

THICKNESS	GROUT JOINT RECOMMENDATION
1/2"	3/8"

NOTES

We do not recommend light colored quarry tile in commercial kitchens unless properly sealed. It is necessary to follow the proper procedures and recommendations from the grout and maintenance products manufacturers.

Special care should be taken when grouting with dark pigmented colors. A grout release is recommended to prevent finely powdered pigments from lodging in the pores of the tile surface.

Suitable for use on ramps when ordered with abrasive.

Since there is shade variation in all natural products, the tile and trim supplied for your particular installation may not match these samples. Final selection should be made from actual tiles and trim and not from tile and trim samples or color reproductions. Manufactured in accordance with ANSI A137.1 standards.

Water, oil, grease, etc. create slippery conditions. Floor applications with exposure to these conditions require extra caution in product selection.

For additional information, refer to "Factors to Consider" at http://daltile.com/factors-to-consider.cfm.

TRIM

	TYPE	NUMBER	SIZE	PCS. PER CARTON
	Bullnose	Q-1485*†	4 x 8	50
	Bullnose Corner	QCR-L-1485*†	4 x 8	20
	Bullnose	Q-1665*	6 x 6	44
	Bullnose Corner	QCRL-1665*	6 x 6	44
	Cove Base**	Q-3565▲	5 x 6	44
	Cove Base Corner	QCR-L-3565*▲■	5 x 6	20
	Cove Base Inside Corner	QB-3565▲	1 x 5	25
	Cove Base Outside Corner	QC-3565▲	1 x 5	20

* Available in abrasive grain

** Cove Base trim is intended to coordinate with floor field tile in the standard 90-degree installation position.

† Available in colors 0Q40 and 0Q41 only

▲ Not available in Flash colors; use coordinating solid

■ Special Order

SHADE VARIATION

MEDIUM (V2)
Color variation within each tile.

DYNAMIC C.O.F. (WET) : 2

The higher the rating, the higher the slip resistance.

1	< 0.42
2	≥ 0.42

STATIC C.O.F. (WET) : 2

1	0.50 - 0.59
2	≥ 0.60

TEST RESULTS

	ASTM#	RESULT (Non-Abrasive Grain)	RESULT (Abrasive Grain)
Water Absorption	C373	< 3.0%	< 3.0%
Breaking Strength	C648	> 350 lbs	> 350 lbs
Scratch Hardness	MOHS	7.0	7.0
Chemical Resistance	C650	Resistant	--
Dynamic C.O.F.	A137.1	≥ 0.42	≥ 0.42
Static C.O.F.	C1028	Wet: ≥ 0.60 Dry: ≥ 0.80	Wet: ≥ 0.60 Dry: ≥ 0.90

Dynamic C.O.F. (Wet) value as measured by the DCOF AcuTest™ helps to assess a product's suitability for a commercial environment. For more information, visit our website at www.daltile.com/DCOF.

PRE CONSUMER RECYCLED MATERIALS

MADE IN THE U.S.A.

EXTERIOR PRODUCT

All or selected items within this series are made in the USA.
For more information visit www.daltile.com/QuarryTile

daltile®

7834 C. F. Hawn Freeway | Dallas, TX 75217 | 214.398.1411 800.933.TILE
For more information about Daltile products and services, visit our website at daltile.com

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Acoustical Ceiling Tile - Mineral Fiber

Product: Armstrong Ultima Tegular Ceiling Tile or approved equal

Locations/Applications: Ceilings Throughout

Product Requirements:

- NRC rating of .65 - .70
- Fire Rating: Class A
- Light Reflect: .90
- Anti-Mold & Mildew
- Sag Resistant
- Certified Low VOC Emissions
- Washable
- Impact Resistant
- Scratch Resistant
- Soil Resistant
- Primary (Embodied) Energy below 11MJ/SF
- High Warranty recommended
- Product in a recycle program recommended
- Product with high recycled content recommended

ULTIMA®

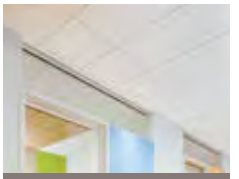
Tegular

fine texture

USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 88%

10-YEAR Availability — Items 1911, 1912, 1914, 1915

Ultima Beveled Tegular with Sonata® 9/16" suspension system (Pg. 265)



Visit Armstrong.com Photo Gallery to view more installation photos

SEARCH: ultima

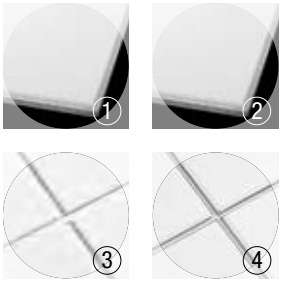
KEY SELECTION ATTRIBUTES

- Smooth, clean, durable finish – Washable, Impact-resistant, Scratch-resistant, Soil-resistant
- Scrubbable and water-repellent (items 1936, 1937)
- Excellent sound absorption
- High CAC for excellent sound blocking – items 1951, 1952
- Ceiling-2-Ceiling™ Post-consumer Recycled Content options: Items 1911HRC, 1912HRC, 1914HRC, 1915HRC. 71% Pre-consumer; 15% Post-consumer
- 88% Biobased content (see page 331)
- Available with AirGuard™ Coating
- Visual coordinates with Optima® for mixed (open/closed plan) applications
- Items 1912 and 1936 available on Create!™ colors and images – see pages 163-165
- Non-directional visual reduces installation time and scrap
- Compatible with the TechZone™ Ceiling Systems
- Meets USDA/FSIS guidelines for use in food processing areas (items 1936 and 1937)
- 30-Year Limited System Warranty against visible sag (excludes items 1905 and 1929), mold/mildew, and bacterial growth

TYPICAL APPLICATIONS

- Offices
- Healthcare – assists in addressing HIPAA and FGI acoustical requirements
- Classrooms
- Corridors
- Lobbies/reception areas
- Department stores/retail
- Areas requiring frequent plenum access
- Areas with indirect lighting systems
- Kitchens, dining rooms, and food preparation areas (items 1936 and 1937)

DETAIL (Other Suspension Systems compatible. Refer to listing on page 228.)



1. Ultima Beveled Tegular
2. Ultima Health Zone™ Beveled Tegular
3. Ultima with Suprafine® 9/16" suspension system
4. Ultima with Silhouette® XL® 9/16" suspension system with 1/4" reveal

COLOR

White

Create! colors available on items 1912, 1936. See pages 165-167.

ULTIMA®

Tegular

fine texture

HRC items contain 15% or greater post-consumer recycled ceilings

CLOSED LOOP RECYCLED CONTENT CEILING-2-CEILING

UP TO 86% RECYCLED CONTENT

EPD AVAILABLE

LEED® acoustics energy daylight & views indoor air quality renewable materials recycled content waste mgmt local* materials

Calculate LEED contribution at armstrong.com/greengenie

*LOCATION DEPENDENT

$$$$

VISUAL SELECTION

PERFORMANCE

Dots represent high level of performance.

Edge Profile	Susp. Dwg. Pgs. 273-277 armstrong.com/catdwgs	Item No.	Dimensions (Inches)	Acoustics NRC	Acoustics CAC	Fire Rating	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certified Low VOC Emissions	Durability: Water Repel	Durability: Wash	Durability: Scrub	Durability: Impact	Durability: Scratch	Durability: Soil	Primary Energy (Embodied)	Recycled Content◆	Recycle Program	Warranty†
ULTIMA Tegular				UL Classified				BioBlock+	Humi-Guard+								Below 11MJ/SF		Yes	No. of Years
15/16" Beveled Tegular	15	**1422**	6 x 48 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	**1917**	12 x 24 x 3/4"	N/A	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	NEW **1993**	12 x 48 x 3/4"	0.65	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	NEW **1994**	12 x 60 x 3/4"	0.65	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	NEW **1995**	12 x 72 x 3/4"	0.65	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	**1911** **1911HRC****	24 x 24 x 3/4" 24 x 24 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High High	●	30
	15	**1951**	24 x 24 x 3/4"	0.60	40 ●	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	NEW **1894**	24 x 24 x 3/4"	0.60	40 ●	Fire Guard	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	**1914** **1914HRC****	24 x 48 x 3/4" 24 x 48 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High High	●	30
	15	**1985**	24 x 60 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	**1981**	24 x 72 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	NEW **FastSize™**	W: 4" - 24" / L: 4" - 72" 3/4" thick	0.60	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
ULTIMA Tegular with AirGuard™ Coating																				
15/16" Beveled Tegular	15	**1901**	24 x 24 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	15	**1904**	24 x 48 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30

** Other sizes are not available for HRC items

MINERAL FIBER

ULTIMA®

Tegular
fine texture

HRC items contain 15% or greater post-consumer recycled ceilings

CLOSED LOOP RECYCLED CONTENT
CEILING-2-CEILING

UP TO 86% RECYCLED CONTENT

EPD AVAILABLE

LEED® acoustics energy daylight & views indoor air quality renewable materials recycled content waste mgmt local* materials

Calculate LEED contribution at armstrong.com/greengenie

*LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE Dots represent high level of performance.

Edge Profile	Susp. Dwg. Pgs. 273-277 armstrong.com/catdwgs	Item No.	Dimensions (Inches)	Acoustics NRC	Acoustics CAC	Fire Rating	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certified Low VOC Emissions	Durability: Water Repel	Durability: Wash	Durability: Scrub	Durability: Impact	Durability: Scratch	Durability: Soil	Primary (Embodied) Energy	Recycled Content◆	Recycle Program	Warranty†
ULTIMA Tegular				UL Classified				BioBlock+	Humi-Guard+								Below 11MJ/SF		Yes	No. of Years
9/16" Beveled Tegular	29, 44, 48, 52, 56, 60	**1423**	6 x 48 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60	**1427**	6 x 60 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60	**1916**	12 x 24 x 3/4"	N/A	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60 NEW	**1996**	12 x 48 x 3/4"	0.65	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60 NEW	**1997**	12 x 60 x 3/4"	0.65	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60 NEW	**1998**	12 x 72 x 3/4"	0.65	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60	**1912**	24 x 24 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
		1912HRC**	24 x 24 x 3/4"															High		
	29, 44, 48, 52, 56, 60	**1952**	24 x 24 x 3/4"	0.60	40 ●	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60 NEW	**1895**	24 x 24 x 3/4"	0.60	40 ●	Fire Guard	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60	**1915**	24 x 48 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
		1915HRC**	24 x 48 x 3/4"															High		
	29, 44, 48, 52, 56, 60	**1986**	24 x 60 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60	**1982**	24 x 72 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60	**1905**	30 x 30 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	Std	●	–	●	–	●	●	●	●	High	●	1
	29, 44, 48, 52, 56, 60	**1929**	30 x 54 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	Std	●	–	●	–	●	●	●	●	High	●	1
	29, 44, 48, 52, 56, 60 NEW	**FastSize™**	W: 4" - 24" / L: 4" - 72" 3/4" Thick	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30

** Other sizes not available for HRC items.

ULTIMA®

Tegular
fine texture

UP TO 77% RECYCLED CONTENT | EPD AVAILABLE

LEED®: acoustics, energy, daylight & views, indoor air quality, renewable materials, recycled content, waste mgmt, local* materials

Calculate LEED contribution at armstrong.com/greengenie *LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE
Dots represent high level of performance.

Edge Profile	Susp. Dwg. Pgs. 273-277 armstrong.com/catdwgs	Item No.	Dimensions (Inches)	Acoustics NRC	Acoustics CAC	Fire Rating	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certified Low VOC Emissions	Durability						Primary (Embodied) Energy	Recycled Content◆	Recycle Program	Warranty†
				UL Classified				BioBlock+	Humi-Guard+		Water Repel	Wash	Scrub	Impact	Scratch	Soil	Below 11MJ/SF		Yes	30-Year
ULTIMA Tegular with AirGuard™ Coating																				
9/16" Beveled Tegular	29, 44, 48, 52, 56, 60	**1902**	24 x 24 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
	29, 44, 48, 52, 56, 60	**1906**	24 x 48 x 3/4"	0.70 ●	35	Class A	0.90 ●	●	●	●	–	●	–	●	●	●	●	High	●	30
ULTIMA Health Zone™																				
15/16" Beveled Tegular	15, 16	**1937**	24 x 24 x 3/4"	0.70 ●	35	Class A	0.86 ●	●	●	●	●	●	–	●	●	●	●	High	●	30
9/16" Beveled Tegular	29, 44, 48, 52, 56, 60	**1936**	24 x 24 x 3/4"	0.70 ●	35	Class A	0.86 ●	●	●	●	●	●	–	●	●	●	●	High	●	30

SUSPENSION SYSTEMS

15/16": Prelude®; Clean Room™ (Steel or Aluminum)

9/16": Suprafine®; Silhouette® 1/4" Reveal; Silhouette 1/8" Reveal; Interlude® XL®; Sonata® XL; Trimlok®

Item 1912-CAC 33 on Interlude, Sonata, Suprafine

NEW Blizzard White – Suspension System Finish

A color and texture coordinated suspension system to complement Ultima ceiling panels for a monolithic look and feel. Available for:

1. Prelude XL and XL HRC
2. Suprafine ML, XL, and XL HRC
3. Silhouette XL 1/4" and 1/8" Reveal
4. Interlude XL HRC

PHYSICAL DATA

Material
Wet-formed mineral fiber with DuraBrite® acoustically transparent membrane. 1936, 1937 – Wet-formed mineral fiber with DuraBrite acoustically transparent water-repellent 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

ASTM E1264 Classification
Type IV, Form 2, Pattern E
Fire Class A

Sag Resistance
HumiGuard® Plus – superior resistance to sagging in high humidity conditions up to, but not including, standing water and outdoor applications. (Excludes items 1905 and 1929).

Anti-Mold/Mildew & Bacteria
BioBlock® Plus contains an anti-microbial treatment and provides guaranteed resistance against growth of mold/mildew and Gram-positive and Gram-negative odor/stain-causing bacteria for 30 years.

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.

Primary (Embodied) Energy
See all LCA information on our EPD's.

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 – 2.2 (BTU units)
R Factor – 0.39 (Watts units)

30-Year Performance Guarantee & Warranty†
When installed with Armstrong Suspension System. Details at armstrong.com/warranty

Cleaning Recommendations (Items 1936, 1937 only)
To clean panel, use a clean, white cloth with water or a mild detergent and wipe surface. To disinfect panel, lightly spray surface and wipe clean with a clean, white cloth. Acceptable colorless disinfectants include:
- Sodium hypochlorite
- Hydrogen peroxide
- Quaternary ammonium

Weight; Square Feet/Carton
1905 – 1.05 lbs/SF; 62.5 SF/ctn
1911, 1912, 1914, 1915 – 1.05 lbs/SF; 48 SF/ctn
1916, 1917, 1993, 1996 – 1.05 lbs/SF; 24 SF/ctn
1936, 1937 – 1.08 lbs/SF; 48 SF/ctn
1422, 1423 – 1.08 lbs/SF; 24 SF/ctn
1427 – 1.07 lbs/SF; 24 SF/ctn
1929 – 1.02 lbs/SF; 68 SF/ctn
1951, 1952 – 1.31 lbs/SF; 48 SF/ctn
1901, 1902, 1904, 1906 – 1.08 lbs/SF; 48 SF/ctn
1994, 1997 – 1.05 lbs/SF; 30 SF/ctn
1995, 1998 – 1.05 lbs/SF; 36 SF/ctn

Minimum Order Quantity
1 carton

Metric Items Available
1905M, 1912M, 1912MHRC, 1914M, 1915M, 1916M, 1917M, 1951M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

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armstrong.com/commceilings
(search: ultima)
BPCS-3039-814

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Acoustical Ceiling Tile - Mineral Fiber (Wet Areas)

Product: Armstrong Ultima Health Zone Tegular Ceiling Tile or approved equal

Locations/Applications: Food Preparation

Product Requirements:

- NRC rating of .70
- Fire Rating: Class A
- Light Reflect: .86
- Anti-Mold & Mildew
- Sag Resistant
- Certified Low VOC Emissions
- Water Repellent
- Washable
- Scrubable
- Impact Resistant
- Scratch Resistant
- Soil Resistant
- Primary (Embodied) Energy below 11MJ/SF
- High Warranty recommended
- Product in a recycle program recommended
- Product with high recycled content recommended

ULTIMA® Health Zone™

Square Lay-in, Tegular

fine texture

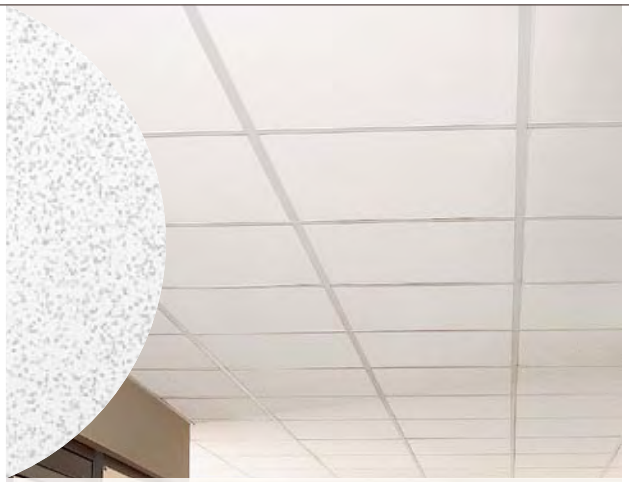
USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 88%

UP TO 77% RECYCLED CONTENT

EPD AVAILABLE

LEED® acoustics ✓ energy ✓ daylight & views ✓ indoor air quality ✓ renewable materials ✓ recycled content ✓ waste mgmt ✓ local* materials ✓

Calculate LEED contribution at armstrong.com/greengenie *LOCATION DEPENDENT



Ultima Health Zone Square Lay-in with Prelude® 15/16" suspension system (Pg. 259)

KEY SELECTION ATTRIBUTES

- Clean Rooms up to ISO Class 5 (Class 100) (items 1935 & 1937)
- Exceeds FGI Guidelines for acoustics and cleanablility in general healthcare spaces
- Meets USDA/FSIS guidelines for use in food processing areas
- Long-lasting water-repellency; Washable and Scrubbable
- Smooth, clean, durable finish – Impact-, Scratch-, and Soil-resistant; safe for use with disinfectants
- Excellent sound absorption
- 30-Year Limited System Warranty against visible sag, mold/mildew, and bacterial growth

TYPICAL APPLICATIONS

Clean Rooms (items 1935 & 1937)

Healthcare

- Patient rooms
- Treatment rooms
- Nurses' stations
- Emergency rooms
- Corridors
- Lavatories and restrooms
- Kitchen/food prep areas

COLOR

White

Create! colors available on item 1935. See pages 165-167.

VISUAL SELECTION

PERFORMANCE

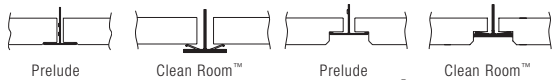
Dots represent high level of performance.

Edge Profile	Susp. Dwg. Pgs. 273-277 armstrong.com/catdwgs	Item No.	Dimensions (Inches)		Acoustics NRC	Acoustics CAC	Fire Rating	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certified Low VOC Emissions	Durability						Primary (Embodied) Energy	Recycled Content◆	Recycle Program	Warranty†
ULTIMA Health Zone					UL Classified				BioBlock+	Humi-Guard+		Water Repel	Wash	Scrub	Impact	Scratch	Soil	Below 11MJ/SF		Yes	No. of Years
15/16" Square Lay-in	1, 6, 7	**1935**	24 x 24 x 3/4"	☐	0.70 ●	35	Class A	0.86 ●	●	●	●	●	●	●	●	●	●	●	High	●	30
	1, 6, 7	**1938****	24 x 48 x 3/4"	▭	0.70 ●	35	Class A	0.86 ●	●	●	●	●	●	●	●	●	●	●	High	●	30
15/16" Beveled Tegular	15, 16	**1937**	24 x 24 x 3/4"	☐	0.70 ●	35	Class A	0.86 ●	●	●	●	●	●	●	●	●	●	●	High	●	30
9/16" Beveled Tegular	29, 43, 47, 51, 55, 59	**1936**	24 x 24 x 3/4"	☐	0.70 ●	35	Class A	0.86 ●	●	●	●	●	●	●	●	●	●	●	High	●	30

** Item does not have painted edges

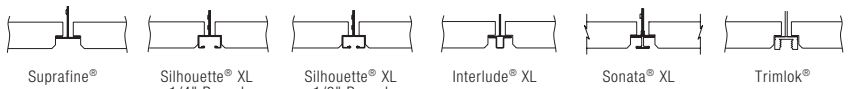
SUSPENSION SYSTEMS

15/16"



Prelude | Clean Room™ (Steel or Aluminum) | Prelude AL Prelude Plus XL® SS Prelude Plus XL | Clean Room™ (Steel or Aluminum)

9/16"



Suprafine® | Silhouette® XL 1/4" Reveal | Silhouette® XL 1/8" Reveal | Interlude® XL | Sonata® XL | Trimlok®

PHYSICAL DATA

Items 1935, 1938: Refer to Physical Data on page 224.

Items 1936, 1937: Refer to Physical Data on page 228.

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(search: ultima)
BPCS-4066-813

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Acoustical Ceiling Tile - Fiberglass

Product: Armstrong Optima Tegular Ceiling Tile or approved equal

Locations/Applications: Ceilings, Open Areas

Product Requirements:

- NRC rating of .90 - 1.00
- AC: 180-190
- Fire Rating: Class A
- Light Reflect: .90
- Anti-Mold & Mildew
- Sag Resistant
- Certified Low VOC Emissions
- Washable
- Impact Resistant
- Scratch Resistant
- Soil Resistant
- Primary (Embodied) Energy below 11MJ/SF
- High Warranty recommended
- Product in a recycle program recommended
- Product with high recycled content recommended

OPTIMA®

Tegular
fine texture

Items with Breakthrough Plant-based Binder have a PB Suffix

Optima Tegular 24" x 24" panels with Sonata® 9/16" suspension system (Pg. 265)

Visit Armstrong.com Photo Gallery to view more installation photos

SEARCH: optima

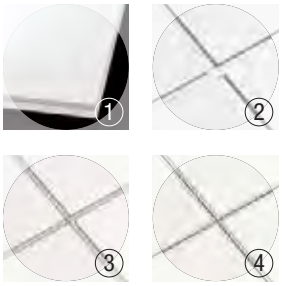
KEY SELECTION ATTRIBUTES

- Outstanding acoustical performance for open plan areas, both Articulation Class (180-200) and NRC (0.90-1.00)
- Smooth, clean, durable finish – Washable, Impact-resistant, Scratch-resistant, Soil-resistant
- Energy-saving high light-reflective finish
- Non-directional visual reduces installation time and scrap
- Items with PB suffix are manufactured with a plant-based binder
- Sag-resistant large size panels
- Compatible with TechZone™ Ceiling Systems (Pgs. 235-241)
- 30-Year Limited System Warranty against visible sag, mold/mildew, and bacterial growth

TYPICAL APPLICATIONS

- Open plan offices
- Computer rooms
- Corridors (walls-to-deck)
- Auditoriums
- Waiting rooms/nurses' stations – assists in addressing HIPAA and FGI acoustical requirements
- Areas with indirect lighting systems

DETAIL (Other Suspension Systems compatible. Refer to listing on page 200.)



1. Optima Square Tegular
2. Optima Tegular with Prelude® 15/16" suspension system
3. Optima Tegular with Interlude® XL® 9/16" suspension system
4. Optima Tegular with Silhouette® 9/16" suspension system with 1/8" reveal

COLOR

White

OPTIMA®

Tegular
fine texture

Items with Breakthrough Plant-based Binder have a PB Suffix

UP TO 71% RECYCLED CONTENT

EPD AVAILABLE

LEED® acoustics energy daylight & views indoor air quality renewable materials recycled content waste mgmt local* materials

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VISUAL SELECTION

PERFORMANCE

Dots represent high level of performance.

Edge Profile	Susp. Dwg. Pgs. 273-277 armstrong.com/catdwgs	Item No.	Dimensions (Inches)	Acoustics NRC	Acoustics CAC	Acoustics AC	Fire Rating	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certified Low VOC Emissions	Durability Wash	Durability Impact	Durability Scratch	Durability Soil	Primary (Embodied) Energy	Recycled Content◆	Recycle Program	Warranty†
OPTIMA Tegular				UL Classified					Inherent	Humi-Guard+						Below 11MJ/SF		Yes	No. of Years
15/16" Square Tegular	8	**1402**	6 x 48 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	8	**1406**	6 x 60 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	8	**3264**	12 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	8	**3278**	20 x 60 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	8	**3250 3250PB**	24 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	– ●	●	●	●	●	●	High	●	30
	8	**3354**	24 x 24 x 1"	0.90 ●	26	200 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	–	30
	8	**3253**	24 x 24 x 1-1/2"	1.00 ●	N/A	200 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	8	**3252 3252PB**	24 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	– ●	●	●	●	●	●	High	●	30
	8	**3281**	24 x 72 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	8	**3282**	24 x 96 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	8	**3258**	30 x 30 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	8	**3286**	30 x 60 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	8	**3255 3255PB**	48 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	– ●	●	●	●	●	●	High	●	30
	8 NEW	**FastSize**™	W: 4" - 48" / L: 4" - 120" 1" Thick	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	–	High	●	30
	8	**Other Sizes**	W: 4" - 36" / L: 4" - 120" W: 4" - 42" / L: 4" - 102" W: 4" - 48" / L: 4" - 90" 1-1/2" Thick	1.00 ●	N/A	200 ●	Class A	0.90 ●	●	●	–	●	●	●	●	–	High	●	30
9/16" Square Tegular	26, 43, 47, 51, 55, 59	**1410**	4 x 48 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**1411**	4 x 60 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**1412**	6 x 6 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**1413**	6 x 12 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**1415**	6 x 42 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**1403**	6 x 48 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**1417**	6 x 54 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**1407**	6 x 60 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**1409**	6 x 96 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3263**	12 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3290**	12 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**1414**	12 x 96 x 1"	0.90 ●	N/A	180 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3276**	20 x 54 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3266**	20 x 56 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30

FIBERGLASS

OPTIMA®

Tegular
fine texture

Items with Breakthrough Plant-based Binder have a PB Suffix

UP TO 71% RECYCLED CONTENT

EPD AVAILABLE

LEED® acoustics ✓ energy ✓ daylight & views ✓ indoor air quality ✓ renewable materials ✓ recycled content ✓ waste mgmt ✓ local* materials ✓

Calculate LEED contribution at armstrong.com/greengenie *LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE

Dots represent high level of performance.

Edge Profile	Susp. Dwg. Pgs. 273-277 armstrong.com/catdwgs	Item No.	Dimensions (Inches)	Acoustics NRC	Acoustics CAC	Acoustics AC	Fire Rating	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certified Low VOC Emissions	Durability Wash	Durability Impact	Durability Scratch	Durability Soil	Primary (Embodied) Energy	Recycled Content◆	Recycle Program	Warranty†
OPTIMA Tegular				UL Classified					Inherent	Humi-Guard+						Below 11MJ/SF		Yes	No. of Years
9/16" Square Tegular	26, 43, 47, 51, 55, 59	**3277**	20 x 60 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3279**	21 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3251** **3251PB**	24 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	– ●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3355**	24 x 24 x 1"	0.90 ●	26	200 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	–	30
	26, 43, 47, 51, 55, 59	**3254**	24 x 24 x 1-1/2"	1.00 ●	N/A	200 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3280**	24 x 42 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3257** **3257PB**	24 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	– ●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3265** **3265PB**	24 x 60 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	– ●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3261** **3261PB**	24 x 72 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	– ●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3262** **3262PB**	24 x 96 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	– ●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3283**	27 x 30 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3268**	28 x 30 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3269**	28 x 60 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3259**	30 x 30 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3284**	30 x 54 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3289**	30 x 56 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3285**	30 x 60 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3287**	42 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3288**	44 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3256** **3256PB**	48 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	– ●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3249**	48 x 54 x 1"	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	NEW **FastSize™**	W: 4" - 48" / L: 4" - 120" 1" Thick	0.95 ●	N/A	190 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**Other Sizes**	W: 4" - 36" / L: 4" - 120" W: 4" - 42" / L: 4" - 102" W: 4" - 48" / L: 4" - 90" 1-1/2" Thick	1.00 ●	N/A	200 ●	Class A	0.90 ●	●	●	–	●	●	●	●	●	High	●	30

FIBERGLASS

OPTIMA®

Tegular
fine texture

Items with Breakthrough Plant-based Binder have a PB Suffix

UP TO 71% RECYCLED CONTENT

EPD AVAILABLE

LEED® acoustics, energy, daylight & views, indoor air quality, renewable materials, recycled content, waste mgmt, local* materials

Calculate LEED contribution at armstrong.com/greengenie *LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE

Dots represent high level of performance.

Edge Profile	Susp. Dwg. Pgs. 273-277 armstrong.com/catdwgs	Item No.	Dimensions (Inches)	Acoustics NRC	Acoustics CAC	Acoustics AC	Fire Rating	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certified Low VOC Emissions	Durability						Primary (Embodied) Energy	Recycled Content◆	Recycle Program	Warranty†
OPTIMA Health Zone™				UL Classified					Inherent	Humi-Guard+		Water Repel	Wash	Scrub	Impact	Scratch	Soil	Below 11MJ/SF		Yes	No. of Years
15/16" Square Tegular	8, 10	**3214**	24 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	8, 10	**3316**	24 x 24 x 1-1/2"	0.95 ●	29**	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	–	30
	8, 10	**3215**	24 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	8, 10	**3317**	24 x 48 x 1-1/2"	0.95 ●	29**	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	–	30
	8, 10	**Other Sizes**	W: 4" - 48" / L: 12" - 48" 1" Thick	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
9/16" Square Tegular	26, 43, 47, 51, 55, 59	**3216**	24 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3217**	24 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**Other Sizes**	W: 4" - 48" / L: 12" - 48" 1" Thick	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30

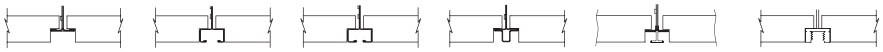
** CAC 29 achieved with Clean Room™ suspension system, not UL classified for acoustics.

SUSPENSION SYSTEMS

15/16"

Prelude® | Clean Room (Steel or Aluminum)

9/16"

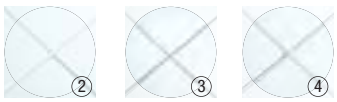


Suprafine® | Silhouette® 1/4" Reveal | Silhouette 1/8" Reveal | Interlude® | Sonata® | Trimlok®

NEW **Blizzard White – Suspension System Finish**

A color and texture coordinated suspension system to complement Optima ceiling panels for a monolithic look and feel.

Available for:
1. Prelude® XL® and XL HRC
2. Suprafine® ML, XL, and XL HRC
3. Silhouette® XL 1/4" and 1/8" Reveal
4. Interlude® XL HRC



ACCESSORIES (not included; 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)

PHYSICAL DATA

Material
3316, 3317, 3354, 3355 – Fiberglass with DuraBrite® acoustically transparent membrane; CAC backing
All other items – Fiberglass 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)

ASTM E1264 Classification
Type XII, Form 2, Pattern E
Fire Class A

Sag Resistance
HumiGuard® Plus – superior resistance to sagging in high humidity conditions up to, but not including, standing water and outdoor applications.

Anti Mold/Mildew & Bacteria
Fiberglass substrate is inherently resistant to the growth of mold, mildew, and bacteria.

VOC Emissions (PB items only)
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.

Primary (Embodied) Energy
See all LCA information on our EPD's.

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.

Acoustical Details
Some items have CAC backing. CAC backing may be available as a special order. A CAC value of 37 can be achieved by backloading fiberglass products with Item 769 or 770.

Insulation Value
3253, 3254 –
R Factor – 6.0 (BTU units)
R Factor – 1.05 (Watts units)
3281, 3282 –
R Factor – 3.0 (BTU units)
R Factor – 0.53 (Watts units)
All other items –
R Factor – 4.0 (BTU units)
R Factor – 0.70 (Watts units)

30-Year Performance Guarantee & Warranty†
When installed with Armstrong Suspension System. Details at armstrong.com/warranty

Weight; Square Feet/Carton
1402, 1403 – 0.55 lbs/SF; 24 SF/ctn
1406, 1407 – 0.55 lbs/SF; 30 SF/ctn
1409, 3249, 3250, 3250PB, 3251, 3251PB, 3252, 3252PB, 3257, 3262, 3262PB, 3282 – 0.55 lbs/SF; 96 SF/ctn
1410 – 0.55 lbs/SF; 16 SF/ctn
1411 – 0.55 lbs/SF; 20 SF/ctn
1412 – 0.55 lbs/SF; 6 SF/ctn
1413 – 0.55 lbs/SF; 12 SF/ctn
1414, 3263, 3264, 3290 – 0.55 lbs/SF; 48 SF/ctn
1415 – 0.55 lbs/SF; 21 SF/ctn
1417 – 0.55 lbs/SF; 27 SF/ctn
3214 – 0.45 lbs/SF; 128 SF/ctn
3215, 3216, 3217 – 0.45 lbs/SF; 96 SF/ctn
3253, 3254 – 0.78 lbs/SF; 64 SF/ctn
3255, 3255PB, 3256, 3256PB – 0.55 lbs/SF; 128 SF/ctn
3258, 3259, 3276 – 0.55 lbs/SF; 75 SF/ctn
3261 – 0.55 lbs/SF; 72 SF/ctn
3265PB, 3277, 3278, 3285, 3286 – 0.55 lbs/SF; 100 SF/ctn
3266 – 0.55 lbs/SF; 62.22 SF/ctn
3268 – 0.55 lbs/SF; 70 SF/ctn
3269 – 0.55 lbs/SF; 93.33 SF/ctn
3279, 3280 – 0.55 lbs/SF; 84 SF/ctn
3281 – 0.55 lbs/SF; 72 SF/ctn
3283 – 0.55 lbs/SF; 67.5 SF/ctn
3284 – 0.55 lbs/SF; 90 SF/ctn
3287 – 0.55 lbs/SF; 112 SF/ctn
3288 – 0.55 lbs/SF; 117.33 SF/ctn
3316, 3317 – 0.75 lbs/SF; 64 SF/ctn
3354, 3355 – 0.57 lbs/SF; 96 SF/ctn

Minimum Order Quantity
1 carton

Metric Items Available
3250M, 3251M, 3252M, 3253M, 3254M, 3256M, 3257M, 3354M, 3355M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

TechLine℠ / 1 877 ARMSTRONG
armstrong.com/commceilings
(search: optima)

BPCS-4648-1213

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Acoustical Ceiling Tile - Fiberglass (Wet Areas)

Product: Armstrong Optima Healthzone Tegular Ceiling Tile or approved equal

Locations/Applications: Food Preparation

Product Requirements:

- NRC rating of .95
- AC: 190
- Fire Rating: Class A
- Light Reflect: .86
- Anti-Mold & Mildew
- Sag Resistant
- Water Repellent
- Washable
- Scrubable
- Impact Resistant
- Scratch Resistant
- Soil Resistant
- Primary (Embodied) Energy below 11MJ/SF
- High Warranty recommended
- Product in a recycle program recommended
- Product with high recycled content recommended

OPTIMA® Health Zone™

Square Lay-in, Tegular

fine texture

Health Zone Optima Square Tegular with Prelude® XL® 15/16" suspension system (Pg.259)

Visit Armstrong.com Photo Gallery to view more installation photos

SEARCH: optima

KEY SELECTION ATTRIBUTES

- Clean Rooms up to ISO Class 5 (Items 3114, 3115, 3214, 3215 with Clean Room suspension system)
- Exceeds FGI Guidelines for acoustics and cleanability in general healthcare spaces
- Smooth, clean, durable finish – Impact-resistant, Scratch-resistant, and Soil-resistant
- Outstanding acoustical performance for open plan areas, both Articulation Class (190) and NRC (0.95)
- Long-lasting water-repellency
- Washable and Scrubbable
- Safe for use with disinfectants
- Meets USDA/FSIS guidelines for use in food processing areas
- Energy-saving high light-reflective finish
- Visual complements Ultima®, Ultima Health Zone, and Optima
- 30-Year Limited System Warranty against visible sag, mold/mildew, and bacterial growth

TYPICAL APPLICATIONS

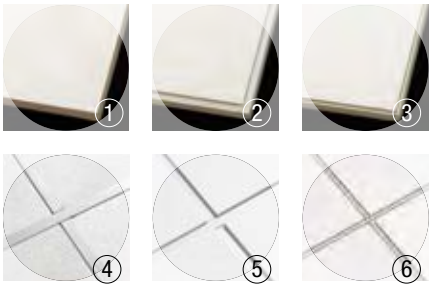
Clean Rooms

- Medical facilities
- Data centers

Healthcare. Assists in addressing FGI and HIPAA requirements.

- Patient rooms (walls-to-deck)
- Treatment rooms (walls-to-deck)
- Nurses' stations
- Emergency rooms
- Semi-restricted surgical areas
- Kitchens/food preparation areas
- Laboratories

DETAIL (Other Suspension Systems compatible. Refer to listing on page 206.)



1. Optima Health Zone Square Lay-in
2. Optima Health Zone 15/16" Square Tegular
3. Optima Health Zone 9/16" Square Tegular
4. Optima Health Zone Square Lay-in with Clean Room™ 15/16" suspension system
5. Optima Health Zone Square Tegular with Prelude XL 15/16" suspension system
6. Optima Health Zone Square Tegular with Interlude® XL 9/16" suspension system

COLOR

White

OPTIMA® Health Zone™

Square Lay-in, Tegular

fine texture

UP TO 71% RECYCLED CONTENT | EPD AVAILABLE

LEED® — acoustics, energy, daylight & views, indoor air quality, renewable materials, recycled content, waste mgmt, local* materials

Calculate LEED contribution at armstrong.com/greengenie *LOCATION DEPENDENT

$$
$$$$

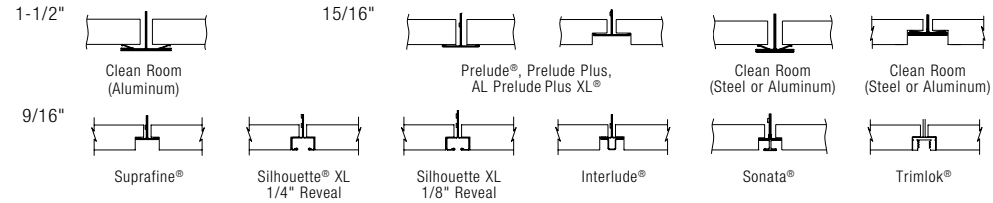
VISUAL SELECTION

PERFORMANCE Dots represent high level of performance.

Edge Profile	Susp. Dwg. Pgs. 273-277 armstrong.com/catdwgs	Item No.	Dimensions (Inches)	Acoustics NRC	Acoustics CAC	Acoustics AC	Fire Rating	Light Reflect	Anti-Mold & Mildew	Sag Resist	Certified Low VOC Emissions	Durability: Water Repel	Durability: Wash	Durability: Scrub	Durability: Impact	Durability: Scratch	Durability: Soil	Primary (Embodied) Energy	Recycled Content◆	Recycle Program	Warranty†
OPTIMA Health Zone				UL Classified					Inherent	Humi-Guard+								Below 11MJ/SF		Yes	No. of Years
15/16" Square Lay-in	1, 6, 7	**3114**	24 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	1, 6, 7	**3314**	24 x 24 x 1-1/2"	0.95 ●	29**	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	–	30
	1, 6, 7	**3115**	24 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	1, 6, 7	**3315**	24 x 48 x 1-1/2"	0.95 ●	29**	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	–	30
	1	**Other Sizes**	W: 4" - 47" / L: 12" - 48" 1" Thick	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
15/16" Square Tegular	8, 10	**3214**	24 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	8, 10	**3316**	24 x 24 x 1-1/2"	0.95 ●	29**	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	–	30
	8, 10	**3215**	24 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	8, 10	**3317**	24 x 48 x 1-1/2"	0.95 ●	29**	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	–	30
	8, 10	**Other Sizes**	W: 4" - 47" / L: 12" - 48" 1" Thick	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
9/16" Square Tegular	26, 43, 47, 51, 55, 59	**3216**	24 x 24 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**3217**	24 x 48 x 1"	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30
	26, 43, 47, 51, 55, 59	**Other Sizes**	W: 4" - 47" / L: 12" - 48" 1" Thick	0.95 ●	N/A	190 ●	Class A	0.86 ●	●	●	–	●	●	●	●	●	●	●	High	●	30

** CAC 29 achieved with Clean Room™ suspension system, CAC backed items not UL Classified for acoustics.

SUSPENSION SYSTEMS



PHYSICAL DATA

Material
3114, 3115, 3214, 3215, 3216, 3217 – Fiberglass with DuraBrite® acoustically transparent membrane. 3314, 3315, 3316, 3317 – Fiberglass with DuraBrite acoustically transparent membrane; CAC backing.

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)

ASTM E1264 Classification
Type XII, Form 2, Pattern E, Fire Class A

Sag Resistance
HumiGuard® Plus – superior resistance to sagging in high humidity conditions up to, but not including, standing water and outdoor applications.

Anti Mold/Mildew & Bacteria
Fiberglass substrate is inherently resistant to the growth of mold, mildew, and bacteria.

Primary (Embodied) Energy
See all LCA information on our EPD's.

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 – 4.0 (BTU units)
R Factor – 0.70 (Watts units)

Acoustical Details
Some items have CAC backing. CAC backing may be available as a special order. CAC value of 37 can be achieved by backloading soft fiber products with item 769 or 770.

Application Considerations
For Clean Room installations, use full-size panels. Testing for Clean Room 5 (Class 100) was completed with full-size 15/16" gasketed suspension system. For Clean Rooms that require field cut perimeter panels, use Lay-in panels (3114, 3115) or Tegular panels (3214, 3215) with Lay-in field cut panels at the perimeter.

30-Year Performance Guarantee & Warranty†
When installed with Armstrong Suspension System. Details at armstrong.com/warranty

Cleaning Recommendations
To clean panel, use a clean, white cloth with water or a mild detergent and wipe surface. To disinfect panel, lightly spray surface and wipe clean with a clean, white cloth. Acceptable colorless disinfectants include:
- Sodium hypochlorite
- Hydrogen peroxide
- Quaternary ammonium

Weight; Square Feet/Carton
3114, 3115, 3214, 3215, 3216, 3217, 3314, 3315 – 0.45 lbs/SF; 96 SF/ctn
3316, 3317 – 0.75 lbs/SF; 64 SF/ctn

Minimum Order Quantity
1 carton

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Armstrong®

Acoustical Ceiling Tile - Metal

Related Masterspec: Division 9, 095133 - Acoustical Metal Pan Ceiling

Product: Metalworks Tegular Ceiling Tile or approved equal

Locations/Applications: Varies

Product Requirements:

- NRC rating of .65
- Light Reflect: .61-.70
- Washable
- Scrubable
- Impact Resistant
- Soil Resistant
- High Warranty recommended
- 25% recycled content recommended

CEILING | SYSTEMS

Between us, ideas become reality™

METALWORKS™ Tegular

Armstrong®

METALWORKS™

Tegular

smooth texture

MetalWorks Tegular Microperforated in Silver Grey on Suprafine® suspension system in Silver Grey with 4" Classic Axiom® Curved in Silver Grey; Unilever Food Solutions, Lisle, IL

Key Selection Attributes

- 100% upward access
- Installs on 15/16" or 9/16" Exposed Tee suspension systems
- Durable – Washable, Scrubbable, Soil-resistant
- Outstanding NRC with acoustical fleece or infill panel (0.65– 0.90)
- BioAcoustic™ infill panels can enhance acoustics and contribute to LEED® Credits
- Standard edge caps for cut panels in White, Silver Grey, Gun Metal Grey, and Black (for use with Effects™ colors)
- MetalWorks Tegular now available for TechZone™ ceilings; for details, visit armstrong.com/techzone
- 18" x 18" MetalWorks Tegular infill panels now available for Metaphors® Coffers; for details, visit armstrong.com/metaphors
- Additional sizes, colors, and perforations available as premium and custom options; for more information, visit our web site at armstrong.com/metalworks or call 1 877 ARMSTRONG and select options 1-1-4 to work with the Architectural Specialties project management team

Inset: MetalWorks Tegular Extra Microperforated in Effects Cherry on Prelude® suspension system in Black; Mary Immaculate Catholic Church, Farmers Branch, TX

Color Selection

Due to printing limitations, shade may vary from actual product.

White (WH) | Silver Grey (SG) | Gun Metal Grey (MY) | Effects Maple (FXMP) | Effects Cherry (FXCH) | Effects Dark Cherry (FXDC) | Effects Walnut (FXWN)

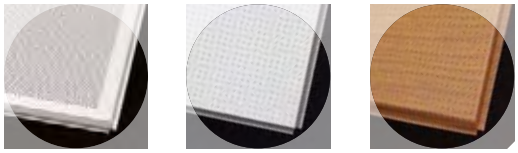
Panels are available in Custom RAL colors upon request.
Effects colors are only available for unperforated and extra microperforated panels.

Perforation Options

(Actual 1:2 scale shown)

Unperforated (M1) | Microperforated (M2) | Extra Microperforated (M3)

Detail



MetalWorks Tegular Microperforated | MetalWorks Tegular Extra Microperforated | Effects Wood Looks Tegular Extra Microperforated

Additional sizes, colors, and perforations available as custom options. For more information, visit our web site at armstrong.com/metalworks or call 1 877 ARMSTRONG and select options 1-1-4 to work with the Architectural Specialties project management team.

On the cover: MetalWorks Tegular 2' x 2' and Custom Tegular 2' x 4' Microperforated in Silver Grey with Suprafine suspension system in Silver Grey; Shadow Hills High School, Indio, CA

METALWORKS™

Tegular

smooth texture

Recycled Content: 25%

armstrong.com/greengenie

LEED® Credits

Energy	Waste Mgmt	Recycled Content	Local Materials	Renewable Materials	Daylight & Views
	✔	✔	✔		

Location Dependent

LEED for Schools

Acoustics	Low Emitting or CHPS
✔	✔

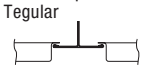
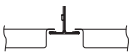
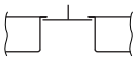
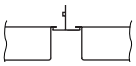
Colors and Perforations

White (WH)
Silver Grey (SG)
Gun Metal Grey (MY)

Effects™ Maple (FXMP)
Effects Cherry (FXCH)
Effects Dark Cherry (FXDC)
Effects Walnut (FXWN)

(M1) Unperforated
(M2) Microperforated
(M3) Extra Micorperforated

Visual Selection

Edge Profile	Item Number◆	Dimensions		Durable: Wash	Scrub	Impact	Soil
METALWORKS Flush Tegular (with acoustical fleece)							
15/16" Flush Tegular	6461_ _ _ _◆◆	2' x 2'	☐	•	•	•	•
METALWORKS 5/16" Square Tegular (with acoustical fleece)							
15/16" Square Tegular 	6462_ _ _ _	2' x 2'	☐	•	•	•	•
9/16" Square Tegular 	6464_ _ _ _ _ _◆◆◆	2' x 2'	☐	•	•	•	•
METALWORKS 5/8" Square Tegular (with acoustical fleece)							
15/16" Square Tegular 	6463_ _ _ _†	2' x 2'	☐	•	•	•	•
9/16" Square Tegular 	6465_ _ _ _†	2' x 2'	☐	•	•	•	•

◆ When specifying or ordering, include the appropriate perforation and letter color suffixes with the item number (e.g., 6462 M 1 W H). Light reflectance is for White only.

◆◆ "S" Service item with 1,000 SF minimum order quantity and extended lead time.

◆◆◆ Available in Effects Wood Looks finishes. NOTE: Perforation M2 is not available in Effects finishes as a standard option. **Additional 9/16" Square Tegular sizes available for TechZone™ ceilings. Due to color variation, they cannot be mixed with item 6464. For details, visit armstrong.com/techzone**

† "S" Service item with extended lead times

Acoustical Performance

Dots represent highest level of acoustical performance

Perforation	% Open Area	NRC	CAC	Light Reflect (White only)
M1	0%	0.10	36	0.77
M2	18.4%	0.70 0.90** •	38* •	0.61
M3	1.5%	0.65 0.70**	40* •	0.77

* With optional field-cut #747 mineral fiber backing (cannot be used with fiberglass infill #8200100).

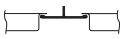
** NRC 0.90 (microperforated) or NRC 0.70 (extra microperforated) with optional fiberglass infill #8200100 (cannot be used with #747 mineral fiber backing). NRC 0.85 (microperforated) or NRC 0.70 (extra microperforated) with optional BioAcoustic™ infill #5479 or 5823.

EXAMPLE: **6461 M2 WH**

- 6461: Panel Dimension/Type: 15/16" Flush Tegular
- M2: Perforation: M2 Microperforated
- WH: Finish: White

Suspension Systems

15/16"



Prelude® XL®

9/16"

Interlude®

Silhouette® Bolt-Slot

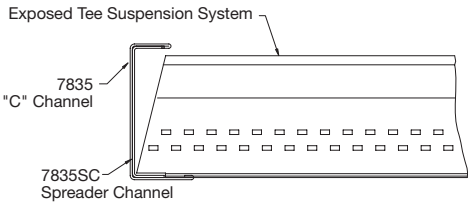
Sonata®

Suprafine® XL

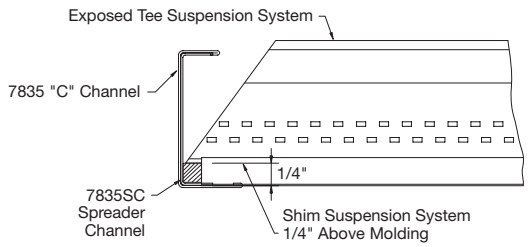
Trimlok® Screw-Slot

Prelude and Suprafine are available in many standard colors. All other suspension systems are available in standard White only. Other colors available as special order.

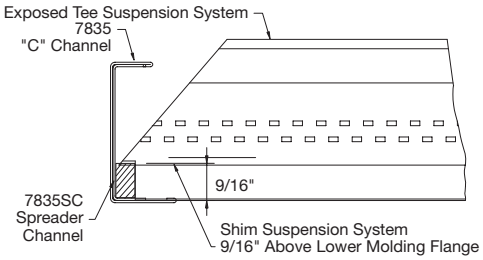
Installation Details – For termination at walls or transitions



Flush Tegular



5/16" Square Tegular



5/8" Square Tegular

METALWORKS™

Tegular

smooth texture

Colors

White (WH)
Silver Grey (SG)
Gun Metal Grey (MY)
Black (BL)
Effects™ Maple (FXMP)
Effects Cherry (FXCH)
Effects Dark Cherry (FXDC)
Effects Walnut (FXWN)

Accessories

Item Number	Description	Dimensions	Pcs/Ctn
6096_ _ ◆	15/16" Edge Cap for Cut Tegular Panels***	Nominal 2'	50
6099_ _ ◆	9/16" Edge Cap for Cut Tegular Panels***	Nominal 2'	50
7835	C-Channel	–	–
7835SC	Spreader Channel	–	–
AX2STR	2" Straight Axiom® Classic Trim†	120" x 3/4" x 2"	–
AX4STR	4" Straight Axiom Classic Trim†	120" x 3/4" x 4"	–
AX6STR	6" Straight Axiom Classic Trim†	120" x 3/4" x 6"	–
5342_ _ _ _◆	2" Effects Wood Looks Trim	Nominal 10' length	6
5344_ _ _ _◆	4" Effects Wood Looks Trim	Nominal 10' length	6
5346_ _ _ _◆	6" Effects Wood Looks Trim	Nominal 10' length	6
FXSPTHDC	Effects Hold Down Clip for Cut Panel Installations	N/A	10
770*	Cortega Square Lay-in Panel	2' x 2' x 5/8"	8
5479	BioAcoustic™ Infill Panel (Beige Matte)	2' x 2' x 5/8"	12
5823	BioAcoustic Infill Panel (Black Matte)	2' x 2' x 5/8"	12
8200100	1" Fiberglass Infill Bag (Black Gloss)	2' x 2' x 1"	12

◆ When specifying or ordering, include the appropriate 2- or 4-letter color suffix (e.g., 6096 W H or 5342 F X C H).
* Recommended for high CAC acoustical performance.
*** Edge Caps only available for 5/16" square Tegular items (6462, 6464) in White, Silver Grey, or Gun Metal Grey and Black (use with Effects colors).
† Axiom trim is also available in other sizes and designs. For details, visit armstrong.com/axiom.
Note: For details about Effects Wood Looks visuals and trim, visit armstrong.com/effects.

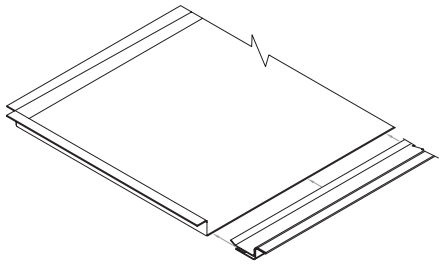
Axiom Trim Channel Profiles – 2", 4", 6", 8", 10", 12", 14", and 16"

Axiom 2" Trim Channel

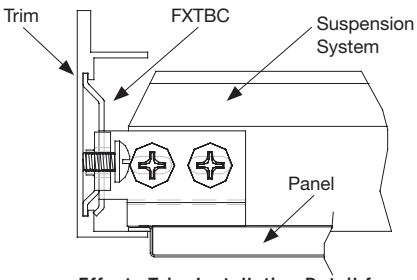
Effects Wood Looks in Walnut with 2" Effects Walnut Trim

2" Effects Trim Profile

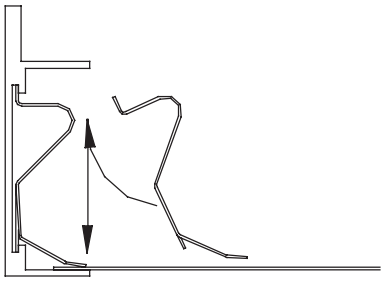
Accessory Details



Edge Cap Application for Cut Panels



Effects Trim Installation Detail for Exposed/Cloud Applications



Effects Hold Down Clip (Item FXSPTHDC) for Use with Cut Panels

Physical Data

Material
Electrogalvanized Steel – 0.021" thickness

Surface Finish
Factory-applied powder-coated finish (post-coated). Premium and Custom RAL colors also available. Refer to CS-3957 for a sampling of Custom RAL colors. Contact Architectural Specialties for custom color matching requests at 1 877 ARMSTRONG, select options 1-1-4.

Fire Performance
Factory Mutual Approvals Specification tested per ASTM E84 and CAN/ULC S102. Flame Spread Index 25 or less. Smoke Developed Index 50 or less.

ASTM E1264 Classification
Fire Class – Class A
Unperforated – Type XX, Pattern G
Perforated – Type XX, Pattern C

Installation Considerations
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 armstrong.com/installation.

Seismic Installations
MetalWorks Tegular has been engineered, tested, and approved for application in all seismic areas.

Warranty
One (1) year limited warranty.
Details: armstrong.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
6462M, 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 ARMSTRONG
armstrong.com/metalworks
BPCS-3269-213

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Armstrong®

Acoustical Ceiling Tile - Metal

Related Masterspec: Division 9, 095113 - Acoustical Panel Ceiling

Product: Metalworks Tegular Ceiling Tile or approved equal

Locations/Applications: Varies

Product Requirements:

- NRC rating of .65
- Light Reflect: .61-.70
- Washable
- Scrubable
- Impact Resistant
- Soil Resistant
- High Warranty recommended
- 25% recycled content recommended

CEILING | SYSTEMS

Between us, ideas become reality™

METALWORKS™ Tegular

Armstrong®

METALWORKS™

Tegular

smooth texture

MetalWorks Tegular Microperforated in Silver Grey on Suprafine® suspension system in Silver Grey with 4" Classic Axiom® Curved in Silver Grey; Unilever Food Solutions, Lisle, IL

Key Selection Attributes

- 100% upward access
- Installs on 15/16" or 9/16" Exposed Tee suspension systems
- Durable – Washable, Scrubbable, Soil-resistant
- Outstanding NRC with acoustical fleece or infill panel (0.65– 0.90)
- BioAcoustic™ infill panels can enhance acoustics and contribute to LEED® Credits
- Standard edge caps for cut panels in White, Silver Grey, Gun Metal Grey, and Black (for use with Effects™ colors)
- MetalWorks Tegular now available for TechZone™ ceilings; for details, visit armstrong.com/techzone
- 18" x 18" MetalWorks Tegular infill panels now available for Metaphors® Coffers; for details, visit armstrong.com/metaphors
- Additional sizes, colors, and perforations available as premium and custom options; for more information, visit our web site at armstrong.com/metalworks or call 1 877 ARMSTRONG and select options 1-1-4 to work with the Architectural Specialties project management team

Inset: MetalWorks Tegular Extra Microperforated in Effects Cherry on Prelude® suspension system in Black; Mary Immaculate Catholic Church, Farmers Branch, TX

Color Selection

Due to printing limitations, shade may vary from actual product.

White (WH) | Silver Grey (SG) | Gun Metal Grey (MY) | Effects Maple (FXMP) | Effects Cherry (FXCH) | Effects Dark Cherry (FXDC) | Effects Walnut (FXWN)

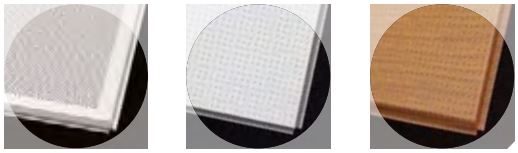
Panels are available in Custom RAL colors upon request.
Effects colors are only available for unperforated and extra microperforated panels.

Perforation Options

(Actual 1:2 scale shown)

Unperforated (M1) | Microperforated (M2) | Extra Microperforated (M3)

Detail



MetalWorks Tegular Microperforated | MetalWorks Tegular Extra Microperforated | Effects Wood Looks Tegular Extra Microperforated

Additional sizes, colors, and perforations available as custom options. For more information, visit our web site at armstrong.com/metalworks or call 1 877 ARMSTRONG and select options 1-1-4 to work with the Architectural Specialties project management team.

On the cover: MetalWorks Tegular 2' x 2' and Custom Tegular 2' x 4' Microperforated in Silver Grey with Suprafine suspension system in Silver Grey; Shadow Hills High School, Indio, CA

METALWORKS™

Tegular

smooth texture

Recycled Content: 25%

armstrong.com/greengenie

LEED® Credits

Energy	Waste Mgmt	Recycled Content	Local Materials	Renewable Materials	Daylight & Views
	✔	✔	✔		

Location Dependent

LEED for Schools

Acoustics	Low Emitting or CHPS
✔	✔

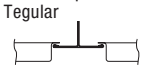
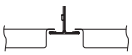
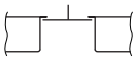
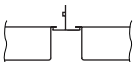
Colors and Perforations

White (WH)
Silver Grey (SG)
Gun Metal Grey (MY)

Effects™ Maple (FXMP)
Effects Cherry (FXCH)
Effects Dark Cherry (FXDC)
Effects Walnut (FXWN)

(M1) Unperforated
(M2) Microperforated
(M3) Extra Micorperforated

Visual Selection

Edge Profile	Item Number◆	Dimensions		Durable: Wash	Scrub	Impact	Soil
METALWORKS Flush Tegular (with acoustical fleece)							
15/16" Flush Tegular	6461_ _ _ _◆◆	2' x 2'	☐	•	•	•	•
METALWORKS 5/16" Square Tegular (with acoustical fleece)							
15/16" Square Tegular 	6462_ _ _ _	2' x 2'	☐	•	•	•	•
9/16" Square Tegular 	6464_ _ _ _ _ _◆◆◆	2' x 2'	☐	•	•	•	•
METALWORKS 5/8" Square Tegular (with acoustical fleece)							
15/16" Square Tegular 	6463_ _ _ _†	2' x 2'	☐	•	•	•	•
9/16" Square Tegular 	6465_ _ _ _†	2' x 2'	☐	•	•	•	•

◆ When specifying or ordering, include the appropriate perforation and letter color suffixes with the item number (e.g., 6462 M 1 W H). Light reflectance is for White only.

◆◆ "S" Service item with 1,000 SF minimum order quantity and extended lead time.

◆◆◆ Available in Effects Wood Looks finishes. NOTE: Perforation M2 is not available in Effects finishes as a standard option. **Additional 9/16" Square Tegular sizes available for TechZone™ ceilings. Due to color variation, they cannot be mixed with item 6464. For details, visit armstrong.com/techzone**

† "S" Service item with extended lead times

Acoustical Performance

Dots represent highest level of acoustical performance

Perforation	% Open Area	NRC	CAC	Light Reflect (White only)
M1	0%	0.10	36	0.77
M2	18.4%	0.70 0.90** •	38* •	0.61
M3	1.5%	0.65 0.70**	40* •	0.77

* With optional field-cut #747 mineral fiber backing (cannot be used with fiberglass infill #8200100).

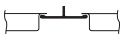
** NRC 0.90 (microperforated) or NRC 0.70 (extra microperforated) with optional fiberglass infill #8200100 (cannot be used with #747 mineral fiber backing). NRC 0.85 (microperforated) or NRC 0.70 (extra microperforated) with optional BioAcoustic™ infill #5479 or 5823.

EXAMPLE: **6461 M2 WH**

- 6461: Panel Dimension/Type: 15/16" Flush Tegular
- M2: Perforation: M2 Microperforated
- WH: Finish: White

Suspension Systems

15/16"



Prelude® XL®

9/16"

Interlude®

Silhouette® Bolt-Slot

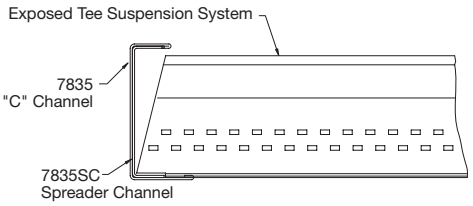
Sonata®

Suprafine® XL

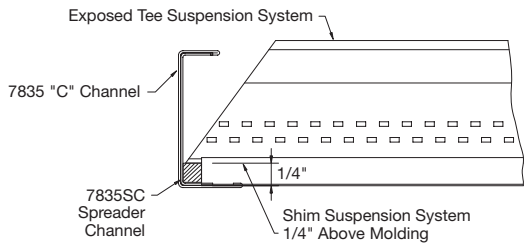
Trimlok® Screw-Slot

Prelude and Suprafine are available in many standard colors. All other suspension systems are available in standard White only. Other colors available as special order.

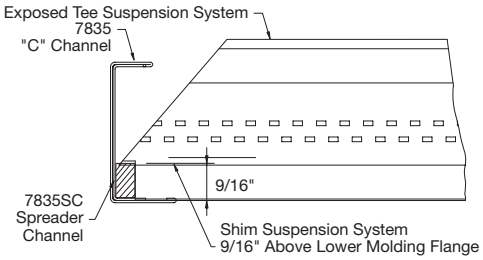
Installation Details – For termination at walls or transitions



Flush Tegular



5/16" Square Tegular



5/8" Square Tegular

METALWORKS™

Tegular

smooth texture

Colors

White (WH)
Silver Grey (SG)
Gun Metal Grey (MY)
Black (BL)
Effects™ Maple (FXMP)
Effects Cherry (FXCH)
Effects Dark Cherry (FXDC)
Effects Walnut (FXWN)

Accessories

Item Number	Description	Dimensions	Pcs/Ctn
6096_ _ ◆	15/16" Edge Cap for Cut Tegular Panels***	Nominal 2'	50
6099_ _ ◆	9/16" Edge Cap for Cut Tegular Panels***	Nominal 2'	50
7835	C-Channel	–	–
7835SC	Spreader Channel	–	–
AX2STR	2" Straight Axiom® Classic Trim†	120" x 3/4" x 2"	–
AX4STR	4" Straight Axiom Classic Trim†	120" x 3/4" x 4"	–
AX6STR	6" Straight Axiom Classic Trim†	120" x 3/4" x 6"	–
5342_ _ _ _◆	2" Effects Wood Looks Trim	Nominal 10' length	6
5344_ _ _ _◆	4" Effects Wood Looks Trim	Nominal 10' length	6
5346_ _ _ _◆	6" Effects Wood Looks Trim	Nominal 10' length	6
FXSPTHDC	Effects Hold Down Clip for Cut Panel Installations	N/A	10
770*	Cortega Square Lay-in Panel	2' x 2' x 5/8"	8
5479	BioAcoustic™ Infill Panel (Beige Matte)	2' x 2' x 5/8"	12
5823	BioAcoustic Infill Panel (Black Matte)	2' x 2' x 5/8"	12
8200100	1" Fiberglass Infill Bag (Black Gloss)	2' x 2' x 1"	12

◆ When specifying or ordering, include the appropriate 2- or 4-letter color suffix (e.g., 6096 W H or 5342 F X C H).
* Recommended for high CAC acoustical performance.
*** Edge Caps only available for 5/16" square Tegular items (6462, 6464) in White, Silver Grey, or Gun Metal Grey and Black (use with Effects colors).
† Axiom trim is also available in other sizes and designs. For details, visit armstrong.com/axiom.
Note: For details about Effects Wood Looks visuals and trim, visit armstrong.com/effects.

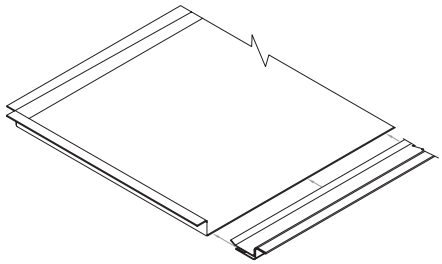
Axiom Trim Channel Profiles – 2", 4", 6", 8", 10", 12", 14", and 16"

Axiom 2" Trim Channel

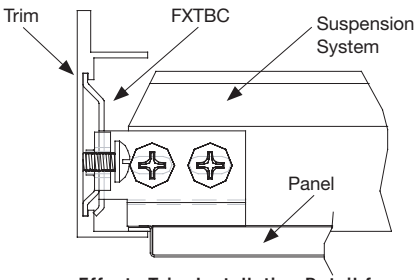
Effects Wood Looks in Walnut with 2" Effects Walnut Trim

2" Effects Trim Profile

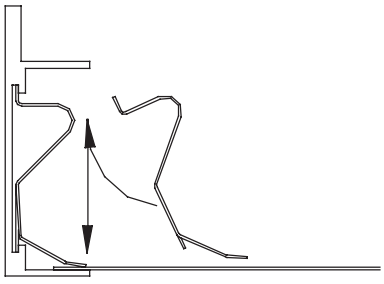
Accessory Details



Edge Cap Application for Cut Panels



Effects Trim Installation Detail for Exposed/Cloud Applications



Effects Hold Down Clip (Item FXSPTHDC) for Use with Cut Panels

Physical Data

Material
Electrogalvanized Steel – 0.021" thickness

Surface Finish
Factory-applied powder-coated finish (post-coated). Premium and Custom RAL colors also available. Refer to CS-3957 for a sampling of Custom RAL colors. Contact Architectural Specialties for custom color matching requests at 1 877 ARMSTRONG, select options 1-1-4.

Fire Performance
Factory Mutual Approvals Specification tested per ASTM E84 and CAN/ULC S102. Flame Spread Index 25 or less. Smoke Developed Index 50 or less.

ASTM E1264 Classification
Fire Class – Class A
Unperforated – Type XX, Pattern G
Perforated – Type XX, Pattern C

Installation Considerations
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 armstrong.com/installation.

Seismic Installations
MetalWorks Tegular has been engineered, tested, and approved for application in all seismic areas.

Warranty
One (1) year limited warranty.
Details: armstrong.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
6462M, 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

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armstrong.com/metalworks
BPCS-3269-213

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Armstrong®

Acoustical Clouds

Product: Armstrong Soundscapes or approved equal

Locations/Applications: Areas with exposed ceilings

Product Requirements:

- Fire Rating: Class A
- Light Reflect: .9
- Anti-Mold & Mildew
- Sag Resistant
- Washable
- Scratch Resistant
- Soil Resistant
- High Warranty recommended
- Product in a recycle program recommended
- Product with high recycled content recommended

SOUNDSCAPES® Basics

Acoustical Canopies

SoundScapes Basics Acoustical Canopies

KEY SELECTION ATTRIBUTES

- Define spaces and enhance acoustics in open plenum spaces with spot sound absorption
- Curved panel can be used as a hill or valley
- Fast, easy installation
- Fast lead times – perfect for retrofit applications
- Energy efficient, high light-reflectant surface
- For additional size and color options, see our line of SoundScapes Acoustical Canopies

COLOR

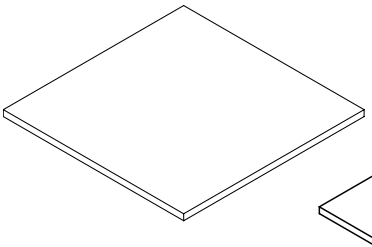
White
(WH)

Visit Armstrong.com
Photo Gallery to view more
installation photos

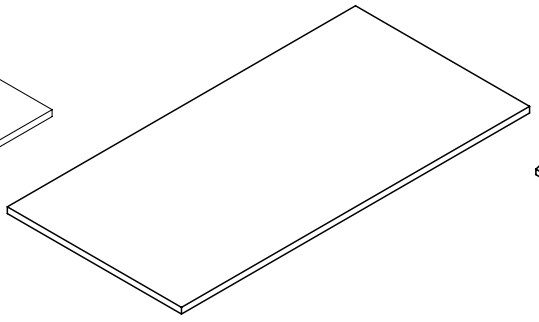
SEARCH: soundscapes shapes

PANEL SELECTION (finished on all sides)

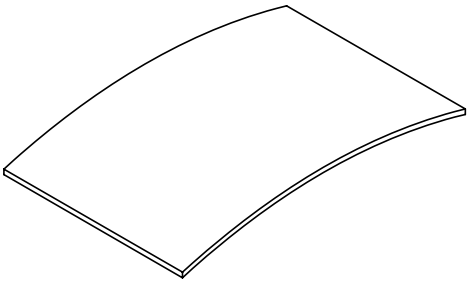
Flat Nominal 4' x 4'



Flat Nominal 4' x 8'



Curved Nominal 4' x 6'
Can be used as a hill or valley



NOTE: These items are white only, for additional standard and custom color options, see our full selection of SoundScapes Shapes Acoustical Clouds; consult your Armstrong representative for lead times.

SOUNDSCAPES® Basics

Acoustical Canopies

72% RECYCLED CONTENT

LEED® acoustics · energy · daylight & views · indoor air quality · renewable materials · recycled content · waste mgmt · local materials

Calculate LEED contribution at armstrong.com/greengenie

VISUAL SELECTION

PERFORMANCE

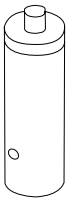
Dots represent high level of performance

Item Number	Description	Dimensions (Inches)	Quantity	Sabins/ Panel	Fire Rating	Light Reflect	Sag Resist	Anti-Mold & Mildew	Durable			Recycle Content◆	Recycle
							Humi-Guard+	BioBlock+	Wash	Scratch	Soil		Yes
66331WH **66334WH**	Square	Nominal 48 x 48" (1200mm x 1200mm)	1 pc/ctn 4 pcs/ctn	19.32 or 1.20/SF	Class A	0.90 •	•	•	•	•	•	High	•
66341WH **66344WH**	Rectangle	Nominal 48 x 96" (1200mm x 2400mm)	1 pc/ctn 4 pcs/ctn	37.84 or 1.18/SF	Class A	0.90 •	•	•	•	•	•	High	•
66351WH **66352WH**	Hill/Valley	Nominal 48 x 72" (1181mm x 1869mm)	1 pc/ctn 2 pcs/ctn	26.41 or 1.10/SF	Class A	0.90 •	•	•	•	•	•	High	•

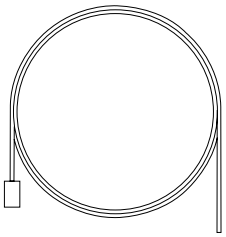
ACCESSORIES

Item Number	Description	Quantity
6636	Soundscapes Basics Hanging Kit	1 Bag

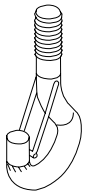
EACH HANGING INCLUDES TWO (2) OF EACH ITEM:



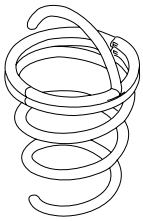
Cable Adjuster



Aircraft Cable

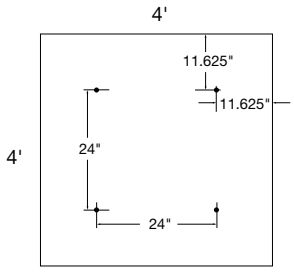


Locking Hook

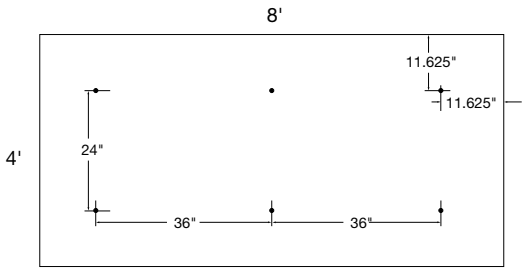


Spiral Anchor

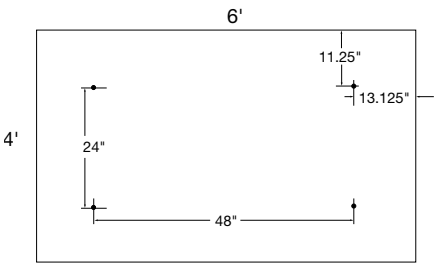
HANGING AND HARDWARE PLACEMENT



2 hanging kits needed per panel



3 hanging kits needed per panel



2 hanging kits needed per panel

PHYSICAL DATA

Material
Flat clouds, 1.57" thick, curved canopy 1.18" thick fiberglass with DuraBrite® scrim on face and back, painted sides.

Surface Finish
DuraBrite with factory-applied paint on face and back, painted sides. Standard White has energy-saving, high light-reflective finish (LR 0.90).

Fire Performance

SoundScapes Basics panel material is ASTM E84 Class A: Flame Spread 25 or under and Smoke Developed 50 or less.

SoundScapes Basics, as with other architectural features located in the ceiling plane, may obstruct or skew the existing or planned fire sprinkler water distribution pattern, or possibly delay the activation of the fire sprinkler or fire detection system. Consult a fire protection engineer, NFPA 13, and local codes for guidance on the proper installation techniques where fire detection or suppression systems are present.

ASTM E1264 Classification
Type XII, Form 2, Pattern E

Acoustical Performance
Acoustical performance differs based on panel size. See chart above for more information.

Design Considerations

Special care in installation and handling must be taken to avoid surface damage to the paint finish.

Due to slight thickness and paint system variations, do not mix SoundScapes Basics with other SoundScapes products.

Seismic Installation
SoundScapes Basics must be installed to allow for 18" of movement in each direction. Two panels must be installed a minimum of 36" from each other.

Suspension Systems
See Installation Instructions BPLA-297846 for installation details.

Warranty
One (1) year limited warranty.
Details: armstrong.com/warranty

Panel Weight/SF
1.0 lbs/SF

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armstrong.com/shapes
BPCS-4543-1114

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Armstrong®

Rubber Baseboards - Heavy Traffic

Product: Johnsonite Millwork Wall Base

Locations/Applications: Hallways

Product Requirements:

- Meets or exceeds performance and dimensional requirements of ASTM F-1861 Standard Specification for Resilient Wall Base, Type TP, and Group 1
- Flexibility - will not crack, break, or show any signs of fatigue when bent around a 1/4” diameter cylinder
- Fire Resistant (ASTM E 648/NFPA 253 (Critical Radiant Flux) – Class 1 and ASTM E 84/NFPA 255: Flame/Smoke – Class A/less than 450 Smoke)
- Chemical Resistance - ASTM F 925
- 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 Standard Specification for Resilient Wall Base

Johnsonite
A Tarkett Company

Product Specification

Section 096513

Millwork® Wall Base

1. PROPRIETARY PRODUCT/MANUFACTURER

1.1. Proprietary Product: Millwork Resilient Wall Base profiles replicate the look of finely milled wood.

1.2. Manufacturer:

Johnsonite, Inc. Phone (800) 899-8916
16910 Munn Road (440) 543-8916
Chagrin Falls, Ohio 44023 Tech: Ext 9297
Web: www.johnsonite.com Samples: Ext 9299
E-mail: info@johnsonite.com Fax: (440) 543-8920

1.3. Proprietary Product Description:

1.3.1. Construction: Johnsonite Millwork Resilient Wall Base is manufactured from a proprietary thermoplastic rubber formulation designed specifically to meet the performance and dimensional requirements of ASTM F-1861 Standard Specification for Resilient Wall Base, Type TP, and Group 1.

1.3.2. 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

Overlook™ (MW-XX-C)**:** 1/4″ (.25", 6.35mm) thick by 7-1/2″ (19.05cm) height, 6 per carton, 8 ft lengths, 48 ft (14.6m) per carton, 56 lbs (25.4 kg) per carton

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

Reveal™ **8"** (MW-XX-F8)**:** 1/4" (.25", 6.35mm) thick by 8" (20.32) height with a 45° angular top and a 7/32" (5.5mm) wide surface reveal, 4 per carton, 8 ft lengths, 32 ft (9.75m) per carton, 49 lbs (14.5kg) 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

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

Monarch™ **8"** (MW-XX-M8)**:** 3/16″ (.19", 4.76mm) thick by 8.0″ (15.24cm) height, 6 per carton, 8 ft lengths, 48 ft (14.6m) per carton, 60 lbs (27.2kg) 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

- **Flexibility**: Will not crack, break, or show any signs of fatigue when bent around a 1/4" (6.4 mm) diameter cylinder.
- **Fire Resistance**:
  - ASTM E 648/NFPA 253 (Critical Radiant Flux) – Class 1
  - ASTM E 84/NFPA 255: Flame/Smoke – Class A/less than 450 Smoke
- **Chemical Resistance**: ASTM F 925, Passed – 5% Acetic acid, 70% Isopropyl alcohol, White mineral oil (medicinal grade), Sodium hydroxide solution (5% NaOH), Hydrochloric acid solution (5% HCl), Sulfuric acid solution (5% H_2SO_4), Household ammonia solution (5% NH_4OH), Household bleach (5.25% NaOCl), Olive oil (light), Kerosene (K1), and Unleaded gasoline (regular grade)
- 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 Standard Specification for Resilient Wall Base.

3. INSTALLATION

Johnsonite Wall Base and adhesives must be site conditioned at room temperature for a minimum of 48 hours prior to, during, and after installation. Room temperature must be maintained between 65° and 85°F (18° and 30°C) with HVAC system operating. A minimum temperature of 55°F (13°C) must be maintained afterwards. The ambient relative humidity should be between 40% and 60%.

All walls must be clean, smooth, flat and dry. The surface must be free of all dust, loose particles, solvents, paint, grease, oil, wax, alkali, sealing/curing compounds, old adhesive, and any other foreign material, which could affect installation. Remove existing adhesive mechanically – do not use chemical adhesive removers or solvents. Fill all depressions, cracks, and other surface irregularities with a good quality patching compound.

NOTE: Contamination on the substrate can cause damage to the wall base material. Permanent and non-permanent markers, pens, crayons, paint, etc., must not be used to write on the back of the wall base material or used to mark the substrate as they could bleed through and stain the wall base material. If these contaminants are present on the substrate they must be mechanically removed prior to the installation of the wall base material.

Caution: Do not use liquid solvents or adhesive removers.

Do not install Johnsonite Wall Base over vinyl wall coverings.

Do not install Johnsonite Wall Base over non-porous surfaces with Johnsonite 960 Wall Base Adhesive. Utilize Johnsonite 946 Premium Contact Adhesive following the non-porous application instructions for all non-porous surface installations.

3.1. 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 T (Delineate)	= 185 - 235 lf

946 Premium Contact Adhesive (non-porous surfaces)

Application: Brush or roller

Approximate coverage:

1 kg Unit (0.95 Qt.) – 24 to 36 Sq. ft. per Unit
6 kg Unit (1.44 Gal.) – 144 to 215 Sq. ft. per Unit

3.2. Installation Manual: Refer to Johnsonite Wall Base Installation Instructions for complete installation details.

4. AVAILABILITY AND COST

Available through authorized Johnsonite distributors nationwide.

5. WARRANTY

Limited 2 year warranty. For complete details, contact Johnsonite or an authorized Johnsonite distributor.

6. MAINTENANCE

Refer to Johnsonite Wall Base Installation Instructions for complete maintenance details.

7. TECHNICAL SERVICES

Samples: Submittal samples for verification and approval available upon request from Johnsonite. 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.johnsonite.com or contact Johnsonite at 800-899-8916.

Rubber Baseboards - Moderate Traffic

Product: Johnsonite Traditional Wall Base

Locations/Applications: Classrooms, Offices, Conference Rooms, Lounges

Product Requirements:

- Meets or exceeds performance and dimensional requirements of ASTM F-1861, Type TV and TP, Group 1 (solid), Style A and B, Standard Specification for Resilient Wall Base
- Flexibility - will not crack, break, or show any signs of fatigue when bent around a 1/4” diameter cylinder
- Fire Resistant (ASTM E 84/NFPA 255 (Flame/Smoke) – Class A, < 450 ASTM E 648 (NFPA 253): Critical Radiant Flux – Class I)
- Chemical Resistance - ASTM F 925
- 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

Johnsonite
A Tarkett Company

Product Specification

Section 096513

Traditional & Perceptions™ Wall Base

1. PROPRIETARY PRODUCT/MANUFACTURER

1.1. Proprietary Product: Thermoset Rubber Wall Base

1.2. Manufacturer:

Johnsonite, Inc.	Phone	(800) 899-8916
16910 Munn Road		(440) 543-8916
Chagrin Falls, Ohio 44023	Tech:	Ext 9297
Web: www.johnsonite.com	Samples:	Ext 9299
Email: info@johnsonite.com	Fax:	(440) 543-8920

1.3. Proprietary Product Description:

1.3.1. Construction: Johnsonite Traditional Wall Base is manufactured from a proprietary rubber formulation designed specifically to meet the performance and dimensional requirements of ASTM F-1861, Type TV and TP, Group 1 (solid), Style A and B, Standard Specification for Resilient Wall Base.

1.3.2. 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)

Perceptions™ Rubber Wall Base

- Recess (RWDC with angled toe or RWDCT for straight: 0.125" (3.17 mm) thickness, 4-1/4" (10.8 cm) height, available in 120' (36.58 m) coiled lengths (or special order 4' straight lengths)

- Spire (RWDC-XX-A with toe): 0.125" (3.17 mm) thickness, 4-1/4" (10.8 cm) height, 120' (36.58 m) coiled lengths (or special order 4' straight lengths).

- Quad (RWDC-XX-C with toe): 0125" (3.17 mm) thickness, 4-1/4" (10.8 cm) height, 120' (36.58 m) coiled lengths (or special order 4' straight 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

- 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.
- Flexibility: Will not crack, break, or show any signs of fatigue when bent around a 1/4" (6.4 mm) diameter cylinder.
- 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
- Resistance to light (ASTM F 1515): $\Delta E < 8$
- Fire Resistance:

  Vinyl Wall Base
  ASTM E 84/NFPA 255 (Flame/Smoke) – Class B, < 450
  ASTM E 648 (NFPA 253): Critical Radiant Flux – Class I

  Rubber Wall Base
  ASTM E 84/NFPA 255 (Flame/Smoke) – Class A, < 450
  ASTM E 648 (NFPA 253): Critical Radiant Flux – Class I

3. INSTALLATION

Johnsonite Wall Base and adhesives must be site conditioned at room temperature for a minimum of 48 hours prior to, during, and after installation. Room temperature must be maintained between 65° and 85°F (18° and 30°C) with HVAC system operating. A minimum temperature of 55°F (13°C) must be maintained afterwards. The ambient relative humidity should be between 40% and 60%.

All walls must be clean, smooth, flat and dry. The surface must be free of all dust, loose particles, solvents, paint,

grease, oil, wax, alkali, sealing/curing compounds, old adhesive, and any other foreign material, which could affect installation. Remove existing adhesive mechanically – do not use chemical adhesive removers or solvents. Fill all depressions, cracks, and other surface irregularities with a good quality patching compound.

Caution: Do not use liquid solvents or adhesive removers.

Do not install Johnsonite BaseWorks Wall Base over vinyl wall coverings.

Do not install Johnsonite Wall Base over non-porous surfaces with Johnsonite 960 Wall Base Adhesive. For non-porous surfaces apply Johnsonite 946 Premium Contact Adhesive.

3.1. Adhesives:

960 Cove Base Adhesive (porous surfaces)

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

946 Premium Contact Adhesive (non-porous surfaces)

Application: Brush or roller

Approximate coverage:

1 kg Unit (0.95 Qt) – 24 to 36 sq. ft. per unit
6 kg Unit (1.44 Gal.) – 144 to 215 sq. ft. per unit

3.2. Installation Manual: Refer to Johnsonite Wall Base Installation Instructions for complete installation details.

4. AVAILABILITY AND COST

Available through authorized Johnsonite distributors nationwide.

5. WARRANTY

Limited 2 year warranty. For complete details, contact Johnsonite or an authorized Johnsonite distributor.

6. MAINTENANCE

Refer to Johnsonite Wall Base Installation Instructions for complete maintenance details.

7. TECHNICAL SERVICES

Samples: Submittal samples for verification and approval available upon request from Johnsonite. 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.johnsonite.com or contact Johnsonite at 800-899-8916.

Sheet Goods

Product: Lonfloor Galvanized sheet vinyl flooring or approved equal

Locations/Applications: Pending

Product Requirements:

- Wear Layer Thickness of 0.8 mm
- Sheet Vinyl Floor Covering with Backing, ASTM F1303 (Type 1, Grade1, Class B)

Specifications- product must meet or exceed requirements for the following-

- Flexibility - ASTM F137
- Hardness - ASTM D2240
- James Machine, SCOF - ASTM D2047
- Abrasion Resistance - ASTM D3884
- Static Load Limit @ 800 PSI - ASTM F 970
- Residual Indentation - ASTM F 1914
- Castor Chair Test, ISO - TR4918
- Dimensional Stability - ASTM F2199
- Resistance to Heat - ASTM F 1514
- Resistance to Light - ASTM F 1515
- Critical Radiant Flux CRF (W/cm2) - ASTM E 648
- Chemical Resistance - ASTM F 925

Environmental-

- GreenMedic™: Formulated for microbial resistance recommended
- GreenAir™: Formulated for low VOCs recommended
- 20 - 40% post-industrial recycled content recommended
- FloorScore®Indoor Air Quality Certified recommended
- LEED Low Emitting Materials recommended

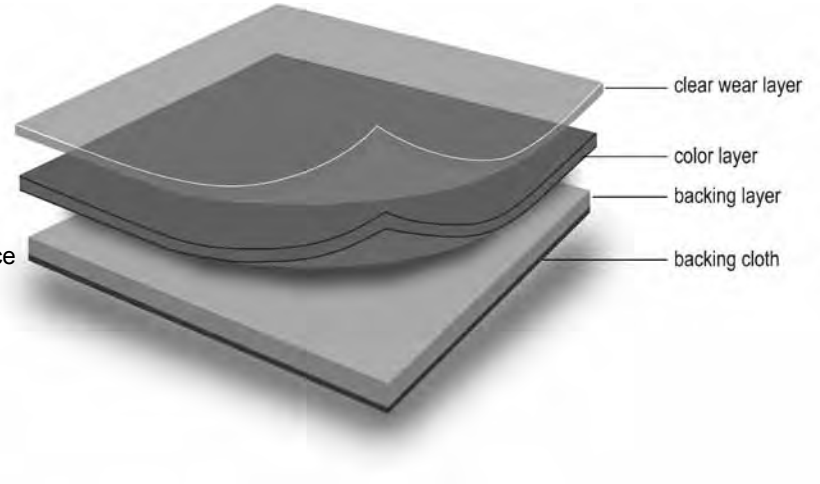
LONFLOOR GALVANIZED

LONSEAL

LONFLOOR GALVANIZED is a high-performance, heterogeneous resilient sheet vinyl flooring solution that is available in rich, inviting earth tones with random flecks that will create interest in any space.

*Due to the light color of #240, additional maintenance procedures are necessary to ensure a long lasting installation.

STANDARD SIZES (nominal)
Overall thickness: 0.080" (2.0 mm)
Wear layer thickness: 0.031" (0.8 mm)
Roll size: 6' (1.8 m) wide x 60' (18.3 m)
Weight: 0.6 lbs./sq. ft., 210 lbs./roll
Colors: Eight available



GREEN FEATURES
- GreenMedic™: Formulated for microbial resistance
- GreenAir™: Formulated for low VOCs
- 20 - 40% post-industrial recycled content
  - Contributes towards LEED MR 4.1 and MR 4.2
- FloorScore® Indoor Air Quality Certified
  - Conforms to CA Specification 01350
- LEED Low Emitting Materials
  - Adhesives and Sealants: LEED IEQ Credit 4.1
  - Flooring Systems: LEED IEQ Credit 4.3

10-YEAR WARRANTY
Lonseal offers a 10-year limited warranty.

TECHNICAL DATA

Sheet Vinyl Floor Covering with Backing, ASTM F1303	Type 1, Grade1, Class B
Flexibility, ASTM F137	Pass
Hardness, ASTM D2240	90
James Machine, SCOF, ASTM D2047	Neolite: 0.67; Neolite w/ Finish: 0.69
Abrasion Resistance, ASTM D3884	0.75%, 1,000 cycles
Static Load (max 0.005"), ASTM F970	850 psi
Short-term Indentation, ASTM F1914	0.001" residual indentation @ 75 lbs.
Castor Chair Test, ISO TR4918	25,000 cycles - Wear: 5.0, Color: 5.0, Change: 5.0
Dimensional Stability, ASTM F2199	0.09% loss
Heat Stability, ASTM F1514	Pass
Light Stability, ASTM F1515	Pass
Critical Radiant Flux, ASTM E648	Class 1 ≥0.45 watts/cm^2
Chemical Resistance, ASTM F925	Slight Surface Attack: Gasoline; Slight Color Change: 5% Phenol, Gasoline

*For detailed technical information, please refer to **www.lonseal.com.***

floor score by SCScertified

GREENAIR™ COLLECTION
LOW VOC PRODUCTS BY LONSEAL INC.

GREENMEDIC™
High Performance, Anti-Microbial products by Lonseal Inc.

LONSEAL, INC.
928 E. 238th Street, Carson, CA 90745 USA
800.832.7111 toll free | 310.830.7111 ph
www.lonseal.com

Updated: 04.14.14

JIS Q 9001:2004/JIS Q 9001:2000, the International Quality Assurance Standard
ISO 14001, Environmental Management Systems

Rubber Flooring

Related Masterspec: Division 9, 096519 - Resilient Tile Flooring

Product: Noraplan Environcare Rubber Flooring

Locations/Applications: Lab Floors

Product Requirements:

- ASTM F1344 Classification (Type 1, Grade 1)

Specifications- product must meet or exceed requirements for the following-

- Critical Radiant Flux ASTM E648 (min ≥0.45)
- Smoke Density ASTM E662 (both <450) flaming/non-flaming
- Static Coefficient of Friction ASTM D2047 (dry/wet)
- Abrasion ASTM D3389 H-18 wheel 1.1 lbs. load and 1000 cycles (< 0.035 oz. required)
- Shore Hardness Type A ASTM D2240
- Static Load Limit (Residual Compression) ASTM F970 with 800 lbs/psi
- Heat Resistance ASTM F1514, Require Avg. ΔE ≤8.0
- Light Resistance ASTM F1515, Require Avg. ΔE ≤8.0
- Sound Absorption E2179 (ΔIIConly)
- Sound Absorption ISO 140 (ΔLw only)
- Chemical Resistance

Environmental-

- Bacteria Resistance ASTM E2180 and ASTM G21 Recommended
- Product that is GREENGUARD Certified for Low VOC Emissions Recommended
- CA 01350 Compliant Product Recommended

noraplan®

Product	2.0 mm products: eco environcare sentica	3.0 mm products: degree environcare sentica	nTx 2.0 mm products: eco environcare sentica	nTx 3.0 mm products: degree environcare sentica	acoustic products: environcare sentica	ed products: environcare sentica	unita/unita nTx
Limited Wear Warranty (in years)	5	5	5	5	5	5	5
Conductivity Warranty (in years)	–	–	–	–	–	10	–
ASTM F1344 (tiles) Classification	Type I Grade 1	Type I Grade 1	–	–	–	Type I Grade 1	–
ASTM F1859 (rolls) Classification	Type I	Type I	Type I	Type I	–	Type I	Type I
ASTM F1860 (rolls with backing) Classification	–	–	–	–	Type I Grade 2	–	–
Critical Radiant Flux ASTM E648 (min ≥0.45)	Class 1 0.97	Class 1 1.03	Class 1 0.88	Class 1 082	Class 1 1.0	Class 1 0.59	Class 1 0.98
Smoke Density ASTM E662 (both <450) flaming/non-flaming	196/207	376/256	199/120	282/155	299/153	185/211	210/161
Static Coefficient of Friction ASTM D2047 (dry/wet)	0.96/0.85	0.99/0.88	0.96/0.85	0.99/0.88	1.0/0.9	0.92/0.89	0.98/0.94
Suitable for Ramps	No	No	No	No	No	No	No
Abrasion ASTM D3389 H-18 wheel 1.1 lbs load and 1000 cycles (< 0.035 oz required)	0.008	0.003	0.008	0.003	0.007	0.002	0.007
Shore Hardness Type A ASTM D2240	92	92	92	92	92	92	92
Rolling Load Limit (lbs/psi) [1]	450	550	450	550	450	450	450
Forklift Traffic	No	No	No	No	No	No	No
Static Load Limit (Residual Compression) ASTM F970 with 800 lbs/psi	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Heat Resistance ASTM F1514, Require Avg. ΔE ≤8.0	← Easily achieved with regular maintenance. →						
Light Resistance ASTM F1515, Require Avg. ΔE ≤8.0							
Sound Absorption E2179 (ΔIIC only)	ΔIIC 11	ΔIIC 14	ΔIIC 11	ΔIIC 14	ΔIIC 21	**	ΔIIC 11
Sound Absorption ISO 140 (Δ Lw only)	ΔLw 8 dB	ΔLw 10 dB	ΔLw 8 dB	ΔLw 10 dB	ΔLw 18 dB	ΔLw 6 dB	ΔLw 9 dB
Sound Generation	**	20.9 Sones	**	20.9 Sones	14.8 Sones	**	**
Oil and Grease Resistance	No	No	No	No	No	Yes	No
Chemical Resistance	← Call for specifics. →						
Static Generation ANSI ESD S97.2*	–	–	–	–	–	<20 volts	–
Static Generation AATCC 134 (20% RH)	<2000 volts	<2000 volts	<2000 volts	<2000 volts	<2000 volts	<2000 volts	<2000 volts
Decay Time FTM 101 C 4046	–	–	–	–	–	<0.25 (sec)	–
ESD ASTM F150 (ohms)	–	–	–	–	–	$10^6 < 10^9$	–
Bacteria Resistance ASTM E2180 and ASTM G21	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GREENGUARD Certified for Low VOC Emissions	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GREENGUARD Gold Certified for Low VOC Emissions	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CA 01350 Compliant	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1) The shape of the wheel's contact surface must be flat with rounded edges. No metal wheels. Shore hardness should be ≤ 99, Type A.

*Tested with conductive shoes.

**Not tested.

NOTE: Exact values may vary due to the test methods and tolerance between batches. The ASTM minimum requirement shall be achieved or exceeded.

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

nora®

High-performance floor coverings in a wide range of harmoniously soothing designer colors.

• Excellent wear resistance.
• Slip resistant in compliance with OSHA requirements.
• GREENGUARD Certified for Low VOC Emissions.
• GREENGUARD Gold Certified for Low VOC Emissions (formerly GREENGUARD Children & Schools).
• CA 01350 compliant.

Art. 2463

~ 24"/610 mm x 24"/610 mm

Thickness: ~.12"/~3.0 mm

Art. 1463

~ 48"/1.22 m x 39.37'/12.0 m

Thickness: ~.12"/~3.0 mm

Art. 2462

~ 24"/610 mm x 24"/610 mm

Thickness: ~.08"/~2.0 mm

Art. 1462

~ 48"/1.22 m x 49.2'/15.0 m

Thickness: ~.08"/~2.0 mm

noraplan® environcare™ nTx 3.0 mm

Art. 1421*

~ 48"/1.22 m x 39.37'/12.0 m

Thickness: ~.12"/~3.0 mm

noraplan® environcare™ nTx 2.0 mm

Art.

1626*

~ 48"/1.22 m x 49.2'/15.0 m

Thickness: ~.08"/~2.0 mm

* Minimum quantities required

	3mm thickness
	for special fire-protection requirements
	Largely oil and grease resistant
	for raised-access floors
	available as stairtread
	high footfall sound absorption
	electrostatic dissipative / conductive

GUIDE SPECIFICATIONS FOR THE
noraplan environcare™
BY nora systems, Inc.

This document is coordinated with the resilient tile and resilient sheet products in the nora systems, Inc. product literature, including the Product Catalog, and is available from nora systems, Inc. at www.nora.com/us.

SECTION 09650
RESILIENT FLOORING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 – Specification sections, apply to work of this section.

1.02 SUMMARY

A. The work of this Section includes:
1. Rubber tile flooring
2. Rubber sheet flooring
3. Rubber wall base
4. Rubber stairtreads and accessories
5. Responsibilities, preparation/installation

B. Related Sections: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
1. Section 03300 - Cast-In-Place Concrete; concrete substrate; slab surface tolerances; vapor retarder for applications on or below grade; 83/90 degree riser and tread edge angle for stairtread and nosings
2. Section 06100 - Rough Carpentry; plywood substrate; surface tolerances
3. Section 10270 - Access Flooring; resilient floor covering for access panels

C. References (Industry Standards):
1. American Association of Textile Chemists and Colorists
   a. AATCC 134 Electrostatic Propensity of Carpets
2. American National Standards Institute
   a. ANSI ESD S97.2 Floor Materials and Footwear – Voltage Measurement on a Person
3. American Society for Testing and Materials
   a. ASTM C423 Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
   b. ASTM C518 Standard Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
   c. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension
   d. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine
   e. ASTM D2240 Standard Test Method for Rubber Property – Durometer Hardness
   f. ASTM D3389 Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform, Double Head Abrader)
   g. ASTM D6499 Standard Test Method for The Immunological Measurement of Antigenic Protein in Natural Rubber and its Products
   h. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
   i. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
   j. ASTM E648 Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
   k. ASTM E662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
   l. ASTM E1745 Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
   m. ASTM E2179 Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors

n. ASTM E2180 Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) in Polymeric or Hydrophobic Materials
o. ASTM F150 Standard Test Method for Electrical Resistance of Conductive and Static Dissipative Resilient Flooring
p. ASTM F155 Method of Test for Temper of Strip and Sheet Metals for Electronic Devices
q. ASTM F386 Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces
r. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
s. ASTM F925 Standard Test Method for Resistance to Chemicals of Resilient Flooring
t. ASTM F970 Standard Test Method for Static Load Limit
u. ASTM F1344 Standard Specification for Rubber Floor Tile
v. ASTM F1482 Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
w. ASTM F1514 Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color
x. ASTM F1859 Standard Specification for Rubber Sheet Floor Covering Without Backing
y. ASTM F1860 Standard Specification for Rubber Sheet Floor Covering With Backing
z. ASTM F1861 Standard Specification for Resilient Wall Base
aa. ASTM F2055 Standard Test Method for Size and Squareness of Resilient Floor Tile by Dial Gage Method
bb. ASTM F2169 Standard Specification for Resilient Stair Treads
cc. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using *in situ* Probes
dd. ASTM F2199 Standard Test Method for Determining Dimensional Stability of Resilient Floor Tile after Exposure to Heat
ee. ASTM F3010 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings
ff. ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

4. European Norm
   a. FTM 101 C 4046 Static Decay
5. International Organization for Standardization
   a. ISO 140 Measurement of sound insulation in buildings and of building elements
6. National Fire Protection Association
   a. NFPA 253 Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source
   b. NFPA 258 Test Method for Specific Density of Smoke Generated by Solid Materials

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's Installation Guide, Maintenance Guide and Safety Data Sheet (SDS) for each material proposed for use (available at www.nora.com/us).

B. Samples: Submit two 3 inch by 3 inch samples of each product (except norament® serra, noraplan® degree and norament® stairtreads), in color specified, for verification. The noraplan degree product requires two 6 inch by 6 inch samples; norament serra requires two 3 inch by 6 inch samples, and norament stairtreads require two 2 inch wide samples.

1.04 QUALITY ASSURANCE

A. Manufacturer: Provide resilient flooring manufactured by a firm with a minimum of 10 years' experience with resilient flooring of type's equivalent to those specified. Manufacturers proposed for use, which are not named in this section, should submit evidence of ability to meet performance requirements specified not less than 10 days prior to bid date.
   1. The manufacturer should have the Quality Management System approved by Lloyd's Register Quality Assurance to the Quality Management System Standard ISO 9001:2000.
   2. Color Matching: Provide resilient flooring products, including wall base, accessories and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
   3. Manufacturer must be capable of providing technical training and technical field service representation.

B. Installer Qualifications: Installer should be nora® approved for the requirements of the project or INSTALL (International Standards & Training Alliance) resilient certified for the requirements of the project.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.

B. Deliver materials sufficiently in advance of installation to condition materials to the required temperature for 48 hours prior to installation.

1.06 PROJECT CONDITIONS

A. Maintain temperature and humidity at service levels or 68° F (20° C), ± 5° F (3° C), and 50% RH ± 10% in areas to receive resilient flooring. Specified temperature should be maintained at least 48 hours before, during, and 72 hours after installation.

1.07 WARRANTY

A. Provide current, detailed manufacturer's warranty for each flooring product as applicable, including limited wear, defect and conductivity.

1.08 EXTRA MATERIALS

A. Furnish full size units equal to 2 percent of quantity of resilient flooring installed as extra materials. Properly label and package extra materials. Deliver to owners designated storage area.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. nora systems, Inc., 9 Northeastern Blvd., Salem, NH 03079; telephone 800-332-NORA or 603-894-1021; fax 603-894-6615.

B. The Manufacturer should meet 1.04 A. and have or provide the following:
1. ISO 14001 Environmental Management Systems certification.
2. Validation according to the Eco-Management and Audit System (EMAS).
3. Construction waste take back program for the purpose of reducing jobsite waste by taking back their uninstalled waste flooring. Details of the nora program are available at www.nora.com/us.
4. Flooring surfaces that are easily cleaned and do not require coatings and stripping, or use chemicals that may be hazardous to human health.
5. Supply all required products that are CA 01350 compliant.
6. Flooring that is free of anything known to be teratogenic, mutagenic or carcinogenic.
7. Flooring that contains no polyvinyl chloride or plasticizers.
8. Flooring that contains no halogens.

Note: For specific product application recommendations please refer to your local nora® sales representative or www.nora.com/us.

2.02 RESILIENT TILE FLOORING FOR COMMERCIAL TRAFFIC

A.

1.	Product Name:	**noraplan environcare™ 2.0 mm, Article 2462**
2.	ASTM Specification:	ASTM F1344 Standard Specification for Rubber Floor Tile, defined as Type I and Grade 1
3.	Limited Wear Warranty:	5 years
4.	Material:	nora vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury
5.	Composition:	Homogeneous rubber compound with a random scattered design
6.	Color:	48 standard colors available
7.	Surface:	Smooth
8.	Back of Tile/Sheet/Nosing:	Double-sanded smooth
9.	Material Size:	~24 inches by 24 inches (610mm by 610mm) per ASTM F2055 ± 0.018 (± 0.45mm) is required
10.	Stairtread Length:	Not applicable
11.	Squareness:	ASTM F2055, ± 0.018 inches (± 0.45mm) is required
12.	Thickness:	0.8 inches (2mm), ASTM F386, ± 0.005 inches (± 0.127 mm) is required
13.	Depth:	Not applicable
14.	Dimensional Stability:	ASTM F2199, ≤ 0.15% in both directions is required

15.	Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, 0.97 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required
16.	Smoke Density:	ASTM E662; NFPA 258; NBS, 196 (flaming) and 207 (non-flaming) achieved, < 450 is required
17.	Tunnel Test:	Not applicable
18.	CAN/ULC-S102.2:	Surface Burning, FSC1 of 125 and SD of 370, achieved
19.	Burn Resistance:	Resistant to cigarette and solder burns
20.	Slip Resistance:	ASTM D2047 Static coefficient of friction, Neolite dry 0.96, Neolite wet 0.85 achieved, ≥ 0.5 is required (not recommended for ramps)
21.	Bacteria Resistance:	ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity
22.	VOC's:	This flooring is GREENGUARD Gold Certified for Low VOC Emissions, GREENGUARD Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant
23.	Latex Allergies:	ASTM D6499, Inhibition Elisa, results are below detection level
24.	Sound Absorption:	ASTM E2179 Δ IIC 11, ISO 140 Δ Lw 8 dB (compare only Δ values)
25.	Sound Generation:	Not applicable
26.	Hardness:	ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required
27.	Static Load:	ASTM F970, Residual compression of 0.003" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. is required
28.	Rolling Load Limit:	≤ 450 lbs. / sq. inch, with no forklift traffic
29.	Abrasion Resistance:	ASTM D3389, 1.1 lbs. (500g) load on H-18 wheel with 1000 cycles, 0.008 oz. (0.24g) weight loss achieved, ≤ 0.035 oz. (1.0g) is required
30.	Elongation:	ASTM D412 Modulus @ 10% is 1213.1 lbs. per sq. inch achieved, ≥ 300 lbs. per sq. inch is required
31.	Oil & Grease Resistance:	No
32.	Heat Resistance:	ASTM F1514, Avg. ΔE ≤ 8.0 is required, easily achieved with all batches and regular maintenance
33.	Light Resistance:	ASTM F1515, Avg. ΔE ≤ 8.0, easily achieved with all batches and regular maintenance
34.	Static Generation:	AATCC 134, < 2000 Volts at 20% RH, achieved
35.	Decay Time:	Not applicable
36.	Conductivity:	Not applicable
37.	Thermal Transmission:	ASTM C518, R-value 0.04, achieved
38.	Cleaning:	Cleaned and maintained effectively using water, nora cleaning pads and a suitable cleaning machine, without the use of any factory and/or field-applied coatings. Also without using any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic.
39.	Shine:	Higher shine achieved by buffing without any artificial topical applied coatings
40.	Stain Removal:	Samples of the product shall be provided for stain removal testing by the owner. Sample size shall be 24 inches by 24 inches, pre-cleaned by manufacture per published recommendations. Samples shall have no coatings, sealers, floor finish or other manually or mechanically applied finish on the surface of the product. Stain testing shall consist of application of common healthcare related disinfectants and chemicals to include, but not limited to, Betadine, Methylene Blue, Silver Nitrate and alcohol based hand sanitizer. Duration of test period shall be no less than one week. Removal of chemicals shall be in accordance with manufacturers published cleaning and maintenance recommendations.
41.	Substrate Preparation:	Per ASTM F710 and the nora Installation Guide

B.

1.	Product Name:	**noraplan environcare™ 3.0 mm, Article 2463**
2.	ASTM Specification:	ASTM F1344 Standard Specification for Rubber Floor Tile, defined as Type I and Grade 1
3.	Limited Wear Warranty:	5 years
4.	Material:	nora vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury
5.	Composition:	Homogeneous rubber compound with a random scattered design
6.	Color:	48 standard colors available
7.	Surface:	Smooth
8.	Back of Tile/Sheet/Nosing:	Double-sanded smooth

9.	Material Size:	~24 inches by 24 inches (610mm by 610mm) per ASTM F2055 ± 0.018 (± 0.45mm) is required
10.	Stairtread Length:	Not applicable
11.	Squareness:	ASTM F2055, ± 0.018 inches (± 0.45mm) is required
12.	Thickness:	~0.12 inches (3mm), ASTM F386, ± 0.005 inches (± 0.127 mm) is required
13.	Depth:	Not applicable
14.	Dimensional Stability:	ASTM F2199, ≤ 0.15% in both directions is required
15.	Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, 1.03 is achieved, ≥ 0.45 watts/sq. cm for Class 1 is required
16.	Smoke Density:	ASTM E662; NFPA 258; NBS, 376 (flaming) and 256 (non-flaming) achieved, < 450 is required
17.	Tunnel Test:	Not applicable
18.	CAN/ULC-S102.2:	Surface Burning, FSC1 of 125 and SD of 370, achieved
19.	Burn Resistance:	Resistant to cigarette and solder burns
20.	Slip Resistance:	ASTM D2047 Static coefficient of friction, Neolite dry 0.99, Neolite wet 0.88 achieved, ≥ .5 is required (not recommended for ramps)
21.	Bacteria Resistance:	ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity
22.	VOC's:	This flooring is GREENGUARD Gold Certified for Low VOC Emissions, GREENGUARD Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant
23.	Latex Allergies:	ASTM D6499, Inhibition Elisa, results are below detection level
24.	Sound Absorption:	ASTM E2179 Δ IIC 14, ISO 140 Δ L_w 10 dB (compare only Δ values)
25.	Sound Generation:	67.2 dBA, 68.9 dBC and 20.9 Sones, Independently tested
26.	Hardness:	ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required
27.	Static Load:	ASTM F970, Residual compression of 0.003" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. is required
28.	Rolling Load Limit:	≤ 550 lbs. / sq. inch, with no forklift traffic
29.	Abrasion Resistance:	ASTM D3389, 1.1 lbs. (500g) load on H-18 wheel with 1000 cycles, 0.003 oz. (0.09g) weight loss achieved, ≤ 0.035 oz. (1.0g) is required
30.	Elongation:	ASTM D412 Modulus @ 10% is 1299 lbs. per sq. inch achieved, ≥ 300 lbs. per sq. inch is required
31.	Oil & Grease Resistance:	No
32.	Heat Resistance:	ASTM F1514, Avg. $\Delta E \leq 8.0$ is required, easily achieved with all batches and regular maintenance
33.	Light Resistance:	ASTM F1515, Avg. $\Delta E \leq 8.0$, easily achieved with all batches and regular maintenance
34.	Static Generation:	AATCC 134, < 2000 Volts at 20% RH, achieved
35.	Decay Time:	Not applicable
36.	Conductivity:	Not applicable
37.	Thermal Transmission:	ASTM C518, R-value 0.04, achieved
38.	Cleaning:	Cleaned and maintained effectively using water, nora cleaning pads and a suitable cleaning machine, without the use of any factory and/or field-applied coatings. Also without using any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic.
39.	Shine:	Higher shine achieved by buffing without any artificial topical applied coatings
40.	Stain Removal:	Samples of the product must be provided for stain removal testing by the owner. Sample size must be 24 inches by 24 inches, pre-cleaned by manufacture per published recommendations. Samples must have no coatings, sealers, floor finish or other manually or mechanically applied finish on the surface of the product. Stain testing must consist of application of common healthcare related disinfectants and chemicals to include, but not limited to, Betadine, Methylene Blue, Silver Nitrate and alcohol based hand sanitizer. Duration of test period must be no less than one week. Removal of chemicals must be in accordance with manufacturers published cleaning and maintenance recommendations.
41.	Substrate Preparation:	Per ASTM F710 and the nora Installation Guide

2.03 RESILIENT SHEET FLOORING FOR COMMERCIAL TRAFFIC

A.

1.	Product Name:	**noraplan environcare™ 2.0 mm, Article 1462**
2.	ASTM Specification:	ASTM F1859 Standard Specification for Rubber Sheet Floor Covering Without Backing, defined as Type 1
3.	Limited Wear Warranty:	5 years
4.	Material:	nora vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury
5.	Composition:	Homogeneous rubber compound with a random scattered design
6.	Color:	48 standard colors available
7.	Surface:	Smooth
8.	Back of Tile/Sheet/Nosing:	Double-sanded smooth
9.	Material Size:	~49.2 feet by 48 inches (15m by 1.22m), ≥ amount specified
10.	Stairtread Length:	Not applicable
11.	Squareness:	Not applicable
12.	Thickness:	~0.8 inches (2mm), ASTM F386, ± 0.006 inches (± 0.15mm) is required
13.	Depth:	Not applicable
14.	Dimensional Stability:	ASTM F2199, ≤ 0.15% in both directions is required
15.	Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, 0.97 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required
16.	Smoke Density:	ASTM E662; NFPA 258; NBS, 196 (flaming) and 207 (non-flaming) achieved, < 450 is required
17.	Tunnel Test:	Not applicable
18.	CAN/ULC-S102.2:	Surface Burning, FSC1 of 125 and SD of 370, achieved
19.	Burn Resistance:	Resistant to cigarette and solder burns
20.	Slip Resistance:	ASTM D2047 Static coefficient of friction, Neolite dry 0.96, Neolite wet 0.85 achieved, ≥ 0.5 required (not recommended for ramps)
21.	Bacteria Resistance:	ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity
22.	VOC's:	This flooring is GREENGUARD Gold Certified for Low VOC Emissions, GREENGUARD Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant
23.	Latex Allergies:	ASTM D6499, Inhibition Elisa, results are below detection level
24.	Sound Absorption:	ASTM E2179 Δ IIC 11, ISO 140 Δ L_w 8dB (compare only Δ values)
25.	Sound Generation:	Not applicable
26.	Hardness:	ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required
27.	Static Load:	ASTM F970, Residual compression of 0.003" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. required
28.	Rolling Load Limit:	≤ 450 lbs. / sq. inch, with no forklift traffic
29.	Abrasion Resistance:	ASTM D3389, 1.1 lbs. (500g) load on H-18 wheel with 1000 cycles, 0.008 oz. (0.24g) weight loss achieved, ≤ 0.035 oz. (1.0g) is required
30.	Elongation:	ASTM D412 Modulus @ 10% is 866.8 lbs. per sq. inch achieved, ≥ 300 lbs. per sq. inch is required
31.	Oil & Grease Resistance:	No
32.	Heat Resistance:	ASTM F1514, Avg. $\Delta E \leq 8.0$ is required, easily achieved with all batches and regular maintenance
33.	Light Resistance:	ASTM F1515, Avg. $\Delta E \leq 8.0$, easily achieved with all batches and regular maintenance
34.	Static Generation:	AATCC 134, < 2000 Volts at 20% RH, achieved
35.	Decay Time:	Not applicable
36.	Conductivity:	Not applicable
37.	Thermal Transmission:	ASTM C518, R-value 0.04, achieved
38.	Cleaning:	Cleaned and maintained effectively using water, nora cleaning pads and a suitable cleaning machine, without the use of any factory and/or field-applied coatings. Also without using any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic.
39.	Shine:	Higher shine achieved by buffing without any artificial topical applied coatings

40.	Stain Removal:	Samples of the product must be provided for stain removal testing by the owner. Sample size must be 24 inches by 24 inches, pre-cleaned by manufacture per published recommendations. Samples must have no coatings, sealers, floor finish or other manually or mechanically applied finish on the surface of the product. Stain testing must consist of application of common healthcare related disinfectants and chemicals to include, but not limited to, Betadine, Methylene Blue, Silver Nitrate and alcohol based hand sanitizer. Duration of test period must be no less than one week. Removal of chemicals must be in accordance with manufacturers published cleaning and maintenance recommendations.
41.	Substrate Preparation:	Per ASTM F710 and the nora Installation Guide

B.

1.	Product Name:	**noraplan environcare™ 3.0 mm, Article 1463**
2.	ASTM Specification:	ASTM F1859 Standard Specification for Rubber Sheet Floor Covering Without Backing, defined as Type 1
3.	Limited Wear Warranty:	5 years
4.	Material:	nora vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury
5.	Composition:	Homogeneous rubber compound with a random scattered design
6.	Color:	48 standard colors available
7.	Surface:	Smooth
8.	Back of Tile/Sheet/Nosing:	Double-sanded smooth
9.	Material Size:	~39.37 feet by 48 inches (12m by 1.22m), ≥ amount specified
10.	Stairtread Length:	Not applicable
11.	Squareness:	Not applicable
12.	Thickness:	~0.12 inches (3mm), ASTM F386, ± 0.006 inches (± 0.15mm) is required
13.	Depth:	Not applicable
14.	Dimensional Stability:	ASTM F2199, ≤ 0.15% in both directions is required
15.	Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, 1.03 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required
16.	Smoke Density:	ASTM E662; NFPA 258; NBS, 376 (flaming) and 256 (non-flaming) achieved, < 450 is required
17.	Tunnel Test:	Not applicable
18.	CAN/ULC-S102.2:	Surface Burning, FSC1 of 125 and SD of 370, achieved
19.	Burn Resistance:	Resistant to cigarette and solder burns
20.	Slip Resistance:	ASTM D2047 Static coefficient of friction, Neolite dry 0.99 Neolite wet 0.88 achieved, ≥ .5 required (not recommended for ramps)
21.	Bacteria Resistance:	ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity
22.	VOC's:	This flooring is GREENGUARD Gold Certified for Low VOC Emissions, GREENGUARD Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant
23.	Latex Allergies:	ASTM D6499, Inhibition Elisa, results are below detection level
24.	Sound Absorption:	ASTM E2179 Δ IIC 14, ISO 140 Δ L_w 10dB (compare only Δ values)
25.	Sound Generation:	67.2 dBA, 68.9 dBC and 20.9 Sones, Independently tested
26.	Hardness:	ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required
27.	Static Load:	ASTM F970, Residual compression of 0.003" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. required
28.	Rolling Load Limit:	≤ 550 lbs. / sq. inch, with no forklift traffic
29.	Abrasion Resistance:	ASTM D3389, 1.1 lbs. (500g) load on H-18 wheel with 1000 cycles, 0.003 oz. (0.09g) weight loss achieved, ≤ 0.035 oz. (1.0g) is required
30.	Elongation:	ASTM D412 Modulus @ 10% is 1299 lbs. per sq. inch achieved, ≥ 300 lbs. per sq. inch is required
31.	Oil & Grease Resistance:	No
32.	Heat Resistance:	ASTM F1514, Avg. $\Delta E \leq 8.0$ is required, easily achieved with all batches and regular maintenance
33.	Light Resistance:	ASTM F1515, Avg. $\Delta E \leq 8.0$, easily achieved with all batches and regular maintenance
34.	Static Generation:	AATCC 134, < 2000 Volts at 20% RH, achieved
35.	Decay Time:	Not applicable

36.	Conductivity:	Not applicable
37.	Thermal Transmission:	ASTM C518, R-value 0.04, achieved
38.	Cleaning:	Cleaned and maintained effectively using water, nora cleaning pads and a suitable cleaning machine, without the use of any factory and/or field-applied coatings. Also without using any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic.
39.	Shine:	Higher shine achieved by buffing without any artificial topical applied coatings
40.	Stain Removal:	Samples of the product must be provided for stain removal testing by the owner. Sample size must be 24 inches by 24 inches, pre-cleaned by manufacture per published recommendations. Samples must have no coatings, sealers, floor finish or other manually or mechanically applied finish on the surface of the product. Stain testing must consist of application of common healthcare related disinfectants and chemicals to include, but not limited to, Betadine, Methylene Blue, Silver Nitrate and alcohol based hand sanitizer. Duration of test period must be no less than one week. Removal of chemicals must be in accordance with manufacturers published cleaning and maintenance recommendations.
41.	Substrate Preparation:	Per ASTM F710 and the nora Installation Guide

Note: Exact values may vary due to the test methods and tolerance between batches. The ASTM minimum requirement should be achieved or exceeded.

PART 3 – RESPONSIBILITES

3.01 GENERAL CONTRACTOR RESPONSIBILITIES

Note: In the absence of a general contractor, these responsibilities defer to the end user.

A. Supply a safe, climate controlled building and subfloor as detailed in the nora Installation Guide (available at www.nora.com/us).

B. 1. A concrete subfloor that meets the requirements of ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring is required, or as detailed in the nora Installation Guide.

2. A wooden substrate that is not directly in contact with concrete or soil subfloors on or below grade, even if built on sleepers is required. All suspended wood floors should have an adequate underfloor ventilation system, and a permanently effective vapor retarder should be placed on the ground beneath the air space.

C. A concrete subfloor that is structurally sound, and has finished shrinking, cracking, curling or moving in any way is required.

D. For all concrete substrates on or below grade, a permanent effective vapor retarder with a low permeance (less than 0.1) and that meets the requirements of the latest edition of ASTM E1745 Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs, should be placed directly underneath the concrete above the granular fill, and installed as per the manufacturer's written instructions. Alternatively a surface applied moisture mitigation system should be used as described in 3.01 H.

E. A clean non-burnished concrete surface free from any paint, wax, oil, grease, and film forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds is required. The surface should not have any alkaline salts, laitance, mold, mildew, residual adhesive, chemical adhesive removers or anything that may prevent appropriate products bonding to it. If not then the general contractor should provide the mechanical means to remove them. This could be dustless diamond grinding (DiamaBrush), bead-blast or similar with a suitable Hepa vacuum attachment. Review and comply with all relevant local, state and federal regulations.

F. Valid tests and acceptable test results should be provided to the end user and flooring contractor, including documenting with photographs, the location of all tests, recorded % relative humidity levels and temperature of both the concrete subfloor and ambient conditions prior to flooring installation. Testing should be performed at the correct, controlled ambient service temperature and humidity following the protocol of ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes, using a Wagner Rapid RH probes only. It is recommended that moisture testing be performed by a certified International Concrete Repair Institute (ICRI) Tier 2 Testing Technician – Grade 1. When tested at the

correct ambient temperature and humidity the maximum allowable should be 85% RH for the correct nora® wet adhesive and nora® dryfix adhesive or 75% RH for nora® stepfix.

G. If it is not possible to drill into the concrete for any reason as detailed in ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes, please contact the nora® Technical Department for other recommendations.

H. Only if it is not possible to provide a concrete substrate with acceptable moisture levels, or that (when appropriate) have a confirmed effective vapor retarder, then a surface applied moisture mitigation system should be used that meets the requirements of ASTM F3010 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings. Please note that all additional costs associated with this concrete condition are the responsibility of the general contractor / end user, including any additional requirements for concrete preparation, priming, leveler, patching or labor.

I. A secure storage area that is maintained permanently or temporarily at ambient service temperature and humidity (except walk in freezers or similar), or 68°F ± 5° F and 50% ± 10% relative humidity, for at least 48 hours prior to and during the application of the flooring, so the flooring contractor can acclimate the flooring materials is required.

J. An installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity (except walk in freezers or similar), or 68°F ± 5° F and 50% ± 10% relative humidity, for at least 48 hours prior to, during and 72 hours after the application of the flooring is required.

K. Areas with direct prolonged exposure to sunlight should be protected with the use of Low E glass doors and windows or facades.

L. Areas of the flooring that are subject to direct sunlight through doors or windows should have them covered using blinds, curtains, cardboard or similar for the time of the installation and 72 hours after the installation to allow the adhesive to cure. Note: These areas should be installed using wet adhesives only.

M. Prevent all traffic for a minimum of 12 hours and rolling loads for 72 hours to allow the adhesive to cure. If required, after 12 hours protect the flooring from damage during construction operations using Masonite, plywood or a similar product, ensuring first that the flooring surface is free of all debris. Lay panels so that the edges form a butt joint and tape the joint to prevent both movement and debris entrapment underneath them. Inspect immediately before covering and after removal for final acceptance.

N. Have the flooring cleaned no sooner than 72 hours (unless given written permission from the nora Technical Department) after the installation using either the nora pro clean® system or a standard method as detailed in the appropriate nora® Maintenance Guide.

3.02 FLOORING CONTRACTOR RESPONSIBILITIES

A. Provide trained installers that have at least one of the following:
   1. Approved by nora systems, Inc. for all of the requirements of the project or INSTALL (International Standards & Training Alliance) certified for the requirements of the project.
   2. An effective installation manager, to manage the project, installers, and ensure that all of the required procedures are followed as detailed in the nora Installation Guide (available at www.nora.com/us).

B. Acclimate the flooring in the secure storage area provided by the general contractor that is maintained permanently or temporarily at ambient service temperature and humidity (except walk in freezers or similar), or 68°F ± 5° F and 50% relative humidity, for at least 48 hours prior to application.

C. For wooden subfloors American Plywood Association (APA) underlayment grade plywood should be double sheeted at a suitable thickness (minimum total wood thickness of 1 1/4 inch) to overlay the wooden substrate and installed as detailed in ASTM F1482 Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring. Please note, as plywood will expand and contract due to changes in moisture content and temperature, nora systems, Inc. cannot accept any liability of the plywood joints telegraphing through the finished floor.

D. Perform mat bond tests in each major area (1 per ~1,000 sq. ft.) This should consist of the proposed subfloor preparation, mitigation and leveling or smoothing products. A detailed method statement is available in the nora Installation Guide (available at www.nora.com/us). Do not proceed with installation until all the results of the bond test are acceptable.

E. Review and comply with all relevant Safety Data Sheets (SDS), local, state and federal regulations.

F. Clean out and fill or repair any dormant saw cuts and cracks with an appropriate product following the manufacturers written usage instructions. For any expansion (moving) joints, use an industry standard expansion joint assembly.

G. When required, use a surface applied moisture mitigation system that meets the requirements of ASTM F3010, and following the directions and requirements detailed in the manufacturers written instructions. Provide written confirmation and photographs to the general contractor or end user that the subfloor was prepared correctly prior to the application of the membrane, and that the membrane was applied correctly (without pin-holes) including confirmation of the gallons used and total square feet installed.

H. When required, use a leveler following the manufacturers written instructions. The surface should be free of dust, solvents, paint, wax, varnish, oil, grease, asphalt, old adhesives, and other extraneous materials that may interfere with the bond. These should be completely removed by mechanical means only. Dustless diamond grinding or bead blasting are the preferred method to remove contaminates and bond breakers, as it also helps to level the concrete.

I. Prime the subfloor prior to using a suitable leveler. Note: a 1/8 inch minimum thickness is required for the leveler to be considered porous as required when using nora® 485 or 685 acrylic adhesives.

J. Vacuum floors immediately prior to installing the flooring to remove all loose particles. If required, only use water based sweeping compounds. Do not use any wax or oil based compounds that leave behind a residue that may interfere with the adhesive bond.

K. Install resilient flooring, including but not limited to the following, in accordance with the nora Installation Guide.
1. Do not mix manufacturing batches of a color within the same area.
2. Do not install resilient flooring over building expansion joints.
3. Do not install defective or damaged resilient flooring.
4. Layout resilient flooring to provide ~equal size at perimeter. Adjust layout as necessary to reduce the amount of resilient flooring which is cut to less than half full width.
5. Lay resilient flooring with arrows in the same direction (excluding borders).
6. Install resilient flooring without voids at seams. Lay seams together without stress.
7. Cut/scribe resilient flooring neatly at perimeter and obstructions.
8. Extend resilient flooring into reveals, closets, and similar openings.
9. Remove excess adhesive immediately.
10. Install reducer strips at exposed edges.

L. When required, install nora® wall base in accordance with manufacturer's Installation Guide. Install in longest practical lengths.

M. When required, install resilient stairtreads and accessories in accordance with the nora Installation Guide.

N. When required, heat weld noraplan® seams using a color coordinated nora® heat welding rod in accordance with the nora Installation Guide.

O. When required, cold weld noraplan using a color coordinated nora® cold weld in accordance with the nora Installation Guide.

P. When required, flash cove. Extend flooring up the wall using the boot flash coving method, to the required height. Provide cove stick and suitable capping strip. All internal and external vertical seams, or as specified, should be noraplan cold welded with a color coordinated nora cold weld. Note: Do not heat weld the vertical seams.

Q. When required, use nora® sanitary base installed using nora® basefix and following the nora Installation Guide. All vertical external corners should be cold welded. If specified, all other seams between the sanitary base, and between the sanitary base and flooring should be cold welded together with coordinated colored nora cold weld in accordance with the nora Installation Guide. Note: Do not heat weld these seams.

R. Touch-up and repair any minor damage to eliminate all evidence of repair. Remove and replace work which cannot be satisfactorily repaired.

END OF SECTION

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08/14

Rubber Flooring

Related Masterspec: Division 9, 096516 - Resilient Sheet Flooring

Product: Noraplan Environcare Rubber Flooring

Locations/Applications: Lab Floors

- ASTM F1344 Classification (Type 1, Grade 1)

Product Requirements:

Specifications- product must meet or exceed requirements for the following-

- Critical Radiant Flux ASTM E648 (min ≥0.45)
- Smoke Density ASTM E662 (both <450) flaming/non-flaming
- Static Coefficient of Friction ASTM D2047 (dry/wet)
- Abrasion ASTM D3389 H-18 wheel 1.1 lbs. load and 1000 cycles (< 0.035 oz. required)
- Shore Hardness Type A ASTM D2240
- Static Load Limit (Residual Compression) ASTM F970 with 800 lbs/psi
- Heat Resistance ASTM F1514, Require Avg. ΔE ≤8.0
- Light Resistance ASTM F1515, Require Avg. ΔE ≤8.0
- Sound Absorption E2179 (ΔIIConly)
- Sound Absorption ISO 140 (ΔLw only)
- Chemical Resistance

Environmental-

- Bacteria Resistance ASTM E2180 and ASTM G21 Recommended
- Product that is GREENGUARD Certified for Low VOC Emissions Recommended
- CA 01350 Compliant Product Recommended

noraplan®

Product	2.0 mm products: eco environcare sentica	3.0 mm products: degree environcare sentica	nTx 2.0 mm products: eco environcare sentica	nTx 3.0 mm products: degree environcare sentica	acoustic products: environcare sentica	ed products: environcare sentica	unita/unita nTx
Limited Wear Warranty (in years)	5	5	5	5	5	5	5
Conductivity Warranty (in years)	–	–	–	–	–	10	–
ASTM F1344 (tiles) Classification	Type I Grade 1	Type I Grade 1	–	–	–	Type I Grade 1	–
ASTM F1859 (rolls) Classification	Type I	Type I	Type I	Type I	–	Type I	Type I
ASTM F1860 (rolls with backing) Classification	–	–	–	–	Type I Grade 2	–	–
Critical Radiant Flux ASTM E648 (min ≥0.45)	Class 1 0.97	Class 1 1.03	Class 1 0.88	Class 1 082	Class 1 1.0	Class 1 0.59	Class 1 0.98
Smoke Density ASTM E662 (both <450) flaming/non-flaming	196/207	376/256	199/120	282/155	299/153	185/211	210/161
Static Coefficient of Friction ASTM D2047 (dry/wet)	0.96/0.85	0.99/0.88	0.96/0.85	0.99/0.88	1.0/0.9	0.92/0.89	0.98/0.94
Suitable for Ramps	No	No	No	No	No	No	No
Abrasion ASTM D3389 H-18 wheel 1.1 lbs load and 1000 cycles (< 0.035 oz required)	0.008	0.003	0.008	0.003	0.007	0.002	0.007
Shore Hardness Type A ASTM D2240	92	92	92	92	92	92	92
Rolling Load Limit (lbs/psi) [1]	450	550	450	550	450	450	450
Forklift Traffic	No	No	No	No	No	No	No
Static Load Limit (Residual Compression) ASTM F970 with 800 lbs/psi	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Heat Resistance ASTM F1514, Require Avg. ΔE ≤8.0	← Easily achieved with regular maintenance. →						
Light Resistance ASTM F1515, Require Avg. ΔE ≤8.0							
Sound Absorption E2179 (ΔIIC only)	ΔIIC 11	ΔIIC 14	ΔIIC 11	ΔIIC 14	ΔIIC 21	**	ΔIIC 11
Sound Absorption ISO 140 (Δ Lw only)	ΔLw 8 dB	ΔLw 10 dB	ΔLw 8 dB	ΔLw 10 dB	ΔLw 18 dB	ΔLw 6 dB	ΔLw 9 dB
Sound Generation	**	20.9 Sones	**	20.9 Sones	14.8 Sones	**	**
Oil and Grease Resistance	No	No	No	No	No	Yes	No
Chemical Resistance	← Call for specifics. →						
Static Generation ANSI ESD S97.2*	–	–	–	–	–	<20 volts	–
Static Generation AATCC 134 (20% RH)	<2000 volts	<2000 volts	<2000 volts	<2000 volts	<2000 volts	<2000 volts	<2000 volts
Decay Time FTM 101 C 4046	–	–	–	–	–	<0.25 (sec)	–
ESD ASTM F150 (ohms)	–	–	–	–	–	$10^6 < 10^9$	–
Bacteria Resistance ASTM E2180 and ASTM G21	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GREENGUARD Certified for Low VOC Emissions	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GREENGUARD Gold Certified for Low VOC Emissions	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CA 01350 Compliant	Yes	Yes	Yes	Yes	Yes	Yes	Yes

1) The shape of the wheel's contact surface must be flat with rounded edges. No metal wheels. Shore hardness should be ≤ 99, Type A.

*Tested with conductive shoes.

**Not tested.

NOTE: Exact values may vary due to the test methods and tolerance between batches. The ASTM minimum requirement shall be achieved or exceeded.

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www.nora.com/us

nora®

High-performance floor coverings in a wide range of harmoniously soothing designer colors.

• Excellent wear resistance.
• Slip resistant in compliance with OSHA requirements.
• GREENGUARD Certified for Low VOC Emissions.
• GREENGUARD Gold Certified for Low VOC Emissions (formerly GREENGUARD Children & Schools).
• CA 01350 compliant.

Art. 2463

~ 24"/610 mm x 24"/610 mm

Thickness: ~.12"/~3.0 mm

Art. 1463

~ 48"/1.22 m x 39.37'/12.0 m

Thickness: ~.12"/~3.0 mm

Art. 2462

~ 24"/610 mm x 24"/610 mm

Thickness: ~.08"/~2.0 mm

Art. 1462

~ 48"/1.22 m x 49.2'/15.0 m

Thickness: ~.08"/~2.0 mm

noraplan® environcare™ nTx 3.0 mm

Art. 1421*

~ 48"/1.22 m x 39.37'/12.0 m

Thickness: ~.12"/~3.0 mm

noraplan® environcare™ nTx 2.0 mm

Art.

1626*

~ 48"/1.22 m x 49.2'/15.0 m

Thickness: ~.08"/~2.0 mm

* Minimum quantities required

	3mm thickness
	for special fire-protection requirements
	Largely oil and grease resistant
	for raised-access floors
	available as stairtread
	high footfall sound absorption
	electrostatic dissipative / conductive

GUIDE SPECIFICATIONS FOR THE
noraplan environcare™
BY nora systems, Inc.

This document is coordinated with the resilient tile and resilient sheet products in the nora systems, Inc. product literature, including the Product Catalog, and is available from nora systems, Inc. at www.nora.com/us.

SECTION 09650
RESILIENT FLOORING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 – Specification sections, apply to work of this section.

1.02 SUMMARY

A. The work of this Section includes:
1. Rubber tile flooring
2. Rubber sheet flooring
3. Rubber wall base
4. Rubber stairtreads and accessories
5. Responsibilities, preparation/installation

B. Related Sections: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
1. Section 03300 - Cast-In-Place Concrete; concrete substrate; slab surface tolerances; vapor retarder for applications on or below grade; 83/90 degree riser and tread edge angle for stairtread and nosings
2. Section 06100 - Rough Carpentry; plywood substrate; surface tolerances
3. Section 10270 - Access Flooring; resilient floor covering for access panels

C. References (Industry Standards):
1. American Association of Textile Chemists and Colorists
   a. AATCC 134 Electrostatic Propensity of Carpets
2. American National Standards Institute
   a. ANSI ESD S97.2 Floor Materials and Footwear – Voltage Measurement on a Person
3. American Society for Testing and Materials
   a. ASTM C423 Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
   b. ASTM C518 Standard Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
   c. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension
   d. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine
   e. ASTM D2240 Standard Test Method for Rubber Property – Durometer Hardness
   f. ASTM D3389 Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform, Double Head Abrader)
   g. ASTM D6499 Standard Test Method for The Immunological Measurement of Antigenic Protein in Natural Rubber and its Products
   h. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
   i. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
   j. ASTM E648 Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
   k. ASTM E662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
   l. ASTM E1745 Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
   m. ASTM E2179 Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors

n. ASTM E2180 Standard Test Method for Determining the Activity of Incorporated Antimicrobial Agent(s) in Polymeric or Hydrophobic Materials
o. ASTM F150 Standard Test Method for Electrical Resistance of Conductive and Static Dissipative Resilient Flooring
p. ASTM F155 Method of Test for Temper of Strip and Sheet Metals for Electronic Devices
q. ASTM F386 Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces
r. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
s. ASTM F925 Standard Test Method for Resistance to Chemicals of Resilient Flooring
t. ASTM F970 Standard Test Method for Static Load Limit
u. ASTM F1344 Standard Specification for Rubber Floor Tile
v. ASTM F1482 Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
w. ASTM F1514 Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color
x. ASTM F1859 Standard Specification for Rubber Sheet Floor Covering Without Backing
y. ASTM F1860 Standard Specification for Rubber Sheet Floor Covering With Backing
z. ASTM F1861 Standard Specification for Resilient Wall Base
aa. ASTM F2055 Standard Test Method for Size and Squareness of Resilient Floor Tile by Dial Gage Method
bb. ASTM F2169 Standard Specification for Resilient Stair Treads
cc. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using *in situ* Probes
dd. ASTM F2199 Standard Test Method for Determining Dimensional Stability of Resilient Floor Tile after Exposure to Heat
ee. ASTM F3010 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings
ff. ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

4. European Norm
   a. FTM 101 C 4046 Static Decay
5. International Organization for Standardization
   a. ISO 140 Measurement of sound insulation in buildings and of building elements
6. National Fire Protection Association
   a. NFPA 253 Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source
   b. NFPA 258 Test Method for Specific Density of Smoke Generated by Solid Materials

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's Installation Guide, Maintenance Guide and Safety Data Sheet (SDS) for each material proposed for use (available at www.nora.com/us).

B. Samples: Submit two 3 inch by 3 inch samples of each product (except norament® serra, noraplan® degree and norament® stairtreads), in color specified, for verification. The noraplan degree product requires two 6 inch by 6 inch samples; norament serra requires two 3 inch by 6 inch samples, and norament stairtreads require two 2 inch wide samples.

1.04 QUALITY ASSURANCE

A. Manufacturer: Provide resilient flooring manufactured by a firm with a minimum of 10 years' experience with resilient flooring of type's equivalent to those specified. Manufacturers proposed for use, which are not named in this section, should submit evidence of ability to meet performance requirements specified not less than 10 days prior to bid date.
   1. The manufacturer should have the Quality Management System approved by Lloyd's Register Quality Assurance to the Quality Management System Standard ISO 9001:2000.
   2. Color Matching: Provide resilient flooring products, including wall base, accessories and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
   3. Manufacturer must be capable of providing technical training and technical field service representation.

B. Installer Qualifications: Installer should be nora® approved for the requirements of the project or INSTALL (International Standards & Training Alliance) resilient certified for the requirements of the project.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.

B. Deliver materials sufficiently in advance of installation to condition materials to the required temperature for 48 hours prior to installation.

1.06 PROJECT CONDITIONS

A. Maintain temperature and humidity at service levels or 68° F (20° C), ± 5° F (3° C), and 50% RH ± 10% in areas to receive resilient flooring. Specified temperature should be maintained at least 48 hours before, during, and 72 hours after installation.

1.07 WARRANTY

A. Provide current, detailed manufacturer's warranty for each flooring product as applicable, including limited wear, defect and conductivity.

1.08 EXTRA MATERIALS

A. Furnish full size units equal to 2 percent of quantity of resilient flooring installed as extra materials. Properly label and package extra materials. Deliver to owners designated storage area.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. nora systems, Inc., 9 Northeastern Blvd., Salem, NH 03079; telephone 800-332-NORA or 603-894-1021; fax 603-894-6615.

B. The Manufacturer should meet 1.04 A. and have or provide the following:
1. ISO 14001 Environmental Management Systems certification.
2. Validation according to the Eco-Management and Audit System (EMAS).
3. Construction waste take back program for the purpose of reducing jobsite waste by taking back their uninstalled waste flooring. Details of the nora program are available at www.nora.com/us.
4. Flooring surfaces that are easily cleaned and do not require coatings and stripping, or use chemicals that may be hazardous to human health.
5. Supply all required products that are CA 01350 compliant.
6. Flooring that is free of anything known to be teratogenic, mutagenic or carcinogenic.
7. Flooring that contains no polyvinyl chloride or plasticizers.
8. Flooring that contains no halogens.

Note: For specific product application recommendations please refer to your local nora® sales representative or www.nora.com/us.

2.02 RESILIENT TILE FLOORING FOR COMMERCIAL TRAFFIC

A.

1.	Product Name:	**noraplan environcare™ 2.0 mm, Article 2462**
2.	ASTM Specification:	ASTM F1344 Standard Specification for Rubber Floor Tile, defined as Type I and Grade 1
3.	Limited Wear Warranty:	5 years
4.	Material:	nora vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury
5.	Composition:	Homogeneous rubber compound with a random scattered design
6.	Color:	48 standard colors available
7.	Surface:	Smooth
8.	Back of Tile/Sheet/Nosing:	Double-sanded smooth
9.	Material Size:	~24 inches by 24 inches (610mm by 610mm) per ASTM F2055 ± 0.018 (± 0.45mm) is required
10.	Stairtread Length:	Not applicable
11.	Squareness:	ASTM F2055, ± 0.018 inches (± 0.45mm) is required
12.	Thickness:	0.8 inches (2mm), ASTM F386, ± 0.005 inches (± 0.127 mm) is required
13.	Depth:	Not applicable
14.	Dimensional Stability:	ASTM F2199, ≤ 0.15% in both directions is required

15.	Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, 0.97 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required
16.	Smoke Density:	ASTM E662; NFPA 258; NBS, 196 (flaming) and 207 (non-flaming) achieved, < 450 is required
17.	Tunnel Test:	Not applicable
18.	CAN/ULC-S102.2:	Surface Burning, FSC1 of 125 and SD of 370, achieved
19.	Burn Resistance:	Resistant to cigarette and solder burns
20.	Slip Resistance:	ASTM D2047 Static coefficient of friction, Neolite dry 0.96, Neolite wet 0.85 achieved, ≥ 0.5 is required (not recommended for ramps)
21.	Bacteria Resistance:	ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity
22.	VOC's:	This flooring is GREENGUARD Gold Certified for Low VOC Emissions, GREENGUARD Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant
23.	Latex Allergies:	ASTM D6499, Inhibition Elisa, results are below detection level
24.	Sound Absorption:	ASTM E2179 Δ IIC 11, ISO 140 Δ Lw 8 dB (compare only Δ values)
25.	Sound Generation:	Not applicable
26.	Hardness:	ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required
27.	Static Load:	ASTM F970, Residual compression of 0.003" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. is required
28.	Rolling Load Limit:	≤ 450 lbs. / sq. inch, with no forklift traffic
29.	Abrasion Resistance:	ASTM D3389, 1.1 lbs. (500g) load on H-18 wheel with 1000 cycles, 0.008 oz. (0.24g) weight loss achieved, ≤ 0.035 oz. (1.0g) is required
30.	Elongation:	ASTM D412 Modulus @ 10% is 1213.1 lbs. per sq. inch achieved, ≥ 300 lbs. per sq. inch is required
31.	Oil & Grease Resistance:	No
32.	Heat Resistance:	ASTM F1514, Avg. ΔE ≤ 8.0 is required, easily achieved with all batches and regular maintenance
33.	Light Resistance:	ASTM F1515, Avg. ΔE ≤ 8.0, easily achieved with all batches and regular maintenance
34.	Static Generation:	AATCC 134, < 2000 Volts at 20% RH, achieved
35.	Decay Time:	Not applicable
36.	Conductivity:	Not applicable
37.	Thermal Transmission:	ASTM C518, R-value 0.04, achieved
38.	Cleaning:	Cleaned and maintained effectively using water, nora cleaning pads and a suitable cleaning machine, without the use of any factory and/or field-applied coatings. Also without using any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic.
39.	Shine:	Higher shine achieved by buffing without any artificial topical applied coatings
40.	Stain Removal:	Samples of the product shall be provided for stain removal testing by the owner. Sample size shall be 24 inches by 24 inches, pre-cleaned by manufacture per published recommendations. Samples shall have no coatings, sealers, floor finish or other manually or mechanically applied finish on the surface of the product. Stain testing shall consist of application of common healthcare related disinfectants and chemicals to include, but not limited to, Betadine, Methylene Blue, Silver Nitrate and alcohol based hand sanitizer. Duration of test period shall be no less than one week. Removal of chemicals shall be in accordance with manufacturers published cleaning and maintenance recommendations.
41.	Substrate Preparation:	Per ASTM F710 and the nora Installation Guide

B.

1.	Product Name:	**noraplan environcare™ 3.0 mm, Article 2463**
2.	ASTM Specification:	ASTM F1344 Standard Specification for Rubber Floor Tile, defined as Type I and Grade 1
3.	Limited Wear Warranty:	5 years
4.	Material:	nora vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury
5.	Composition:	Homogeneous rubber compound with a random scattered design
6.	Color:	48 standard colors available
7.	Surface:	Smooth
8.	Back of Tile/Sheet/Nosing:	Double-sanded smooth

9.	Material Size:	~24 inches by 24 inches (610mm by 610mm) per ASTM F2055 ± 0.018 (± 0.45mm) is required
10.	Stairtread Length:	Not applicable
11.	Squareness:	ASTM F2055, ± 0.018 inches (± 0.45mm) is required
12.	Thickness:	~0.12 inches (3mm), ASTM F386, ± 0.005 inches (± 0.127 mm) is required
13.	Depth:	Not applicable
14.	Dimensional Stability:	ASTM F2199, ≤ 0.15% in both directions is required
15.	Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, 1.03 is achieved, ≥ 0.45 watts/sq. cm for Class 1 is required
16.	Smoke Density:	ASTM E662; NFPA 258; NBS, 376 (flaming) and 256 (non-flaming) achieved, < 450 is required
17.	Tunnel Test:	Not applicable
18.	CAN/ULC-S102.2:	Surface Burning, FSC1 of 125 and SD of 370, achieved
19.	Burn Resistance:	Resistant to cigarette and solder burns
20.	Slip Resistance:	ASTM D2047 Static coefficient of friction, Neolite dry 0.99, Neolite wet 0.88 achieved, ≥ .5 is required (not recommended for ramps)
21.	Bacteria Resistance:	ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity
22.	VOC's:	This flooring is GREENGUARD Gold Certified for Low VOC Emissions, GREENGUARD Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant
23.	Latex Allergies:	ASTM D6499, Inhibition Elisa, results are below detection level
24.	Sound Absorption:	ASTM E2179 Δ IIC 14, ISO 140 Δ L_w 10 dB (compare only Δ values)
25.	Sound Generation:	67.2 dBA, 68.9 dBC and 20.9 Sones, Independently tested
26.	Hardness:	ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required
27.	Static Load:	ASTM F970, Residual compression of 0.003" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. is required
28.	Rolling Load Limit:	≤ 550 lbs. / sq. inch, with no forklift traffic
29.	Abrasion Resistance:	ASTM D3389, 1.1 lbs. (500g) load on H-18 wheel with 1000 cycles, 0.003 oz. (0.09g) weight loss achieved, ≤ 0.035 oz. (1.0g) is required
30.	Elongation:	ASTM D412 Modulus @ 10% is 1299 lbs. per sq. inch achieved, ≥ 300 lbs. per sq. inch is required
31.	Oil & Grease Resistance:	No
32.	Heat Resistance:	ASTM F1514, Avg. $\Delta E \leq 8.0$ is required, easily achieved with all batches and regular maintenance
33.	Light Resistance:	ASTM F1515, Avg. $\Delta E \leq 8.0$, easily achieved with all batches and regular maintenance
34.	Static Generation:	AATCC 134, < 2000 Volts at 20% RH, achieved
35.	Decay Time:	Not applicable
36.	Conductivity:	Not applicable
37.	Thermal Transmission:	ASTM C518, R-value 0.04, achieved
38.	Cleaning:	Cleaned and maintained effectively using water, nora cleaning pads and a suitable cleaning machine, without the use of any factory and/or field-applied coatings. Also without using any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic.
39.	Shine:	Higher shine achieved by buffing without any artificial topical applied coatings
40.	Stain Removal:	Samples of the product must be provided for stain removal testing by the owner. Sample size must be 24 inches by 24 inches, pre-cleaned by manufacture per published recommendations. Samples must have no coatings, sealers, floor finish or other manually or mechanically applied finish on the surface of the product. Stain testing must consist of application of common healthcare related disinfectants and chemicals to include, but not limited to, Betadine, Methylene Blue, Silver Nitrate and alcohol based hand sanitizer. Duration of test period must be no less than one week. Removal of chemicals must be in accordance with manufacturers published cleaning and maintenance recommendations.
41.	Substrate Preparation:	Per ASTM F710 and the nora Installation Guide

2.03 RESILIENT SHEET FLOORING FOR COMMERCIAL TRAFFIC

A.

1.	Product Name:	**noraplan environcare™ 2.0 mm, Article 1462**
2.	ASTM Specification:	ASTM F1859 Standard Specification for Rubber Sheet Floor Covering Without Backing, defined as Type 1
3.	Limited Wear Warranty:	5 years
4.	Material:	nora vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury
5.	Composition:	Homogeneous rubber compound with a random scattered design
6.	Color:	48 standard colors available
7.	Surface:	Smooth
8.	Back of Tile/Sheet/Nosing:	Double-sanded smooth
9.	Material Size:	~49.2 feet by 48 inches (15m by 1.22m), ≥ amount specified
10.	Stairtread Length:	Not applicable
11.	Squareness:	Not applicable
12.	Thickness:	~0.8 inches (2mm), ASTM F386, ± 0.006 inches (± 0.15mm) is required
13.	Depth:	Not applicable
14.	Dimensional Stability:	ASTM F2199, ≤ 0.15% in both directions is required
15.	Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, 0.97 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required
16.	Smoke Density:	ASTM E662; NFPA 258; NBS, 196 (flaming) and 207 (non-flaming) achieved, < 450 is required
17.	Tunnel Test:	Not applicable
18.	CAN/ULC-S102.2:	Surface Burning, FSC1 of 125 and SD of 370, achieved
19.	Burn Resistance:	Resistant to cigarette and solder burns
20.	Slip Resistance:	ASTM D2047 Static coefficient of friction, Neolite dry 0.96, Neolite wet 0.85 achieved, ≥ 0.5 required (not recommended for ramps)
21.	Bacteria Resistance:	ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity
22.	VOC's:	This flooring is GREENGUARD Gold Certified for Low VOC Emissions, GREENGUARD Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant
23.	Latex Allergies:	ASTM D6499, Inhibition Elisa, results are below detection level
24.	Sound Absorption:	ASTM E2179 Δ IIC 11, ISO 140 Δ L_w 8dB (compare only Δ values)
25.	Sound Generation:	Not applicable
26.	Hardness:	ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required
27.	Static Load:	ASTM F970, Residual compression of 0.003" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. required
28.	Rolling Load Limit:	≤ 450 lbs. / sq. inch, with no forklift traffic
29.	Abrasion Resistance:	ASTM D3389, 1.1 lbs. (500g) load on H-18 wheel with 1000 cycles, 0.008 oz. (0.24g) weight loss achieved, ≤ 0.035 oz. (1.0g) is required
30.	Elongation:	ASTM D412 Modulus @ 10% is 866.8 lbs. per sq. inch achieved, ≥ 300 lbs. per sq. inch is required
31.	Oil & Grease Resistance:	No
32.	Heat Resistance:	ASTM F1514, Avg. $\Delta E \leq 8.0$ is required, easily achieved with all batches and regular maintenance
33.	Light Resistance:	ASTM F1515, Avg. $\Delta E \leq 8.0$, easily achieved with all batches and regular maintenance
34.	Static Generation:	AATCC 134, < 2000 Volts at 20% RH, achieved
35.	Decay Time:	Not applicable
36.	Conductivity:	Not applicable
37.	Thermal Transmission:	ASTM C518, R-value 0.04, achieved
38.	Cleaning:	Cleaned and maintained effectively using water, nora cleaning pads and a suitable cleaning machine, without the use of any factory and/or field-applied coatings. Also without using any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic.
39.	Shine:	Higher shine achieved by buffing without any artificial topical applied coatings

40.	Stain Removal:	Samples of the product must be provided for stain removal testing by the owner. Sample size must be 24 inches by 24 inches, pre-cleaned by manufacture per published recommendations. Samples must have no coatings, sealers, floor finish or other manually or mechanically applied finish on the surface of the product. Stain testing must consist of application of common healthcare related disinfectants and chemicals to include, but not limited to, Betadine, Methylene Blue, Silver Nitrate and alcohol based hand sanitizer. Duration of test period must be no less than one week. Removal of chemicals must be in accordance with manufacturers published cleaning and maintenance recommendations.
41.	Substrate Preparation:	Per ASTM F710 and the nora Installation Guide

B.

1.	Product Name:	**noraplan environcare™ 3.0 mm, Article 1463**
2.	ASTM Specification:	ASTM F1859 Standard Specification for Rubber Sheet Floor Covering Without Backing, defined as Type 1
3.	Limited Wear Warranty:	5 years
4.	Material:	nora vulcanized rubber compound 913 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury
5.	Composition:	Homogeneous rubber compound with a random scattered design
6.	Color:	48 standard colors available
7.	Surface:	Smooth
8.	Back of Tile/Sheet/Nosing:	Double-sanded smooth
9.	Material Size:	~39.37 feet by 48 inches (12m by 1.22m), ≥ amount specified
10.	Stairtread Length:	Not applicable
11.	Squareness:	Not applicable
12.	Thickness:	~0.12 inches (3mm), ASTM F386, ± 0.006 inches (± 0.15mm) is required
13.	Depth:	Not applicable
14.	Dimensional Stability:	ASTM F2199, ≤ 0.15% in both directions is required
15.	Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, 1.03 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required
16.	Smoke Density:	ASTM E662; NFPA 258; NBS, 376 (flaming) and 256 (non-flaming) achieved, < 450 is required
17.	Tunnel Test:	Not applicable
18.	CAN/ULC-S102.2:	Surface Burning, FSC1 of 125 and SD of 370, achieved
19.	Burn Resistance:	Resistant to cigarette and solder burns
20.	Slip Resistance:	ASTM D2047 Static coefficient of friction, Neolite dry 0.99 Neolite wet 0.88 achieved, ≥ .5 required (not recommended for ramps)
21.	Bacteria Resistance:	ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity
22.	VOC's:	This flooring is GREENGUARD Gold Certified for Low VOC Emissions, GREENGUARD Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant
23.	Latex Allergies:	ASTM D6499, Inhibition Elisa, results are below detection level
24.	Sound Absorption:	ASTM E2179 Δ IIC 14, ISO 140 Δ L_w 10dB (compare only Δ values)
25.	Sound Generation:	67.2 dBA, 68.9 dBC and 20.9 Sones, Independently tested
26.	Hardness:	ASTM D2240, Shore type "A", 92 achieved, ≥ 85 is required
27.	Static Load:	ASTM F970, Residual compression of 0.003" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. required
28.	Rolling Load Limit:	≤ 550 lbs. / sq. inch, with no forklift traffic
29.	Abrasion Resistance:	ASTM D3389, 1.1 lbs. (500g) load on H-18 wheel with 1000 cycles, 0.003 oz. (0.09g) weight loss achieved, ≤ 0.035 oz. (1.0g) is required
30.	Elongation:	ASTM D412 Modulus @ 10% is 1299 lbs. per sq. inch achieved, ≥ 300 lbs. per sq. inch is required
31.	Oil & Grease Resistance:	No
32.	Heat Resistance:	ASTM F1514, Avg. $\Delta E \leq 8.0$ is required, easily achieved with all batches and regular maintenance
33.	Light Resistance:	ASTM F1515, Avg. $\Delta E \leq 8.0$, easily achieved with all batches and regular maintenance
34.	Static Generation:	AATCC 134, < 2000 Volts at 20% RH, achieved
35.	Decay Time:	Not applicable

36.	Conductivity:	Not applicable
37.	Thermal Transmission:	ASTM C518, R-value 0.04, achieved
38.	Cleaning:	Cleaned and maintained effectively using water, nora cleaning pads and a suitable cleaning machine, without the use of any factory and/or field-applied coatings. Also without using any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic.
39.	Shine:	Higher shine achieved by buffing without any artificial topical applied coatings
40.	Stain Removal:	Samples of the product must be provided for stain removal testing by the owner. Sample size must be 24 inches by 24 inches, pre-cleaned by manufacture per published recommendations. Samples must have no coatings, sealers, floor finish or other manually or mechanically applied finish on the surface of the product. Stain testing must consist of application of common healthcare related disinfectants and chemicals to include, but not limited to, Betadine, Methylene Blue, Silver Nitrate and alcohol based hand sanitizer. Duration of test period must be no less than one week. Removal of chemicals must be in accordance with manufacturers published cleaning and maintenance recommendations.
41.	Substrate Preparation:	Per ASTM F710 and the nora Installation Guide

Note: Exact values may vary due to the test methods and tolerance between batches. The ASTM minimum requirement should be achieved or exceeded.

PART 3 – RESPONSIBILITES

3.01 GENERAL CONTRACTOR RESPONSIBILITIES

Note: In the absence of a general contractor, these responsibilities defer to the end user.

A. Supply a safe, climate controlled building and subfloor as detailed in the nora Installation Guide (available at www.nora.com/us).

B. 1. A concrete subfloor that meets the requirements of ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring is required, or as detailed in the nora Installation Guide.

2. A wooden substrate that is not directly in contact with concrete or soil subfloors on or below grade, even if built on sleepers is required. All suspended wood floors should have an adequate underfloor ventilation system, and a permanently effective vapor retarder should be placed on the ground beneath the air space.

C. A concrete subfloor that is structurally sound, and has finished shrinking, cracking, curling or moving in any way is required.

D. For all concrete substrates on or below grade, a permanent effective vapor retarder with a low permeance (less than 0.1) and that meets the requirements of the latest edition of ASTM E1745 Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs, should be placed directly underneath the concrete above the granular fill, and installed as per the manufacturer's written instructions. Alternatively a surface applied moisture mitigation system should be used as described in 3.01 H.

E. A clean non-burnished concrete surface free from any paint, wax, oil, grease, and film forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds is required. The surface should not have any alkaline salts, laitance, mold, mildew, residual adhesive, chemical adhesive removers or anything that may prevent appropriate products bonding to it. If not then the general contractor should provide the mechanical means to remove them. This could be dustless diamond grinding (DiamaBrush), bead-blast or similar with a suitable Hepa vacuum attachment. Review and comply with all relevant local, state and federal regulations.

F. Valid tests and acceptable test results should be provided to the end user and flooring contractor, including documenting with photographs, the location of all tests, recorded % relative humidity levels and temperature of both the concrete subfloor and ambient conditions prior to flooring installation. Testing should be performed at the correct, controlled ambient service temperature and humidity following the protocol of ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes, using a Wagner Rapid RH probes only. It is recommended that moisture testing be performed by a certified International Concrete Repair Institute (ICRI) Tier 2 Testing Technician – Grade 1. When tested at the

correct ambient temperature and humidity the maximum allowable should be 85% RH for the correct nora® wet adhesive and nora® dryfix adhesive or 75% RH for nora® stepfix.

G. If it is not possible to drill into the concrete for any reason as detailed in ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes, please contact the nora® Technical Department for other recommendations.

H. Only if it is not possible to provide a concrete substrate with acceptable moisture levels, or that (when appropriate) have a confirmed effective vapor retarder, then a surface applied moisture mitigation system should be used that meets the requirements of ASTM F3010 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings. Please note that all additional costs associated with this concrete condition are the responsibility of the general contractor / end user, including any additional requirements for concrete preparation, priming, leveler, patching or labor.

I. A secure storage area that is maintained permanently or temporarily at ambient service temperature and humidity (except walk in freezers or similar), or 68°F ± 5° F and 50% ± 10% relative humidity, for at least 48 hours prior to and during the application of the flooring, so the flooring contractor can acclimate the flooring materials is required.

J. An installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity (except walk in freezers or similar), or 68°F ± 5° F and 50% ± 10% relative humidity, for at least 48 hours prior to, during and 72 hours after the application of the flooring is required.

K. Areas with direct prolonged exposure to sunlight should be protected with the use of Low E glass doors and windows or facades.

L. Areas of the flooring that are subject to direct sunlight through doors or windows should have them covered using blinds, curtains, cardboard or similar for the time of the installation and 72 hours after the installation to allow the adhesive to cure. Note: These areas should be installed using wet adhesives only.

M. Prevent all traffic for a minimum of 12 hours and rolling loads for 72 hours to allow the adhesive to cure. If required, after 12 hours protect the flooring from damage during construction operations using Masonite, plywood or a similar product, ensuring first that the flooring surface is free of all debris. Lay panels so that the edges form a butt joint and tape the joint to prevent both movement and debris entrapment underneath them. Inspect immediately before covering and after removal for final acceptance.

N. Have the flooring cleaned no sooner than 72 hours (unless given written permission from the nora Technical Department) after the installation using either the nora pro clean® system or a standard method as detailed in the appropriate nora® Maintenance Guide.

3.02 FLOORING CONTRACTOR RESPONSIBILITIES

A. Provide trained installers that have at least one of the following:
   1. Approved by nora systems, Inc. for all of the requirements of the project or INSTALL (International Standards & Training Alliance) certified for the requirements of the project.
   2. An effective installation manager, to manage the project, installers, and ensure that all of the required procedures are followed as detailed in the nora Installation Guide (available at www.nora.com/us).

B. Acclimate the flooring in the secure storage area provided by the general contractor that is maintained permanently or temporarily at ambient service temperature and humidity (except walk in freezers or similar), or 68°F ± 5° F and 50% relative humidity, for at least 48 hours prior to application.

C. For wooden subfloors American Plywood Association (APA) underlayment grade plywood should be double sheeted at a suitable thickness (minimum total wood thickness of 1 1/4 inch) to overlay the wooden substrate and installed as detailed in ASTM F1482 Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring. Please note, as plywood will expand and contract due to changes in moisture content and temperature, nora systems, Inc. cannot accept any liability of the plywood joints telegraphing through the finished floor.

D. Perform mat bond tests in each major area (1 per ~1,000 sq. ft.) This should consist of the proposed subfloor preparation, mitigation and leveling or smoothing products. A detailed method statement is available in the nora Installation Guide (available at www.nora.com/us). Do not proceed with installation until all the results of the bond test are acceptable.

E. Review and comply with all relevant Safety Data Sheets (SDS), local, state and federal regulations.

F. Clean out and fill or repair any dormant saw cuts and cracks with an appropriate product following the manufacturers written usage instructions. For any expansion (moving) joints, use an industry standard expansion joint assembly.

G. When required, use a surface applied moisture mitigation system that meets the requirements of ASTM F3010, and following the directions and requirements detailed in the manufacturers written instructions. Provide written confirmation and photographs to the general contractor or end user that the subfloor was prepared correctly prior to the application of the membrane, and that the membrane was applied correctly (without pin-holes) including confirmation of the gallons used and total square feet installed.

H. When required, use a leveler following the manufacturers written instructions. The surface should be free of dust, solvents, paint, wax, varnish, oil, grease, asphalt, old adhesives, and other extraneous materials that may interfere with the bond. These should be completely removed by mechanical means only. Dustless diamond grinding or bead blasting are the preferred method to remove contaminates and bond breakers, as it also helps to level the concrete.

I. Prime the subfloor prior to using a suitable leveler. Note: a 1/8 inch minimum thickness is required for the leveler to be considered porous as required when using nora® 485 or 685 acrylic adhesives.

J. Vacuum floors immediately prior to installing the flooring to remove all loose particles. If required, only use water based sweeping compounds. Do not use any wax or oil based compounds that leave behind a residue that may interfere with the adhesive bond.

K. Install resilient flooring, including but not limited to the following, in accordance with the nora Installation Guide.
1. Do not mix manufacturing batches of a color within the same area.
2. Do not install resilient flooring over building expansion joints.
3. Do not install defective or damaged resilient flooring.
4. Layout resilient flooring to provide ~equal size at perimeter. Adjust layout as necessary to reduce the amount of resilient flooring which is cut to less than half full width.
5. Lay resilient flooring with arrows in the same direction (excluding borders).
6. Install resilient flooring without voids at seams. Lay seams together without stress.
7. Cut/scribe resilient flooring neatly at perimeter and obstructions.
8. Extend resilient flooring into reveals, closets, and similar openings.
9. Remove excess adhesive immediately.
10. Install reducer strips at exposed edges.

L. When required, install nora® wall base in accordance with manufacturer's Installation Guide. Install in longest practical lengths.

M. When required, install resilient stairtreads and accessories in accordance with the nora Installation Guide.

N. When required, heat weld noraplan® seams using a color coordinated nora® heat welding rod in accordance with the nora Installation Guide.

O. When required, cold weld noraplan using a color coordinated nora® cold weld in accordance with the nora Installation Guide.

P. When required, flash cove. Extend flooring up the wall using the boot flash coving method, to the required height. Provide cove stick and suitable capping strip. All internal and external vertical seams, or as specified, should be noraplan cold welded with a color coordinated nora cold weld. Note: Do not heat weld the vertical seams.

Q. When required, use nora® sanitary base installed using nora® basefix and following the nora Installation Guide. All vertical external corners should be cold welded. If specified, all other seams between the sanitary base, and between the sanitary base and flooring should be cold welded together with coordinated colored nora cold weld in accordance with the nora Installation Guide. Note: Do not heat weld these seams.

R. Touch-up and repair any minor damage to eliminate all evidence of repair. Remove and replace work which cannot be satisfactorily repaired.

END OF SECTION

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08/14

Vinyl Composite Tile (VCT)

Product: NCC currently uses Azrock VCT

Locations/Applications: Pending

Product Requirements: Existing VCT is Azrock VCT and new VCT should comply with those standards; The use of VCT is discouraged, and alternatively, BBT should be used. Current product specifications are as follows:

- Classification ASTM F 1066

Specifications- product must meet or exceed requirements for the following-
- Static Load Limit @ 150 PSI - ASTM F 970
- Flammability - ASTM E 648
- Smoke Density - ASTM E 662
- Slip Resistance SCOF - ADA Compliant
- Chemical Resistance

Environmental-
- FloorScore®Indoor Air Quality Certification recommended
- ISO 9001 & ISO 14001 Certification recommended
- UL Certification Recommended
- Phthalate free products recommended
- Use of recycled VCT and pre & post consumer recycled content recommended
- NSF-322 Gold certified products recommended

VCT

Technical Data	Standards	VCT	Solids & Feature Strips
Type of Floor Covering		Vinyl Composition Tile	Vinyl Composition Tile
Classification	ASTM F 1066	Class 2 Through Pattern	Class 1 Solid Color
Total Thickness		1/8" (3.2 mm)	1/8" (3.2 mm)
Static Load Limit	ASTM F 970	150 psi	150 psi
Tile Size Weight/sq. ft./m² Carton Quantity Carton Weight		12" x 12" (305 mm x 305 mm) 1.4 lbs sq. ft. (14.0 lbs. m²) 45 tiles = 45 sq. ft. (4.18 m²) 64 lbs (29.0 kg)	12" x 12" (305 mm x 305 mm) 1.4 lbs sq. ft. (14.0 lbs. m²) 45 tiles = 45 sq. ft. (4.18 m²) 64 lbs (29.0 kg)
Flammability	ASTM E 648	Class 1 >0.45 CRF	Class 1 >0.45 CRF
Smoke Density	ASTM E 662	<450	<450
Slip Resistance SCOF	ADA Compliant		
Chemical Resistance		Good	Good
Colors		73 Standard Price	4 Premium Price Solids
Warranty		5 Year LIMITED Warranty. See azrock.com for complete warranty information.	5 Year LIMITED Warranty. See azrock.com for complete warranty information.
Maintenance		Conventional VCT Maintenance 3-5+ coats of finish*	Conventional VCT Maintenance 3-5+ coats of finish*

Feature Strips
Sizes, Quantities & Weights

1/4" x 24"
100 pieces per ctn -
200 lin. ft. (60.96 lin. m per ctn)
6 lbs per ctn (2.7 kg)

1/2" x 24"
75 pieces per ctn -
150 lin. ft. (45.72 lin. m per ctn)
9 lbs per ctn (4 kg)

1" x 24"
50 pieces per ctn -
100 lin. ft. (30.48 lin. m per ctn)
11.5 lbs per ctn (5.2 kg)

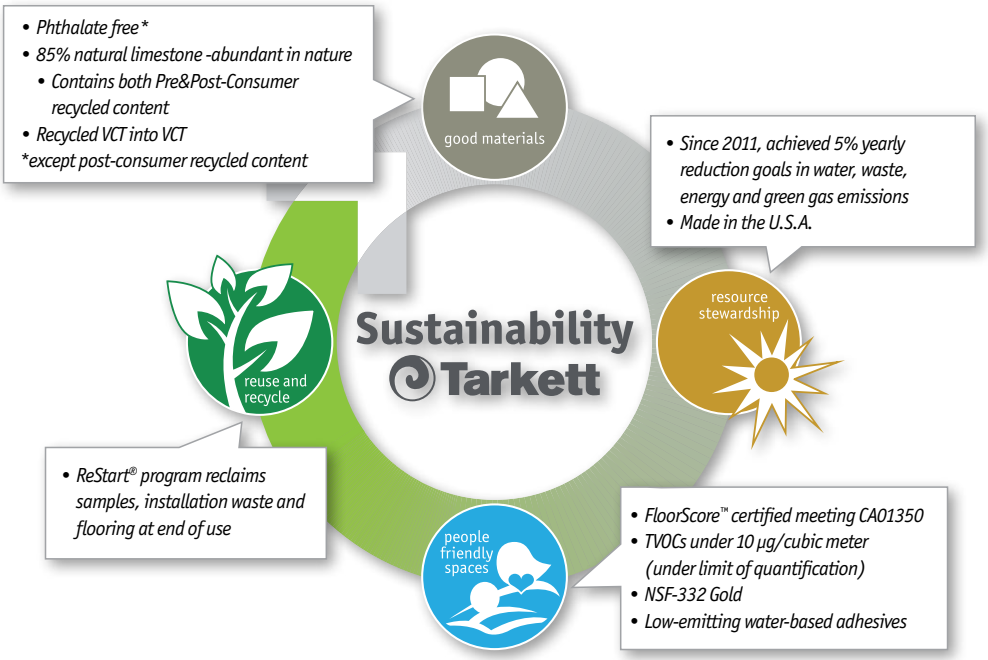
2" x 24"
25 pieces per ctn -
50 lin. ft. (15.24 lin. m per ctn)
12 lbs per ctn (5.4 kg)

4" x 24"
15 pieces per ctn -
30 lin. ft. (9.14 lin. m per ctn)
14 lbs per ctn (6.3 kg)

6" x 24"
15 pieces per ctn -
30 lin. ft. (9.14 lin. m per ctn)
21 lbs per ctn (9.5 kg)

* Depending upon use of the floor.
Please visit azrock.com for the most updated specifications, and installation, cleaning and maintenance instructions.

How to Order: **VCT Standard** V-(XXX) Color Number or V-(XXXX) Color Number **VCT Solids** VS(XXX) Color Number



MADE IN USA

SPEED SWATCH
800-899-8916

16910 Munn Road
Chagrin Falls, OH 44023
800-899-8916 or 440-543-8916

azrock.com

Tarkett | THE ULTIMATE FLOORING EXPERIENCE

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Bio-Based Tile

Product: Armstrong Migrations BBT or approved equal

Locations/Applications: Pending

Product Requirements: Specifications- product must meet or exceed requirements for the following-

- Thickness - ASTM F 386
- Size - ASTM F 2055
- Squareness - ASTM F 2055
- Indentation – One Minute - ASTM F 1914
- Indentation – Ten Minutes - ASTM F 1914
- Static Load Limit @ 250 PSI - ASTM F 970
- Impact - ASTM F 1265
- Deflection - ASTM F 1304
- Dimensional Stability - ASTM F 2199
- Chemical Resistance - ASTM F 925
- Resistance to Heat - ASTM F 1514
- Resistance to Light - ASTM F 1515
- Fire Test Data, Flame Spread - ASTM E 648
- Fire Test Data – Smoke Evolution ASTM E 662
- Fire Test Data – Canada CAN/ULC S-102.2

Environmental- it is recommended that the product meets or exceeds the following-

- Regional Materials - LEED ®MR5.0
- Recycled Content - LEED MR4.0
- Rapidly Renewable Materials - LEED MR6.0
- Certified Low Emitting Product - LEED EQ4.3
- Certified Low Emitting Adhesive - LEED EQ4.1
- Indoor Air Quality - FloorScore™
- Indoor Air Quality - CHPS 01350
- NSF/ANSI 332 - Sustainability Assessment

STRIATIONS BBT® | MIGRATIONS®

BioBased Tile®

Armstrong®
COMMERCIAL FLOORING

BioBased Tile® (BBT) with patent-pending BioStride® polymer, is made with rapidly renewable, US-grown plant ingredients. Armstrong offers BBT as a non-PVC product option at an affordable price point. With the same proven, long product life as other resilient flooring materials, BBT has more than 5 times greater resistance to impact and more than 2.5 times greater resistance to cracking than standard composition tile. Migrations easily transitions from Imperial Texture® and is available in 12˝x 12˝format. Striations offers a unique linear visual in a 12˝x 24˝format. Armstrong® BBT is NSF/ANSI 332 Gold Level Certified and Striations was awarded Bronze in the 2011 International Design Awards (IDA).

PRODUCT INFORMATION	
Construction	BioBased Tile
Product Line	Striations I Migrations
International Product Specifications	ASTM F 2982
Overall Thickness	1/8 in. (3.2 mm)
Wear Layer Thickness	1/8 in. (3.2 mm)
Finish	Fast Start Factory Finish
Installation	Full Spread Adhesives – S-525 High-Moisture, S-700 Thin Spread
Maintenance Options	Polish
PACKAGING	
Tile Sizes	Migrations – 12. in x 12 in. (305 mm x 305 mm) Striations – 12 in. x 24 in. (305 mm x 610 mm)
Tiles Per Carton	Migrations – 45 (45 sq. ft.) Striations – 22 (44 sq. ft.)
Shipping Weight	Migrations – 63 lbs. (28.6 kg) Striations – 61 lbs. (27.7 kg)

	PERFORMANCE	TEST METHOD	MINIMUM REQUIREMENT	PERFORMANCE VS. REQUIREMENT
ASTM F 2982	Thickness	ASTM F 386	Nominal ± 0.005 in.	Meets
	Size	ASTM F 2055	± 0.016 in. per linear foot	Exceeds
	Squareness	ASTM F 2055	0.010 in. max	Exceeds
	Indentation – One Minute	ASTM F 1914	≤ 0.012 in.	Exceeds
	Indentation – Ten Minutes	ASTM F 1914	≤ 0.015 in.	Exceeds
	Static Load Limit @ 250 PSI	ASTM F 970	≤ 0.005 in.	Exceeds
	Impact	ASTM F 1265	No cracks beyond limit after 12 drops	Exceeds
	Deflection	ASTM F 1304	1.0 in. minimum	Exceeds
	Dimensional Stability	ASTM F 2199	≤ 0.028 in. per linear feet	Meets
	Chemical Resistance	ASTM F 925	No more than slight change in surface dulling, attack or staining	Meets or Exceeds
	Resistance to Heat	ASTM F 1514	ΔE ≤ 8	Exceeds
	Resistance to Light	ASTM F 1515	ΔE ≤ 8	Exceeds
Supplementary	Fire Test Data – Flame Spread	ASTM E 648	0.45 watt/cm^2 or more Class I	Meets
	Fire Test Data – Smoke Evolution	ASTM E 662	450 or less	Meets
	Fire Test Data – Canada	CAN/ULC S-102.2	Use dependant	Flame Spread – 0 Smoke Developed – 25
	Regional Materials	LEED® MR5.0	Meets Guidelines	Meets
	Recycled Content	LEED MR4.0	Meets Guidelines	Meets
	Rapidly Renewable Materials	LEED MR6.0	Meets Guidelines	Meets
	Certified Low Emitting Product	LEED EQ4.3	Meets Guidelines	Meets
	Certified Low Emitting Adhesive	LEED EQ4.1	Meets Guidelines	Meets
	Indoor Air Quality	FloorScore™	Meets Certification Guidelines	Certified
	Indoor Air Quality	CHPS 01350	Meets Certification Guidelines	Certified
	NSF/ANSI 332	Sustainability Assessment	Meets Certification Guidelines	Gold Level Certified

WARRANTY
5-Year Commercial Warranty when installed in accordance with Armstrong's Guaranteed Installation Systems manual, F-5061.
LINKS
Installation Instructions – www.armstrong.com/pdbupimages/200838.pdf
Maintenance Information – www.armstrong.com/pdbupimages/197956.pdf
View the full line – www.armstrong.com/commflooringna/products/biobased-tile
Email Techline – www.armstrong.com/commflooringna/contact_techline.jsp

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STRIATIONS BBT® | MIGRATIONS®

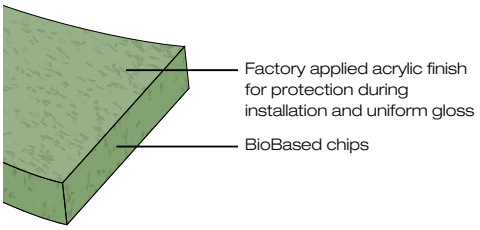
BioBased Tile®

Armstrong®
COMMERCIAL FLOORING

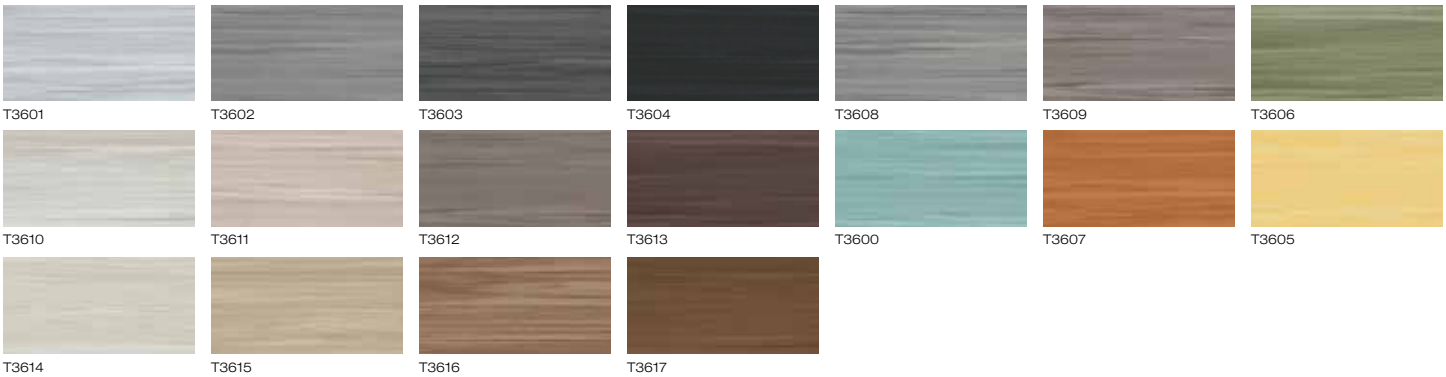
Sustainability Facts

Serving	As Served
**Striations	Migrations**	
Certified to meet LEED® EQ Credit: Low Emitting Interiors	✓
Pre-Consumer Recycled Content	10%
Regional Materials*	Jackson, MS
Rapidly Renewable Materials	2%
Adhesives	
Certified to meet LEED® EQ Credit: Low Emitting Interiors	✓
FloorScore™ Certified to CDPH Standard Method V1.1-2010	✓
Green Guide for Healthcare GGHC IEQ4.3	✓
Collaborative for High Performance Schools CHPS-IEQ2.2 & LABS-21 IEQ4.3	✓
U.S. Green Building Council Member	✓
Canada Green Building Council Member	✓
NSF/ANSI 332 Gold Level Certified	✓

*Depends on project location



Striations



Migrations

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Luxury Vinyl Tile

Product: AmericanBiltrite Sonota Luxury Vinyl Tile or approved equal

Locations/Applications: Pending

Product Requirements: Specifications- product must meet or exceed requirements for the following-

- Solid Vinyl Floor Tile - ASTM F 1700 (Class III, Type A or B)
- Static Coefficient of Friction - ASTM D 2047
- Critical Radiant Flux CRF (W/cm2) - ASTM E 648
- Smoke Density - ASTM E 662
- Sound Absorption - ASTM E 989/E 492
- Chemical Resistance - ASTM F 925
- Static Load Limit @ 250 PSI - ASTM F 970
- Resistance to Heat - ASTM F 1514
- Resistance to Light - ASTM F 1515
- Residual Indentation - ASTM F 1914
- Squareness - ASTM F 2055

Environmental- it is recommended that the product meets or exceeds the following-

- Indoor Air Quality - FloorScore™
- ISO 9001 & ISO 14001 Certified

SONATA - LUXURY VINYL FLOORING

TECHNICAL SPECIFICATIONS

	Metric	Imperial
Gauge	2.50 mm	0.100"
Sizes (refer to web site for size availability on each product) ▪ Tiles	457 mm x 457 mm 305 mm x 610 mm	18" x 18" 12" x 24"
▪ Planks	100 mm x 900 mm 150 mm x 1,200 mm 230 mm x 1,200 mm	 4" x 36" 6" x 48" 9" x 48"
Wear Layer Thickness	0.5 mm (0.020")	
ASTM D 2047 – Static Coefficient of Friction	Meets ADA guidelines	
ASTM E 648 – Critical Radiant Flux CRF (W/cm^2)	> 0.45	
ASTM E 662 – Smoke Density	≤ 450	
ASTM E 989/E 492 – Sound Absorption	IIC 59	
ASTM F 925 – Chemical Resistance	Exceeds	
ASTM F 970 – Static Load (modified at 2,500 psi)	≤ 0.005"	
ASTM F 1514-Heat Stability (ΔE≤8.0)	Pass	
ASTM F 1515-Light Stability (ΔE≤8.0)	Pass	
ASTM F 1700 – Solid Vinyl Floor Tile	Class III, Type A or B	
ASTM F 1914 – Residual Indentation	≤ 8%	
ASTM F 2055 – Squareness	0.010" maximum	
Indoor Air Quality (IAQ): Volatile Organic Compounds (VOC's)	FloorScore Certified by SCS Certification Registration Number SCS-FS-01495	
Maintenance	Very low	
PU (Polyurethane) surface treatment containing Aluminum Oxide	Facilitates maintenance	
Adhesives: PS-30 AD-530SF	Regular traffic Heavy traffic/rolling loads	
Limited Wear Warranty	10 years for commercial installations 20 years for residential installations	

Please note that technical web site documents prevail.

http://www.american-biltrite.com | flooring@american-biltrite.com
USA : 1.888.275.7075 CANADA : 1.800.567.2794

6093-A (2014-05-15)

Poured in Place Terrazzo

Related Masterspec: Division 9, 096623 - Resinous Matrix Terrazzo Flooring

Product: Terroxy Resin System - Thin Set Epoxy Terrazzo or approved equal

Locations/Applications: Floors

Product Requirements: Specifications- product must meet or exceed requirements for the following-

- Hardness - ASTM D-2240 using Shore-D Durometer
- Tensile Strength - ASTM D-638
- Compressive Strength - ASTM D-695 Specimen B cylinder
- Flexural Strength - ASTM D-790
- Chemical Resistance - ASTM D-1308 seven days at room temperature by immersion method
- Flammability - ASTM D-635
- Thermal Coefficient of Linear Expansion - ASTM D-696
- Bond Strength - ACI COMM 403, Bulletin 59-43 (pages 1139-1141)

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 pre-cast epoxy terrazzo tread or tread & riser units.
3. Thin-set pre-cast 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.

System Specifications

Section 096623

B. LEED Submittals
   1. Product Data for Credit MR 4.1 [and Credit MR 4.1]: For [aggregates,] indicating percentages by weight of postindustrial recycled content.
      a. Include statement that indicates cost for each product having recycled content.
   2. Product Data for Credit MR 5.1: For products manufactured within a 500-mile (804.7 km) radius of the project.
   3. Product Data for Credit EQ 4.1: For adhesives, including printed statement of VOC content and chemical components.

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 [NTMA] [Manufacturer's] 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 manufacturer'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 in NTMA.
   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.

G. Qualification Data: For qualified Installer.
   1. Submit proof of Contractor membership in NTMA.
   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 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 (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.

B. Source Limitations:
   1. Obtain primary Epoxy Terrazzo Flooring System materials including membranes, primers, resins and hardening agents from a single manufacturer with proof of NTMA membership.
   2. Obtain aggregates, divider strips, sealers, cleaners from source recommended by primary materials manufacturer.

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, jobsite 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 dust control procedures.
   5. Review plans for concrete curing and site drying to enable timely achievement of suitable slab moisture conditions.

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

E. **Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.**
   1. Build mockups for terrazzo including accessories.
      a. Size: Minimum 100 sq. ft. (9.3 sq. m.) 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 undistributed 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 50°F to 80°F (10.0°C to 26.6°C).

1.06 PROJECT CONDITIONS

A. **Terrazzo contractor shall, prior to surface preparation:**
   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°F (15.5°C)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). An effective in situ probe for relative humidity testing is the Rapid RH 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 3.1 m). 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. Concrete floor shall receive a steel trowel finish.
   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 shall have an efficient moisture vapor barrier (suggested minimum: 15 mils = .4 mm thickness) directly under the concrete slab. 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 Primer (for slabs on-grade or light-weight 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: Fiberglass scrim.
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 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.	4,800 psi min.
		20.7 MPa	33.1 MPa
Compressive Strength	ASTM D-695 Specimen B cylinder	10,000 psi min.	12,000 psi min.
		68.9 MPa	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 Georgia White marble blended 60% #1 chip and 40% #0 chip, ground and grouted with epoxy resin according to Installation Specifications, finishing to a nominal 1/4" (6.4 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 Requirements	Terroxy® Thin-set Epoxy Terrazzo Typical Results
Flammability	ASTM D-635	Self extinguishing, extent of burning 0.25 inches(6.4 mm) max.	Self extinguishing, extent of burning 0.25 inches (6.4 mm) max.
Thermal Coefficient of Linear Expansion	ASTM D-696	$25x10^{-6}$ inches per inch per degrees to 140ºF	$25x10^{-6}$ inches per inch per degrees to 140ºF
		11.4×10^{-7} cm per cm per ºC to 60ºC Max	11.4×10^{-7} cm per cm per ºC to 60ºC Max
Bond Strength	ACI COMM 403, Bulletin 59-43 (pages 1139-1141)	300 psi (100% concrete failure)	300 psi (100% concrete failure)
		2.1 MPa (100% concrete failure)	2.1 MPa (100% concrete failure)

4. Aggregates [OPTION: Marble, Glass, Mother of Pearl] Complying with NTMA 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. Post-Industrial or Post-Consumer Recycled Content: ‹Insert Value› percent.
5. Finishing Grout: Terroxy® Epoxy Matrix or Terroxy® Clear Resin as recommended by Terroxy® Resin Systems.

C. Mix: Comply with NTMA's "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 Sample Number›
    b. TZ__: ‹Insert 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] [Aluminum] [Plastic, in color selected from manufacturer's full range].
   2. Guide for commonly used L-type divider strips for Thin-set Epoxy Terrazzo Systems:

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

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

B. Control-Joint Strips: Separate double L-type angles back to back with minimum 1/8" (3.2 mm) width between. Fill joint and area between strips with semi-flexible joint filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.

C. Construction-Joint (Cold-Joint) Strips: Separate double L-type angles back to back with minimum 1/8" (3.2 mm) width between. Fill joint and area between strips with semi-flexible joint filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.

D. Expansion-Joint Strips: Separate double L-type angles, positioned back to back with minimum 1/8" (3.2 mm)width between. Fill area between strips with semi-flexible joint filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.

E. Accessory Strips: Match divider strip width, material and color unless otherwise indicated. Use the following types of accessory strips as required to provide a complete installation:
   1. Base-bead strips for exposed top of terrazzo base.
   2. Edge-bead for exposed edges of terrazzo.
   3. Nosings for terrazzo stair treads and landings.
   4. ‹Insert requirements›.

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. Anchoring Devices:
   1. Strips: Provide mechanical anchoring devises for strip materials as required for secure attachment to substrate.
   2. Precast Terrazzo: Provide mechanical anchoring devices as recommended by Terrazzo Contractor for proper anchorage and support of units for conditions of installation and support.

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

D. Joint Compound: Terroxy® Joint Filler, color to be selected by architect to match/compliment terrazzo.

E. Cleaner: Terroxy® Terra Clean, a neutral cleaner with pH factor between 7 and 10 specifically designed for terrazzo.

F. Surface Finish System: Terroxy® Natural 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, a standard coefficient of friction of 0.6 or higher, does not affect physical properties of terrazzo and complies with NTMA's "Terrazzo Specifications and Design Guide."
   1. [Option 1: Terroxy® WB Acrylic Sealer, medium gloss, water-based sealer.]
   2. [Option 2: Terroxy® Acrylic Sealer, high performance, high gloss acrylic sealer.]
   3. [Option 3: Terroxy® WB Urethane or Terroxy® WB Penetrating Sealer, 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. 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" (19 mm) 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 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" (1.6 mm) wide according to Terroxy® Resin Systems Technical Bulletin 009 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 Primer is recommended. Apply to terrazzo substrates according to Terroxy® Resin Systems Moisture Vapor Primer 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 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 "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: [1/4" (6.4 mm)] [3/8" (9.5 mm)] [As indicated]

C. Flexible Reinforcing Membrane

1. [Option 1: Membrane application for isolated cracking. Route out all cracks and fill with semi-flexible Terroxy® Joint Filler. Apply Terroxy® Iso-Crack Epoxy Membrane (spread at 40 mils = 1.0 mm thickness) across the crack allowing 12 inches (304.8 mm) on either side. Imbed fiberglass scrim 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 semi-flexible Terroxy® Joint Filler. 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.]

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 or mechanically anchor strips as required to attach strips to substrate.
   b. Control-Joint Strips: Separate double L-type angles, positioned back to back with minimum 1/8" (3.2 mm) width between. Fill joint and area between strips with semi-flexible Terroxy® Joint Filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.
   c. Construction-Joint (Cold-Joint) Strips: Separate double L-type angles, positioned back to back with minimum 1/8" (3.2 mm) width between. Fill joint and area between strips with semi-flexible Terroxy® Joint Filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.
   d. Expansion-Joint Strips: Separate double L-type angles, positioned back to back with minimum 1/8" (3.2 mm) width between. Fill area between strips with semi-flexible Terroxy® Joint Filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.

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 D-36 Diamond matrix stones 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.
3. Allow grout to cure. Grout may be left on terrazzo until other trades work is completed.

I. Polishing: Grind with 120 grit or finer stones until all grout is removed from surface. Repeat rough grinding, grout coat and polishing if large terrazzo chip voids exist after initial polishing. Produce surface with a minimum of 70 percent aggregate exposure.

J. Surface Finishing (Alternate care and maintenance system. If including addendum, remove item B Sealing from subpart 3.05 CLEANING AND PROTECTION.):

1. Flood mop and wet vac all slurry from surface, using Terroxy® Terra Clean per Terroxy® Resin Systems recommendations insuring all latency and particulate matter is removed.
2. Continue grinding process with diamond grits 220, 400 and 600. Repeating Step #1 between steps insuring all previous grit latency and particulate matter is removed.
3. Inspect entire surface for consistent appearance, manifesting no abrasion scratches from previous grits. Readdress any area manifesting previous grit scratch pattern not matching 600 grit finish before continuing.
4. Mechanically polish surface using 1,000 grit diamond pads as supplied by Terrazzo & Marble Supply. Surface shall have uniform reflective appearance showing no high or low sheen variances.
5. Flood mop and wet vac as described in Step #1 insuring no presence of any particulate matter or other trades' dirt or oils.
6. Final polish surface using Terroxy® Terra Polish per Terroxy® Resin Systems recommendations with 3M or equal white polishing pad equipped on a 175 rpm floor machine with solution tank and standard pad driver as supplied by Terrazzo & Marble Supply.
7. Thoroughly scrub and agitate entire surface using Terroxy® Terra Clean per Terroxy® Resin Systems recommendations, wet vac scrub from surface insuring all final chemistry is removed.
8. Once surface is entirely dry, allowing four hours minimum, impregnate and seal surface with Terroxy® Terra Tight Impregnator as needed per Terroxy® Resin Systems recommendations. Following directions, remove any excess.
9. Allow 24 hours before use or open traffic. Maintain surface with Terroxy® Terra Clean

as daily maintenance cleaner. Periodically spot polish high-traffic areas with Terroxy® Terra Polish as needed to maintain uniform appearance. Bi-annually impregnate surface to preserve per Terroxy® Natural Finish System (as needed).

3.04 PRECAST TERRAZZO INSTALLATION

A. Install precast units using method recommended by NTMA 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 Terroxy® Terra Clean.

B. Sealing: Apply Slip- and stain-resistant sealer that is chemically neutral with a pH factor between 7 and 10; does not affect physical properties of terrazzo and complies with NTMA's "Terrazzo Specifications and Design Guide. (If conducting Terroxy® Natural Finish System, as described in item J Surface Finishing from sub-part 3.03 EPOXY TERRAZZO INSTALLATION, remove this item.)

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

Terrazzo Tile

Product: Wausau Tile Terrazzo Tiles or approved equal

Locations/Applications: Floors

Product Requirements: Specifications- product must meet or exceed requirements for the following-

- Compression - ASTM C140
- Absorption - ASTM C 140
- Flexural - ASTM C 293
- Specular Gloss Testing at 60 degrees - ASTM D523
- Static Coefficient of Friction test - ASTMC1238
- Stain testing / initial protection testing
- C373 Water Absorption
- C482 Bond Strength - 376 psi.
- C485 Warpage Edge +/- .001% or .002 in.
- C485 Warpage Diagonal +/- .003% or .010 in.
- C499 Nominal Size - range of .029 in.
- C499 Thickness - range of .029 in.
- C502 Wedging +/- .023% or .028 in.
- C609 Color Uniformity - V1 – V4
- C648 Breaking Strength - 981 lbf.
- C650 Resistance to Chemical Substance- not affected
- C674 Flexural properties - 1995 psi.
- C1028 Static COF / Dynamic DCOF – passes at factory
- C1243 Deep Abrasion Wear – passes (meets p3 standards)
- C1378 Resistance to staining - not affected

09300 Wausau Tile Terrazzo Tiles
2013 Flooring Specification - Tile Set Method

Distribution by:
Wausau Tile
9001 Business Hwy 51
Rothschild, WI. 54474
715 - 359 - 3121
www.wausautile.com

PART ONE – GENERAL

1) INTRODUCTION

Wausau Tile Terrazzo Tile flooring is to be installed following the tile setting procedures of the Tile Council of North America (TCNA). Wausau Tile Terrazzo Tiles are provided with chamfered edges and are available in a Polished, Honed or Brushed finish (EcoPremier series colors are available in Honed or Brushed finishes only). Wausau Tile Terrazzo Tiles, all colors and finishes, are provided with a factory applied initial protectant. Wausau Tile is the manufacturer of Wausau Terrazzo Tile and is not responsible for defects that are not related to the manufacture of the tile.

2) SUMMARY
- a) Types of Terrazzo Tile work included:
  - i) Terrazzo Tile flooring
  - ii) Terrazzo Tile wall tile
  - iii) Precast terrazzo accessories - stair and base
- b) Polishing and finishing maintenance materials
- c) Related work not specified under this section
  - i) Cast-in-place concrete: substrate

3) REFERENCES
- a) American Society for Testing and Materials (ASTM)
  - i) ASTM C-373
  - ii) ASTM C-482
  - iii) ASTM C-485
  - iv) ASTM C-499
  - v) ASTM C-502
  - vi) ASTM C-609
  - vii) ASTM C-648
  - viii) ASTM C-650
  - ix) ASTM C-674
  - x) ASTM C-1026
  - xi) ASTM C-1028
  - xii) ASTM C-1243
  - xiii) ASTM C-1378
- b) American National Standards Institute (ANSI)
  - i) ANSI A108.1
  - ii) ANSI A108.5
  - iii) ASTM A108.6
  - iv) ASTM A108.10
  - v) ASTM A118.3
  - vi) ASTM A118.4
  - vii) ASTM A 118.6
  - viii) ASTM A 137.1 (Section 9.6)
- c) National Terrazzo and Mosaic Association (NTMA)
- d) Tile Council of North America (TCNA) Handbook – latest edition

4) QUALITY ASSURANCE
- a) Setting and Grouting Materials: Provide materials obtained from one source for each type and color of grout and setting materials.
- b) NTMA Standards: Comply with specified provisions and recommendations of NTMA
- c) TCNA Standards: Comply with specifications under the current Handbook for Tile Installation
- d) Manufacturer to supply written Quality Assurance Program, upon request

5) DELIVERY, STORAGE, AND HANDLING
   a) Packaging and Shipping: Wausau Tile Terrazzo Tile to be delivered in original unopened packaging with legible manufacturer identification including size, quantity and manufacture date.
   b) Storage and Protection: Wausau Tile Terrazzo Tile is to be stored indoors in a climate controlled environment, sheltered from moisture and in the original packaging. Protected from damage by other trades.

6) WARRANTY
   a) Terrazzo Tile flooring and accessories are warranted against product defects for one year from date of delivery.

7) EXTRA MATERIALS
   a) Furnish not less than three percent as attic or maintenance stock of each type, color pattern, and size of precast terrazzo tile installed.

PART TWO – PRODUCTS

1) MANUFACTURERS
   a) Acceptable product manufacturer: Wausau Tile, Inc., as distributed by:
      Wausau Tile
      9001 Business Hwy 51
      Rothschild, WI. 54474
      www.wausautile.com

2) MATERIALS
   a) Portland Cement: ASTM C-150 specifications for Portland cement
   b) Aggregates: All aggregates to meet ASTM C-33, ASTM C-131 specifications
      i) The aggregates used in Wausau Terrazzo Tiles have a natural color range and come in a variety of sizes and colors. Therefore the aesthetic class/shade range as per ASTM test C609 will vary from a V1 rating to a V4 rating. For best results, tiles need to be blended at the jobsite from multiple pallets in a numerical sequence.
   c) Coloring: Pigments used shall be inorganic, resistant to alkalinity, and used per manufacturer's recommendations.
   d) Color Blending: The aggregates used in our Wausau Tile Terrazzo Tile have a natural color range. This can cause slight variances in overall color. Tiles need to be blended at the job site from multiple pallets in numerical sequence.
   e) Tile Protection:
      i) Wausau Tile Terrazzo Tiles, all colors and finishes, are provided with a factory applied initial protectant.

3) MANUFACTURED UNITS
   a) Precast Cement Terrazzo Tiles
      i) Size:11-13/16" x 11-13/16" x 1/2", 7.0 lbs. (approx.)
         15-13/16" x 15-13/16" x 5/8", 14.0 lbs (approx.)
         17-13/16" x 17 13/16" x 5/8", 17.0 lbs (approx.)
         11-13/16" x 23 13/16" x 5/8", 15.0 lbs (approx.)
         23-13/16" x 23-13/16" x 7/8", 42.0 lbs (approx.)
   b) Chamfered face edges
   c) Surface to be ground & polished, free of holes or rough areas
   d) Surfaces to be uniform in appearance
   e) Color:
      i) Selected from Wausau Tile Terrazzo Tile Color Palette
         (1) Micro Terrazzo Series - Aggregate chips – approx. 1/8"
         (2) Traditional Terrazzo Series - Aggregate chips – approx. ¼" to 3/8"
         (3) River Run Terrazzo Series - Aggregate chips – approx. 3/16" to 3/8"

(4) Recycled Glass Terrazzo Series – Aggregate chips – approx. ¼" to 3/8"
(5) Atmosphere Terrazzo Series – Aggregate chips – approx. 1/8" to 3/8"
(6) EcoPremier Terrazzo Series – Recycled Aggregate chips – approx. 1/16" – 1/8"

ii) Custom Colors and Blends
(1) Custom Colors or Color Matching prepared by request.

f) Finish/Texture**:**
i) Factory Polished, Honed or Brushed (EcoPremier colors are available in Honed or Brushed finishes only).

4) MIXES
a) Aggregate: Natural, sound, crushed marble, stone, recycled glass or recycled porcelain chips without excessive flats or flakes, complying with NTMA requirements
b) Matrix Pigments: Pure mineral or synthetic pigments, resistant to alkalis and non-fading
c) Wausau Tile Terrazzo Tile shall have 70 percent coverage of the precast Terrazzo Tile face with Marble, stone, recycled glass or recycled porcelain aggregate

5) FABRICATION
a) Mechanically vibrated in molds
b) Hydraulically pressed by 900-ton/3250 psi press
c) Steam-cured with 100 percent humidity for 18 hours at 140 degrees F
d) Factory finish: In-line grinding
e) Factory applied initial protectant

6) SOURCE QUALITY CONTROL
a) Inspections:
i) Documented inspection of Terrazzo Tile quality control tests.
ii) In house testing is completed on the first day's production and every 5,000 square feet after for all projects. Testing is performed on the 7th day and the 28th day after the tile has been pressed.
(1) Compression - ASTM C140
(2) Absorption - ASTM C 140
(3) Flexural - ASTM C 293
(4) Specular Gloss Testing at 60 degrees - ASTM D523
(5) Static Coefficient of Friction test - ASTM C1238
(6) Stain testing / initial protection testing
iii) All projects over 10,000 square feet will have one set of tests sent to a third party test lab.
iv) All records are kept at Wausau Tile for a period of 5 years.

7) TEST RESULTS
a) Various Independent Test Labs have completed and verified the following data:
i) C373 Water Absorption - passes
ii) C482 Bond Strength - 376 psi.
iii) C485 Warpage Edge +/- .001% or .002 in.
iv) C485 Warpage Diagonal +/- .003% or .010 in.
v) C499 Nominal Size - range of .029 in.
vi) C499 Thickness - range of .029 in.
vii) C502 Wedging +/- .023% or .028 in.
viii) C609 Color Uniformity - V1 – V4
ix) C648 Breaking Strength - 981 lbf.
x) C650 Resistance to Chemical Substance- not affected
xi) C674 Flexural properties - 1995 psi.
xii) C1028 Static COF / Dynamic DCOF – passes at factory
xiii) C1243 Deep Abrasion Wear – passes (meets p3 standards)
xiv) C1378 Resistance to staining - not affected

PCI Certified Plant
PO Box 1520 • Wausau, WI 54402-1520
715.359.3121 • 800.388.8728
Site Furnishings Fax: 715.355.4627 Paving/Terrazzo Fax: 715.359.7456
wtile@wausautile.com • www.wausautile.com

PART THREE – INSTALLATION GUIDELINES

1) All installation of Wausau Terrazzo tile shall comply with the appropriate Installation Method as depicted in the current edition of the Tile Council of North America Handbook for Ceramic, Glass, and Stone Tile Installation. The architect or other design professional shall select which method to be specified. All specifications must also conform to local codes, ordinances, trade practices, and climatic conditions.

2) All materials used for installation of Wausau Terrazzo Tile must comply with the appropriate ANSI 118 and/or ISO 13007 standards and specifications. Setting materials manufacturer's printed installation instructions are to be followed in every instance. Materials NOT recommended are A-118.1 Dry-Set Mortars and A-136.1 Organic Adhesives. Only ANSI A-118.4 and ISO C2S1 mortars or better are recommended.
    a. A minimum of 95 percent thin-set coverage is recommended on the back of the terrazzo tile. All Terrazzo Tile larger than 12" x 12" may require back-buttering. The corners of the terrazzo tile must have good mortar support to prevent cracking.

3) Appropriate ANSI A-108 installation specifications that correspond with the selected TCNA Installation Method are to be followed. This includes Substrate and Surfaces inspections, Location and Frequency of EJ171 Movement Joint Guidelines, Placement Techniques, and Grouting Procedures.
    a. Minimum recommended grout size is 1/8"

4) Applied Initial Protectant:
    a. Wausau Tile applies Scotchgard™ Stone Floor Protector to the terrazzo tile prior to packaging.
    b. It is not required that the terrazzo tile be resealed prior to or after grouting.
    c. If a slight grout haze occurs, it can be effectively remove from the tile by using a 3M™ Eraser Pad 3600 Pink pad with water and or a 3M™ Neutral Cleaner.
        i. A floor buffer might be recommended to assist in cleaning
    d. If a more difficult stain occurs, use a Scotchbrite™ Doodlebug™ Easy Erasing Pad 4610 along with water and or a 3M™ Neutral Cleaner.
        i. A floor buffer might be recommended to assist in cleaning.
    e. For additional protectant information and long term care guidelines, please contact 3M via 1-800-852-9722 or www.3m.com/facility. For complete 3M system, Visit www.3mfloorprotection.com.

8/1/2013

Poured in Place Terrazzo

Related Masterspec: Division 9, 096613 - Portland Cement Terrazzo Flooring

Product: Terroxy Resin System - Thin Set Epoxy Terrazzo or approved equal

Locations/Applications: Floors

Product Requirements: Specifications- product must meet or exceed requirements for the following-

- Hardness - ASTM D-2240 using Shore-D Durometer
- Tensile Strength - ASTM D-638
- Compressive Strength - ASTM D-695 Specimen B cylinder
- Flexural Strength - ASTM D-790
- Chemical Resistance - ASTM D-1308 seven days at room temperature by immersion method
- Flammability - ASTM D-635
- Thermal Coefficient of Linear Expansion - ASTM D-696
- Bond Strength - ACI COMM 403, Bulletin 59-43 (pages 1139-1141)

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 pre-cast epoxy terrazzo tread or tread & riser units.
3. Thin-set pre-cast 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.

System Specifications

Section 096623

B. LEED Submittals
   1. Product Data for Credit MR 4.1 [and Credit MR 4.1]: For [aggregates,] indicating percentages by weight of postindustrial recycled content.
      a. Include statement that indicates cost for each product having recycled content.
   2. Product Data for Credit MR 5.1: For products manufactured within a 500-mile (804.7 km) radius of the project.
   3. Product Data for Credit EQ 4.1: For adhesives, including printed statement of VOC content and chemical components.

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 [NTMA] [Manufacturer's] 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 manufacturer'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 in NTMA.
   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.

G. Qualification Data: For qualified Installer.
   1. Submit proof of Contractor membership in NTMA.
   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 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 (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.

B. Source Limitations:
   1. Obtain primary Epoxy Terrazzo Flooring System materials including membranes, primers, resins and hardening agents from a single manufacturer with proof of NTMA membership.
   2. Obtain aggregates, divider strips, sealers, cleaners from source recommended by primary materials manufacturer.

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, jobsite 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 dust control procedures.
   5. Review plans for concrete curing and site drying to enable timely achievement of suitable slab moisture conditions.

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

E. **Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.**
   1. Build mockups for terrazzo including accessories.
      a. Size: Minimum 100 sq. ft. (9.3 sq. m.) 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 undistributed 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 50°F to 80°F (10.0°C to 26.6°C).

1.06 PROJECT CONDITIONS

A. **Terrazzo contractor shall, prior to surface preparation:**
   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°F (15.5°C)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). An effective in situ probe for relative humidity testing is the Rapid RH 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 3.1 m). 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. Concrete floor shall receive a steel trowel finish.
   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 shall have an efficient moisture vapor barrier (suggested minimum: 15 mils = .4 mm thickness) directly under the concrete slab. 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 Primer (for slabs on-grade or light-weight 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: Fiberglass scrim.
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 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.	4,800 psi min.
		20.7 MPa	33.1 MPa
Compressive Strength	ASTM D-695 Specimen B cylinder	10,000 psi min.	12,000 psi min.
		68.9 MPa	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 Georgia White marble blended 60% #1 chip and 40% #0 chip, ground and grouted with epoxy resin according to Installation Specifications, finishing to a nominal 1/4" (6.4 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 Requirements	Terroxy® Thin-set Epoxy Terrazzo Typical Results
Flammability	ASTM D-635	Self extinguishing, extent of burning 0.25 inches(6.4 mm) max.	Self extinguishing, extent of burning 0.25 inches (6.4 mm) max.
Thermal Coefficient of Linear Expansion	ASTM D-696	$25x10^{-6}$ inches per inch per degrees to 140ºF	$25x10^{-6}$ inches per inch per degrees to 140ºF
		11.4×10^{-7} cm per cm per ºC to 60ºC Max	11.4×10^{-7} cm per cm per ºC to 60ºC Max
Bond Strength	ACI COMM 403, Bulletin 59-43 (pages 1139-1141)	300 psi (100% concrete failure)	300 psi (100% concrete failure)
		2.1 MPa (100% concrete failure)	2.1 MPa (100% concrete failure)

4. Aggregates [OPTION: Marble, Glass, Mother of Pearl] Complying with NTMA 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. Post-Industrial or Post-Consumer Recycled Content: ‹Insert Value› percent.
5. Finishing Grout: Terroxy® Epoxy Matrix or Terroxy® Clear Resin as recommended by Terroxy® Resin Systems.

C. Mix: Comply with NTMA's "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 Sample Number›
    b. TZ__: ‹Insert 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] [Aluminum] [Plastic, in color selected from manufacturer's full range].
   2. Guide for commonly used L-type divider strips for Thin-set Epoxy Terrazzo Systems:

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

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

B. Control-Joint Strips: Separate double L-type angles back to back with minimum 1/8" (3.2 mm) width between. Fill joint and area between strips with semi-flexible joint filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.

C. Construction-Joint (Cold-Joint) Strips: Separate double L-type angles back to back with minimum 1/8" (3.2 mm) width between. Fill joint and area between strips with semi-flexible joint filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.

D. Expansion-Joint Strips: Separate double L-type angles, positioned back to back with minimum 1/8" (3.2 mm)width between. Fill area between strips with semi-flexible joint filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.

E. Accessory Strips: Match divider strip width, material and color unless otherwise indicated. Use the following types of accessory strips as required to provide a complete installation:
   1. Base-bead strips for exposed top of terrazzo base.
   2. Edge-bead for exposed edges of terrazzo.
   3. Nosings for terrazzo stair treads and landings.
   4. ‹Insert requirements›.

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. Anchoring Devices:
   1. Strips: Provide mechanical anchoring devises for strip materials as required for secure attachment to substrate.
   2. Precast Terrazzo: Provide mechanical anchoring devices as recommended by Terrazzo Contractor for proper anchorage and support of units for conditions of installation and support.

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

D. Joint Compound: Terroxy® Joint Filler, color to be selected by architect to match/compliment terrazzo.

E. Cleaner: Terroxy® Terra Clean, a neutral cleaner with pH factor between 7 and 10 specifically designed for terrazzo.

F. Surface Finish System: Terroxy® Natural 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, a standard coefficient of friction of 0.6 or higher, does not affect physical properties of terrazzo and complies with NTMA's "Terrazzo Specifications and Design Guide."
   1. [Option 1: Terroxy® WB Acrylic Sealer, medium gloss, water-based sealer.]
   2. [Option 2: Terroxy® Acrylic Sealer, high performance, high gloss acrylic sealer.]
   3. [Option 3: Terroxy® WB Urethane or Terroxy® WB Penetrating Sealer, 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. 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" (19 mm) 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 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" (1.6 mm) wide according to Terroxy® Resin Systems Technical Bulletin 009 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 Primer is recommended. Apply to terrazzo substrates according to Terroxy® Resin Systems Moisture Vapor Primer 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 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 "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: [1/4" (6.4 mm)] [3/8" (9.5 mm)] [As indicated]

C. Flexible Reinforcing Membrane

1. [Option 1: Membrane application for isolated cracking. Route out all cracks and fill with semi-flexible Terroxy® Joint Filler. Apply Terroxy® Iso-Crack Epoxy Membrane (spread at 40 mils = 1.0 mm thickness) across the crack allowing 12 inches (304.8 mm) on either side. Imbed fiberglass scrim 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 semi-flexible Terroxy® Joint Filler. 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.]

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 or mechanically anchor strips as required to attach strips to substrate.
   b. Control-Joint Strips: Separate double L-type angles, positioned back to back with minimum 1/8" (3.2 mm) width between. Fill joint and area between strips with semi-flexible Terroxy® Joint Filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.
   c. Construction-Joint (Cold-Joint) Strips: Separate double L-type angles, positioned back to back with minimum 1/8" (3.2 mm) width between. Fill joint and area between strips with semi-flexible Terroxy® Joint Filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.
   d. Expansion-Joint Strips: Separate double L-type angles, positioned back to back with minimum 1/8" (3.2 mm) width between. Fill area between strips with semi-flexible Terroxy® Joint Filler. Match material, thickness and color of divider strips and depth required for topping thickness indicated.

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 D-36 Diamond matrix stones 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.
3. Allow grout to cure. Grout may be left on terrazzo until other trades work is completed.

I. Polishing: Grind with 120 grit or finer stones until all grout is removed from surface. Repeat rough grinding, grout coat and polishing if large terrazzo chip voids exist after initial polishing. Produce surface with a minimum of 70 percent aggregate exposure.

J. Surface Finishing (Alternate care and maintenance system. If including addendum, remove item B Sealing from subpart 3.05 CLEANING AND PROTECTION.):

1. Flood mop and wet vac all slurry from surface, using Terroxy® Terra Clean per Terroxy® Resin Systems recommendations insuring all latency and particulate matter is removed.
2. Continue grinding process with diamond grits 220, 400 and 600. Repeating Step #1 between steps insuring all previous grit latency and particulate matter is removed.
3. Inspect entire surface for consistent appearance, manifesting no abrasion scratches from previous grits. Readdress any area manifesting previous grit scratch pattern not matching 600 grit finish before continuing.
4. Mechanically polish surface using 1,000 grit diamond pads as supplied by Terrazzo & Marble Supply. Surface shall have uniform reflective appearance showing no high or low sheen variances.
5. Flood mop and wet vac as described in Step #1 insuring no presence of any particulate matter or other trades' dirt or oils.
6. Final polish surface using Terroxy® Terra Polish per Terroxy® Resin Systems recommendations with 3M or equal white polishing pad equipped on a 175 rpm floor machine with solution tank and standard pad driver as supplied by Terrazzo & Marble Supply.
7. Thoroughly scrub and agitate entire surface using Terroxy® Terra Clean per Terroxy® Resin Systems recommendations, wet vac scrub from surface insuring all final chemistry is removed.
8. Once surface is entirely dry, allowing four hours minimum, impregnate and seal surface with Terroxy® Terra Tight Impregnator as needed per Terroxy® Resin Systems recommendations. Following directions, remove any excess.
9. Allow 24 hours before use or open traffic. Maintain surface with Terroxy® Terra Clean

as daily maintenance cleaner. Periodically spot polish high-traffic areas with Terroxy® Terra Polish as needed to maintain uniform appearance. Bi-annually impregnate surface to preserve per Terroxy® Natural Finish System (as needed).

3.04 PRECAST TERRAZZO INSTALLATION

A. Install precast units using method recommended by NTMA 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 Terroxy® Terra Clean.

B. Sealing: Apply Slip- and stain-resistant sealer that is chemically neutral with a pH factor between 7 and 10; does not affect physical properties of terrazzo and complies with NTMA's "Terrazzo Specifications and Design Guide. (If conducting Terroxy® Natural Finish System, as described in item J Surface Finishing from sub-part 3.03 EPOXY TERRAZZO INSTALLATION, remove this item.)

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

Carpet Tile

Product: Interface Platform Carpet Tile or approved equal

Locations/Applications: Classrooms, Offices, Conference Rooms, Lounges

Product Requirements:

- 100% Solution Dyed
- Nylon
- Level Patterned Loop Surface Texture; Cut Pile Carpet should be avoided
- Tufted Yarn Weight of 14 oz per yard, or greater
- Anti-microbial

Specifications- product must meet or exceed requirements for the following-

- Floor Radiant Panel - (ASTM E-648) Class 1
- Smoke Density - (ASTM E-662) </= 450
- Lightfastness - (AATCC 16 - E) >/= 4.0 @ 60 AFU's
- Static - (AATCC - 134) < 3.0 KV
- Dimensional Stability - AACHEN Din 54318 <.10%
- Traffic Classification - Severe
- Fiber Modification Ratio - 1.7 to 1.9
- Preservative Efficacy - (AATCC 174 Parts 2&3) 99% Reduction/No Mold 7 Days
  (ASTM E-2471) Complete Inhibition

Environmental

- Recycled content to be a minimum of 50%
- Green Label Plus is encouraged
- A product that is part of the Environmental Product Declaration is encouraged
- End of Life - Carpet to Carpet Recycling is encouraged

Platform

Interface

Installation Method

Quarter-Turn Brick

All product specifications reflect averages derived from product sample testing, are subject to normal manufacturing and testing tolerances and inherent pattern variances, and may be changed without notice. For more information about these and other important attributes of the product(s) described herein, including recycled content and product warranty information, please see www.interface.com/disclaimer.

Product Platform **Color** 9335 Pearl Gray **Collection** Platform Main Line & Sidetrack **Backing** GlasBac®

Product Specifications		
Product Number	1467202500	
Product Construction	Tufted Textured Loop	
Yarn System	Post-Consumer Content Type 6,6 Nylon	
Yarn Manufacturer	Universal	
Dye Method	100% Solution Dyed	
Dye Lots	Non-Mergeable	
Soil/Stain Protection	Protekt²®	
Preservative Protection	Intersept®	
	Imperial	**Metric**
Tufted Yarn Weight	14 oz/yd²	475 g/m²
Machine Gauge	1/12 in	47.2 ends/10cm
Pile Height	0.18 in	4.6 mm
Pile Thickness	0.126 in	3.2 mm
Stitches	7 /in	27.6 ends/10cm
Pile Density	4,000 oz/yd³	158.9 g/m³
Size	19.69 in x 19.69 in	50cm x 50cm
Performance Specifications		
Flooring Radiant Panel	(ASTM E-648) Class 1	
Smoke Density	(ASTM E - 662) ≤ 450	
Lightfastness	(AATCC 16 - E) ≥ 4.0 @ 60 AFU's	
Static	(AATCC - 134) < 3.0 KV	
Dimensional Stability	AACHEN Din 54318 <.10%	
Traffic Classification	Severe	
Fiber Modification Ratio	1.7 to 1.9	
Preservative Efficacy	(AATCC 174 Parts 2&3) 99% Reduction/No Mold 7 Days (ASTM E-2471) Complete Inhibition	
Environmental Specifications		
Total Recycled Content	50%	
Recycled Content (Post Industrial)	49%	
Recycled Content (Post Consumer)	1%	
Indoor Air Quality	Green Label Plus #GLP0820	
Ingredients and Life Cycle Impacts	Environmental Product Declaration	
Other Environmental Claims	3rd Party Verified Climate Neutral NSF/ANSI-140 Gold - Sustainable Carpet Assessment Standard	
End of Life	Carpet to Carpet Recycling	
Technical Information		
Installation	See recommended Interface Installation Guidelines online	
Maintenance	See recommended Interface Maintenance Guidelines online	

Reclamation	Recyclable through ReEntry® 2.0 - Call 1.888.733.6873 (U.S.) / 1.866.398.3191 (Canada)
Warranty	15 Year Standard, Non-Prorated Warranty
Standard Backing	GlasBac®
Backing Options	GlasBac®, GlasBac®RE, NexStep®
Tile Size Options	50cm x 50cm
Manufacturing Location	ISO 9001 & 14001 Certified facilities in Troup County, Georgia, United States

Broadloom Carpet

Product: Shaw Contract Metro Broadloom Carpet or approved equal

Locations/Applications: Classrooms, Offices, Conference Rooms, Lounges

Product Requirements:

- 100% Solution Dyed
- Nylon
- Level Patterned Loop Surface Texture; Cut Pile Carpet should be avoided
- Tufted Yarn Weight of 14 oz per yard, or greater
- Anti-microbial

Specifications- product must meet or exceed requirements for the following-

- Floor Radiant Panel - (ASTM E-648) Class 1
- Smoke Density - (ASTM E-662) </= 450
- Lightfastness - (AATCC 16 - E) >/= 4.0 @ 60 AFU's
- Static - (AATCC - 134) < 3.0 KV
- Dimensional Stability - AACHEN Din 54318 <.10%
- Traffic Classification - Severe
- Fiber Modification Ratio - 1.7 to 1.9
- Preservative Efficacy - (AATCC 174 Parts 2&3) 99% Reduction/No Mold 7 Days
  (ASTM E-2471) Complete Inhibition

Environmental-

- Recycled content to be a minimum of 50%
- Green Label Plus is encouraged
- A product that is part of the Environmental Product Declaration is encouraged
- End of Life - Carpet to Carpet Recycling is encouraged

shaw contract group®

metro
collection: Turn-Key

broadloom specifications

style name	metro
style number	50895
construction	pattern loop
fiber	eco solution q® nylon
dye method	100% solution dyed

	english	**metric**
pattern repeat	0.5630"w x 1.4060"l	14.30 mm w x 35.71 mm l
tufted weight	28.0	949.36 g/m²
gauge	1/10	39.37 per 10 cm
stitches per inch	11.0	43.31 per 10 cm
finished pile thickness	0.159	4.04 mm
total thickness	0.306	7.77 mm
average density	6340	11.81 kilotex
product size	12 foot	3.66 m
primary backing	synthetic	
secondary backing	classicbac®	
protective treatments	ssp® shaw soil protection	
gsa approved product	yes	

testing

radiant panel	Class I
nbs smoke	less than 450
electrostatic propensity	less than 3.5 kv

warranties

installation method

direct glue

coordinating products

venture capital, urban, digital, in-transit, global, space, culture, evolution, innovation, terra, fossil, divide, equal, edit, mecca, graphic, graphic, text, text ultraloc®, blog, blog ultraloc®

environmental certification

green label plus certification number glp 8472

cradle to cradle silver certified

Specifications are subject to nominal manufacturing variances.
Material supply and/or manufacturing processes may necessitate changes without notice.

shaw contract group® roll over each term to see a definition

metro

eco impacts

end of life

recyclability	100% recyclable
shaw closed looped recycling	0.0%

To recycle call 800.509.SHAW

materials

ingredients

face fiber	nylon 6
dye method	100% solution dyed
backing	polymer emulsion
surface treatments	non c8 fluorocarbon chemistry
does not contain PVC, phthalates, or PBD/PBDE	

recycled content

total recycled content (by weight)	20.0 %
pre-consumer	8.9 %
post-consumer	11.1 %
bio-based/rapidly renewable content (by weight)	0.0 %
packaging	100% recyclable
country of origin (manufacturer)	USA

Meets or exceeds all local and national regulations in country of manufacture.
Manufactured in an ISO9001 & ISO14001 certified facility or equivalent.
Recycled content is calculated using system allocation, mass balance, and direct insertion.
The actual recycled content in this product will likely vary. For more information email info@shawgreenedge.com.

third party certifications

CRI green label plus	GLP 8472
USGBC LEED	contributes

social responsibility

Shaw and our people provide financial support, volunteer service and leadership for charitable and civic organizations in the communities where we work and live. Additionally, we strive to adhere to all applicable laws regarding labor, discrimination and harassment, wages and benefits, health and safety, diversity and equal opportunity.

Paint

Product:

- Sherwin Williams ProMar 200 Zero VOC Interior Latex Paint or approved equal
- Sherwin Williams ProMar 400 Zero VOC Interior Latex Paint or approved equal

Locations/Applications: Throughout

Product Requirements: Paint colors are to be chosen from the NCC approved list. See Appendix. Non-standard paint colors are to be reviewed by Facilities at the initial stages of design for approval or rejection.

Note: Specialty wallcoverings are to be reviewed by NCC at the initial stages of design for approval.

SHERWIN-WILLIAMS.

Education Facility Guide Specification

This Painting Schedule is furnished as a guide to select paint systems, and is not all-inclusive of available Sherwin-Williams products. Specifiers should review the contents and edit to suit the particular project and its location.

The schedule is arranged by substrates, and offers latex, acrylic, water-based epoxy, and water-based urethane. Each type also includes the available sheens.

Local and National V.O.C. (Volatile Organic Compound) regulations have been taken into consideration. However, because regulations vary by region and frequently change, specifiers should verify that the products comply with local rules. Consult with your Sherwin-Williams representative before finalizing the selection.

If you need additional product information, contact your Sherwin-Williams representative, refer to the Sherwin-Williams Painting Systems Catalog, visit sherwin-williams.com or call our Architectural Services Answer Team.

The Sherwin-Williams Company
Architectural Services Department
800-321-8194 (Telephone)
216-566-1392 (Fax)

09 91 23 INTERIOR &
09 91 13 EXTERIOR

Issued May 2013

The Sherwin-Williams Company

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Gypsum Board —Walls
Gypsum Board — Ceilings and Soffits
Wood — Painted Doors, Frames, Trim and Chair Rails
Wood — Stained Doors, Frames, Trim and Chair Rails
Ferrous Metal — Doors, Frames and Miscellaneous Metals
Ferrous Metal — High Performance Finish (Including Handrails)
Non-Ferrous Metal — Galvanized/Aluminum Metal Surfaces
Non-Ferrous Metal — High Performance Finish (Including Handrails)

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Masonry and Concrete — Ceilings and Soffits
Gypsum Board — Walls (Dry Areas)
Gypsum Board — Ceilings and Soffits
Ferrous Metal — Doors, Frames and Miscellaneous Metals
Ferrous Metal — High Performance Finish (Including Handrails)
Non-Ferrous Metal — Galvanized/Aluminum Metal Surfaces
Non-Ferrous Metal — High Performance Finish (Including Handrails)
CMU-Concrete Masonry Units (Moist Areas: Not within Shower)

Gymnasium: Pages 11 – 12
CMU — Concrete Masonry Units
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Exposed Ceilings and Decking: Page 12
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Medium/Heavy Duty (Kitchen Areas, Food Service, Restrooms, Labs, Corridors)

Natatorium/Aquatic Center: Page 13
CMU-Concrete Masonry Units (Wet Areas; Showers)
CMU – Concrete Masonry Units (Dry Areas; Pool area, Restrooms, Office, Locker Rooms, Closets, Stairwells)
Ferrous Metal — Doors, Frames, Miscellaneous Metals including Handrails, and Columns
Non-Ferrous Metal — Doors, Frames, Handrails, including Overhead Galvanized Decking

Index (Cont.)

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Education Facility Interior Paint Schedule

Important Surface Preparation Instructions:

Verify the existence of lead based paints on the project. Buildings constructed after 1978 are less likely to contain lead based paints. If lead based paints are suspected on the project, all removal must be done in accordance with the EPA Renovation, Repair and Painting rule and all applicable state and local regulations. State and local regulations may be more strict than those set under the federal regulations. Verify that Owner has completed a Hazardous Material Assessment Report for the project prior to issuing of Drawings.

WARNING! 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. Removal must be done in accordance with EPA Renovation, Repair and Painting Rule and all related state and local regulations. Care should be taken to follow all state and local regulations which may be more strict than those set under the federal RRP Rule.

Specifier Notes — Topcoats:

a. **ProMar® 200 Zero VOC Interior Latex** — A durable, professional quality zero VOC vinyl acrylic topcoat available in a Flat, Low Sheen, Eg-Shel, and Semi-Gloss finishes.

b. **ProMar 400 Zero VOC Interior Latex** — A durable, economical, professional quality zero VOC vinyl acrylic topcoat available in a Flat, Low Sheen, Eg-Shel, and Semi-Gloss finishes.

c. **Pro Industrial™ Pre-Catalyzed Waterbased Epoxy** — A single component, waterborne acrylic epoxy that offers the durability and resistance to stains and most cleaning solvents usually characteristic of two-component waterbased epoxies. Available in an Eg-Shel and Semi-Gloss finish.

d. **Pro Industrial Water Based Catalyzed Epoxy** — A two-component, water-based epoxy formulated to provide excellent corrosion resistance, chemical resistance, abrasion resistance, and moisture resistance. Available in an Eg-Shel and Gloss finish.

e. **Pro Industrial Acrylic Coating**— A single component, light industrial, 100% acrylic coating that flows and levels to a smooth finish. Available in a Eg-Shel, Semi-Gloss, and Gloss finishes.

Recommended Finishes:

Ceilings and Soffits:	Flat Finish
Walls:	Eg-Shel or Semi-Gloss Finish
Trim:	Semi-Gloss Finish (unless otherwise noted)

Miscellaneous Notes:

SURFACE PREPARATION:

A. Proper product selection, surface preparation, and application affect coating performance. Coating integrity and service life will be reduced because of improperly prepared surfaces. Selection and implementation of proper surface preparation ensures coating adhesion to the substrate and prolongs the service life of the coating system.

B. Selection of the proper method of surface preparation depends on the substrate, the environment, and the expected service life of the coating system. Economics, surface contamination, and the effect on the substrate will also influence the selection of surface preparation methods.

C. The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.

D. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry 48 hours before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

E. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50°F, unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50°F or higher to use low temperature products.

F. This schedule is not inclusive of all Sherwin-Williams products; other products and finishes are available.

G. Not all products are compliant nationwide, visit related websites for CARB, OTC, SCAQMD for current VOC regulations.

CARB- http://www.arb.ca.gov/coatings/coatingsrules.htm
OTC- www.otcair.org
SCAQMD- http://www.aqmd.gov/rules

H. Product names, logos, brands and other trademarks are the property of their respective trademark holders.

I. Refer to the current MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.

J. Coating Maintenance Manual: upon conclusion of the project, the Contractor or paint manufacture/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams “Custodian Project Color and Product Information” report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

Office/Classroom/Hallway/Stairwell:

CMU — Concrete Masonry Units

Semi-Gloss Finish

Primer: PrepRite® Block Filler, B25W25
1st coat: ProMar® 200 Zero VOC Interior Latex Semi-Gloss, B31-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31-2600 Series

Alternate:
Primer: PrepRite Block Filler, B25W25
1st coat: Pro Industrial™ Pre-Catalyzed Waterbased Epoxy, Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy, Semi-Gloss, K46 Series

Eg-Shel Finish

Filler: PrepRite Block Filler, B25W25
1st coat: ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600 Series

Alternate:
Filler: PrepRite Block Filler, B25W25
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy, Eg-Shel, K45 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy, Eg-Shel, K45 Series

Masonry and Concrete — Ceilings and Soffits

Flat Finish

Primer: Loxon® Concrete & Masonry Primer Sealer, A24W8300
1st coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series

Alternate:
Primer: Loxon Concrete & Masonry Primer Sealer, A24W8300
1st coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series
2nd coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series

Gypsum Board — Walls

Semi-Gloss Finish

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31-2600 Series

Semi-Gloss- **High Performance Finish**

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy, Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy, Semi-Gloss, K46 Series

Office/Classroom/Hallway/Stairwell (Cont.):

Gypsum Board — Walls

Eg-Shel Finish

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600 Series

Eg-Shel- **High Performance Finish**

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy, Eg-Shel, K45 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy, Eg-Shel, K45 Series

Gypsum Board — Ceilings and Soffits

Flat Finish

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series

Alternate:
Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series
2nd coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series

Wood — Painted Doors, Frames, Trim and Chair Rails

Semi-Gloss Finish

Primer: PrepRite® ProBlock® Latex Primer/Sealer B51 Series
1st coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series
2nd coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series

Alternate:
Primer: PrepRite® ProBlock® Latex Primer/Sealer B51 Series
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Wood — Stained Doors, Frames, Trim and Chair Rails

Stained Finish

Stain: Wood Classics® 250 Stain, A49-800 Series
2nd coat: Wood Classics Waterborne Polyurethane Satin or Gloss A68 Series
3rd coat: Wood Classics Waterborne Polyurethane Satin or Gloss A68 Series

Office/Classroom/Hallway/Stairwell (Cont.):

Ferrous Metal — Doors, Frames and Miscellaneous Metals

Semi-Gloss Finish

Primer: Pro Industrial™ Pro-Cryl® Universal Primer, B66-310 Series
1st coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series
2nd coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series

Alternate:
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Ferrous Metal — High Performance Finish (Including Handrails)

Eg-Shel or Gloss Finish

Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel B73-360 Series or Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel B73-360 Series or Gloss, B73-300 Series

Non-Ferrous Metal — Galvanized/Aluminum Metal Surfaces

Semi-Gloss Finish

Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series
2nd coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series

Alternate:
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Non-Ferrous Metal — High Performance Finish (Including Handrails)

Eg-Shel or Gloss Finish

Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series

Kitchen/Cafeteria/Restroom/Locker Room (Cont.):

CMU —Concrete Masonry Units (Dry Areas)

Gloss- **High Performance Finish**

Filler: Loxon Block Surfacer, A24W200
1st coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series

Semi-Gloss Finish

Filler: Loxon Block Surfacer, A24W200
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Eg-Shel Finish

Filler: Loxon Block Surfacer, A24W200
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Eg-Shel, K45 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Eg-Shel, K45 Series

Eg-Shel- **High Performance Finish**

Filler: Loxon Block Surfacer, A24W200
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series

Masonry and Concrete — Ceilings and Soffits

Flat Finish

Primer: Loxon Concrete & Masonry Primer Sealer, A24W8300
1st coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series

Alternate:
Primer: Loxon Concrete & Masonry Primer Sealer, A24W8300
1st coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series
2nd coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series

Kitchen/Cafeteria/Restroom/Locker Room (Cont.):

Gypsum Board — Walls (Dry Areas)

Gloss- **High Performance Finish**

Filler: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series

Semi-Gloss Finish

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Eg-Shel Finish

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Eg-Shel, K45 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Eg-Shel, K45 Series

Eg-Shel- **High Performance Finish**

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-300 Series

Gypsum Board — Ceilings and Soffits

Flat Finish

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series

Alternate:
Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series
2nd coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series

Ferrous Metal — Doors, Frames and Miscellaneous Metals

Semi-Gloss Finish

Primer: Pro Industrial™ Pro-Cryl® Universal Primer, B66-310 Series
1st coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series
2nd coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series

Alternate:
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Kitchen/Cafeteria/Restroom/Locker Room (Cont.):

Ferrous Metal — High Performance Finish (Including Handrails)
Eg-Shel or Gloss Finish
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series

Non-Ferrous Metal — Galvanized/Aluminum Metal Surfaces
Semi-Gloss Finish
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series
2nd coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series

Alternate:
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Non-Ferrous Metal — High Performance Finish (Including Handrails)
Eg-Shel or Gloss Finish
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series

CMU-Concrete Masonry Units (Moist Areas; Non-Shower area)
Gloss- **High Performance Finish**
Primer: Heavy Duty Block Filler, B42W46
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series

Gymnasium:

CMU — Concrete Masonry Units

Gloss- **High Performance Finish**

Filler: Loxon Block Surfacer, A24W200
1st coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series

Semi-Gloss

Filler: Loxon Block Surfacer, A24W200
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Eg-Shel -**High Performance Finish**

Filler: Loxon Block Surfacer, A24W200
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series

Gypsum Board — Walls

Gloss -**High Performance Finish**

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series

Semi-Gloss

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series
2nd coat: Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series

Eg-Shel -**High Performance Finish**

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series

Gypsum Board — Ceilings and Soffits

Flat Finish

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series
2nd coat: ProMar 200 Zero VOC Interior Latex Flat, B30-2600 Series

Alternate:

Primer: ProMar 200 Zero VOC Latex Primer, B28W2600
1st coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series
2nd coat: ProMar 400 Zero VOC Interior Latex Flat, B30-4600 Series

Ferrous Metal — Doors, Frames and Miscellaneous Metals (Including Handrails)

Eg-Shel or Gloss -**High Performance Finish**

Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series

Gymnasium (Cont.):

Non-Ferrous Metal — Galvanized/Aluminum Metal Surfaces (Including Handrails)
Eg-Shel or Gloss -**High Performance Finish**
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series or Gloss, B73-300 Series

Exposed Ceilings and Decking:

Ferrous Metal Decking — Including Bar Joists
Flat, Eg-Shel, or Semi-Gloss Finish
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Waterborne Acrylic Dryfall, Flat, Eg-Shel, Semi-Gloss, B42-80 Series
2nd coat: Pro Industrial Waterborne Acrylic Dryfall, Flat, Eg-Shel, Semi-Gloss B42-80 Series

Non-Ferrous Metal Decking
Flat, Eg-Shel, or Semi-Gloss Finish
1st coat: Pro Industrial Waterborne Acrylic Dryfall, Flat, Eg-Shel, Semi-Gloss B42-80 Series
2nd coat: Pro Industrial Waterborne Acrylic Dryfall, Flat, Eg-Shel, Semi-Gloss B42-80 Series

Concrete Floors — Pigmented:

Light Duty (Foot Traffic)
1st coat: ArmorSeal® Tread-Plex™
2nd coat: ArmorSeal Tread-Plex

Medium/Heavy Duty (Kitchen Areas, Food Service, Restrooms, Labs, Corridors)
1st coat: ArmorSeal 1000 HS Epoxy B67-2000 Series
2nd coat: ArmorSeal 1000 HS Epoxy B67-2000 Series

Concrete Floors — Decorative

Sherwin-Williams, offers a full line of patching materials, basecoats and high-performance floor finishes. Sherwin-Williams has a coating solution for most surfaces.

Please contact your local Sherwin-Williams representative for detailed information and specifications.

Natatorium/Aquatic Center:

CMU (Wet Areas; Showers)
Semi-Gloss Finish
Primer: Kem Cati-Coat® HS Epoxy Filler/Sealer B42W400/B42V401
1st coat: Macropoxy® 646-100 Fast Cure Epoxy B58-620/B58V620
2nd coat: Macropoxy 646-100 Fast Cure Epoxy B58-620/B58V620

Alternate:
Primer: Cement-Plex 875 B42W200/B42V201
1st coat: Macropoxy 646-100 Fast Cure Epoxy B58-620/B58V620
2nd coat: Macropoxy 646-100 Fast Cure Epoxy B58-620/B58V620

CMU — Concrete Masonry units (Dry Areas; Pool Area, Restrooms, Office, Locker Rooms, Closets, Stairwells)
Eg-Shel- **High Performance Finish**
Filler: Loxon Block Surfacer, A24W200
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series

Ferrous Metal — Doors, Frames, Miscellaneous Metals including Handrails, and Columns
Gloss Finish
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series

Eg-Shel Finish
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series

Non-Ferrous Metal — Doors, Frames, Handrails, Including Overhead Galvanized Decking
Gloss Finish
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Gloss, B73-300 Series

Eg-Shel Finish
Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series
2nd coat: Pro Industrial Water Based Catalyzed Epoxy Eg-Shel, B73-360 Series

Education Facility Exterior Paint Schedule

Specifier Notes — Topcoats:

a. **A-100® Exterior Latex** — A 100% acrylic formula that offers a durable, professional quality coating available in a Flat, Satin, Low-Sheen, and Gloss finishes.

b. **Loxon® XP** — Provides flexibility, durability, and weather resistance. This product will protect against wind-driven rain when used on tilt-up, precast, or poured-in-place concrete, CMU, and stucco. This may be applied to a surface with a pH of 6 to 13.

c. **Conflex XL Elastomeric** — An elastomeric coating that provides excellent flexibility, durability, and weather resistance. This product will protect against wind-driven rain when used on tilt-up, precast, or poured-in-place concrete, CMU, and stucco. Available in smooth or textured finishes.

d. **Waterbased Acrolon® 100 Urethane** — A two-component, waterbased, acrylic urethane enamel. It is designed for high performance protection with outstanding exterior gloss and color retention properties.

e. **Pro Industrial™ Acrylic Coating** — A single component, light industrial, 100% acrylic coating that flows and levels to a smooth finish. Available in a Eg-Shel, Semi-Gloss, and Gloss finishes.

f. **Ultracrete Textured Masonry Topcoat** — A 100% acrylic aggregate-filled coating used to produce a textured finish on exterior surfaces.

Recommended Finishes:

Walls: Flat or Satin (unless otherwise noted)
Trim: Semi-gloss or Gloss Finish (unless otherwise noted)

Education Facility Exterior Paint Schedule

Exterior Concrete/Masonry Areas (Smooth):

Satin Finish

Primer: Loxon Concrete & Masonry Primer Sealer, A24W8300
1st coat: A-100 Exterior Latex Satin, A82 Series
2nd coat: A-100 Exterior Latex Satin, A82 Series

Flat Finish

Primer: Loxon® Concrete & Masonry Primer Sealer, A24W8300
1st coat: A-100® Exterior Latex Flat, A6 Series
2nd coat: A-100 Exterior Latex Flat, A6 Series

Textured Finish

Primer: Loxon Concrete & Masonry Primer Sealer, A24W8300
1st coat: Ultracrete Textured Masonry Topcoat Fine, Medium, Extra Coarse, A44-800 Series
2nd coat: Ultracrete Textured Masonry Topcoat Fine, Medium, Extra Coarse, A44-800 Series

Exterior CMU & Block Areas (Porous):

Satin Finish

Filler: Loxon Block Surfacer, A24W200
1st coat: A-100® Exterior Latex Satin, A82 Series
2nd coat: A-100 Exterior Latex Satin, A82 Series

Flat Finish — **High Build Coating**

Filler: Loxon XP Waterproofing Coating, A24-1400 Series
1st coat: Loxon XP Waterproofing Coating, A24-1400 Series

Elastomeric

Filler: Loxon Block Surfacer, A24W200
1st coat: ConFlex XL Elastomeric High Build Coating, A5-400 Series
2nd coat: ConFlex XL Elastomeric High Build Coating, A5-400 Series

Exterior Ferrous Metals:

Gloss- **High Performance Finish**

Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Waterbased Acrolon® 100 Polyurethane Gloss, B65-720 Series
2nd coat: Waterbased Acrolon 100 Polyurethane Gloss, B65-720 Series

Semi-Gloss Finish

Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series
2nd coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series

Exterior Non-Ferrous Metals:

Gloss- **High Performance Finish**

Primer: Pro Industrial™ Pro-Cryl® Universal Primer, B66-310 Series
1st coat: Waterbased Acrolon 100 Polyurethane Gloss, B65-720 Series
2nd coat: Waterbased Acrolon 100 Polyurethane Gloss, B65-720 Series

Semi-Gloss Finish

Primer: Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
1st coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series
2nd coat: Pro Industrial Acrylic Semi-Gloss, B66-650 Series

Exterior Wood:

Gloss Finish

Primer: Exterior Latex Wood Primer, B42W8041
1st coat: A-100 Exterior Latex Gloss, A8 Series
2nd coat: A-100 Exterior Latex Gloss, A8 Series

Satin Finish

Primer: Exterior Latex Wood Primer, B42W8041
1st coat: A-100 Exterior Latex Satin, A82 Series
2nd coat: A-100 Exterior Latex Satin, A82 Series

Low Sheen Finish

Primer: Exterior Latex Wood Primer, B42W8041
1st coat: A-100 Exterior Latex Low Sheen, A12 Series
2nd coat: A-100 Exterior Latex Low Sheen, A12 Series

Exterior Plaster/Stucco/EIFS:

Gloss Finish

Primer: Loxon Concrete & Masonry Primer Sealer, A24W8300
1st coat: A-100 Exterior Latex Gloss, A8 Series
2nd coat: A-100 Exterior Latex Gloss, A8 Series

Satin Finish

Primer: Loxon Concrete & Masonry Primer Sealer, A24W8300
1st coat: A-100 Exterior Latex Satin, A82 Series
2nd coat: A-100 Exterior Latex Satin, A82 Series

Flat Finish

Primer: Loxon® Concrete & Masonry Primer Sealer, A24W8300
1st coat: A-100® Exterior Latex Flat, A6 Series
2nd coat: A-100 Exterior Latex Flat, A6 Series

Flat Finish — **High Build Coating**

Primer: Loxon XP Waterproofing Coating, A24-1400 Series

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DIVISION 10

SPECIALTIES

CANNONDESIGN

Magnetic Glassboard & Accessories

Product: Clarus Glassboards - Glassboard Float or approved equal

Locations/Applications: Classrooms

Product Requirements:

- Magnetic, non-staining writing surface
- 1/4” Tempered Safety Writing Glass
- Concealed hardware
- Eased corners
- Polished edges

Accessories: As required per application

CLARUS GLASSBOARDS™

GLASSBOARD FLOAT

GLASSBOARD FLOAT™

· Clean lines and minimalist design

· Features Float™ concealed mounting hardware

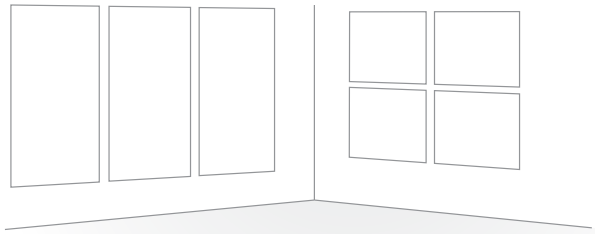
· Modular for simple relocation

· Compatible with any marker, even permanent

· Easily wipes clean without ghosting or staining

· Custom logos and printed designs available

INSTALLATION CONCEPTS



STANDARD FINISHES

Pure White

· Crisp and bright white finish

· Opaque visual characteristics

· Contrasting against non-white wall

Magnetic Pure White

· Compatible with rare-earth magnets

· Perfect for posting maps and notes

SPECIFY ANY COLOR

COLORS BY CLARUS

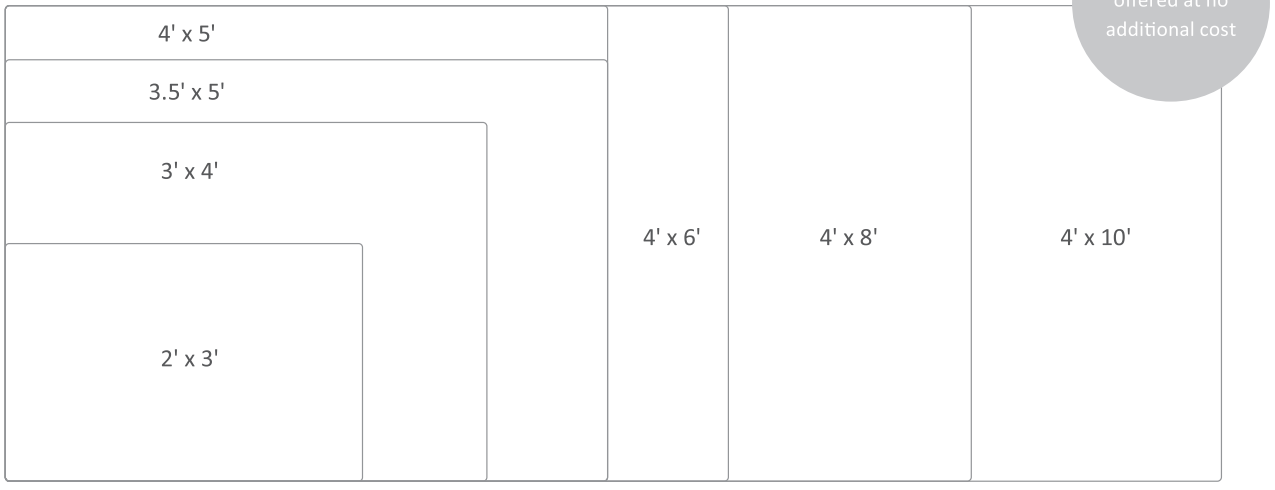
· All Glassboards available in custom colors

· See color palettes on clarusglassboards.com for more information

NEUTRAL PALETTE

SMOOTH WHITE C101	SOFT GRAY C103	WARM BEIGE C102
STORM GRAY C104	DEEP BLUE C105	NEON BLACK C106

FIT YOUR ENVIRONMENT



Phone 888.813.7414 | clarusglassboards.com

Manufactured with the Clarus commitment to sustainability

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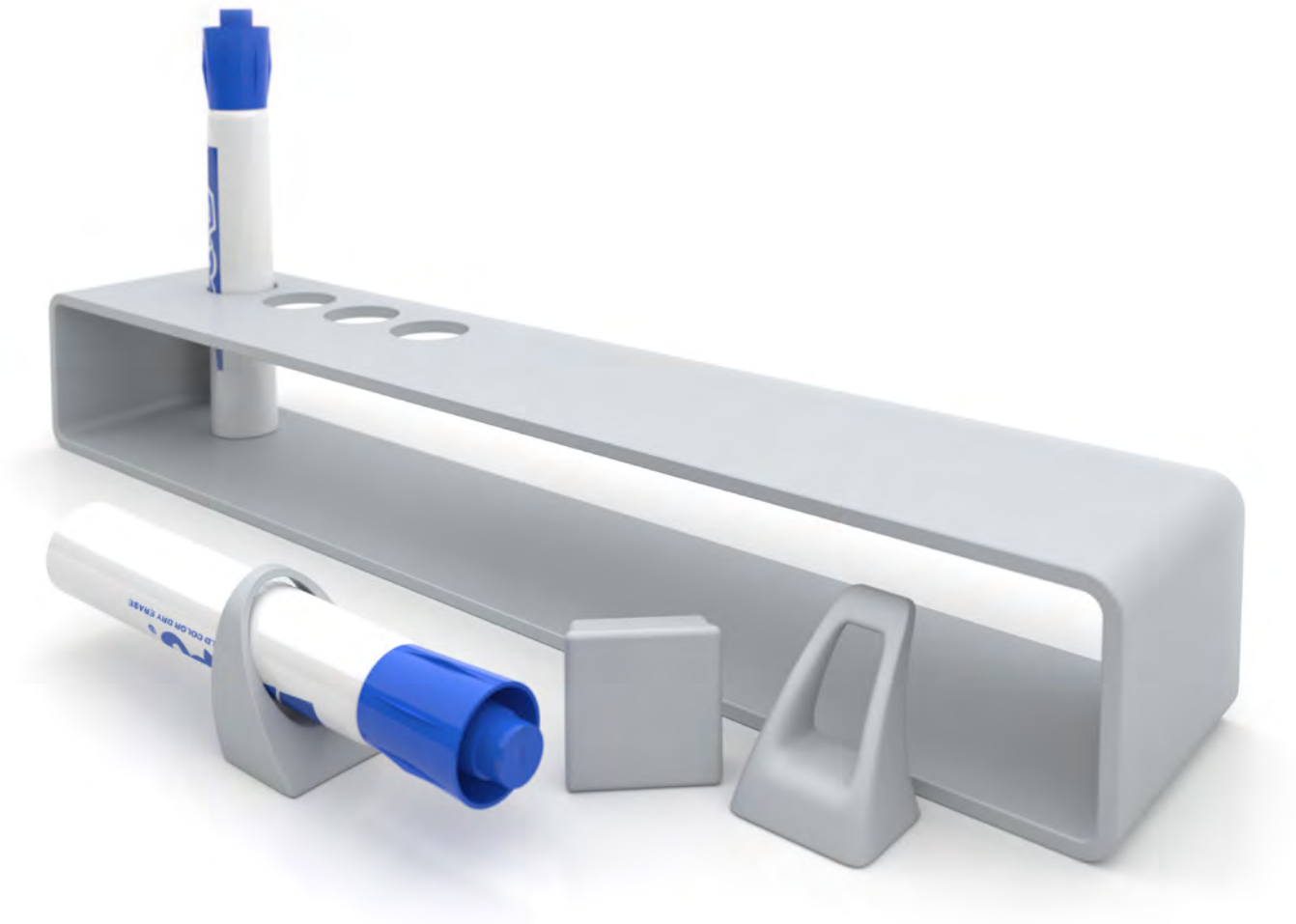
Float

OVERVIEW SPECIFICATIONS DOWNLOADS GALLERY

- Utilizes only 1/4" PPG Starphire Tempered Safety Writing Glass.
- Non-staining writing surface compatible with any marker, even permanent.
- CLarus Float concealed hardware & all mounting materials/anchors included.
- Colors by Clarus Coatings utilized for superior color and strength.
- Custom logos, patterns and artwork printing available. Magnetic & non-magnetic finish.
- Clarus Opti-Clear Polish.
- Eased corners for safety.

CLARUS®
GLASSBOARDS

ACCESSORIES

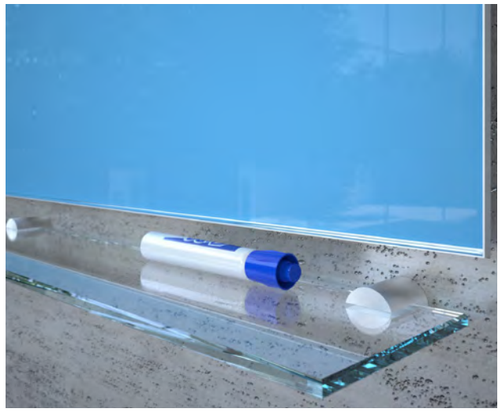


TRAYS

BOX
So much more than just a box! First ever magnetic marker and eraser holder for your Glassboard.

CURVE
Curvalicious and functional! Markers on top, eraser below. Apply anywhere to a Glassboard with removable adhesive.

T
Clean and classic. Get yours in a 12" section or full length to span your entire Glassboard.



GLASS
An original, and still going strong. Complement your Glassboard with a Glass Marker Tray.

MAGNETS

SQUARE
Keep track of those important notes on your Glassboard. Square packs the strength of 10 or more ordinary magnets.

LOOP
The new-school marker holder. Repositionable and minimal. Hold your favorite markers with Loop.

HOOK
Cradle markers, hang concepts or line them up to form your own design for hours (ok minutes) of entertainment.

CYLINDER
Don't try to stick this round magnet in a square hole, place it on your Magnetic Glassboard to hold notes!

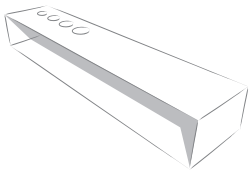
TRAYS

BOX

Finish:
soft gray

Dimensions:
1 ¾" tall x 2 ¼" deep x 12" wide

Installation:
magnetic or removable adhesive

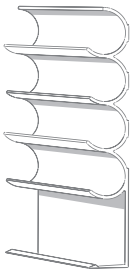


CURVE

Finish:
anodized aluminum finish

Dimensions:
6 ¾" tall x 1" deep x 3" wide

Installation:
removable adhesive

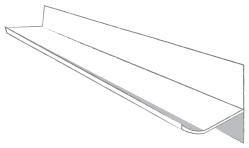


T

Finish:
anodized aluminum finish

Dimensions:
2 ¾" deep x 12" long,
custom lengths available

Installation:
easily onto wall with provided hardware or Glassboard with removable adhesive

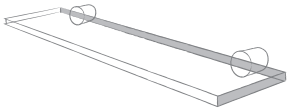


GLASS

Finish:
¼" Clarus Glass

Dimensions:
4" deep x 24" long,
custom lengths available

Installation:
easily onto wall with provided hardware



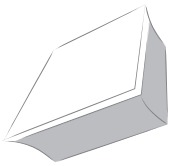
MAGNETS

SQUARE

Finish:
soft gray

Dimensions:
1" x 1"

set of three comes with all Magnetic Glassboards...or order more in sets of 3!



LOOP

Finish:
soft gray

Dimensions:
⅞" wide x 1 ¼" tall

sold in sets of three

HOOK

Finish:
soft gray

Dimensions:
1" wide x 1 ¼" tall

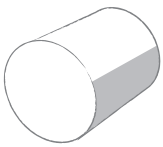
sold in sets of three

CYLINDER

Finish:
chrome

Dimensions:
⅜" diameter x ½" long

sold in sets of three



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Manufactured with the Clarus commitment to sustainability

Clear Writable Coating

Product: IdeaPaint Create Clear or approved equal

Locations/Applications: Classrooms

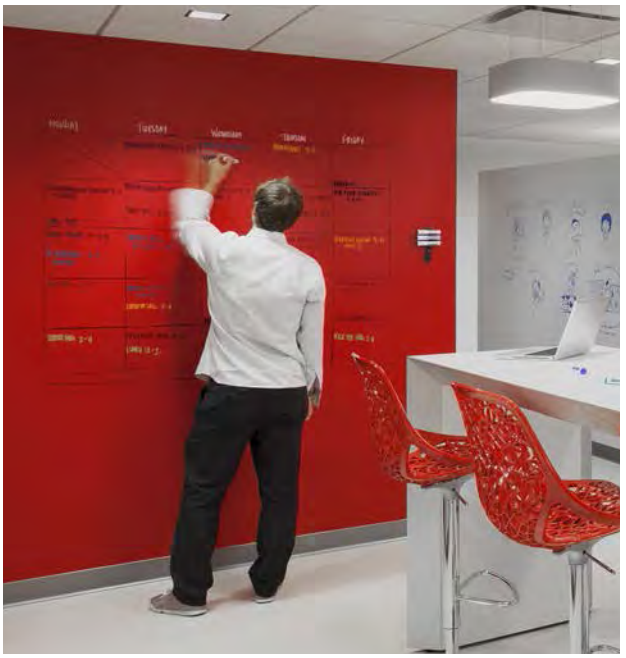
Product Requirements:

- Low VOC <25g/l
- SCAQMD Compliant
- Commercial-grade performance
- LEED Complaint product recommended
- UL GREENGUARD Certified product recommended
- CDPH/EHLB/Standard Method/V1.1 Compliant
- IgCC Compliant product recommended
- NAHB National Green Building Standard/ICC 700 Compliant product recommended
- CALGreen Compliant product recommended
- ASHRAE 189.1 Complaint product recommended

IdeaPaint CREATE CLEAR

IdeaPaint **CREATE CLEAR** is a transparent high performance dry erase topcoat that may be applied over any color, allowing you to turn spaces into creative places without having to change existing décors.

- Easy roller application
- HVLP spray application (professional installer only)
- Virtually odorless formula
- Lowest VOC content in category
- Write on in 4 days
- Environmentally compliant
- Commercial-grade performance
- 10-year limited warranty



SPECIFICATIONS	Clear
LEED Compliant	●
UL GREENGUARD Gold Certified	●
CDPH/EHLB/Standard Method/V1.1 Compliant	●
IgCC Compliant	●
NAHB National Green Building Standard/ICC 700 Compliant	●
ASHRAE 189.1 Complaint	●
SCAQMD Compliant	●
CALGreen Compliant	●

Please visit *www.ideapaint.com* for additional product information.

Surfaces
IdeaPaint CREATE CLEAR can be applied to any latex-based coated surface.

Additional Colors
IdeaPaint CREATE is also available in WHITE and BLACK.

Sustainability Specs
- 21 g/l VOC (Clear)

Dry Time / Conditions
77°F (25°C) + 50% RH:
Dry to Touch -1-2 hours
Initial Cure Time - 4 days

AVAILABLE KIT SIZES

KIT SIZE	COLOR CLASS
50 SQ FT	Clear
100 SQ FT	Clear

White Marker Boards

Product: Chemetal 1030 Marker Board or approved equal

Locations/Applications: Classrooms

Product Requirements: Can be an HPL or an HPL with a thin iron layer to provide magnetic capabilities

CHEMETAL

chemetal.com

Magnetic • Dry Erase Marker • Chalkboard
Image Projection • Paintable • Custom

Chemetal Magnetic Laminates (#150-157) are high pressure laminates (HPL) that contain a thin iron layer sandwiched in the HPL Backer, enabling magnetic effect when used with magnets. They are ideal for vertical interior application. We recommend obtaining a sample of material for testing prior to installation. Surface is melamine.
Features: Magnetic • Dry Erase • Image Projection • Chalkboard • Paintable • Custom • 4 x 8 Foot Sheets

#150 HPL Magnetic Board

Magnetic	•
Projection	• (with light paint)
Paintable	•
Size	4 x 8 feet
Thickness	.04" (1mm)

#151 Black Magnetic Chalkboard

Magnetic	•
Chalk	•
Size	4 x 8 feet
Thickness	.04" (1mm)

#152 White Gloss Magnetic Dry Erase

Magnetic	•
Dry Erase	•
Size	4 x 8, 4 x 10 feet
Thickness	.04" (1mm)

#153 White Satin Magnetic

Magnetic	•
Projection	•
Size	4 x 8 feet
Thickness	.04" (1mm)
Dry Erase	• (Limited, frequent cleaning required)

#157 Lime Gloss Magnetic Dry Erase

Magnetic	•
Dry Erase	•
Size	4 x 8 feet
Thickness	.04" (1mm)

#160 White Gloss Magnetic Dry Erase Steel

Magnetic	•
Dry Erase	•
Size	4' x 8', 4' x 10', custom
Thickness	.023", .05" w/backer. Steel. See special Tech Info for this product.

Custom Magnetic Laminate

We can apply any Chemetal 400, 500, 800 (metal only), 900 or Tints Series Solid Aluminum design to #150 Magnetic Board to create a custom magnetic laminate.
Size: 4 x 8 feet
Thickness: .050"

#1030 Marker Board, from InteriorArts.

Magnetic	
Dry Erase	•
Size	4 x 8 feet
Thickness	.03"

*Non-magnetic dry erase plastic laminate from InteriorArts, ialaminates.com

#1031 GraphMarker Board, from InteriorArts.

Magnetic	
Dry Erase	•
Size	4 x 8 feet
Thickness	.03"

*Non-magnetic dry erase plastic laminate from InteriorArts, ialaminates.com

Chemetal Product Reference — Magnetic Dry Erase

DESIGN	SIZE		BASE METAL	THICKNESS			WEIGHT
Magnetic and Dry Erase	**96"x 48"**	**120x 48"**		**HPL**	**Phenolic**	**Solid Metal**	**lbs/sq ft**
150 HPL Magnetic Board	•		Iron/Melamine	.033			.58
151 Black Magnetic Chalkboard	•		Iron/Melamine	.043			.58
152 White Gloss Magnetic Dry Erase	•	•	Iron/Melamine	.043			.58
153 White Satin Magnetic	•		Iron/Melamine	.043			.58
157 Lime Gloss Mag. Dry Erase	•		Iron/Melamine	.043			.58
160 White Gloss Magnetic Dry Erase Steel	•	•	Steel		.05	.023	.94

Product Notes:
Chemetal offers cut-to-size pieces on all designs. Order minimums and charges apply. This may be especially helpful with #160, which is all steel and will not easily cut with woodworking equipment.

150 Series magnetics contain a layer of iron foil and can be cut, with woodworking equipment, with modifications. Learn more in the Tech Info Section at chemetal.com.

Want Dry Erase Laminate? InteriorArts, our hpl design laminate line, offers 2 cost-effective dry erase option, #1030 White Marker Board and #1031 Graph Marker Board. See them at ialaminates.com.

• Indicates standard size product.

Indicates non-standard product.

Phenolic Solid metal bonded with adhesive to layers of kraft paper impregnated with phenolic resin.

HPL Thin metal foil bonded with heat & pressure to layers of kraft paper impregnated with phenolic resin. Can be rolled and shipped.

Solid Metal Indicates no backer.

Technical Information
Chemetal Magnetic Laminates
Product #'s 150-157

Chemetal Magnetic Laminates are HPL (High Pressure Laminates) that contain a thin foil layer of iron sandwiched in the HPL Backer, enabling magnetic effect when used with magnets. We recommend obtaining a sample of material for testing prior to installation. Surface is melamine.

APPLICATION:Vertical interior application.
SIZE: 4 x 8 feet (122 x 244 cm)
THICKNESS: .04" (1 mm)
WEIGHT: 18 LBS

IDEAL USAGE PER PRODUCT:
Dry Erase: Chemetal #152, #157
Chalk: Chemetal # 151
Image Projection: Chemetal #153
Paintable: Chemetal #150
Custom: Any Chemetal 400, 500, 800 (metal only), 900 or Tints Series designs may be applied.

See Product Chart in Magnetic Laminate Brochure for more Product Info.

CLEANING:
Do not use washing detergents. Sponge and water are suitable for most cleaning requirements. For more complete cleaning conventional spirits (ethyl alcohol) may be used except where noted below.

Chemetal #152, #157: Dry wipeable, sponge and water may be used, as well as conventional spirits.
Chemetal #151: Sponge and water
Chemetal #153: Require frequent cleaning when used with dry erase markers. Other Chemetal finishes are recommended for regular dry erase use. Sponge and water may be used, and conventional spirits.
Chemetal #150: This laminate backer is meant for surface customization (paint, etc.) Follow cleaning recommendations of surface material.

All Chemetal Magnetic Laminates are supplied with a protective mask or film. It is recommended that surface be cleaned with conventional spirits (ethyl alcohol) after mask removal to remove any residue.

NOTE: Never use detergents such as washing liquids to clean the surface because they usually contain fatty or oil substances to prevent skin from drying. A greasy film can remain on surface making cleaning difficult.

TRANSPORT:
Chemetal Magnetic Laminates must be stored and transported FLAT to avoid surface cracks.

CUTTING AND MACHINING:
Please note that sparks may occur during cutting and machining due to iron layer in HPL laminate. Best cutting results are achieved with Carbide-tipped circular saw blade. SPECS: 12" (305 mm) diameter, .07" to .086" (1.8-2.2 mm) thickness. Z60 RPM: 1500 FEED: 26 feet per minute. When cutting double-sided Magnetic Laminates the bottom side must first be slitted for a clean cut.
USE:
Chemetal Magnetic Laminates should be used in well air-conditioned rooms. Overly dry room conditions or direct heat influence should be avoided (risk of cracking). A short-term temperature influence on the laminate up to 140 Farenheit 60°C is possible.

ADHESIVES
When applying dampness impermeable materials on top of Chemetal #150 never use water-containing adhesive as the dampness of the adhesive cannot escape and the adhesive bonding can consequently not dry.

ENVIRONMENTAL:
Laminate Components: 54% iron, 26% paper, 20% synthetic resin (irreversible hardened).
The raw materials and production proccesses guarantee that the boards are free of substances that are harmful to the environment. According to transportation regulations, Chemetal Magnetic Laminates are not classified as hazardous materials, a marking is not necessary. They are physiologically recognized as safe, emission free, insoluble in water and suitable for the contact with food stuffs. Waste material can be disposed in accordance with the local waste regulations on controlled waste disposal sites.

NOTE ON DRY ERASE MARKERS
Quality, age, operating time and storage of dry erase markers have an enormous impact on the dry erase ability. It is necassary to store board markers horizontally. Please observe the storage directions of the manufacturers.

Technical Information

#160 Magnetic Dry Erase Steel

Application

Product is recommended for vertical surfaces, but may be used in light duty horizontal areas.

Base Material

Steel containing varied alloys.

Material Specifications

Size: Sheets are 48" X 96" (4' x 8')

Thickness: .023", .05 w/backer

Weight per sheet 30 lbs. (.94 lbs./sqft)

Shipping

Material sould be shipped flat, with adequate protected on all sides, faces and corners.

Appearance

The surface of the sheet is a white dry erase coating.

Cleaning

Clean the surface using a light-duty conventional cleaners such as mirror glass cleaners. Do not use cleaners that contain abrasives, and try to avoid cleaners with ammonia. Blown air or dusting is another recommended cleaning method.

Surface resistance

The surface is not resistant to scratching. It may be used in horizontal applications, but must be considered light duty. It should be used in vertical or horizontal applications where temperatures don't exceed 160˚F. Maximum heat resistance temperature is 160˚F.

How to process

The sheets are shipped with a protective mask. Quality checks should be carried out on the sheets beforehand.

Cutting

The steel can be processed utilizing various types of metal working equipment and hand tools. Additionally, Chemetal can provide cut-to-size- pieces to aid installation. Charges and minimums apply.

Because alloys in steel can create sparks, dust collection systems must be turned off or disengaged.

Examples of hand tools include circular, band, or jig saws equipped with Bi-Metal blades such as the Lenox Bi-Metal Jig Saw Blades, Lenox Metal Cutting Circular Saw Blades, Lenox Bi-Metal Hole Saws, and Lenox Air Saw Blades for use in pneumatic machine cutting.

Examples of metal working equipment include shears, brakes, rolls, waterjet cutting, and plasma arc cutting.

NOTE: If a torch or plasma arc cutting system is used to cut the parts, the protective wrap should be removed and moved away from the work area prior to cutting to avoid potential fire from the heat and sparks generated.

Safety Note

When handling this material always utilize safe lifting and carrying practices. When working with or cutting the materials always utilize proper Personnel Protective Equipment specified by the manufacturer of the equipment or cutting tool manufacturers.

Backer materials

The steel may be laminated to materials such as fiberboard, particleboard, veneer plywood, plywood and plasterboards, as well as rigid foams and metals.

Bonding

Conventional glues and adhesives and special purpose thermo-setting resins or solvent based contact adhesives may be used for lamination. material may also be fastened mechanically. Pinch rolling the material is also recommended. If necessary, balancing should be done with sheets of equivalent shrinking and expanding ratios.

CHEMETAL®

Technical Information

160 Magnetic Dry Erase Steel

LAMINATION

It is recommended that all substrates, adhesives and Chemetal laminates be stored at room temperature (75°F) with a relative humidity of 45 to 50% for at least 48 hours prior to lamination. All materials should be stored in the same environment where fabrication or installation will take place under the above conditions.

A five to seven day period of time is recommended for optimal pre-conditioning in a warm and dry environment. Lamination performed in cold temperatures may affect long-term results. We recommend the use of balancing sheets. They act as a moisture barrier to ensure a balanced construction. If possible, balanced-construction should be used with sheets of equivalent expansion and shrinkage ratios. Please note that-metal laminates experience minimal if any change in dimension. The fabricated parts should be stored for at least 48 hours before exposure to extreme temperature or humidity changes. (Most contact adhesives require this minimum time to reach initial bond strength). Following these procedures allows the metal to bond firmly to the substrate. The above procedures should be followed when the lamination is to be completed on the job site. Any lamination that is completed in conditions that are different than the expected day to day living conditions may result in failure of the application as noted above. All heating and air conditioning systems should be operating to achieve expected living conditions before any lamination or installation takes place on a job site.

Failure to comply with these recommendations may cause failure of your application. Most substrates experience a change in dimension that may be significantly different than that of metal. This difference may cause the metal to pull away from the substrate or buckle at the weakest point of adhesion.

Sufficient spacing must be provided between and at each end of sheets or strips to accommodate possible linear expansion from the ambient temperature range at the installation site. Minimum spacing of 1/32" is recommended but a more accurate determination can be made by allowing 1/100" for each 96" of metal surface for each 10 degrees Fahrenheit of anticipated temperature change.

If you are not sure how any Chemetal will work for your particular application, we suggest you test the application system you have selected under production and/or installation site conditions.

Proper substrates must be used and careful bonding procedures must be observed. Substrates should be of good quality plywood, high density particleboard or high quality fiberboard. The more resistant the substrate is to dimensional change (shrinkage and/or expansion from changes in humidity and temperature) the better the long-term results will be.

The face of the substrate must be smooth and free of grease, wax, dust, chips and other foreign matter.

For best results, it is recommended that the back of any solid metal be scratched with Scotch Brite pads prior to lamination.

To ensure a good bond, consult and follow the adhesive manufacturer's instructions on preparation of substrates, surfaces and adhesive application. All types of adhesive must be applied evenly and uniformly. There must be no bridging, and positive bonding pressure must be applied uniformly and progressively over the entire surface. To bond metal to your substrate after gluing, pressure must be firmly and evenly applied over the entire surface using a rotary or platen press. If possible, balanced construction should be used with sheets of equivalent expansion and shrinkage ratios. The use of hand or "J" rollers is not recommended for laminating metallic laminate sheets. They can be used for laminating strips as long as firm, even pressure is applied to the entire length.

Once you have started to lay down a piece of metallic laminate do not try to realign it. While you may be able to force it into position, you will put stress into the metal, which may cause buckling and bond failure during a short period of time. Chemetal's metallic laminates will readily conform to the surface of your substrate. For a smooth, flat surface appearance, extra care may be required in surface preparation and lamination. A phenolic backer sheet is available upon request for finishes that are not already supplied with one if you determine that your application requires the additional support.

Presentation Dry Erase Wall Covering & Accessories

Product: Walltalkers Nuvurite

Locations/Applications: Classrooms

Product Requirements:

- Minimal gloss to be used for marker board and projection
- Passes Flammability Testing Class A
- Product meeting the California Indoor Air Quality Specifications 01350 is recommended

Accessories: As required per application

nu•vu•rite™ Specifications

Physical Properties

	U.S. Units	Metric Units
Roll Width	49/50" 59/60"	124/127 cm 150/152 cm
Laminate Thickness	17 mils (avg.)	0.43 mm (avg.)
Tensile (warp x fill)	75 x 75 lbs.	334 x 334 newton

Fabric: Non-Woven

Flammability Testing Class A*: Pass

*Tested to ASTM E-84 applied to Glass Reinforced Cement Board.

Product Name	Color	Use	Surface Gloss	Backing	Product Code
nu•vu•rite™	matte white	projection screen dry erase writing	minimal	non-woven	NV50 or NV60

All widths are nominal.

Note: This product meets California Indoor Air Quality Specifications 01350.

SECTION 09 72 00
PRESENTATION DRY ERASE WALLCOVERING

PART 1 – GENERAL

1.1 SUMMARY

EDIT ITEMS NOT INCLUDED IN THE PROJECT

A. Division Includes:
   1. Dry Erase Wallcovering.
   2. Magnetic Receptive Dry Erase Wallcovering.
   3. Projection Dry Erase Wallcovering.
   4. Dry Erase Wallcovering with Grid.
   5. Dry Erase Wallcovering with Lines.
   6. Adhesive Backed Dry Erase Wallcovering.
   7. Pigmented Dry Erase Wallcovering.
   8. Tray, Trim, and Presentation Rails.
   9. Accessories.

B. Related Divisions:

1.	Division 26 51 00	Interior Lighting.
2.	Division 09 20 00	Plaster and Gypsum Board: Wall substrate.
3.	Division 09 91 23	Interior Painting: Priming for vinyl wall coverings.
4.	Division 09 72 16.13	Flexible Vinyl Wall Coverings.
5.	Division 10 11 00	Visual Display Surfaces: Chalk and markerboards.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

E84	Test Method for Surface Burning Characteristics of Building Materials.

B. Gypsum Association

GA-214-M-97	Recommended Levels of Gypsum Board Finish.

1.3 SUBMITTALS

A. Manufacturer’s product data and installation instructions for each type of dry erase wallcovering, adhesive, and accessories required.
B. Manufacturer’s written product data indicating compliance with specified materials required.
C. Manufacturer’s written installation instructions.
D. Manufacturer’s written instructions for recommended maintenance of each type of dry erase wall covering required.
E. Samples:
   1. 7 inch (177.8mm) x 9 inch (228.6mm) samples of each dry erase material required.
   2. 6 inch (152.4mm) samples of trim, tray, and end caps required.

1.4 QUALITY ASSURANCE

A. Manufacturer: Provide each type of dry erase wallcovering required produced by one manufacturer.
B. Installer: Installation by skilled commercial wallcovering contractor with no less than three years of documented experience installing dry erase wallcovering of the types and extent required.

SELECT ONE OR MORE OF THE FOLLOWING PRODUCTS

C. Composition:
   1. **nu•vu•rite™**: Provide non-woven backing, pigmented vinyl capped with dry erase non-glare film, and heat embossed with a bi-directional lenticular pattern.
   2. **erase•rite®**: Provide specify non-woven or self-adhesive backing, pigmented vinyl specify color, self-adhesive white only capped with dry erase low gloss film.
   3. **mag•rite® II**: Provide scrim backed, ferrous powder, pigmented vinyl capped with dry erase film.
   4. **just•rite®**: Provide scrim backing, pigmented vinyl capped with dry erase film.
   5. **just•rite® grid**: Provide scrim-backed, pigmented vinyl printed with light grid lines capped with dry erase film.
   6. **just•rite® harmony**: Provide scrim backed, pigmented vinyl printed with light lines capped with dry erase film.
   7. **ez•rite®**: Provide specify non-woven or self-adhesive backing, pigmented vinyl capped with dry erase film.
   8. **koro•rite®**: Provide non-woven backing, pigmented vinyl specify color capped with dry erase film.
   9. **koro•rite® metallics**: Provide non-woven backing, pigmented vinyl with a metallic print specify color capped with dry erase film.
   10. **learn•rite™**: Provide non-woven backing, pigmented vinyl printed with light colored lines capped with dry erase film.
   11. **line•rite™**: Provide non-woven backing, pigmented vinyl printed with light lines capped with dry erase film.
   12. **mag•line™**: Provide scrim backed, ferrous powder, pigmented vinyl printed with light lines capped with dry erase film.
   13. **mag•rite® II grid**: Provide scrim backed, ferrous powder, pigmented vinyl printed with light grid lines capped with dry erase film.

D. Surface Burning Characteristics Classification: Provide materials that meet Class I/A rating when tested in accordance with ASTM E84 for flame spread and smoke developed excludes: **mag•line**

E. Field Samples: Prepare field samples for architect's review and establish requirements for seaming and finish trim.
   1. Install sample panel of each type presentation wallcovering specified in area designated by architect.
   2. Maintain corrected and approved samples to serve as a standard of performance for the project.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver presentation wallcoverings to the project site in unbroken and undamaged original factory packaging and clearly labeled with the manufacturer's identification label, quality or grade, and lot number.

B. Store materials in a clean, dry storage area with temperature maintained above 55°F (13°C) with normal humidity.

C. Store material within original packaging to prevent damage.

1.6 PROJECT CONDITIONS

A. Do not apply presentation wallcoverings when surface and ambient temperatures are outside the temperature ranges required by the wallcovering manufacturer.
B. Provide continuous ventilation and heating facilities to maintain substrate surface and ambient temperatures above 55°F (13°C) unless required otherwise by manufacturer's instructions.
C. Apply adhesive when substrate surface temperature and ambient temperature is above 55°F (13°C) and relative humidity is below forty percent.
D. Maintain constant recommended temperature and humidity for at least 72 hours prior to and throughout the installation period, and for 72 hours after wallcovering installation completion.
E. Provide not less than 80-foot-candles per square foot lighting level measured mid-height at substrate surfaces.

1.7 WARRANTY

Submit manufacturer's limited five-year written warranty against manufacturing defects.

1.8 MAINTENANCE

Maintenance instructions: Include precautions against cleaning materials and methods that may be detrimental to finishes and performance.

PART 2 - PRODUCTS

2.1 MANUFACTURER

Wallcoverings: Walltalkers Wallcoverings manufactured by RJF International Corporation, Fairlawn, Ohio, and distributed by _____.
Contact sales representative _____ at _____.

2.2 MATERIALS

SELECT ONE OR MORE OF THE FOLLOWING PRODUCTS

A. **Walltalkers nu•vu•rite**: Patented bi-directional lenticular embossed vinyl surface for projection and dry erase markers. Patent # 5,361,164.
   1. NV50: 49/50 inch (1.25/1.27m) width, non-woven backing.
   2. NV60: 59/60 inch (1.50/1.52m) width, non-woven backing.
B. **Walltalkers erase•rite**: Smooth low gloss vinyl surface for projection and dry erase markers.
   1. ER50: 49/50 inch (1.25/1.27m) width, non-woven backing, white only.
   2. ER60: 59/60 inch (1.50/1.52m) width, non-woven backing, specify color.
   3. EA50: 49/50 inch (1.25/1.27m) width, self-adhesive backing, white only.
C. **Walltalkers mag•rite II**: Magnetic receptive, moderate gloss vinyl surface for dry erase markers.
   1. M248: 47/48 inch (1.19/1.22m) width, woven backing.
   2. M2GR: 2 inch (50.8mm) by 2 inch (50.8mm) grid, 47/48 inch (1.19/1.22m) width, woven backing. Patent # 6,251,500

D. **Walltalkers just•rite**: Moderate gloss vinyl surface for dry erase markers.
   1. JR48: 47/48 inch width (1.19/1.22m), woven backing.
   2. JR60: 59/60 inch (1.50/1.52m) width, woven backing.
   3. JRGR: 2 inch (50.8mm) by 2 inch (50.8mm) grid, 47/48 inch (1.19/1.22m) width, woven backing. Patent # 6,251,500
   4. JRHR: 47/48 inch width (1.19/1.22m), woven baking.

E. **Walltalkers ez•rite**: Smooth gloss vinyl surface for dry erase markers.
   1. ZA50: 49/50 inch (1.25/1.27m) width, self-adhesive backing.
   2. ZP50: 49/50 inch (1.25/1.27m) width, non-woven backing.

F. **Walltalkers koro•rite**: Pigmented gloss vinyl surface for dry erase markers. Patent # 6,251,500
   KR60: 59/60-inch (1.50/1.52m), non-woven backing, specify color.

G. **Walltalkers koro•rite metallics**: Pigmented gloss vinyl surface for dry erase markers. Patent # 6,251,500
   KR54: 53/54 inch (1.35/1.37m) width, non-woven backing, specify color.

H. **Walltalkers learn•rite**: Pigmented gloss vinyl surface for dry erase markers. Patent # 6,251,500
   L150: Continuous light pink, dashed light aqua, and continuous light aqua line repeating, 49/50 inch (1.25/1.27m) width, non-woven backing.

I. **Walltalkers line•rite**: Pigmented gloss vinyl surface for dry erase markers. Patent # 6,251,500
   L250: Continuous light gray lines repeating, 49/50 inch (1.25/1.27m) width, non-woven backing.

J. **Walltalkers mag•line**: Magnetic receptive, moderate gloss vinyl surface for dry erase markers. Patent # 6,251,500
   ML48: Continuous light gray lines repeating, white vinyl, 47/48 inch width (1.25/1.27m), woven backing.

2.3 TRIM & TRAY

A. **Aluminum Tray**:
   TYXX-00: XX = 04, 08, or 12 for length Clear satin, anodized aluminum, snap-on marker and eraser tray with clips

B. **Aluminum Trim**:
   TMXX-00: XX = 04, 08, or 12 for length Clear satin, anodized aluminum, snap-on trim with clips

C. **End Caps**:
   1. ET02-00: 1/4 inch (6mm) box tray end cap set for marker and eraser tray.
   2. ET03-00: 1/2 inch (13mm) anodized tray end cap set for marker and eraser tray.

D. **J Cap Wallcovering Trim**:
   JC12-00: Clear satin, anodized aluminum, low profile trim

E. **Stratum Tray**:
   1. AP18-P1: White stratum tray w/ET02-00 end caps, 18 inch (457.2mm) length only.
   2. AP18-P2: Silver stratum tray w/ET02-99 end caps, 18 inch (457.2mm) length only.
   3. AP18-P3: Gold stratum tray w/ET02-99 end caps, 18 inch (457.2mm) length only.

F. **Plastic Marker Dispenser**:
   1. PMD1-92: Gray plastic marker dispenser.
   2. PMD1-99: Black plastic marker dispenser.

G. **Wood Tray**: Provide wood tray in random lengths of 8 feet (2.44m) to 12 feet (3.66 m).
   1. WTYS-M0: Maple wood marker and eraser tray, unfinished.
   2. WTYS-M1: Maple wood marker and eraser tray, clear coat.
   3. WTYS-M2: Maple wood marker and eraser tray, red oak stain.
   4. WTYS-M3: Maple wood marker and eraser tray, cherry stain.
   5. WTYS-MZ: Maple wood marker and eraser tray, specify custom stain.

6. WTYS-R0: Oak wood marker and eraser tray, unfinished.
7. WTYS-R1: Oak wood marker and eraser tray, clear coat.
8. WTYS-R2: Oak wood marker and eraser tray, red oak stain.
9. WTYS-R3: Oak wood marker and eraser tray, cherry stain.
10. WTYS-RZ: Oak wood marker and eraser tray, specify custom stain.

H. **Wood Trim**: Provide wood trim in random lengths of 8 feet (2.44m) to 12 feet (3.66m).
1. WTRS-M0: Maple wood trim, unfinished.
2. WTRS-M1: Maple wood trim, clear coat.
3. WTRS-M2: Maple wood trim, red oak stain.
4. WTRS-M3: Maple wood trim, cherry stain.
5. WTRS-MZ: Maple wood trim, specify custom stain.
6. WTRS-R0: Oak wood trim, unfinished.
7. WTRS-R1: Oak wood trim, clear coat.
8. WTRS-R2: Oak wood trim, red oak stain.
9. WTRS-R3: Oak wood trim, cherry stain.
10. WTRS-RZ: Oak wood trim, specify custom stain.

I. **Colonial Wood Tray**: Provide wood tray in random lengths of 8 feet (2.44m) to 12 feet (3.66m).
1. WTYC-M0: Colonial maple wood marker and eraser tray, unfinished.
2. WTYC-M1: Colonial maple wood marker and eraser tray, clear coat.
3. WTYC-M2: Colonial maple wood marker and eraser tray, red oak stain.
4. WTYC-M3: Colonial maple wood marker and eraser tray, cherry stain.
5. WTYC-MZ: Colonial maple wood marker and eraser tray, specify custom stain.
6. WTYC-R0: Colonial oak wood marker and eraser tray, unfinished.
7. WTYC-R1: Colonial oak wood marker and eraser tray, clear coat.
8. WTYC-R2: Colonial oak wood marker and eraser tray, red oak stain.
9. WTYC-R3: Colonial oak wood marker and eraser tray, cherry stain.
10. WTYC-RZ: Colonial oak wood marker and eraser tray, specify custom stain.

J. **Colonial Wood Trim**: Provide wood trim in random lengths of 8 feet (2.44m) to 12 feet (3.66m).
1. WTRC-M0: Colonial maple wood trim, unfinished.
2. WTRC-M1: Colonial maple wood trim, clear coat.
3. WTRC-M2: Colonial maple wood trim, red oak stain.
4. WTRC-M3: Colonial maple wood trim, cherry stain.
5. WTRC-MZ: Colonial maple wood trim, specify custom stain.
6. WTRC-R0: Colonial oak wood trim, unfinished.
7. WTRC-R1: Colonial oak wood trim, clear coat.
8. WTRC-R2: Colonial oak wood trim, red oak stain.
9. WTRC-R3: Colonial oak wood trim, cherry stain.
10. WTRC-RZ: Colonial oak wood trim, specify custom stain.

K. **Wood Tray**: Provide wood tray in length of 24 inch (609.6mm).
1. WT24-M0: Maple wood marker and eraser tray, unfinished.
2. WT24-M1: Maple wood marker and eraser tray, clear coat.
3. WT24-M2: Maple wood marker and eraser tray, red oak stain.
4. WT24-M3: Maple wood marker and eraser tray, cherry stain.
5. WT24-MZ: Maple wood marker and eraser tray, specify custom stain.
6. WT24-R0: Oak wood marker and eraser tray, unfinished.
7. WT24-R1: Oak wood marker and eraser tray, clear coat.
8. WT24-R2: Oak wood marker and eraser tray, red oak stain.
9. WT24-R3: Oak wood marker and eraser tray, cherry stain.
10. WT24-RZ: Oak wood marker and eraser tray, specify custom stain.

L. **Paper Rail**:
PR12-00: Aluminum Paper Rail.

M. **Tack Rail**:
1. T112-ZZ: ZZ = color 1 inch (25mm) tack rail with tac•wall insert
2. T212-ZZ: ZZ = color 2 inch (51mm) tack rail with tac•wall insert

2.4 ACCESSORIES

A. **Adhesives**: Heavy-duty clear or clay based premixed vinyl adhesive.
B. **Substrate Primer/Sealer**: White pigmented acrylic base primer/sealer specifically formulated for use with vinyl wallcoverings.
C. **Presentation Starter Kit**: Provide one Walltalkers starter kit containing eight dry erase markers, one eraser, two dry erase cleaning cloths, one empty bottle for water, and one 8 ounce (.23kg) bottle liquid surface cleaning solution for each room installed with dry erase wallcovering.
    RSK2: Regular starter kit with standard dry erase markers.
D. **Broad Tip Dry Erase Markers**:
    1. EC12-99: Chisel BLK - 12CT
    2. EC04-00: Set of four colors: red, blue, green, black.
E. **Eraser**:
    1. DEFE-99: Dry erase felt eraser.
    2. DECC-Y1: Dry erase cleaning cloth - yellow.
F. **Liquid Surface Cleaner**:
    RCC8: 8 ounce (.23kg) bottle liquid surface cleaner.
G. **Magnets**:
    MAG1: Heavy duty magnet - black.
H. **Wood Shelf Caddy:** Provide 12 inch (304.8mm) high x 7-5/8 inch (193.7mm) wide wood caddy with four shelves spaced 1-3/4 inch (4.4mm) apart for storing markers and erasers.
    1. WSC1-M0: Maple wood shelf caddy, unfinished
    2. WSC1-M1: Maple wood shelf caddy, clear coat.
    3. WSC1-M2: Maple wood shelf caddy, red oak stain.
    4. WSC1-M3: Maple wood shelf caddy, cherry stain.
    5. WSC1-MZ: Maple wood shelf caddy, specify custom stain.
    6. WSC1-R0: Oak wood shelf caddy, unfinished.
    7. WSC1-R1: Oak wood shelf caddy, clear coat.
    8. WSC1-R2: Oak wood shelf caddy, red oak stain.
    9. WSC1-R3: Oak wood shelf caddy, cherry stain.
    10. WSC1-RZ: Oak wood shelf caddy, specify custom stain.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and installation conditions to ensure surface conditions meet or exceed a Level 4 finish, per GA-214-M-97: Recommended Levels of Gypsum Board Finish, and permanent lighting should be installed and operational.
B. Test substrate with suitable moisture meter and verify that moisture content does not exceed four percent.
C. Verify substrate surface is clean, dry, smooth, structurally sound, and free from surface defects and imperfections that would show through the finished surface.
D. Evaluate all painted surfaces for the possibility of pigment bleed-through.
E. Notify the contractor and architect in writing of any conditions detrimental to the proper and timely completion of the installation.
F. Beginning of installation means acceptance of surface conditions.

SELECT INSTALLATION FOR WALLCOVERING BACKING OR ADHESIVE BACKING

3.2 INSTALLATION Wallcovering backing.

A. Acclimate wallcovering in the area of installation a minimum of 24 hours before installation.
B. Read and follow the manufacturer's installation instruction sheet contained in each roll of the dry erase wallcovering.
C. Examine all materials for pattern, color, quantity and quality, as specified for the correct location prior to cutting.
D. Primer: Use a quality pigmented acrylic wallcovering primer.
E. Adhesive: Apply a uniform coat of heavy-duty pre-mixed clay-based or extra strength clear wallcovering adhesive.
F. Install each strip horizontally and in the same sequence as cut from the roll.
G. Install dry erase wallcovering sheets in exact order as they are cut from bolt. Reverse hang alternate strips (except lined products). Do not crease or bend the wallcovering when handling.
H. Install dry erase wallcovering horizontally using a level line.
I. Using a level or straight edge, double cut the seam with a seam-cutting tool (Ex: Double Seam-Cutter or Swedish Knife). Do not score drywall or plasterboard when cutting material.
J. When covering the entire wall, seam the material out of the main writing and viewing areas of the wall.
K. Apply wallcovering to the substrate using a wallcovering smoother, wrapped with a soft cloth, to remove air bubbles. Do not use sharp edged smoothing tools. Smooth material on the wall from the middle to the outside edge.
L. Remove excess adhesive immediately after the wallcovering is applied. Clean entire surface with a warm mild soap solution, and clean soft cloths. Rinse thoroughly with water and let dry before using. Change water often to maintain water clarity.
M. Stop installation of material that is questionable in appearance and notify the manufacturer's representative for an inspection.

3.3 INSTALLATION Self-adhesive backing.

A. Walltalkers adhesive backed dry erase wallcovering is only recommended for use on surfaces impervious to moisture such as chalkboards, marker boards, glass, high-pressure laminates, or similar.
B. Acclimate wallcovering in the area of installation a minimum of twenty-four hours before installation.
C. Examine all materials for color, quantity, and quality as specified for the correct location prior to cutting.
D. Read and follow the instructions in the manufacturer's installation sheet contained in each roll of the dry erase wallcovering.
E. Do not crease or bend the wallcovering when handling.
F. To allow air bubble removal, use a pump spray bottle to dampen the surface to be covered. Dampening solution = one half to one capful of mild detergent to 1 gallon (1.81kg) clean water.
G. Slowly remove release liner and smooth wall covering to the hanging surface using a wallcovering smoother wrapped with a soft cloth from the middle to the outside edge to remove air bubbles.
H. Stop installation of material that is questionable in appearance and notify the manufacturer's representative for an inspection.

3.4 CLEAN-UP

A. Upon completion of installation, remove all exposed adhesive immediately using a soft cloth and a warm, mild soap solution and rinse thoroughly with water and dry with clean towel prior to using.
B. Upon completion of the work, remove surplus materials, rubbish, and debris resulting from the wallcovering installation. Leave areas in neat, clean, and orderly condition.

END OF SECTION

erase·rite®, **ez·rite®**, **just·rite®**, **koro·rite®**, **mag·rite®**, **tac·wall®**, **walltalkers®**, **learn·rite™**, **line·rite™**, **mag·line™**, and **nu·vu·rite™** are registered trademarks and trademarks of RJF International Corporation. **PresentationMate™** is a trademark of Strategic Synergies, Inc.

Baby Changing Station

Product: Koala Kare Products KB200-SS Horizontal Wall Mounted Baby Changing Station or approved equal

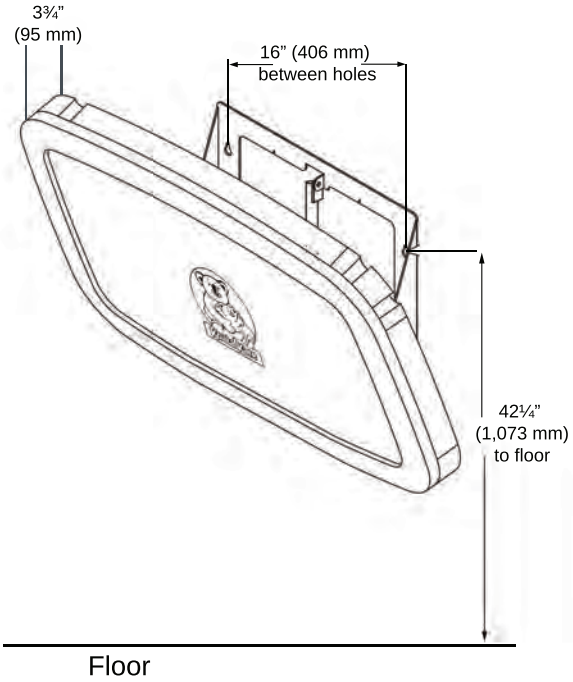
Locations/Applications: Restrooms

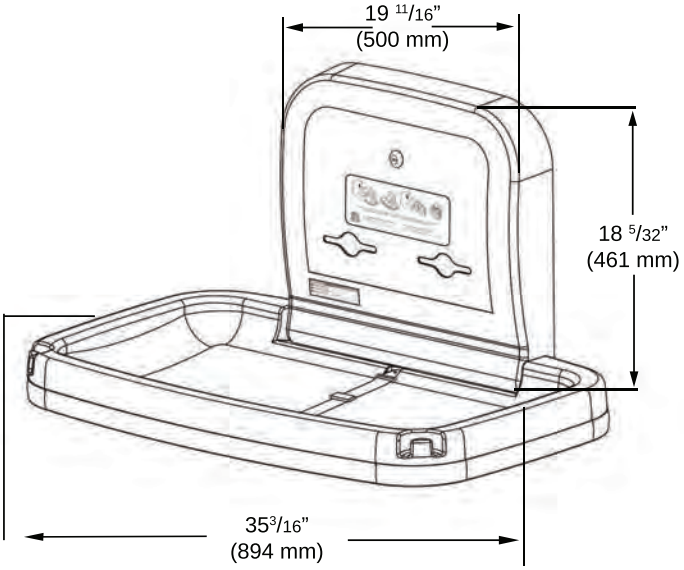
Product Requirements:

- Durable, injection-molded polypropylene
- Pneumatic cylinder to provide controlled, slow opening and closing of bed
- No hinge structure shall be exposed on interior or exterior surfaces
- Microban antimicrobial embedded into plastic material on changing surface
- Bed shall have smooth concave changing area with nylon safety strap
- Built in Liner Dispenser
- Instructional graphics and instructions in 4 different languages, braille optional
- Conforms to or complies with:
  - 2010 ADA Standards for Accessible Design
  - 2009 ICC A117.1, Accessible and Usable Buildings and Facilities
  - ASTM F 2285-04 Standard Safety Performance Specification for Diaper Changing Tables for Commercial Use
  - ANSI Z535.4 Product Safety Signs and Labels
  - EN 12221:2008
  - ASTM G22 Antibacterial standards or local code if more stringent installation requirements are applicable for Barrier-Free accessibility

KOALA KARE PRODUCTS
KB200-SS HORIZONTAL WALL MOUNTED
BABY CHANGING STATION WITH STAINLESS STEEL VENEER

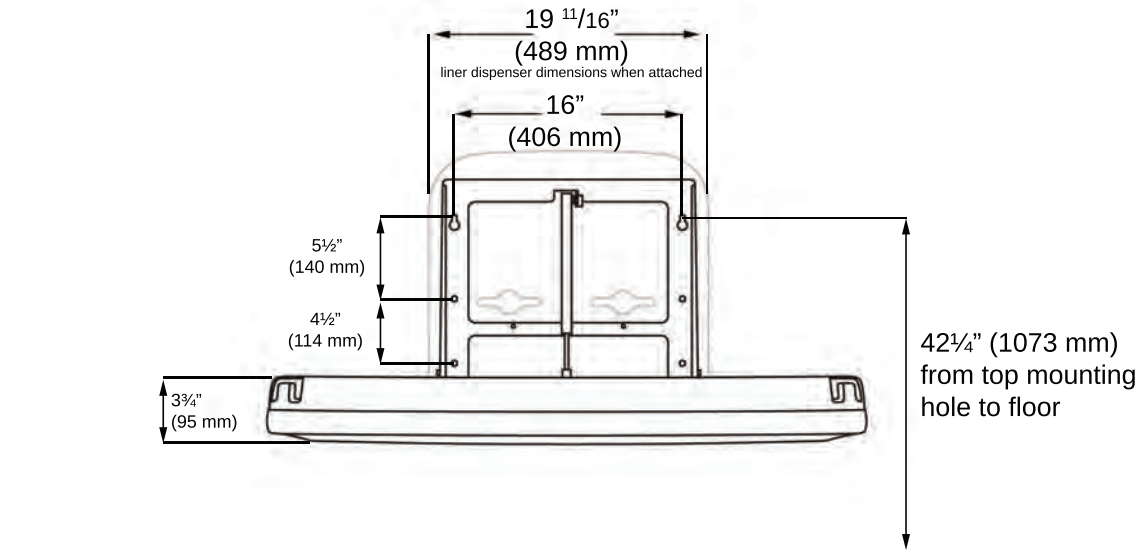
KB200-01SS GREY
KB200-05SS WHITE GRANITE

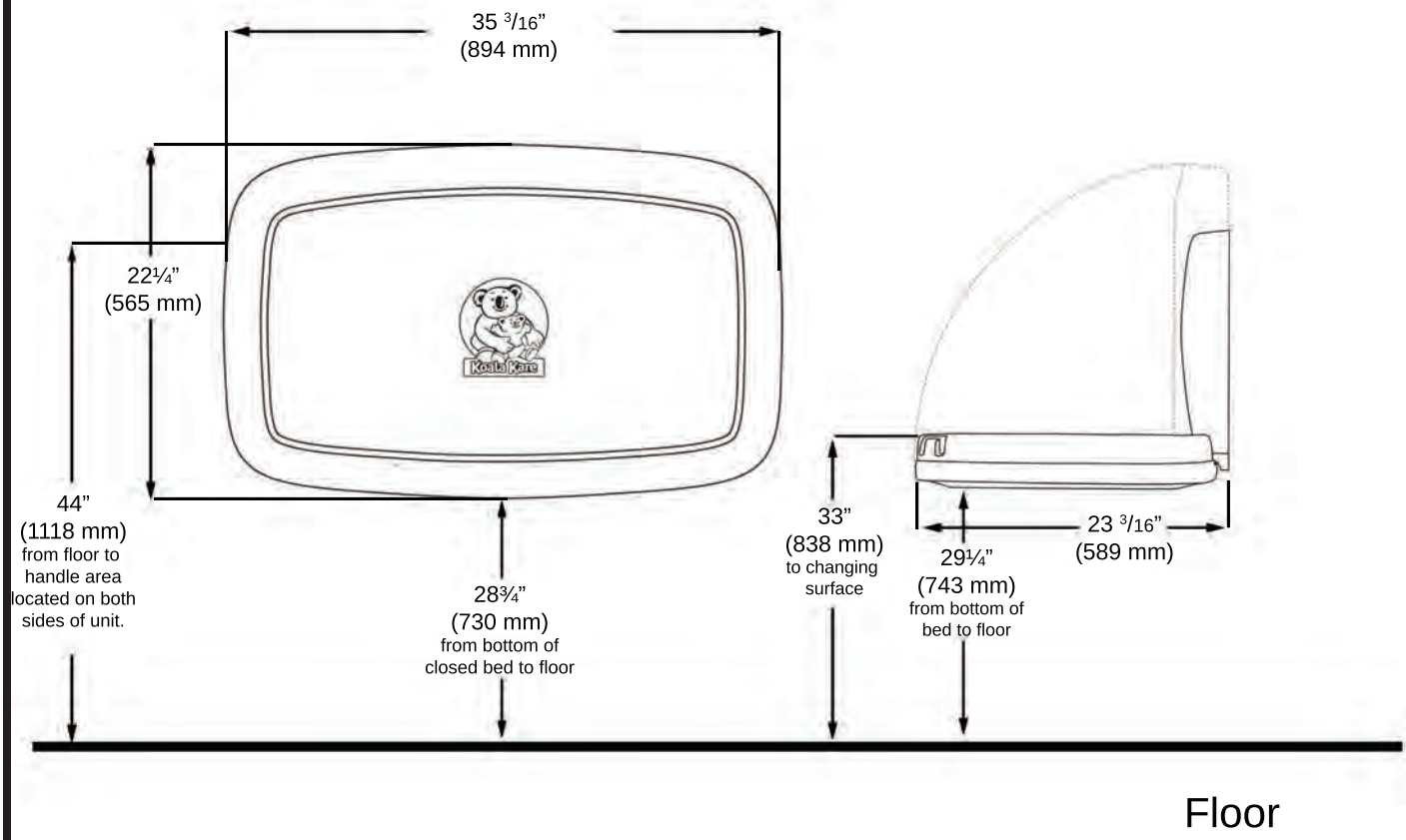




Celebrating 25 Years
Koala Kare

KB200-SS TECHNICAL DATA SHEET


19 11/16”
(489 mm)
liner dispenser dimensions when attached
16”
(406 mm)
5½”
(140 mm)
4½”
(114 mm)
3¾”
(95 mm)
42¼” (1073 mm)
from top mounting
hole to floor
Floor


35 3/16”
(894 mm)
22¼”
(565 mm)
Koala Kare
44”
(1118 mm)
from floor to
handle area
located on both
sides of unit.
28¾”
(730 mm)
from bottom of
closed bed to floor
33”
(838 mm)
to changing
surface
29¼”
(743 mm)
from bottom of
bed to floor
23 3/16”
(589 mm)
Floor

MATERIALS:

FDA approved injection-molded polypropylene with Microban® antimicrobial additive embedded into the bed surface. Type 304 brushed stainless steel finish veneer. Reinforced steel-on-steel hinge mechanism and metal mounting chassis with mounting hardware included. Labelled usage instructions and safety messages in four languages. Optional Braille label available. Contoured changing surface area is 450 sq. in (2903 sq. cm) and comes complete with nylon safety strap and bag hooks. Dual cavity liner dispenser holds approximately 50 KB150-99 bed liners.

OPERATION:

Concealed pneumatic cylinder and metal mounting chassis provides controlled, slow opening and closing of bed. Polypropylene is easy to clean and resists odors and bacterial growth. Complies with ASTM static load performance requirements when properly installed.

Warning: To ensure that the unit supports the intended loads, baby changing stations must be properly installed according to the manufacturer's instructions.

SPECIFICATION:

Baby changing station body shall be durable, injection-molded polypropylene. Design of unit shall be surface-mounted. Front surface of unit shall have a 304 brushed stainless steel finish veneer. Unit shall be equipped with a pneumatic cylinder for controlled opening and closing of bed. Bed shall be secured to metal mounting chassis with a concealed steel-on-steel hinge. No hinge structure shall be exposed on interior or exterior surfaces. Unit shall have mounting hardware included. Unit shall have Microban® antimicrobial embedded into plastic material on the changing surface. Unit shall comply with ADA regulations when properly installed. Bed shall have smooth concave changing area with a nylon safety strap and two hooks for bags or purses. The design and manufacture of Koala products Is intended to be compliant with the 2010 ADA Standards for Accessible Design and the 2009 ICC A117.1, Accessible and Usable Buildings and Facilities. Unit shall conform to ASTM F 2285-04 Standard Safety Performance Specification for Diaper Changing Tables for Commercial Use, ANSI Z535.4 Product Safety Signs and Labels, EN 12221:2008, ASTM G22 Antibacterial standards or local code if more stringent installation requirements are applicable for Barrier-Free accessibility.

Unit shall have a built-in Liner Dispenser for use with 3-ply chemical free biodegradable bed liners, instructional graphics and safety messages in 4 languages. Optional Braille label is available. Unit shall be backed by manufacturer's 5-year limited warranty on materials and workmanship and include a provision for replacement caused by vandalism. Unit shall be manufactured in the U.S.A.

INSTALLATION:

To ensure proper installation and compliance to building codes, it is recommended that a qualified person or carpenter perform the installation of the unit. The unit must be properly installed onto a permanent wall that is capable of supporting significant weight and can accommodate the supplied installation hardware. The Koala Baby Changing Station meets ADA regulations when properly installed. Installer should account for the space that a unit occupies when in the down position and with the caregiver (whether standing or seated) in front of the unit. Locate the unit so that paths of travel are maintained around it when being used.

Drilling holes and mounting the station:

1. Remove changing station from the shipping container and check for any freight damage. If damage is found, please call Koala Kare Products' Customer Service at 888.733.3456. Remove "Installation Kit" and "Operator Kit" from box. Please give "Operator Kit" to facility manager or operator. Box should contain two pieces: the bed and metal mounting chassis and the wall mount liner dispenser. Identify the best location for installing the unit.

2. Standard Installation- Remove the bed and chassis from the box and select the wall area where the unit will be installed. Make sure you have taken into consideration the operating clearance of 9½" (241 mm) on both sides of the exposed chassis and 23 $^{3}/_{16}$" (589 mm) from wall surface when open. Measure from the floor 42¼" (1073 mm) on stud center and mark the wall. The mounting holes are designed for 16" stud centers. Ensure the locations you have marked for the mounting holes are level before drilling. Drill pilot holes for keyhole mounting using a 1/8" regular drill bit.

Masonry or Tile over Stud Wall- Use a 7/32" (6 mm) masonry drill bit for the pilot hole until you hit the stud. Change bit to 1/8" (3 mm) regular drill bit.

Metal Stud or Concrete Block- If the wall has wood studs that are not on 16" (406 mm) centers, has metal studs or an underlying surface of concrete block, drill with a ½" (13 mm) masonry bit. (You may have to purchase toggles before installing.) You must allow a minimum of inside wall space for toggles to turn depending on toggles used. Insert and tighten toggles.

3. Screw two of the mounting screws into the pilot holes leaving ¼" (6 mm) exposed to allow keyhole slots to be easily mounted over the screw heads. Place chassis over screws. After securing the unit using the keyhole slots, verify that the unit is level. Tighten top two screws so that they are flush with the wall. Use the four lower holes as a guide to mark and drill pilot holes. Use remaining four screws and four washers to complete installation of bed and metal mounting bracket. Insert washers over lower four screws. All SIX screws and four washers must be mounted to the chassis.

4. Ensure liner dispenser is free from damage. Remove key, unlock, and open liner dispenser lid. This will expose liner dispenser mounting holes. Line up dispenser mounting holes onto chassis and secure with the four screws provided. Close and lock the liner dispenser door.

5. Remove protective covering from stainless steel on the front of unit. Going with the grain, use a stainless steel cleaning product and cotton rag to remove any residue that may remain.

6. Clean work area and inspect unit to ensure it opens and closes smoothly. Give Operator Kit and key to the facility operator. Replacement parts and additional liners can be purchased from your local distributor or by calling Koala at 888.733.3456 or 303.539.8300.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet. The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions without notice.

Koala Kare Products | 6982 S Quentin St. | Centennial, CO 80112 Toll Free: 888.733.3456 | 303.539.8300 | Fax: 303.539.8399
www.koalabear.com

P/N AB006 May 2012

Surface-Mounted Hook

Product: Bobrick Surface-Mounted Hat and Coat Hook or approved equal

Locations/Applications: Restrooms

Product Requirements:

- Type 304 Stainless Steel
- 22 gauge Flange and Support Arm
- 16 gauge mounting bracket (concealed)
- Can be mounted on particle board partitions, hollow core metal partitions, plaster or drywall

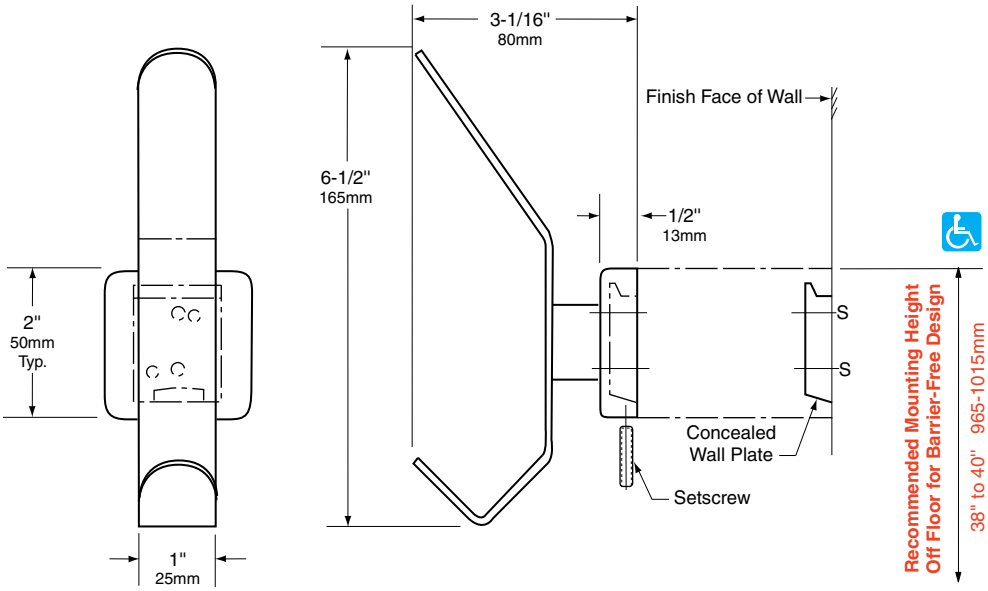
BOBRICK

Technical Data

SURFACE-MOUNTED HAT AND COAT HOOK

B-682
B-6827

Specify Model Required: ☐ Model B-682 Bright polished stainless steel
☐ Model B-6827 Satin-finish stainless steel



MATERIALS:

Flange and Support Arm — 18-8 S, type-304, 22-gauge (0.8mm) stainless steel. Concealed, 16-gauge (1.6mm) stainless steel mounting bracket. All-welded construction. Secured to wall plate with a stainless steel setscrew.

Concealed Wall Plate — 18-8 S, type-304, 16-gauge (1.6mm) stainless steel.

Hook — 18-8 S, type-304, 12-gauge (2.8mm) stainless steel. Welded to the support arm.

INSTALLATION:

To remove concealed wall plate from back of flange and mounting bracket, loosen setscrew. Mount wall plate so prongs are at top; secure with two sheet-metal screws, furnished by manufacturer, at points indicated by an *S*. Engage mounting bracket onto prongs of wall plate, then secure into position by tightening setscrew at bottom of flange.

For partitions with particle-board or other solid core, secure with sheet-metal screws furnished, or provide through-bolts, nuts, and washers.

For hollow-core metal partitions, provide solid backing into which the furnished sheet-metal screws can be secured.

For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure unit with sheet-metal screws furnished.

For other wall surfaces, provide fiber plugs or expansion shields for use with sheet-metal screws furnished, or provide 1/8" (3mm) toggle bolts or expansion bolts.

SPECIFICATION:

Surface-mounted hat and coat hook shall be type-304 stainless steel with _____ (insert one: bright polished or satin) finish. Flange and support arm shall be 22 gauge (0.8mm) and equipped with a concealed, 16-gauge (1.6mm) mounting bracket that is secured to a concealed, 16-gauge (1.6mm) wall plate with a stainless steel setscrew. Hook shall be 12 gauge (2.8mm), welded to the support arm. Manufacturer's service and parts manual shall be provided to the building owner/manager upon request.

Surface-Mounted Hat And Coat Hook shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

Revised 6/06 Printed in U.S.A.
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Napkin/Tampon Vendor

Product: Bobrick ConturaSeries Recessed Napkin/Tampon Vendor or approved equal

Locations/Applications: Restrooms

Product Requirements:

- Mechanical Operation (no batteries or electricity required)
- Required denomination can be changed in field without removing unit from wall
- Coin return pushbutton-operation shall be certified ADA-ABA, ICI / ANSI A117.1 compliant by third party for operation with one hand with less than five pounds of force without tight grasping, pinching, or twisting of the wrist
- Wrong coins shall bypass mechanisms and drop into product tray
- Impact resistant

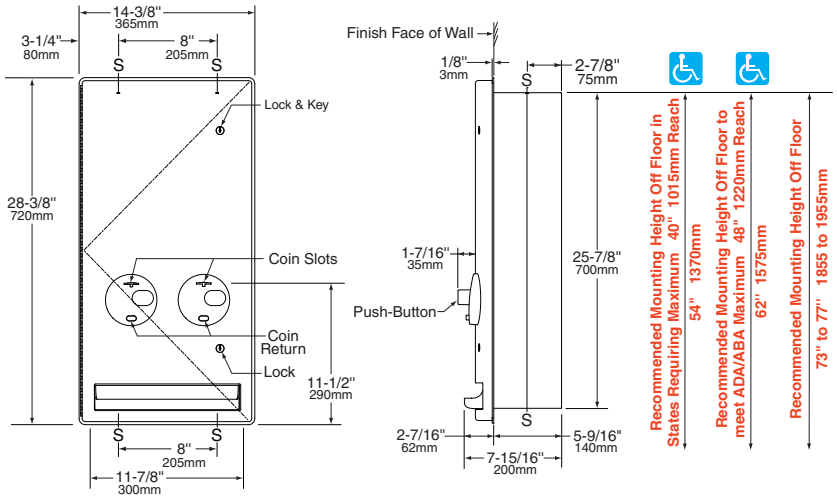
BOBRICK

Technical Data

ConturaSeries® RECESSED NAPKIN/TAMPON VENDOR

B-4706 SERIES

Specify Model Required: ❑ B-4706 25 Recessed 25¢ single-coin operation ❑ B-4706 50 Recessed 50¢ double-coin operation
❑ B-4706C Recessed Free no-coin operation



Rough Wall Opening
12-1/2" (320mm) wide
26-3/8" (670mm) high
5-9/16" (140mm) minimum recessed depth

MATERIALS:

Cabinet — 18-8 S, type-304, 18-gauge (1.2mm) stainless steel. All-welded construction.

Flange — 18-8 S, type-304, 22-gauge (0.8mm) stainless steel with satin finish. Drawn, one-piece, seamless construction. Radius on corners and return edges complement corners and edges on door.

Door — 18-8 S, type-304, 18-gauge (1.2mm) stainless steel with satin finish. Drawn, one-piece, seamless construction. Front of door has same degree of arc as other Bobrick Contura Series washroom accessories. Radius on corners and edges of door match other Contura Series accessories. Secured to cabinet with a full-length stainless steel piano-hinge. Equipped with a stainless steel cable door-swing limiter and two flush tumbler locks keyed like other Bobrick washroom accessories. Door has no brand-name advertising for products dispensed. Can be replaced in the field. Graphic symbols identify product dispensed and coin denomination.

Coin Mechanisms (2) — Impact-Resistant PC-ABS Push Buttons. Coin mechanisms can be converted in the field to any standard coin denomination without having to buy new coin mechanisms (Free, 25¢ or 50¢). Accepts one or two quarters (U. S. or Canadian) as designated by factory setting. Coin Box is equipped with tumbler lock that opens with different key than furnished for door locks.

Coin Return Push-Button (2) — Impact-Resistant PC-ABS Push-Button cancels selection and returns coin into product tray.

Product Tray — Impact-Resistant PC-ABS, provides convenient access to dispensed product.

OPERATION:

After coin is inserted in dispensing mechanism of patron's choice, pushing button dispenses boxed sanitary napkin or tampon tube. Mechanical operations; no batteries or electricity required. Coin slot of each dispensing mechanism is identified by a graphic symbol. Capacity: 20 sanitary napkins and 30 tampons. Coin slots are automatically blocked with a red indicator when supply is depleted. Coin Return Push-Button cancels the selection and returns coin into product tray. Wrong coins (penny, nickel, dime) by-pass mechanisms and drop into product tray. Vendor dispenses sanitary napkin packages measuring 2-7/8" x 3/4" x 4-1/8" to 3-1/8" x 1-1/8" x 4-3/8" (73 x 19 x 105mm to 80 x 29 x 111mm) and tampon tubes measuring 4-5/8" long x 9/16" diameter minimum to 5-1/8" long x 3/4" diameter maximum (118 x 14 to 130 x 19mm).

INSTALLATION:

Provide framed rough wall opening 12-1/2" wide x 26-3/8" high (320 x 670mm). Minimum recessed depth required to finish face of wall for fully recessing the unit is 5-9/16" (140mm). Allow clearance for construction features that may protrude into opening from opposite wall. Coordinate with mechanical engineer to avoid pipes, vents, and conduits. If unit projects above top of wainscot, provide aluminum channel or other filler to eliminate gap between flange and finish face of wall. Insert cabinet, then secure unit with four sheet-metal screws, (not furnished), at points indicated by a *S*.

SPECIFICATION:

Recessed sanitary napkin/tampon vendor shall combine two dispensing mechanisms in one cabinet to provide sanitary napkins or tampons at user's option. Mechanical operations; no batteries or electricity required. Dispensing mechanisms shall be pre-set at factory for _____ (insert one: Free, 25¢ or 50¢) operation, but shall be convertible in the field to allow the change of coin denomination without removing unit from wall. Door shall be furnished with graphics indicating specified coin denomination. Unit shall be type-304 stainless steel with all-welded construction; exposed surfaces shall have #4 satin finish. Front of door shall have same degree of arc and match other Bobrick ConturaSeries accessories in the washroom. Radius on corners and edges of flange and door shall complement other Bobrick ConturaSeries washroom accessories. Flange shall be drawn, one-piece, seamless construction. Door shall be drawn, 18-gauge (1.2mm), one-piece, seamless construction; secured to cabinet with a full-length stainless steel piano-hinge; and equipped with a stainless steel cable door-swing limiter and two flush tumbler locks keyed like other Bobrick washroom accessories. Vendor product selection and coin return pushbutton-operation shall be certified ADA-ABA, ICC/ANSI A117.1 complaint by third party (certification available on request) for operation with one hand with less than 5 pounds of force (22.2 N) without tight grasping, pinching or twisting of the wrist. Push-Button coin return shall cancel selection and return coin into product tray. Wrong coins (penny, nickel, dime) shall by-pass mechanisms and drop into product tray. Product tray shall be impact-resistant PC-ABS plastic and provide easy access to dispensed product. Coin Box shall be equipped with a tumbler lock that is keyed differently than door locks. Unit shall not carry brand-name advertising.

Recessed Napkin/Tampon Vendor shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

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Sanitary Napkin Disposal

Product: Bobrick ConturaSeries Surface-Mounted Sanitary Napkin Disposal or approved equal

Locations/Applications: Restrooms

Product Requirements:

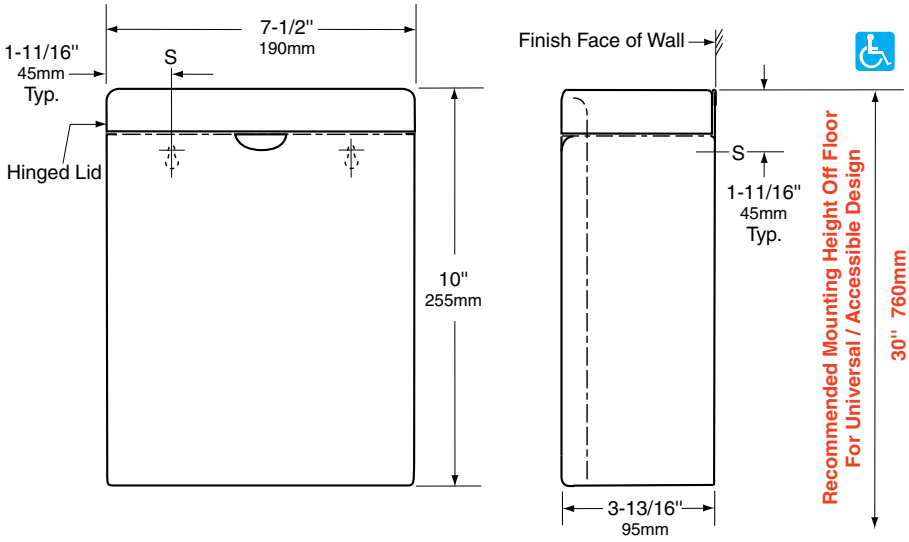
- Integral finger depression for opening cover
- Can be mounted on particle board partitions, hollow core metal partitions, plaster or drywall

BOBRICK

Technical Data

ConturaSeries® SURFACE-MOUNTED SANITARY NAPKIN DISPOSAL

B-270



MATERIALS:

Container — 18-8 S, type-304, 22-gauge (0.8mm) stainless steel. All-welded construction. Exposed surfaces have satin finish. Integral finger depression for opening cover. Front of container has same degree of arc as front of cover and other Bobrick ConturaSeries washroom accessories. Radius on side edges of container match corners and edges of cover and other ConturaSeries accessories.

Cover — 18-8 S, type-304, 22-gauge (0.8mm) stainless steel with satin finish. Drawn, one-piece, seamless construction. Front of cover has same degree of arc as front of container and other Bobrick Contura Series washroom accessories. Radius on corners and edges of cover match side edges of container and other Contura Series accessories. Secured to container with a full-length stainless steel piano-hinge.

OPERATION:

Cover flips up for disposal of sanitary napkins and for servicing container. Disposable paper liners for the container are available as an optional accessory: order Bobrick Part No. 270-12.

INSTALLATION:

For partitions with particle-board or other solid core, secure with two #8 x 3/4" (4.2 x 19mm) sheet-metal screws (not furnished) at all points indicated by an *S*, or provide through-bolts, nuts, and washers.

For hollow-core metal partitions, provide solid backing into which sheet-metal screws can be secured. If two units are installed back-to-back, then provide threaded sleeves and machine screws for the full thickness of partition.

For masonry walls, provide fiber plugs or expansion shields for use with sheet-metal screws, or provide 3/16" (5mm) toggle bolts or expansion bolts.

For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure unit with sheet-metal screws.

SPECIFICATION:

Surface-mounted sanitary napkin disposal shall be type-304 stainless steel with all-welded construction; exposed surfaces shall have satin finish. Front of sanitary napkin disposal shall have same degree of arc and match other Bobrick ConturaSeries accessories in the washroom. Radius on corners and edges of sanitary napkin disposal shall complement other Bobrick ConturaSeries washroom accessories. Cover shall be drawn, one-piece, seamless construction and secured to container with a full-length stainless steel piano-hinge. Container shall have integral finger depression for opening cover.

Surface-Mounted Sanitary Napkin Disposal shall be Model B-270 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
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Revised 09/11/12 Printed in U.S.A.
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Toilet Tissue Dispenser

Product: Bobrick Surface-Mounted Single Jumbo Roll Toilet Tissue Dispenser or approved equal

Locations/Applications: Restrooms

Product Requirements:

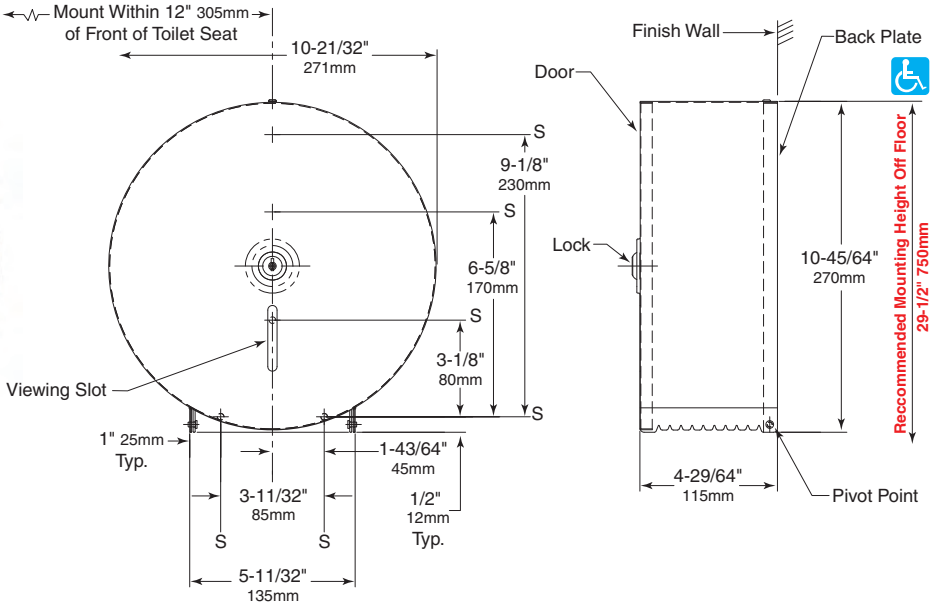
- Door equipped with a lock
- Spindle shall accommodate one toilet tissue roll up to 10” diameter with a 2-1/8” diameter core roll or 1-5/8” diameter core roll by adding rubber o-rings (included)
- Can be mounted on particle board or other solid core partitions, hollow core metal partitions, plaster or drywall

BOBRICK

Technical Data

SURFACE-MOUNTED SINGLE JUMBO-ROLL TOILET TISSUE DISPENSER

B-2890



MATERIAL:

Mounting Plate — 16-gauge (1.6mm) stainless steel.

Door — Type-304, 22-gauge (0.8mm) stainless steel with satin-finish. Slot reveals toilet tissue supply inside cabinet. Equipped with a lock keyed like other Bobrick Washroom Equipment accessories.

Spindle — Removable rubber-o-rings converts to smaller spindle. Fixed inner spindle, 20 gauge (0.9mm) stainless steel.

OPERATION:

Door unlocks with key provided and swings down for loading dispenser. Spindle adapter accommodates one toilet tissue roll up to 10" (255mm) diameter with a 1-5/8" (40mm) diameter core roll. Rubber o-rings (2) (furnished by manufacturer) may be added to the steel inner spindle to accommodate a 2-1/8" (55mm) diameter core roll. Wide viewing slot in door reveals the amount of toilet tissue on roll. Unit is designed for quick reloading.

INSTALLATION:

Mount unit on wall or toilet partition with five sheet-metal screws (not furnished) at points indicated by an *S*. Rear edge of unit should be 20" (510mm) from back wall. This locates toilet tissue within 12" (305mm) of front of standard toilet that projects 30" (305mm) from back wall.

For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure with sheet-metal screws (not furnished). For other wall surfaces, provide fiber plugs or expansion shields for use with sheet-metal screws (not furnished), or provide 6mm (1/4") toggle bolts or expansion bolts.

For partitions with particle-board or other solid core, secure with sheet-metal screws (not furnished), or provide through-bolts, nuts, and washers. For hollow-core metal partitions, provide solid backing into which the sheet-metal screws can be secured. If two units are installed back-to-back, then provide threaded sleeves and machine screws for the full thickness of partition.

SPECIFICATION:

Single jumbo-roll toilet tissue dispenser door shall be 22-gauge (0.8mm) stainless steel with satin-finish. Door shall be equipped with a lock keyed like other Bobrick washroom accessories. Door shall have a slot to reveal toilet tissue supply inside cabinet. Spindle shall accommodate one toilet tissue roll up to 10" (255mm) diameter with a 2-1/8" (55mm) diameter core roll or 1-5/8" (40mm) diameter core roll by adding rubber o-rings (2) furnished.

Single Jumbo-Roll Toilet Tissue Dispenser shall be Model B-2890 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
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Revised 10/29/13 Printed in U.S.A.
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Waste Receptacle

Product: Bobrick ConturaSeries Recessed Waste Receptacle or approved equal

Locations/Applications: Restrooms

Product Requirements:

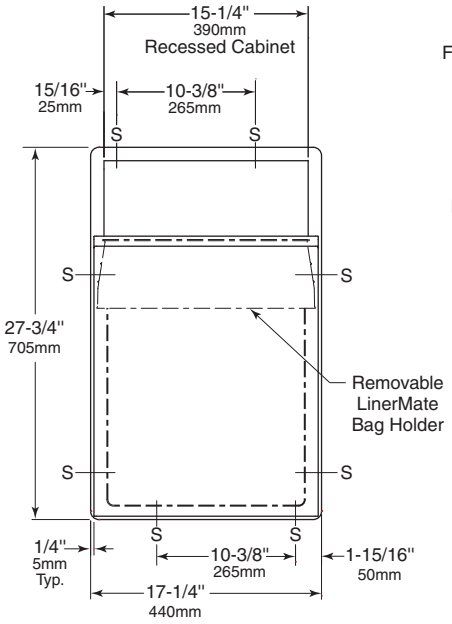
- Recessed
- Capacity to be 12.8 gallons or greater

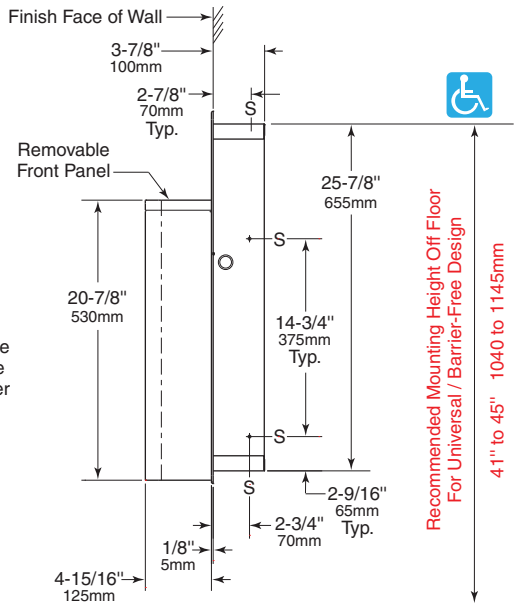
BOBRICK

Technical Data

ConturaSeries® RECESSED WASTE RECEPTACLE

B-43644





Rough Wall Opening
15-7/8" (405mm) wide
26-1/4" (665mm) high
4" (100mm) minimum
recessed depth

MATERIALS:

Cabinet — 18-8 S, type-304, 22-gauge (0.8mm) stainless steel. All-welded construction. Exposed surfaces have satin-finish.

Flange — 18-8 S, type-304, 22-gauge (0.8mm) stainless steel with satin-finish. Drawn, one-piece, seamless construction. Radius on corners and return edges complement side edges of waste receptacle.

Waste Receptacle — 18-8 S, type-304, 22-gauge (0.8mm) stainless steel with satin-finish. Formed, one-piece, seamless construction. Removable front panel has same degree of arc as other Bobrick ConturaSeries washroom accessories. Top edge hemmed for safe handling. Radius on side edges of waste receptacle complement other ConturaSeries accessories. Secured to cabinet with two keyholes over studs on bottom and two tamper-resistant setscrews on top. Capacity: 12.8-gal. (48.3-L).

LinerMate® Trash Liner Holder — Unit equipped with LinerMate to facilitate installation and removal of disposable trash liners and retains liner inside waste receptacle. LinerMate trash liner holder is fabricated with a molded plastic bag holder sleeve and a 20-gauge (0.91mm) stainless steel, U-shaped support strap; riveted construction. Bag holder shall have an arc at front and same shape as inside of waste receptacle area.

OPERATION:

To insert disposable plastic trash bag, lift LinerMate bag holder up and forward and rest over edge of waste receptacle front panel with the bottom notches of LinerMate engaged on top front edge of receptacle. Place plastic trash bag inside LinerMate and fold plastic bag over LinerMate sleeve. Tie a knot in the corner of the bag, then place LinerMate with plastic trash bag back into receptacle. To empty, gather disposable plastic trash bag from LinerMate bag holder sleeve and lift bag up. Front of waste receptacle panel is removable for cleaning cabinet interior.

continued . . .

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

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INSTALLATION:

Provide framed rough wall opening 15-7/8" wide x 26-1/4" high (405 x 665mm). Minimum recessed depth required to finish face of wall is 4" (100mm). Allow clearance for construction features that may protrude into rough wall opening from opposite wall. Coordinate with mechanical engineer to avoid pipes, vents, and conduits. If unit projects above top of wainscot, provide aluminum channel or other filler to eliminate gap between flange and finish face of wall. Mount unit in wall opening with shims between framing and cabinet at all points indicated by an *S*, then secure unit with #8 x 1-1/4" (4.2 x 32mm) screws (not furnished).

SPECIFICATION:

Recessed waste receptacle shall be type-304 stainless steel with all-welded construction; exposed surfaces shall have satin finish. Front of waste receptacle shall have same degree of arc and match other Bobrick ConturaSeries accessories in the washroom. Radius on corners and edges of flange and waste receptacle shall complement other Bobrick ConturaSeries washroom accessories. Flange shall be drawn, one-piece, seamless construction. Waste receptacle shall have a formed, one-piece, seamless, removable front panel with top edge hemmed. Waste receptacle shall be equipped with LinerMate to facilitate installation and removal of disposable trash liners and retains liner inside waste receptacle. LinerMate trash liner holder is fabricated with a molded plastic bag holder sleeve and a 20-gauge (0.91mm) stainless steel, U-shaped support strap; riveted construction. Bag holder shall have an arc at front and same shape as inside of waste receptacle area. Capacity of waste receptacle shall be 12.8-gal. (48.3-L).

Recessed Waste Receptacle shall be Model B-43644 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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Waste Receptacle with Paper Towel Dispenser

Product: Bobrick ConturaSeries Recessed Paper Towel Dispenser and Waste Receptacle or approved equal

Locations/Applications: Restrooms

Product Requirements:

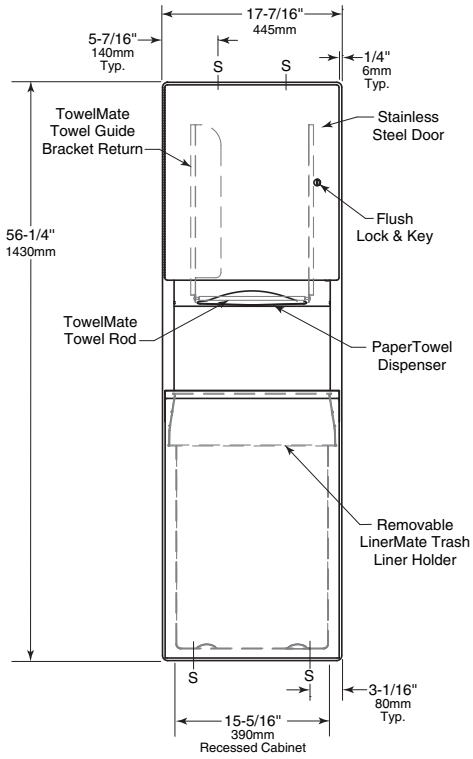
- Recessed
- Capacity to be 15 gallons or greater
- Towel guide angle to prevent paper towels from falling out when door is opened for servicing
- Rounded towel tray has hemmed opening to dispense paper towels without tearing
- Nylon Rod across the center of the towel tray to dispense paper towels one at a time

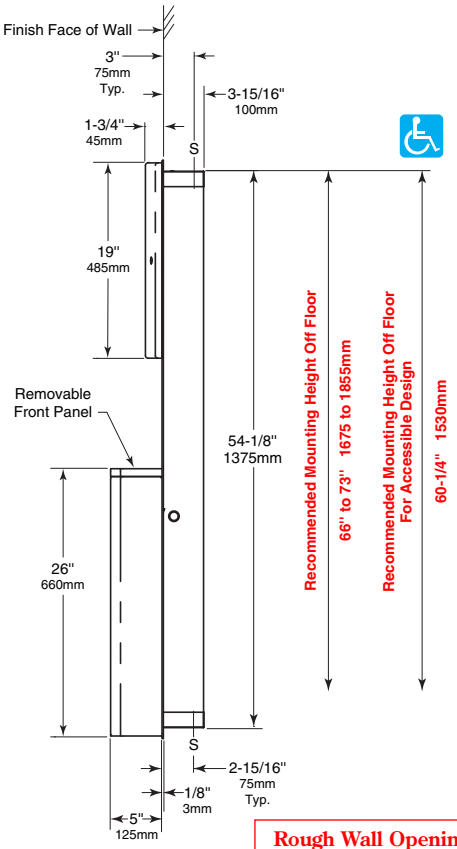
BOBRICK

Technical Data

ConturaSeries® RECESSED PAPER TOWEL DISPENSER AND WASTE RECEPTACLE

B-43944





Rough Wall Opening
16" (405mm) wide
54-3/4" (1390mm) high
4" (100mm) minimum
recessed depth

MATERIALS:

Cabinet — 18-8, type-304, 22-gauge (0.8mm) stainless steel. All-welded construction. Exposed surfaces have satin-finish.

Flange — 18-8, type-304, 22-gauge (0.8mm) stainless steel with satin-finish. Drawn, one-piece, seamless construction. Radius on corners and return edges complement corners and edges of door and waste receptacle.

Door — 18-8, type-304, 18-gauge (1.2mm) stainless steel with satin-finish. Drawn, one-piece, seamless construction. Front of door has same degree of arc as front of waste receptacle and other Bobrick ConturaSeries washroom accessories. Radius on corners and edges of door match side edges of waste receptacle and other ConturaSeries accessories. Secured to cabinet with a full-length stainless steel piano-hinge. Equipped with a stainless steel cable door-swing limiter and flush tumbler lock keyed like other Bobrick washroom accessories.

Paper Towel Dispenser — 18-8, type-304, 22-gauge (0.8mm) stainless steel with satin-finish. Cabinet inside equipped with 90° return towel guide angle to prevent paper towels from falling forward out when door is opened for servicing. Rounded towel tray has hemmed opening to dispense paper towels without tearing. Unit equipped with TowelMate consisting of a 90° return towel guide angle inside cabinet to prevent paper towels from falling forward out when door is opened for servicing and a Nylon Rod across the center of the towel tray to dispense paper towels one at a time. Waste receptacle shall have a formed, 18-gauge (1.2mm), one-piece, seamless, removable front panel with top edge hemmed. Capacity: 600 C-fold or 800 multifold paper towels.

TowelMate® Towel Rod Assembly — Consisting of a round Nylon Rod and (2) stainless steel Rod Screws for attachment, is field replaceable. Stainless steel Stop Screws (2) lock TowelMate Towel Rod assembly in place.

To retrofit TowelMate into existing installed units manufactured prior to April 2010, order TowelMate Accessory Bobrick Part No. 3944-130

continued . . .

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Waste Receptacle — 18-8 S, type-304, 18-gauge (1.2mm) stainless steel with satin-finish. Formed, one-piece, seamless construction. Removable front panel has same degree of arc as front of paper towel dispenser door and other Bobrick ConturaSeries washroom accessories. Top edge hemmed for safe handling. Radius on side edges of waste receptacle match corners and edges of door and other ConturaSeries accessories. Secured to cabinet with two keyholes over studs on bottom and two tamper-resistant setscrews on top. Capacity: 15.0-gal. (56.8-L).

LinerMate® Trash Liner Holder — Unit equipped with LinerMate trash liner holder fabricated with molded plastic trash liner holder sleeve and a 20-gauge (0.91mm), U-shaped support strap; riveted construction. Liner holder shall have an arc at front and same shape as inside of waste receptacle area. LinerMate facilitates installation and removal of disposable trash liners and retains liner inside waste receptacle.

To retrofit LinerMate into existing installed units manufactured prior to December 2009, order LinerMate Accessory Bobrick Part No. 43944-134

OPERATION:

Paper towel dispenser will dispense C-fold or multifold paper towels without adjustment or use of adapters. Cable door-swing limiter prevents damage to washroom accessories and walls. Load paper towels in towel tray, and then pull one sheet of paper towel over the TowelMate towel rod and out to conceal rod and start dispense. Front of waste receptacle panel is removable for cleaning cabinet interior. To insert disposable trash liner, lift LinerMate trash liner holder up and forward and rest over edge of waste receptacle front panel with the bottom notches of LinerMate engaged on top front edge of receptacle. Place disposable trash liner inside LinerMate and fold disposable trash liner over molded sleeve. Tie a knot in the corner of the disposable trash liner, then place LinerMate with disposable trash liner back into receptacle. To empty, gather disposable trash liner from LinerMate liner holder sleeve and lift disposable trash liner up.

INSTALLATION:

Provide framed rough wall opening 16" wide x 54-3/4" high (405 x 1390mm). Minimum recessed depth required to finish face of wall is 4" (100mm). Allow clearance for construction features that may protrude into rough wall opening from opposite wall. Coordinate with mechanical engineer to avoid pipes, vents, and conduits. If unit projects above top of wainscot, provide aluminum channel or other filler to eliminate gap between flange and finish face of wall. Mount unit in wall opening with shims between framing and cabinet at all points indicated by an *S*, then secure unit with #8 x 1-1/4" (4.2 x 32mm) screws (not furnished).

SPECIFICATION:

Recessed paper towel dispenser and waste receptacle shall be type-304 stainless steel with all-welded construction; exposed surfaces shall have satin-finish. Front of paper towel dispenser door and waste receptacle shall have same degree of arc and match other Bobrick ConturaSeries accessories in the washroom. Radius on corners and edges of flange, door, and waste receptacle shall complement other Bobrick ConturaSeries washroom accessories. Flange shall be drawn, one-piece, seamless construction. Paper towel dispenser door shall be drawn, 18-gauge (1.2mm), one-piece, seamless construction; secured to cabinet with a full-length stainless steel piano-hinge; and equipped with a stainless steel cable door-swing limiter and flush tumbler lock keyed like other Bobrick washroom accessories. Paper towel dispenser shall dispense 600 C-fold or 800 multifold paper towels. Unit equipped with TowelMate consisting of a 90° return towel guide angle inside cabinet to prevent paper towels from falling forward out when door is opened for servicing and a Nylon Rod across the center of the towel tray to dispense paper towels one at a time. Waste receptacle shall have a formed, 18-gauge (1.2mm), one-piece, seamless, removable front panel with top edge hemmed. Unit equipped with LinerMate trash liner holder fabricated with molded plastic trash liner holder sleeve and a 20-gauge (0.91mm), U-shaped support strap; riveted construction. Liner holder shall have an arc at front and same shape as inside of waste receptacle area. LinerMate facilitates installation and removal of disposable trash liners and retains liner inside waste receptacle. Capacity of waste receptacle shall be 15.0-gal. (56.8-L).

Recessed Paper Towel Dispenser And Waste Receptacle shall be Model B-43944 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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Hand Dryer

Product: Xlerator Hand Dryer or approved equal

Locations/Applications: Restrooms

Product Requirements:

- Activated by infrared optical sensor located next to air outlet. Dryer shall operate as long as hands are under the air outlet
- ADA compliant recess kit
- UL Listed
- USGBC (Recommended)

XLERATOR® HAND DRYER

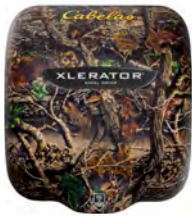
MODELS: **XL - BW W GR C SB SI SP** OPTIONS: **-1.1N** (Noise Reduction Nozzle) **-H** (HEPA Filter) **-VOLTAGE** (See Chart)

XL-BW
White Thermoset Resin (BMC)

XL-W
White Epoxy Painted

XL-GR
Graphite Textured Painted

XL-SP**
Custom Special Paint



XL-SI***
Custom Special Image

XL-C
Chrome Plated

XL-SB
Brushed Stainless Steel

* Dry time based on third party testing performed by SGS International on standard XLERATOR hand dryer with 0.8 nozzle to 0.2g or less of residual moisture.
** Special Paint powder-coated covers are available in many colors and textures.
*** Exclusive digital image technology allows for the addition of company, school or team logos with any color, design or a 'green message'.

FOR ARCHITECT/ENGINEER APPROVAL

Job Name _____ Date _____

Model Specified _____ Quantity _____

Variations Specified _____

Customer/Wholesaler _____

Contractor _____

Architect _____

PERFORMANCE

A. Dry Time: 10-15 Seconds*

B. Wattage: 1500 Watts

C. Certifications: c UL us, CE, RoHS, OSHA Standards, GreenSpec Listed

CONSTRUCTION

A. All covers will be fastened to a base plate by two chrome plated tamper-proof bolts.
Cover shall be one of the following:
Die-cast zinc alloy - One-piece, heavy-duty, rib-reinforced, lightweight, unbreakable, rustproof and all exposed surfaces shall be bright chrome plated or finished with chip-proof, electrostatically applied epoxy paint.
Bulk Molding Compound (BMC) – White reinforced thermoset resin.
Stainless Steel – with a brushed finish.
Special Image – Digital image applied to die-cast or stainless steel covers using patented Kolorfusion Sublimation Decoration process.

B. Base plate shall be equipped with (3) 7/8" (22 mm) diameter holes, the bottom one is suitable for use with surface conduit.

C. All internal parts shall be coated according to Underwriters' Laboratories, Inc. requirements.

D. Entire mechanism shall be internally grounded.

E. Options
HEPA Filtration System: Filters 99.97% of bacteria and particles at 0.3 microns from the air stream.
1.1 Noise Reduction Nozzle: Lowers decibel level 9 dB by reducing air deflection noise but increases dry time by approximately 3 seconds.

F. Accessories (optional)
Sound and Speed Control: 40112 (110V), 40113 (208-240V)
Microban® Antimicrobial Wall Guards: 89W (White), 89B (Black), 89S (Stainless)
XChanger Paper Towel Retrofit Kit: 40550, 40551 (ADA Height)
ADA Recess Kit: 40502

MECHANISM

A. Motor shall be a thermally protected, series commutated, through-flow discharge vacuum motor/blower (5/8 hp / 20,000 rpm) which provides air velocity of up to 19,000 LFM (linear feet per minute) at the air outlet and 16,000 LFM at the hands (4 inches [102 mm] below air outlet).

B. Heating element (970 w) is constructed of Nichrome wire and mounted inside the blower housing, thereby being vandal proof. It shall be protected by an automatic resetting thermostat, which shall open whenever air flow is cut off and shall close when flow of air is resumed. It shall produce an air temperature of up to 135°F (57°C) at a 72°F (22°C) ambient room temperature at the hands (4 inches [102 mm] below air outlet).

C. Control assembly is activated by an infrared optical sensor located next to the air outlet. The dryer shall operate as long as hands are under the air outlet. There is a 35-second lockout feature if hands are not removed.

LIMITED WARRANTY

The dryer shall be guaranteed to be free from defects for a period of five (5) years. Warranty shall include labor performed at factory as well as the repair or exchange of defective parts, at manufacturer's option.

QUANTITY RECOMMENDATIONS

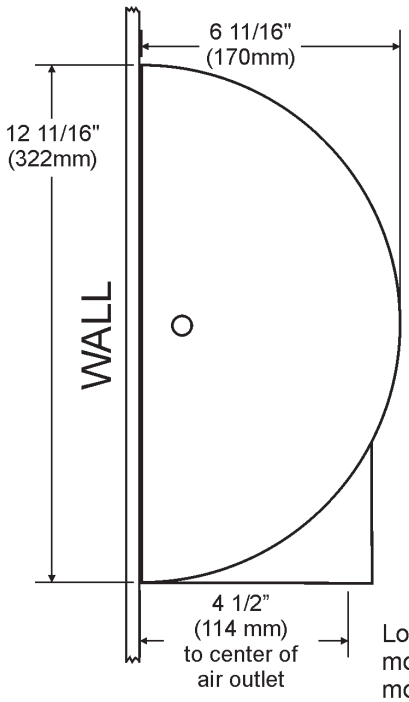
One dryer for every two washbasins is sufficient for most applications. If restroom traffic is unusually heavy, we suggest one dryer per washbasin in small installations and two dryers for every three washbasins in larger installations. When a 54" washfountain is used, we suggest four to five dryers.

EXCEL DRYER, Inc.
East Longmeadow, MA
Phone 1.800.255.9235
Fax 1.413.525.2853
sales@exceldryer.com
www.exceldryer.com

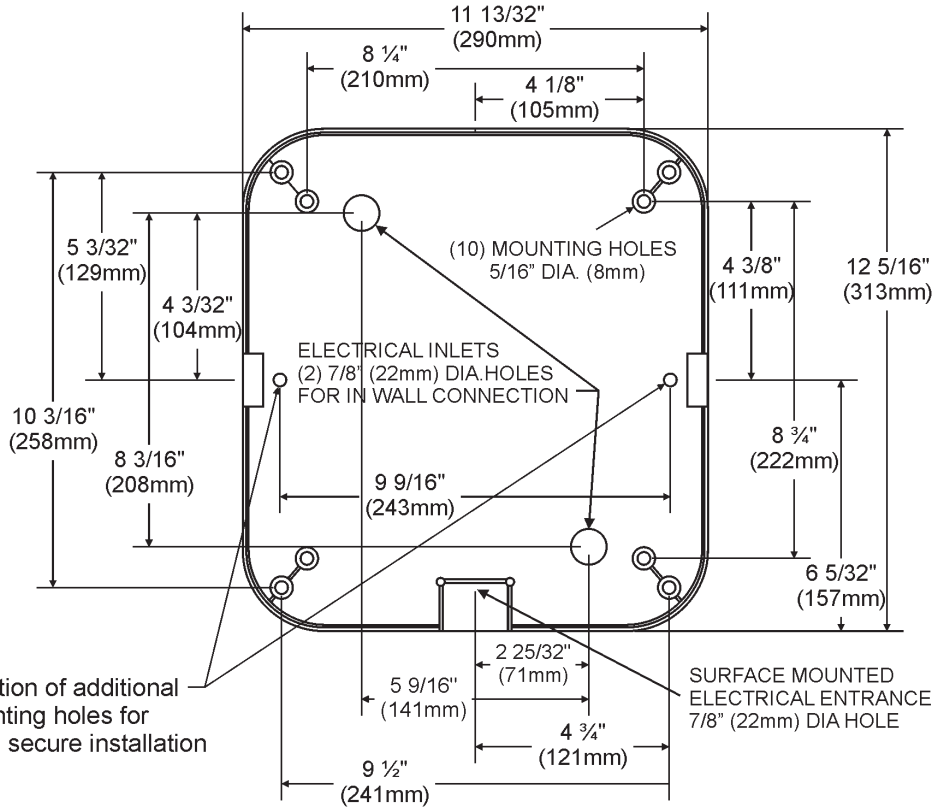
XLERATOR® HAND DRYER

MODELS: **XL - BW W GR C SB SI SP** OPTIONS: **-1.1N** (Noise Reduction Nozzle) **-H** (HEPA Filter) **-VOLTAGE** (See Chart)

SIDE VIEW



FRONT VIEW FACING WALL



DIMENSIONS

Width 11 3/4" (298 mm) **Height** 12 11/16" (322 mm) **Depth** 6 11/16" (170 mm)

ACTIVATION

Automatic Sensor Operated

MOUNTING

Surface Mounted

WEIGHT

XL-BW: 15 lbs. (6.8 kgs.) **XL-SB**: 16 lbs. (7.26 kgs.) **XL-W, GR, C, SI, SP**: 17 lbs. (7.71 kgs.)

ELECTRICAL

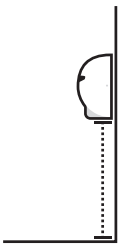
Units are Single Phase 1500 Watts and available as specified in:

110-120V	12.5A	60 Hz	c UL us
208V	7A	50/60 Hz	c UL us
220-240V	6.5A	50/60 Hz	c UL us
277V	5.5A	60 Hz	c UL us
230V	6.5A	50 Hz	CE

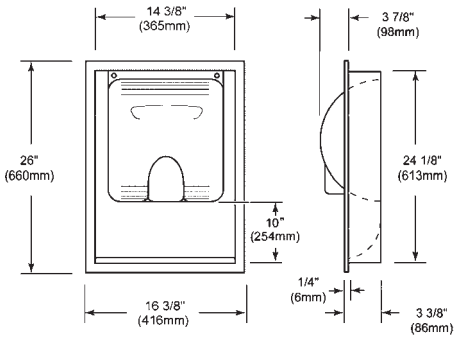
SUGGESTED MOUNTING HEIGHTS

from floor to bottom of dryer:

Men	45"	(114 cm)
Women	43"	(109 cm)
Teenagers	41"	(104 cm)
Small Children	35"	(89 cm)
Handicapped	37"	(94 cm)



OPTIONAL ADA-COMPLIANT RECESS KIT



Part # 40502

DIMENSIONS

Width 16 3/8" (416 mm) **Height** 26" (660 mm) **Depth** 3 3/8" (86 mm)

WEIGHT

11 lbs. (4.99 kgs.)

Bottom of recessed wall box should be 10" (254 mm) below suggested mounting height for dryer.

DIVISION 12

FURNISHINGS

CANNONDESIGN

Vertical Blinds

Product: Levoler Vertical Blinds with Zirlon Wheeled Head Rail System or approved equal

Locations/Applications: Throughout

Product Requirements:

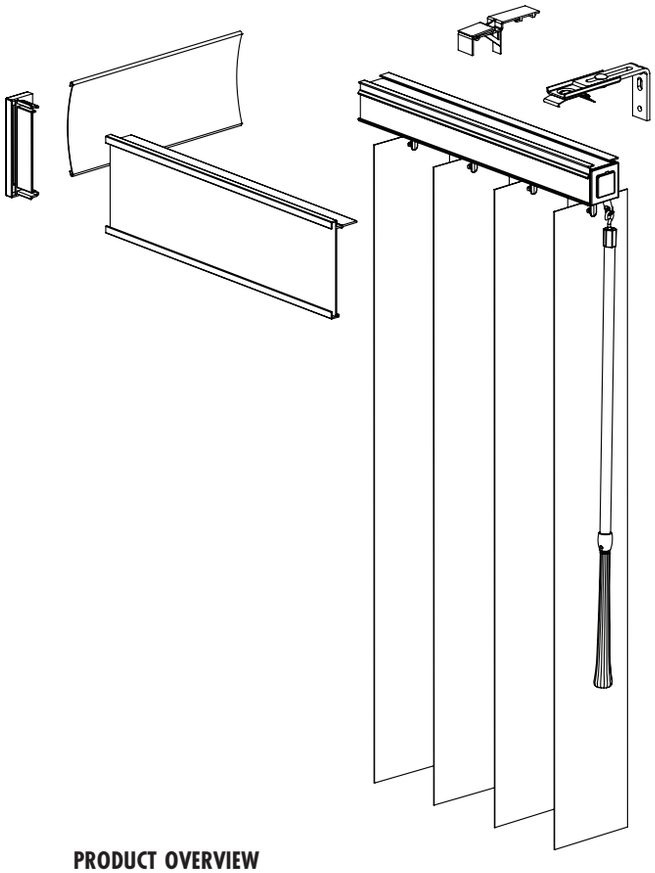
- Self Lubricating wheeled system
- NFPA 701 preferred
- Cordless wand control preferred
- Lifetime limited warranty

LEVOLOR®

Vertical Blinds with Zirlon® Wheeled Head Rail System

Model # LVERT

Versatile, high quality solution for large windows, sliding doors and commercial applications.



KEY FEATURES:

- **Self-lubricating wheeled system glides smoothly**
- **NFPA 701 available on PVC Vanes**
- **Available in over 200 updated vane finishes**
- **Cordless wand control standard, Cord/chain option available free of charge**
- **Lifetime Limited Warranty**

PRODUCT OVERVIEW

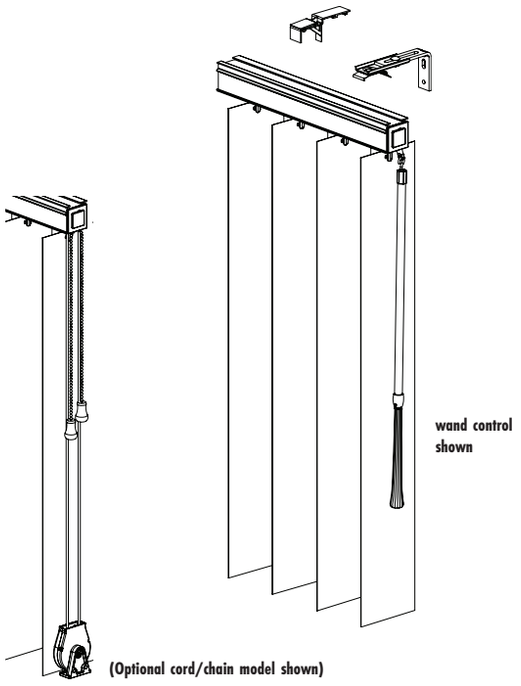
Exclusive to Levolor Vertical Blinds, the Zirlon Wheeled System is designed for durability and superior performance; perfect for applications in hospitals, hotels and schools.

Carriers are specially designed at $\frac{3}{8}$", versus standard $\frac{7}{16}$". While this not only creates a better aesthetic, it also allows for a smaller wall pocket needed to contain the drawn blinds. Choose from four easy-to-use draw types: Right Stack, Left Stack, Dual Stack and Center Stack.

Now standard with cordless wand control to eliminate dangling cords/chains, providing a clean look and smooth operation. Choose from high-quality fiberglass and zinc wands in four finish options in two profiles that coordinate with valances.

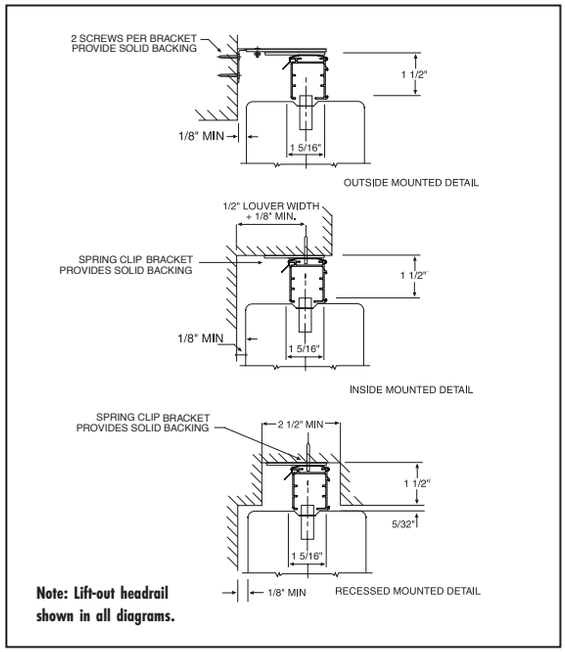
Choose from over 200 specialty finishes that offer a beautiful window solution and great coordination with the entire line of Levolor Blinds & Shades. Get a Perfect Match with Levolor's new 2½" PVC Horizontal Blinds. Finish the look of your window treatment by choosing a headrail that is compatible with the entire line of Levolor vanes, as well at three different valance options designed to accent today's architectural trends.

Custom Vertical Blinds



(Optional cord/chain model shown)

Custom Vertical Blind mounting detail.



Note: Lift-out headrail shown in all diagrams.

PRODUCT SPECIFICATIONS

For more detailed specifications please reference the Vertical Blinds with Zirlon Wheeled Headrail System product Guide Specifications

Products

A. Zirlon Wheeled System Vertical Blinds manufactured by Levolor.
B. Lifetime Limited Warranty
C. Materials:

☐ **Headrail** shall be silver painted aluminum. 1⅝" wide x 1⅛" high

☐ **Carriers** shall be made of Delrin, ⅜" wide and traverse on Zirlon wheels to reduce draw force. The vane stem shall be of snap-out design to yield when subjected to interference without damage to the blade or any part of the carriage assembly.

☐ **Rotation Mechanism** shall allow vanes to be rotated by means of a fiberglass wand with zinc handle or a #6 nickel plated bead chain. Cordless wand standard. ⅜" diameter wand is available in two styles – Transitional (standard with DesignLine™ valance) or Traditional. Both styles are available in four finishes:

a. Traditional wand finish options:
1. White: 67171
2. Off White: 67172
3. Satin Nickel: 67174
4. Bronze: 67176

b. Transitional wand finish options:
1. White: 67271
2. Off White: 67272
3. Satin Nickel: 67274
4. Bronze: 67276

☐ **Traversing Mechanism** shall allow vertical blinds to traverse left to right, right to left, split or center. Blinds shall traverse by means of fiberglass cordless wand with zinc handle (standard control option). With the Cord/Chain option, vertical blinds shall traverse left to right, right to left, split or center by means of a non-stretch traverse cord.

☐ **Installation Brackets** shall be provided for overhead or surface installation using brackets and angle brackets. Brackets shall be designed to facilitate installation and removal of track.

☐ **Vanes** shall be (select one):

a. Solid curved
b. Embossed curved
c. S-Shape
d. Laminated
e. Free hanging fabric
f. Perforated

☐ **Options** shall include:

a. Cordless wand control (standard)
b. Cord/Chain control
c. Backstacker™ (for Cord/Chain control only)
d. One way right stack
e. One way left stack
f. Dual stack
g. Center stack
h. Reverse stack (for Cord/Chain control only)
j. DesignLine™ valance (standard)
k. Upgraded valances
l. Cut outs
m. Angle top
n. Bottom chains

LEVOLOR®
A Newell Rubbermaid Brand

Levolor Window Fashions
3 Glenlake Parkway
Atlanta, GA 30328

Contract Customer Service
1-800-826-8021
www.levolorcontract.com

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LEVOLOR®

GUIDE SPECIFICATIONS

Vertical Blinds with Zirlon® Wheeled Head Rail System

Model # LVERT

Versatile top quality vertical headrail system for commercial office applications.

PART I – GENERAL

1.01 SCOPE

A. Furnish and install Vertical Blinds, provided by Levolor, 3 Glenlake Parkway, Atlanta, GA 30328 in accordance with specifications, drawings, and contract documents.

B. Related work specified elsewhere.

1.02 QUALITY ASSURANCE

A. Installer's qualifications:

1. The installer shall be a firm approved by Levolor's Contract Division.

2. The installer shall be qualified to install the product specified, as demonstrated by prior experience.

B. Job mock-up: (Describe)

1.03 SUBMITTALS

A. Product information: Submit Levolor's product literature and installation instructions.

B. Shop drawings: Indicate field-measured dimensions of opening which are to receive blinds, details on mounting surface and sill conditions, and details of corners and conditions between adjacent blinds.

C. Color samples: Submit a sample of each type and color of material specified.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping

1. Materials shall be delivered to the project in Levolor's original unopened packaging with labels intact.

B. Storage:

1. Materials shall be stored in a clean area which is free of corrosive fumes, dust, and away from construction activities.

2. Materials shall be stacked horizontally using plastic or wood shims such that drainage and ventilation are provided for, and such that water cannot accumulate in, about or upon the containers.

3. Stacks shall be covered with tarpaulins or plastic such that ventilation is provided for, and such that contaminants are prevented from contacting surfaces.

1.05 PROJECT/SITE CONDITIONS (BEFORE PRODUCT INSTALLATION BEGINS)

A. Roof must be tight, windows and frames installed and glazed, and interior doors hung.

B. Wet work including concrete, masonry, plaster, stucco, terrazzo, sheetrock, spackling, and taping (including sanding) shall be complete and dry.

C. Ceilings, window pockets, electrical, and mechanical work above the product shall be complete.

D. Electrical power (110 volt AC) shall be available for installer's tools within 500 ft. of product installation areas.

1.06 WARRANTY

A. Lifetime Limited Warranty: Levolor Contract shall repair or replace for the life of the product, at its option, without charge, any part found defective in workmanship or material as long as the blind remains in the same window for which it was purchased.

PART II – PRODUCTS

2.01 MANUFACTURER AND PRODUCT DESCRIPTION:

A. Vertical Blind Zirlon Headrail System manufactured by Levolor.

B. Materials:

1. Headrail shall be of extruded silver painted aluminum alloy 1⅝" wide x 1⅛" high with capped ends, provided with Delrin, or equal, sprocket wheels. End caps shall be equipped with covers to enclose sprockets and rotation rod ends and rollers for traverse cords.

2. Carriers shall be made of Delrin, ⅜" wide and traverse on Zirlon wheels to reduce draw force. No glides or sliders shall be allowed. The vane stem shall be of snap-out design to yield when subjected to interference without damage to the blade or any part of the carriage assembly.

3. Plastic (Delrin) spacer links shall space and stabilize carriers by passing smoothly between stabilizer guides on each carrier.

4. Vanes shall rotate 180 degrees and pack, when traversed, into no more than ⅜" per vane. When rotated, 3½" vanes shall overlap not less than ⅜".

5. Rotation mechanism shall allow vanes to be rotated by means of:

I. Cordless wand standard. ⅜" diameter wand is available in two styles – Transitional (standard with DesignLine™ valance) or Traditional. Both styles are available in four finishes:

a. Traditional wand finish options:
1. White: 67171
2. Off White: 67172
3. Satin Nickel: 67174
4. Bronze: 67176

b. Transitional wand finish options
1. White: 67271
2. Off White: 67272
3. Satin Nickel: 67274
4. Bronze: 67276

II. Cord/Chain. Either actuation method shall provide 180 degree rotation by turning a keyed aluminum rod actuating Delrin worm and spur gear in each carrier. Gears shall provide no less than 8-to-1 mechanical advantage and keep vanes fixed until reset by control. Spur and worm gear shall slip under extreme loading and be able to be realigned.

6. Traversing mechanism shall allow vertical blinds to traverse left to right, right to left, split or center. Blinds shall traverse by means of a fiberglass cordless wand with zinc handle. Vanes rotate and traverse with the same wand.With the Cord/Chain option, vertical blinds shall traverse left to right, right to left, split or center by means of a non-stretch traverse cord.

7. End Caps: Control and return end cap assemblies shall be molded to match aluminum extrusion profile and provide contemporary aesthetic appearance.

11R229_ Zirlon Vertical Spec.indd 1 9/14/11 9:31 AM

8. Installation Brackets shall be provided for overhead or surface installation using brackets and angle brackets. Brackets shall be designed to facilitate installation and removal of track.

9. Vane spacing: A plastic (Delrin) spacer link integral with the carrier body shall be used to provide visually uniform vane spacing when the blind is fully drawn. Normal vane spacing on center is a fraction of an inch less than the vane size. For example:

Vane width: 3½" Spacing on center 3⅛"

10. Vanes shall be selected from the following (select one): Control location and Stack Draw should be specified.

I. Vanes shall be extruded of 100% GEON solid vinyl or equal. The vinyl shall also contain ultra violet inhibitors. Calcium carbonate content will not exceed 15% on standard colors. Vanes shall withstand 140° heat chamber for thirty minutes without distortion, and with no more shrink and stretch than ½ of 1%. A ten-foot vane suspended from the center of one end shall hang straight with no twist, warp or bow.

Vanes shall be selected from the following styles:

- Solid curved
- Embossed curved
- S-shape
- Laminated
- Perforated

II. Fabric vanes are available as free hanging

Vanes shall be free hanging woven, slit to 3½" wide and color fast. Vanes shall have a steel weight inserted into a sewn pocket at bottom of vane.

11. DesignLine™ valance is standard. Round Wrap or Tailored Corner must be specified.

12. Options available are:

a. Cordless wand control (standard)
b. Cord/Chain control
c. Backstacker™ (for Cord/Chain control only)
d. One way right stack
e. One way left stack
f. Dual stack
g. Center stack
h. Reverse stack (for Cord/Chain control only)
j. DesignLine™ valance (standard)
k. Upgraded valances
l. Cut outs
m. Angle top
n. Bottom chains

PART III – EXECUTION

3.01 INSPECTION

A. Window treatment subcontractor shall be responsible for inspection of site, field measurements, and approval of mounting surfaces and installation conditions.

B. Subcontractor shall verify that site is free of conditions that interfere with blind installation and operation, and shall begin installation only when any unsatisfactory conditions have been rectified.

3.02 INSTALLATION

A. Installation shall comply with Levolor specifications, standards, and procedures.

B. Provide support brackets as per Levolor's installation instructions.

C. See installation instructions packaged with blinds for more installation details.

D. Provide adequate clearance to permit unencumbered operation of blind and hardware.

E. Demonstrate blinds to be in uniform and smooth working order.

3.03 CLEANING

A. Vacuum fabric vanes lightly with brush attachment on a regular basis. Stains may be spot cleaned by sponging gently with mild detergent or fabric cleaner. Ensure proper drying following cleaning by providing adequate ventilation.

B. Clean soiled PVC vanes by wiping clean with only a mild liquid detergent soap solution and water. Do not use abrasive cleansers. Ensure proper drying following cleaning by providing adequate ventilation.

Please contact Contract Customer Service at
800.826.8021

LEVOLOR®
A Newell Rubbermaid Brand

Levolor Window Fashions
3 Glenlake Parkway
Atlanta, GA 30328

Contract Customer Service
1-800-826-8021
www.levolorcontract.com

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F0229011

Room Darkening Shades

Product: MechoShade Blackout Shadecloth Collection - Classic Blackout

Locations/Applications: Throughout

Product Requirements:

- Openness Factor: 0%
- NFPA 701-2004: pass
- GREENGUARD products recommended

Blackout Shadecloth Collection

Equinox | Midnite | MirroFilm | Classic Blackout

Equinox Blackout

0100 Series (opaque)

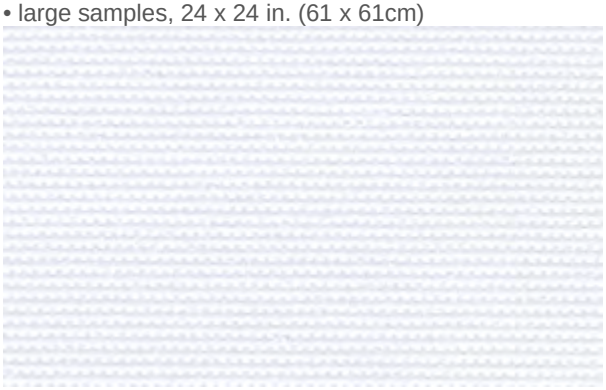
This series is composed of a PVC-free fiberglass material with an opaque acrylic backing that is appropriate for multimedia areas. The fabrication provides thermal insulation, offers opacity at the window wall, and is flame retardant and fade resistant.

Content: 66% acrylic (coating), 34% fiberglass (yarn)
Openness factor: 0% (opaque)
Stocked: 98 in. (249cm) wide
NFPA 701-2004: pass

PVC-Free FR

To request a sample, send an e-mail to samples@mechoshade.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

Privacy / Glare Control

Product: MechoShade EuroVeil Basket Weave 5300 Series

Locations/Applications: Throughout

Product Requirements:

- Openness Factor: 3-5%
- NFPA 701-2004: pass
- GREENGUARD products recommended

EuroVeil® Basket Weave

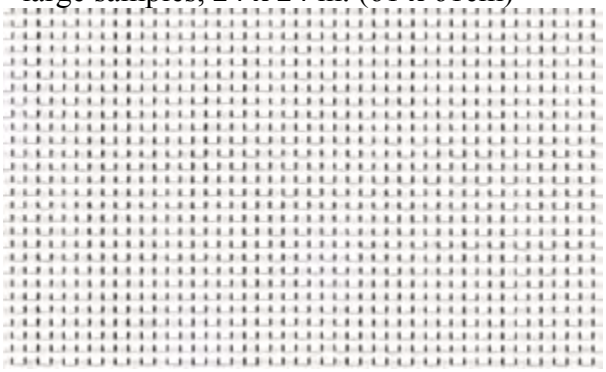
5300 Series (5% open)

This series consists of a thin, fine, see-through screen cloth for window shading. It features a soft texture in a broad range of colors, is ideal for office interiors, and complements today's minimalist architecture.

Content: 85% PVC (coating), 15% polyester (yarn)
Openness factor: approx. 5%
Stocked: 63 in. (160cm) and 96 in. (244cm) wide
NFPA 701-2004: pass

Solar optical properties

To request a sample, send an e-mail to samples@mechoshade.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)



White 5301

Sound Absorbing

Product: MechoShade AcoustiVeil Dimout or approved equal

Locations/Applications: Throughout

Product Requirements:

- Openness Factor: 0-1%
- NRC Rating: 0,575
- NFPA 701-2004: pass
- GREENGUARD products recommended
- PVC-Free products recommended

AcoustiVeil Dimout

0890 Series (0–1% open)

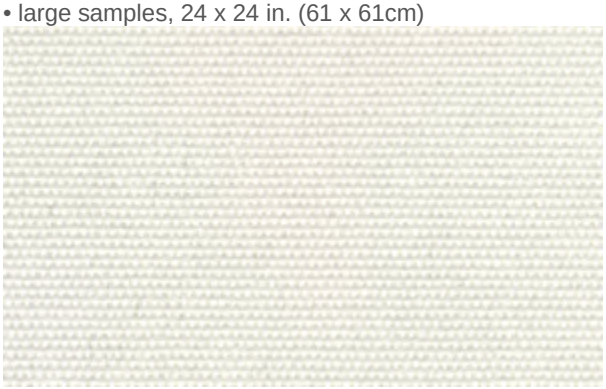
This series is composed of an eco-friendly material that unites form and function as a tightly woven, sound-absorbing, light-blocking, near-blackout textile. Its woven flame-retardant polyester will enhance any interior. With a Noise Reduction Coefficient (NRC) of 0.575, the shadecloth appreciably filters noise and reduces sound reverberation. When sound is absorbed, echoes are reduced.

Content: 100% polyester
Openness factor: 0–1%
Stocked: 86 in. (218cm) wide
NFPA 701-2004: pass
NRC rating: 0.575

PVC-Free FR

To request a sample, send an e-mail to samples@mechoshade.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)



White 0891

High Pressure Laminate

Related Masterspec: Division 6, 064219 - Plastic-Laminate-Faced Wood Paneling
Division 6, 064116 - Plastic-Laminate-Faced Wood Architectural Cabinets

Product: Formica Laminate or approved equal

- General Purpose Grade 10/HGS to be used for interior horizontal or vertical surfaces
- Post Forming Laminate Grade 12/HGP to be used for interior horizontal or vertical surfaces requiring 1/2” or greater outside radiused edges and/or 3/16” cove radii
- Post Forming Laminate Grade 20/VGP to be used for interior vertical surfaces requiring 3/8” or greater outside radiused edges

Locations/Applications: Millwork

Product Requirements: Product must meet or exceed minimum requirements for the following-

- LD3.3 Test (light resistance)
- LD3.4 Test (stain resistance)
- LD3.6 Test (high temperature resistance)
- LD3.8 Test (ball impact resistance)
- LD3.13 Test (water resistance-cylces)

Codes and Specifications- product must meet or exceed requirements for the following-

- ASTM E-84
- U.S. Federal Specification, LP-508-H, Style D, Type I, Class 1
- U.S. Military Specification, MIL-P-17171E(SH), Type I
- FMVSS 302
- NSF Standard 35
- ASTM-G22 Approved

Environmental-

- GREENGUARD Certification strongly encouraged

FORMICA® LAMINATE BY FORMICA GROUP
TECHNICAL DATA (GENERAL PUPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20)

PRODUCT DESCRIPTION

Melamine-impregnated decorative surface papers are combined with phenolic-treated kraft paper and consolidated in a press at high pressures. The sheet back is sanded to maintain a uniform thickness and facilitate bonding.

COLORS AND FINISH

Formica® Brand Laminate sheets (horizontal general purpose grade 10/HGS) are available in a broad selection of designs and colors. Standard finishes for each pattern are detailed in the *Formica Corporation - National Product Guide* (Form No. 02-034W). Not all finishes are available in all Solid Colors / Patterns / Woodgrains. Polished finish (-90) is not recommended for heavy-duty horizontal surfaces.

Formica Brand Laminate sheets (horizontal post-forming grade 12/HGP and vertical post-forming grade 20/VGP) are available in a broad selection of designs and colors. Standard finishes for each pattern are detailed in the *Formica Corporation - National Product Guide* (Form No. 02-034W). Not all finishes are available in all Solid Colors / Patterns / Woodgrains. Polished finish (-90) is not recommended for heavy-duty horizontal surfaces.

RECOMMENDED APPLICATION

Grade 10/HGS

Formica Brand Laminate – general purpose grade 10/HGS is intended for application to interior horizontal or vertical surfaces where design, appearance, quality, durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

Grade 12/HGP

Formica Brand Laminate – post-forming laminate grade 12/HGP is intended for application to interior horizontal or vertical surfaces requiring 1/2" (12.7mm) or greater outside radiused edges, and/or 3/16" (4.8mm) cove radii, where design, appearance, quality,
durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

Grade 20/VGP

Formica Brand Laminate – post-forming grade 20/VGP is intended for application to interior vertical surfaces requiring 3/8" (9.5mm) or greater outside radiused edges, where design, appearance, quality, durability, resistance to stain, and resistance to heat from ordinary sources are important considerations.

FABRICATION AND ASSEMBLY

LIMITATIONS

Formica Brand Laminate is designed for interior use only. Do not adhere directly to plaster, drywall (gypsum board), or concrete. Do not use in areas exposed to temperatures exceeding 275°F (135°C) or for exterior applications. When using Grade 20, **finished panel widths should not exceed 24" (610mm) maximum,** unless the adhesive system is a rigid set adhesive like PVA (wood glue). We do not recommend contact adhesive for Grade 20 panels wider than 24" (610mm). When using Grade 20-90 gloss finish on a panel application, there will be a degree of telegraphing on the surface. Formica recommends using Grade 10-90 or 12-90 gloss for these applications.

MACHINING LOW SHEEN LAMINATE SHEETS

Formica Brand Laminate with low sheen surfaces are subject to marring. Fabricating with peel coat on surface (if applicable) is recommended. Router base should be clean and free of burrs and debris. Table saws should be clean, flat, and free of burrs.

STORAGE

Formica Brand Laminate should be stored horizontally, with a caul board or other protective sheet placed on top to protect the material from possible damage. The material should be protected from moisture, and should never be stored in contact with the floor or an outside wall. Optimum conditions for storage are approximately 75°F (24°C), and 45% to 55% relative humidity.

PRECONDITIONING

Prior to fabrication, allow laminate sheet and substrate to acclimate for at least 48 hours at the same ambient conditions. Optimum conditions are approximately 75°F (24°C), and relative humidity of 45% to 55%. Provisions should be made for the circulation of air around the materials.

SUBSTRATES

Formica Brand Laminate sheet should be bonded to an appropriate substrate, such as #45 density particleboard (ANSI A208.1 - 1999), or Medium Density Fiberboard (MDF). Due to the potential for stress cracking, shrink-back, and surface telegraphing problems, the use of plywood is strongly discouraged and not recommended. The substrate should be sanded smooth, and should be clean, free of oil or grease, and uniform in thickness.

Formica Brand Laminate sheet (grade 10/HGS) can be bonded to metal substrates using contact adhesive (see recommendations below, under Adhesives). Refer to Formica® Laminate Brief - Veneered to Metal Substrates for General Information, Materials, Conditions and Methods. Formica Corporation does not warranty this particular application.

FORMICA® LAMINATE BY FORMICA GROUP
TECHNICAL DATA (GENERAL PUPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20) CONTINUED

ADHESIVES

Contact, semi-rigid (PVAc), or rigid (urea, resorcinol) adhesives may be used. Follow the adhesive manufacturer's recommendations. Certain combinations of finish, substrate, and adhesive can cause telegraphing.

When bonding Formica Brand Laminate sheet (grade 10/ HGS) to metal substrates using contact adhesive, use Formica brand flammable solvent-based #155 or non-flammable solvent-based #120M contact adhesives. Do not use water-based or SBR types of contact adhesive when bonding laminate sheets to metal substrates.

ASSEMBLY

Material, equipment, and workmanship should conform to the Formica Corporation recommended standard practices, conditions, procedures, and recommendations as specified by ANSI/ NEMA LD3-2005, Architectural Woodwork Quality Standards and ANSI 161.2-1998 Standards.

Formica Brand Laminate sheets (grade 10, 12, and 20) can be sawed, drilled, routed, and fabricated using standard carbidetipped cutting tools.

Holes for screws or bolts should be drilled oversized.

Panel assemblies should be laminated with the appropriate backing sheet to minimize warpage. Formica backing sheets (grade 91/BKV or 92/BKH) are recommended for less critical applications. Optimum balancing is obtained by bonding the same surface laminate on both sides of the assembly with the same adhesive. Always align sanding marks in the same direction.

All inside corners of cutouts must be radiused as large as possible, 1/8" (3.18mm) minimum, to avoid stress cracking. The edges and corners should be routed, sanded, or filed smooth and free of chips or nicks. Panels fabricated using metal substrates, which are more dimensionally stable than wood-based materials, should be installed in a framing system, which captures the perimeter of the panel yet allows for the normal dimensional movement of the laminate. This is to protect the panel edge and prevent edge lifting or separation from the substrate, which can occur under dry conditions.

TECHNICAL DATA

Performance compliance of Formica Brand Laminate General purpose grade 10 and Post-forming grades 12 and 20

ANSI / NEMA STANDARDS PUBLICATION — LD3-2005

PHYSICAL PROPERTIES	LD3 TEST	10/HGS
Appearance	3.1	No ABC Defects
Light Resistance	3.3	Slight
Cleanability	3.4	20 (max.)
Stain Resistance	3.4	
Reagents 1 - 10		No Effect
Reagents 11 - 15		Moderate
Boiling Water Resistance	3.5	No Effect
High Temperature Resistance	3.6	Slight
Ball Impact Resistance - in	3.8	50 (min.)
- mm		1270 (min.)
Radiant Heat Resistance - sec	3.10	125 (min.)
Dimensional Change	3.11	
Machine Direction - %		0.50 (max.)
Cross Direction - %		0.90 (max.)
Wear Resistance - cycles	3.13	400 (min.)

PHYSICAL PROPERTIES	LD3 TEST	12/HGP	20/VGP
Appearance	3.1	No ABC Defects	No ABC Defects
Light Resistance	3.3	Slight	Slight
Cleanability	3.4	20 (max.)	20 (max.)
Stain Resistance	3.4		
Reagents 1 - 10		No Effect	No Effect
Reagents 11 - 15		Moderate	Moderate
Boiling Water Resistance	3.5	Slight	Slight
High Temperature Resistance	3.6	Slight	Slight
Ball Impact Resistance - in	3.8	30 (min.)	20 (min.)
- mm		762 (min.)	508 (min.)
Radiant Heat Resistance - sec	3.10	100 (min.)	80 (min.)
Dimensional Change	3.11		
Machine Direction - %		1.1 (max.)	1.1 (max.)
Cross Direction - %		1.4 (max.)	1.4 (max.)
Wear Resistance - cycles	3.13	400 (min.)	400 (min.)
Formability - in	3.14	5/8	1/2
- mm		16	12
Blister Resistance - sec	3.15	55	40

FORMICA® LAMINATE BY FORMICA GROUP
TECHNICAL DATA (GENERAL PUPOSE GRADE 10 AND POST-FORMING GRADES 12 & 20) CONTINUED

FIRE TEST DATA – ASTM E-84

Formica Corporation conducts and maintains an active fire testing program to provide code regulators, architects, and designers with current information on a variety of panel assemblies. Fire test data using Formica® Brand Laminate sheets (grades 10/HGS, 12HGP, and 20/VGP) is available upon request. Contact Formica® Technical Services at 1-800-FORMICA™ (option 2) or 513-786-3578 for assistance.

CODES AND SPECIFICATIONS

FORMICA BRAND LAMINATE
(GENERAL PURPOSE — GRADE 10/HGS / HORIZONTAL APPLICATION)

U.S. Federal Specification, LP-508-H, Style D, Type I, Class 1
U.S. Military Specification, MIL-P-17171E(SH), Type I
FMVSS 302
NSF Standard 35
ASTM-G22 Approved
City of New York, Board of Standards and Appeals, MEA No. 326-86M
GREENGUARD CERTIFICATION

FORMICA BRAND LAMINATE
(POST-FORMING — GRADE 12/HGP / HORIZONTAL APPLICATION)

U.S. Federal Specification, LP-508-H, Style D, Type II, Class 1
FMVSS 302
NSF Standard 35
City of New York, Board of Standards and Appeals, MEA No. 327-86M
GREENGUARD CERTIFICATION

FORMICA BRAND LAMINATE
(POST-FORMING — GRADE 20/VGP / VERTICAL APPLICATION)

U.S. Federal Specification, LP-508-H, Style D, Type II, Class 2
CFR Part 3280 Manufacturing Home Construction and Safety Standards
FMVSS 302
NSF Standard 35
GREENGUARD CERTIFICATION

SIZES

Sheet widths: 36" (914mm), 48" (1219mm), 60" (1524mm)
Sheet lengths: 96" (2438mm, 120" (3048mm), 144" (3658mm)

THICKNESS

	TYPICAL THICKNESS	NEMA THICKNESS RANGE
Grade 10 (HGS)	.045" (1.1mm)	.043" - .053" (1.08mm - 1.32mm)
Grade 12 (HGP)	.035" (0.9mm)	.034" - .044" (0.88mm - 1.12mm)
Grade 20 (VGP)	.026" (0.7mm)	.024" - .032" (0.6mm - 0.8mm)

WEIGHT PER SQUARE FOOT

Grade 10/HGS: 0.324 pounds
Grade 12/HGP: 0.252 pounds
Grade 20/VGP: 0.180 pounds

TO ORDER FORMICA BRAND LAMINATE SAMPLES, PLEASE CALL

U.S.: 1-800-FORMICA™ (select option 1)
Canada: 1-800-363-1405 for ZIP-CHIP service

HOW TO SPECIFY

Surface (and appropriate backing sheet) shall be Formica Brand Laminate by Formica Group, Cincinnati, Ohio.

COLOR NUMBER
COLOR NAME
GRADE
FINISH
SIZE

USE AND CARE

Refer to *Formica Brand Laminate Use and Care Guide* – Form No. YLT 02358w for specific details.

Formica Brand Laminate sheet may be cleaned with a damp cloth and mild detergent.

If in doubt about the suitability of a particular cleaner or detergent, check with its manufacturer. Use of abrasive cleaners, powders, scouring pads, steel wool, sandpaper, etc., can damage the finish of the decorative surface and are not recommended.

Acid or alkaline-based cleaners, compounds, etc., will mar, etch, corrode, and permanently discolor the decorative surface of laminate. Never use these materials on laminate, nor allow bottles, rags, etc., contaminated with them to contact the surface. Accidental spills or splatters from these harsh materials should be wiped off immediately, and the area cleaned thoroughly with a damp cloth.

LIMITED WARRANTY

Formica Corporation expressly warrants that, for a period of one (1) year from the date of first sale, these products will be reasonably free of defects in materials and workmanship, and that when properly handled and fabricated, will conform, within accepted tolerance, to applicable manufacturing specifications. Colors subject to dye lot variations. This limited warranty only applies to Formica Brand Laminate which is stored, handled, fabricated and installed in the manner recommended by Formica Corporation. Due to the variety of uses and applications to which Formica Brand Laminate may be put, **FORMICA CORPORATION CAN MAKE NO WARRANTY THAT THIS PRODUCT IS SUITABLE FOR ANY PARTICULAR PURPOSE AND CAN MAKE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OTHER THAN THOSE SET FORTH ABOVE.**

DISCLAIMER OF WARRANTIES

THE WARRANTIES SET FORTH HEREIN OR IN FORMICA CORPORATION'S WARRANTY DOCUMENTS WITH RESPECT TO A PRODUCT ARE THE ONLY WARRANTIES MADE BY FORMICA CORPORATION IN CONNECTION WITH THESE PRODUCTS, AND ARE EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. PRODUCTS SOLD BY FORMICA CORPORATION ARE SOLD ONLY TO THE SPECIFICATIONS SPECIFICALLY SET FORTH BY FORMICA CORPORATION IN WRITING. FORMICA CORPORATION'S SOLE OBLIGATION FOR A REMEDY TO BUYER SHALL BE REPAIR OR REPLACEMENT OF NON-CONFORMING PRODUCTS, OR AT THE OPTION OF FORMICA CORPORATION, RETURN OF THE PRODUCT AND REFUND OF THE PURCHASE PRICE. BUYER ASSUMES ALL RISK WHATSOEVER AS TO THE RESULT OF THE USE OF THE PRODUCTS PURCHASED, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES.

LIMITATION OF LIABILITY

No claim by buyer of any kind, including claims for indemnification, whether as to quality or amount of products delivered or for non-delivery of products, shall be greater in amount than the purchase price of the products in respect of which damages are claimed. **IN NO EVENT SHALL FORMICA CORPORATION BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL, RELIANCE, EXEMPLARY, OR CONSEQUENTIAL DAMAGES OR COVER, OR LOSS OF PROFIT, REVENUE OR USE, IN CONNECTION WITH, ARISING OUT OF, OR AS A RESULT OF, THE SALE, DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS SOLD HEREUNDER, OR FOR ANY LIABILITY OF BUYER TO ANY THIRD PARTY WITH RESPECT THERETO. BUYER SHALL INSPECT FOR NONCONFORMITY PROMPTLY UPON RECEIPT.** Failure by buyer to give Formica Corporation written notice of claim within 30 days from date of delivery or, in the case of non-delivery from the date fixed for delivery, shall constitute a waiver by buyer of all claims in respect of such products.

Solid Surfaces

Product: Corian or approved equal

Locations/Applications: Lavatory countertops; Reception Areas; Infirmary Surfaces; Tabletops; Cold Cafeteria Surfaces; Hot Cafeteria Surfaces; Windowsills

Product Requirements: Product must meet or exceed minimum requirements for the following:

- ISO 19712-2 (Light Resistance)
- ASTM G155 (Weatherability)
- NEMA LD 3-2005, Method 3.8 (Ball Impact Resistance)
- CSA B45.5-11/IAPMO Z124-2011 (Wear and Cleanability/Stain Resistance)
- ISO 19712-2 (Stain/Chemical-Resistance Test; Resistance to cigarette burns; Resistance to dry hear; Resistance to wet hear; Hot/Cold cycle water-resistance test; load test)
- ISO 4586-2 (Dimensional stability; Resistance to surface wear)
- ASTM G21 (Fungal Resistance)
- ASTM G22(Bacterial Resistance)
- NEMA LD 3-2005 (Boiling Waster Resistance/High Temperature Resistance)
- NFPA 101 Life Safety Code (ASTM E 84, NFPA 225 & UL 723) (Flame Spread Index; Smoke Developed Index)

Environmental-

- Product should meet or exceed emission guidelines for volatile organic compounds (VOCs), and hazardous air pollutants (HAPs)
- GREENGUARD Certification strongly encouraged

DUPONT
corian.

DUPONT™ CORIAN® PERFORMANCE PROPERTIES

PHYSICAL PROPERTIES

Property	Test	Typical Result
Density	ASTM D792	1.7 g/cm^3
Approximate weight per square foot ¼" (6 mm)		2.2 lbs.
Approximate weight per square foot ½" (12 mm)		4.4 lbs.
Thermal Expansion	ASTM D696	3.9 x 10^{-5} in./in.°C (2.2 x 10^{-5} in./in.°F)
Hardness - Rockwell "M" Scale	ASTM D785	>85
Hardness - Barcol Impressor	ISO 19712-2 (ASTM D2583)	56

MECHANICAL PROPERTIES

Property	Test	Typical Result
Flexural Modulus	ASTM D790	1.2 x 10^6 psi
Flexural Strength		10,000 psi
Tensile Modulus	ASTM D638	1.5 x 10^6 psi
Tensile Strength		6,000 psi
Tensile Elongation		0.4 % min.
Compressive strength	ASTM C365	16,000 psi

FITNESS FOR USE

Property	Test	Typical Result
Light Resistance (Xenon Arc)	ISO 19712-2	Pass
Weatherability	ASTM G155	ΔE^*_{94}<5 in 1,000 hrs.
Ball Impact Resistance: Sheets No fracture—½ lb. ball - 1/4"	NEMA LD 3-2005, Method 3.8	36 in. (No failure at height)
Ball Impact Resistance: Sheets No fracture—½ lb. ball - 1/2"		144 in. (No failure at height)
Wear and Cleanability	CSA B45.5-11/ IAPMO Z124-2011	Pass
Stain Resistance		Pass
Stain/chemical-resistance test	ISO 19712-2	Pass
Resistance to cigarette burns		Pass
Resistance to dry heat		Pass
Resistance to wet heat		Pass
Hot/cold cycle water-resistance test		Pass
Load test		Pass
Dimensional stability	ISO 4586-2	Pass
Resistance to surface wear		0.18 % wt/25 revolutions
Fungal Resistance	ASTM G21	ASTM Rating of 0, No observed growth on product at 100x power
Bacterial Resistance	ASTM G22	No observed growth on product at 100x power
Boiling Water Resistance	NEMA LD 3-2005	No visible change
High Temperature Resistance		No change
Flammability: All colors	NFPA 101® Life Safety Code® (ASTM E 84, NFPA 255 & UL 723)	Class I (Class A)
Flame Spread Index		<25
Smoke Developed Index		<25

Typical results for 12 mm solid colors unless gauge is specified. Properties may vary by aesthetic. These values are not intended for engineering calculations, if precise calculations are required contact DuPont for additional information. New York City Material Equipment Acceptance (MEA) number is 272-97-M. Sinks and lavatories meet CSA B45.5-11/IAPMO Z124-2011, ANSI Z-124.3 and ANSI Z124.6 standards for plastic sinks and lavatories.

DUPONT™ CORIAN® PERFORMANCE PROPERTIES

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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.

DUPONT™ CORIAN® PRODUCT OVERVIEW

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.

DUPONT™ CORIAN® PRODUCT OVERVIEW

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.

DUPONT™ CORIAN® PRODUCT OVERVIEW

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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THE FOLLOWING SPECIFICATION IS TO BE USED FOR INTERFACING WITH ARCHITECTURAL MILLWORK AND/OR HORIZONTAL TRIM COMPONENTS.

ADDITIONAL SOLID SURFACE MATERIALS MAY ALSO BE LOCATED IN DIVISION 9 AND DIVISION 10.

SECTION 06651
SOLID SURFACE FABRICATIONS

PART 1 — GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following horizontal and trim solid surface product types:

DELETE BELOW FOR REQUIREMENTS.

1. Countertops with sinks
2. Laboratory countertops
3. Lavatory tops with undermount bowls
4. Lavatory tops with integral bowls
5. Reception areas/nurses stations
6. Vanity tops
7. Tabletops
8. Bar tops
9. Seats
10. Cold cafeteria surfaces
11. Hot cafeteria surfaces
12. Windowsills
13. Thermoforming
14. Cove backsplashes
15. Color inlays

B. Related Sections include the following:

1. Division 1 Section “LEED Requirements” for additional LEED requirements.
2. Division 5 Section “Metal Fabrications” for Blocking.

USE ABOVE AND DELETE BELOW FOR NONCOMBUSTIBLE PROJECTS THAT WILL NOT ALLOW WOOD BLOCKING.

USE BELOW FOR ALL OTHER PROJECTS.

3. Division 6 Section “Rough Carpentry” for Blocking.
4. Division 9 Section “Wall Cladding.”
5. Division 10 Section “Toilet Partitions.”
6. Division 15 Section “Plumbing Fixtures.”
7. Division 16 Section “Wiring Devices.”

KEEP BELOW IF ALTERNATES ARE SPECIFIED IN DIVISION 1. IF THE PROJECT REQUIRES ALTERNATES, INSERT WORK REQUIRED FOR THE ALTERNATES BELOW AND COORDINATE WITH THE DRAWINGS.

C. Alternates:
1. Refer to Division 1 Section “Alternates” for description of work in this Section affected by alternates.

1.3 DEFINITION

A. Solid surface is defined as nonporous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment.

1.4 SUBMITTALS

A. Product data:
1. For each type of product indicated.
2. Product data for the following:
a. Chemical-resistant tops

PROVIDE LIST OF SPECIAL CHEMICALS THAT PRODUCT IS REQUIRED TO RESIST. DELETE BELOW IF NOT REQUIRED FOR PROJECT.

1) <Insert chemical name.>
2) <Insert chemical name.>
3) <Insert chemical name.>
4) <Insert chemical name.>
5) <Insert chemical name.>

B. Shop drawings:
1. Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices and other components.
a. Show full-size details, edge details, thermoforming requirements, attachments, etc.
b. Show locations and sizes of furring, blocking, including concealed blocking and reinforcement specified in other Sections.
c. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacle and other items installed in solid surface.

SAMPLES MAY BE PROVIDED IF COLOR AND FINISH HAVE NOT BEEN SPECIFIED.

IF COLOR AND FINISH ARE SPECIFIED, CONSIDER DELETING THIS PARAGRAPH.

C. Samples:
1. For each type of product indicated.
a. Submit minimum 6-inch by 6-inch sample in specified gloss.
b. Cut sample and seam together for representation of inconspicuous seam.
c. Indicate full range of color and pattern variation.
2. Approved samples will be retained as a standard for work.

D. Product data:
1. Indicate product description, fabrication information and compliance with specified performance requirements.

E. LEED submittals:

MAINTAIN BELOW IF LOW-EMITTING MATERIALS ARE REQUIRED FOR LEED CREDIT EQ4.1

1. Credit EQ 4.1:
    a. Manufacturer's product data for installation adhesives, including printed statement of VOC content and material safety data sheets.

MAINTAIN BELOW IF RECYCLED CONTENT IS REQUIRED FOR LEED CREDIT MR 5.1.

2. Credits MR 5.1:
    a. Product data indicating that materials are regionally manufactured and within 500 miles of the project site.

F. Product certificates:

1. For each type of product, signed by product manufacturer.

FEW MANUFACTURERS PROVIDE THIS TYPE OF CERTIFICATION COMPLIANCE. USE OF PARAGRAPH BELOW MAY LIMIT MANUFACTURER COMPETITION.

G. Fabricator/installer qualifications:

1. Provide copy of certification number.

H. Manufacturer certificates:

1. Signed by manufacturers certifying that they comply with requirements.

NSF/ANSI STANDARD 51: THERE ARE THREE CATEGORIES FOR NSF 51...FOOD CONTACT, SPLASH AND DRIP ZONE, ALL OTHER. FOR ANY APPLICATIONS WHERE FOOD MAY BE DROPPED ONTO A SERVING SURFACE, FOOD CONTACT LISTING SHOULD BE A PROJECT REQUIREMENT FOR THE SURFACING MATERIAL.

DELETE BELOW IF NO FOOD CONTACT IS REQUIRED FOR PROJECT.

I. NSF/ANSI standards:

1. Refer to www.nsf.org for the latest compliance to NSF/ANSI Standard 51 for food zone — all food types.

J. Maintenance data:

1. Submit manufacturer's care and maintenance data, including repair and cleaning instructions.
    a. Maintenance kit for finishes shall be submitted.
2. Include in project closeout documents.

1.5 QUALITY ASSURANCE

A. Qualifications:

1. Shop that employs skilled workers who custom fabricate products similar to those required for this project and whose products have a record of successful in-service performance.

B. Fabricator/installer qualifications:

1. Work of this section shall be by a certified fabricator/installer, certified in writing by the manufacturer.

C. Applicable standards:

1. Standards of the following, as referenced herein:
    a. American National Standards Institute (ANSI)
    b. American Society for Testing and Materials (ASTM)
    c. National Electrical Manufacturers Association (NEMA)
    d. NSF International
2. Fire test response characteristics:

a. Provide with the following Class A (Class I) surface burning characteristics as determined by testing identical products per UL 723 (ASTM E84) or another testing and inspecting agency acceptable to authorities having jurisdiction:
    1) Flame Spread Index: 25 or less.
    2) Smoke Developed Index: 450 or less.

DELETE BELOW IF COMPLEXITY OF PROJECT DOES NOT REQUIRE COORDINATION DRAWINGS.

D. Coordination drawings:
1. Shall be prepared indicating:
    a. Plumbing work.
    b. Electrical work.
    c. Miscellaneous steel for the general work.
    d. Indicate location of all walls (rated and non-rated), blocking locations and recessed wall items, etc.
2. Content:
    a. Project-specific information, drawn accurately to scale.
    b. Do not base coordination drawings on reproductions of the contract documents or standard printed data.
    c. Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements.
    d. Provide alternate sketches to designer for resolution of such conflicts.
        1) Minor dimension changes and difficult installations will not be considered changes to the contract.

E. Drawings shall:
1. Be produced in 1/2-inch scale for all fabricated items.

F. Drawings must be complete and submitted to the architect within 60 days after award of contract for record only.
1. No review or approval will be forthcoming.
2. Coordination drawings are required for the benefit of contractor's fabricators/installers as an aid to coordination of their work so as to eliminate or reduce conflicts that may arise during the installation of their work.

G. Job mock-up:
1. Prior to fabrication of architectural millwork, erect sample unit to further verify selections made under sample submittals and to demonstrate the quality of materials and execution.

IT IS RECOMMENDED THAT THE DESIGNER INDICATE THOSE LOCATIONS REQUIRED FOR MOCK-UPS. MOCK-UP SHOULD INCLUDE EDGING, BOWLS AND/OR COVES. THESE NEED TO BE INCORPORATED INTO THE FINAL PROJECT TO SAVE COST.

2. Mock-up shall be _____ .
3. Build the mock-up to comply with the contract documents and install in a location as directed by the architect.
4. Notify the architect two weeks in advance of the date of when the mock-up will be delivered.
5. Should mock-up not be approved, re-fabricate and reinstall until approval is secured.
    a. Remove rejected units from project site.
6. After approval, the mock-up may become a part of the project.
7. This mock-up, once approved, shall serve as a standard for judging quality of all completed units of work.

KEEP PARAGRAPH BELOW IF SIZE OR COMPLEXITY OF PROJECT REQUIRES PRE-INSTALLATION MEETING.

H. Pre-installation conference:
1. Conduct conference at project site to comply with requirements in Division 1.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver no components to project site until areas are ready for installation.
B. Store components indoors prior to installation.
C. Handle materials to prevent damage to finished surfaces.
1. Provide protective coverings to prevent physical damage or staining following installation for duration of project.

1.7 WARRANTY

A. Provide manufacturer's warranty against defects in materials.
1. Warranty shall provide material and labor to repair or replace defective materials.
2. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.

KEEP BELOW FOR RESIDENTIAL USE ONLY.

3. Warranty shall be transferable to subsequent owner for remainder of warranty period.

B. Optional Installed Warranty:
1. To qualify for the optional Installed Warranty, fabrication and installation must be performed by a DuPont Certified Fabrication/Installation source who will provide a brand plate for the application.
2. This warranty covers all fabrication and installation performed by the certified/approved source subject to the specific wording contained in the Installed Warranty Card.

C. Manufacturer's warranty period:
1. Ten years from date of substantial completion.

1.8 MAINTENANCE

A. Provide maintenance requirements as specified by the manufacturer.

PART 2 — PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers:
1. Subject to compliance with requirements, provide products by one of the following:
a. Corian® surfaces from the DuPont company (basis of design).
b. Insert manufacturer's name.

c. Insert manufacturer's name.

2.2 MATERIALS

A. Solid polymer components
1. Cast, nonporous, filled polymer, not coated, laminated or of composite construction with through body colors meeting ANSI Z124.3 or ANSI Z124.6, having minimum physical and performance properties specified.
2. Superficial damage to a depth of 0.010 inch (.25 mm) shall be repairable by sanding and/or polishing.

1/2-INCH PRODUCT IS THE INDUSTRY STANDARD. WITH FEW EXCEPTIONS, 3/4-INCH PRODUCT IS NOT AVAILABLE IN THE INDUSTRY. 1/4-INCH IS FOR VERTICAL ONLY. SEE MANUFACTURER'S PRODUCT DATA OF PANEL SIZE LIMITATIONS

B. Thickness:
1. 1/4 inch
2. 1/2 inch
3. 3/4 inch

IF NOT DETAILED ON THE PROJECT, SELECT EDGE TREATMENT HERE.

DELETE BELOW IF NOT REQUIRED FOR PROJECT.

C. Edge treatment:
1.
2.
3.
4. As indicated

DELETE BELOW IF NOT REQUIRED FOR PROJECT.

IF NOT DETAILED ON THE PROJECT, SELECT INLAY TREATMENT AND LOCATION HERE. BELOW IS JUST AN EXAMPLE.

CAUTION: ADHERING POROUS PRODUCTS SUCH AS WOOD TO NONPOROUS PRODUCTS MAY RESULT IN REVOCATION OF INSTALLATION WARRANTY.

D. Inlays:
1. Fabricate using manufacturer's approved method.
2. Rout 1/8" deep max. groove for inlay to pattern indicated on designer's drawings.
3. Fill groove using methods approved by manufacturer, avoiding air bubbles or voids.
4. Overfill inlay area.
5. Allow area to fully cure.
    a. Do not overheat inlay while sanding.
6. Finish and touch up to uniform appearance.

IF NOT DETAILED ON THE DRAWINGS, PROVIDE TYPE OF EDGE DETAIL WITH NAME AND LOCATION OF CONTRASTING COLOR.

7. Provide full _____ with contrasting color inlay in center of edge.
    a. Color _____ .

SOLID SURFACE LAVATORIES ARE AVAILABLE FOR ADA OR LOCAL HANDICAP COMPLIANCE. UNDERMOUNT LAVATORIES OF CHINA OR STAINLESS STEEL MAY BE USED IN LIEU OF SOLID SURFACE. COORDINATE WITH PLUMBING.

E. Integral sink:
1. Model number:
    a.
    b.
    c.

VERY FEW STYLES OF LAVATORIES ARE AVAILABLE IN COLORS.

2. Color:
    a.
    b.
    c.

SELECT TYPE OF LAVATORY MOUNTING. SEAMED UNDERMOUNT IS STANDARD.

3. Mounting:
    a. Seamed undermount.

VERY FEW STYLES OF LAVATORIES ARE AVAILABLE IN COLORS.

F. Integral vanity:
1. Model number:
    a.
    b.
    c.

VERY FEW STYLES OF LAVATORIES ARE AVAILABLE IN COLORS.

2. Color:
    a.
    b.
    c.

SELECT TYPE OF LAVATORY MOUNTING. SEAMED UNDERMOUNT IS STANDARD.

3. Mounting:
    a. Seamed undermount.

SELECT TYPE OF BACKSPLASH REQUIRED. IF MULTIPLE SELECTIONS ARE REQUIRED, ADD ADDITIONAL LANGUAGE. APPLIED IS STANDARD. DETAIL HEIGHT ON DRAWINGS.

G. Backsplash:
1. Applied.
2. Coved.

SELECT TYPE OF SIDESPLASH. APPLIED IS STANDARD. COVED IS COSTLY. INDICATE LOCATIONS OF SIDESPLASHES ON DRAWINGS.

H. Sidesplash:
1. Applied.
2. Coved.

I. Performance characteristics:

Property	**Typical Result**	**Test**
Tensile Strength	6,000 psi	ASTM D 638
Tensile Modulus	1.5×10^{-6} psi	ASTM D 638
Tensile Elongation	0.4% min.	ASTM D 638
Flexural Strength	10,000 psi	ASTM D 790
Flexural Modulus	1.2×10^{-6} psi	ASTM D 790
Hardness	>85	Rockwell “M” Scale ASTM D 785
	56	Barcol Impressor ASTM D 2583
Thermal Expansion	3.02×10^{-5} in./in./°C (1.80×10^{-5} in./in./°F)	ASTM D 696

Gloss (60° Gardner)	5–75 (matte—highly polished)	ANSI Z124
Light Resistance	(Xenon Arc) No effect	NEMA LD 3-2000 Method 3.3
Wear and Cleanability	Passes	ANSI Z124.3 & Z124.6
Stain Resistance: Sheets	Passes	ANSI Z124.3 & Z124.6
Fungus and Bacteria Resistance	Does not support microbial growth	ASTM G21&G22
Boiling Water Resistance	No visible change	NEMA LD 3-2000 Method 3.5
High Temperature Resistance	No change	NEMA LD 3-2000 Method 3.6
Izod Impact (Notched Specimen)	0.28 ft.-lbs./in. of notch	ASTM D 256 (Method A)
Ball Impact Resistance: Sheets	No fracture—1⁄2 lb. ball: 1⁄4" slab—36" drop 1⁄2" slab—144" drop	NEMA LD 3-2000 Method 3.8
Weatherability	ΔE^*_{94}<5 in 1,000 hrs.	ASTM G 155
Specific Gravity †	1.7	
Water Absorption	Long-term 0.4% (3⁄4") 0.6% (1⁄2") 0.8% (1⁄4")	ASTM D 570
Toxicity	99 (solid colors) 66 (patterned colors)	Pittsburgh Protocol Test ("LC50"Test)
Flammability	All colors (Class I and Class A)	ASTM E 84, NFPA 255 & UL 723
Flame Spread Index	<25	
Smoke Developed Index	<25	

† Approximate weight per square foot: 1⁄4" (6 mm) 2.2 lbs., 1⁄2" (12.3 mm) 4.4 lbs.
Shapes meet or exceed the ANSI Z124.3 and ANSI Z124.6 standards for plastic sinks and lavatories.
NEMA results based on the NEMA LD 3-2000

2.3 ACCESSORIES

A. Joint adhesive:
   1. Manufacturer's standard one- or two-part adhesive kit to create inconspicuous, nonporous joints.

B. Sealant:
   1. Manufacturer's standard mildew-resistant, FDA-compliant, NSF 51-compliant (food zone — any type), UL-listed silicone sealant in colors matching components.

RETAIN BELOW FOR UNDERMOUNT SINKS AND LAVATORIES.

C. Sink/lavatory mounting hardware:
   1. Manufacturer's standard bowl clips, panel inserts and fasteners for attachment of undermount sinks/lavatories.

D. Conductive tape:
   1. Manufacturer's standard aluminum foil tape, with required thickness, for use with cutouts near heat sources.

E. Insulating felt tape:
   1. Manufacturer's standard for use with conductive tape in insulating solid surface material from adjacent heat source.

2.4 FACTORY FABRICATION

A. Shop assembly

1. Fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer's printed instructions and technical bulletins.
2. Form joints between components using manufacturer's standard joint adhesive without conspicuous joints.
    a. Reinforce with strip of solid polymer material, 2" wide.
3. Provide factory cutouts for plumbing fittings and bath accessories as indicated on the drawings.
4. Rout and finish component edges with clean, sharp returns.
    a. Rout cutouts, radii and contours to template.
    b. Smooth edges.
    c. Repair or reject defective and inaccurate work.

THERMOFORMING IS TYPICALLY ONLY AVAILABLE WITH AN ACRYLIC-BASED MATERIAL.

B. Thermoforming:

1. Comply with manufacturer's data.
2. Heat entire component.
    a. Material shall be uniform, between 275 and 325 degrees Fahrenheit during forming.
3. Form pieces to shape prior to seaming and joining.
4. Cut pieces to finished dimensions.
5. Sand edges and remove nicks and scratches.

MOST MANUFACTURERS HAVE MULTIPLE TIERS FOR PRICING SOLID SURFACE. TYPICALLY, THE LARGER THE PARTICULATE, THE GREATER THE COST. SPECIFYING PRODUCT TO BE SELECTED FROM THE MANUFACTURER'S FULL RANGE OF COLORS IS UNACCEPTABLE AND WILL RESULT IN HIGHER COST AND CONTRACTUAL CONFLICTS.

2.5 FINISHES

A. Select from the manufacturer's standard color chart.

1. Color:
    a.
    b.
    c.
    d.
    e.

SELECT FINISH AFTER REVIEWING SAMPLES. RETENTION OF FINISH DEPENDS ON COLOR SELECTED AND USE OF PRODUCT. SELECT APPROPRIATE FINISH(ES) BELOW. GREATER POLISHING INCREASES COST. MATTE IS STANDARD.

B. Finish:

1. Provide surfaces with a uniform finish.

GREATER POLISHING INCREASES COST. MATTE IS STANDARD, LEAST MAINTENANCE.

    a. Matte; gloss range of 5–20.
        1) Color
        2) Color

3) Color

USE SEMIGLOSS TO BRING OUT DEPTH IN DARKER PATTERNED MATERIALS. REQUIRES MORE MAINTENANCE.

b. Semigloss; gloss range of 20–50.

1) Color
2) Color
3) Color

USE POLISHED FINISH FOR LIGHT DUTY ONLY. IDEAL FOR MAXIMUM SMOOTHNESS AND REFLECTANCE. HEAVIER MAINTENANCE. GREATER COST.

c. Polished; gloss range of 50–80.

1) Color
2) Color
3) Color

PART 3 — EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install components plumb, level and rigid, scribed to adjacent finishes, in accordance with approved shop drawings and product data.

1. Provide product in the largest pieces available.
2. Form field joints using manufacturer's recommended adhesive, with joints inconspicuous in finished work.
a. Exposed joints/seams shall not be allowed.
3. Reinforce field joints with solid surface strips extending a minimum of 1 inch on either side of the seam with the strip being the same thickness as the top.
4. Cut and finish component edges with clean, sharp returns.
5. Rout radii and contours to template.
6. Anchor securely to base cabinets or other supports.
7. Align adjacent countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop.
8. Carefully dress joints smooth, remove surface scratches and clean entire surface.
9. Install countertops with no more than 1/8-inch (3 mm) sag, bow or other variation from a straight line.

B. Coved backsplashes and applied sidesplashes:

1. Install applied sidesplashes using manufacturer's standard color-matched silicone sealant.
2. Adhere applied sidesplashes to countertops using manufacturer's standard color-matched silicone sealant.

USE ABOVE OR BELOW OR COMBINATION OF BOTH.

C. Coved backsplashes and sidesplashes:

1. Provide coved backsplashes and sidesplashes at all walls and adjacent millwork.

2. Fabricate radius cove at intersection of counters with backsplashes to dimensions shown on the drawings.
3. Adhere to countertops using manufacturer's standard color-matched Joint Adhesive.

DELETE BELOW IF NOT ON PROJECT.

D. Color inlays:
1. Comply with product data from manufacturer.
2. Rout groove for inlay to straight edge or pattern indicated on drawings.
3. Fill groove using material furnished by manufacturer.
4. Cure inlay, finish and touch up to uniform appearance.

DELETE BELOW IF NOT ON PROJECT.

E. Integral sinks/vanities:
1. Provide solid surface materials bowls and/or lavatories sinks with overflows in locations shown on the drawings.
2. Secure sinks and lavatory bowls to tops using manufacturer's recommended sealant, adhesive and mounting hardware to maintain warranty.

3.3 REPAIR

A. Repair or replace damaged work which cannot be repaired to architect's satisfaction.

3.4 CLEANING AND PROTECTION

A. Keep components clean during installation.
B. Remove adhesives, sealants and other stains.

DELETE SCHEDULE BELOW IF NOT REQUIRED FOR PROJECT OR IF SCHEDULE ON DRAWINGS IS COMPLETE.

COORDINATE WITH THE INFORMATION IN PART 2.

3.5 SCHEDULE

A. Reception areas:
1. Surfaces of material adhesively joined with inconspicuous seams.

	Color
a. Vertical Thickness _____	_____
b. Horizontal Thickness _____	_____
c. Inlay _____	_____
d. Edge Details _____	_____
e. Finish _____	_____
f. Backsplash _____	_____
g. Sidesplash _____	_____

B. Nurses station:
1. Surfaces of material adhesively joined with inconspicuous seams.

	Color
a. Vertical Thickness _____	_____
b. Horizontal Thickness _____	_____
c. Inlay _____	_____
d. Edge Details _____	_____
e. Finish _____	_____
f. Backsplash _____	_____
g. Sidesplash _____	_____
h. Sink _____	_____

C. Seats:

1. Surfaces of material adhesively joined with inconspicuous seams.

		Color
a. Vertical Thickness	_____	_____
b. Horizontal Thickness	_____	_____
c. Inlay	_____	_____
d. Edge Details	_____	_____
e. Finish	_____	_____

D. Laboratory tops:

1. Surfaces of material adhesively joined with inconspicuous seams.

		Color
a. Vertical Thickness	_____	_____
b. Horizontal Thickness	_____	_____
c. Inlay	_____	_____
d. Edge Details	_____	_____
e. Finish	_____	_____
f. Backsplash	_____	_____
g. Sidesplash	_____	_____
h. Sink	_____	_____

E. Countertops:

1. Surfaces of material adhesively joined with inconspicuous seams.

		Color
a. Vertical Thickness	_____	_____
b. Horizontal Thickness	_____	_____
c. Inlay	_____	_____
d. Edge Details	_____	_____
e. Finish	_____	_____
f. Backsplash	_____	_____
g. Sidesplash	_____	_____

F. Bar tops:

1. Surfaces of material adhesively joined with inconspicuous seams.

		Color
a. Vertical Thickness	_____	_____
b. Horizontal Thickness	_____	_____
c. Inlay	_____	_____
d. Edge Details	_____	_____
e. Finish	_____	_____
f. Backsplash	_____	_____
g. Sidesplash	_____	_____
h. Sink	_____	_____

SOLID SURFACE FABRICATIONS — *continued*

THESE ARE SPECIFIC RECOMMENDATIONS REGARDING HOT APPLICATIONS MADE FROM CORIAN® ACRYLIC MATERIAL. OTHER MATERIALS MAY HAVE DIFFERENT REQUIREMENTS. CONFIRM INSTALLATION REQUIREMENTS WITH MANUFACTURER.

G. Cafeteria surfaces—hot:

1. Adhesively joined with no exposed open or silicone-filled seams.
2. Provide expansion joints in countertop as detailed on the drawings.
3. Make cutouts to templates furnished by the manufacturer.
4. Reinforce edges and cutouts as recommended by the manufacturer.

5. Provide insulation between material and adjacent hot water pans and food warmers.
6. Thermally isolate hot applications from cold.
7. Provide venting of cabinets as required.

	Color
a. Vertical Thickness _____	_____
b. Horizontal Thickness _____	_____
c. Inlay _____	_____
d. Edge Details _____	_____
e. Finish _____	_____
f. Backsplash _____	_____
g. Sidesplash _____	_____
h. Sink _____	_____

THESE ARE SPECIFIC RECOMMENDATIONS REGARDING COLD APPLICATIONS MADE FROM CORIAN® ACRYLIC MATERIAL. OTHER MATERIALS MAY HAVE DIFFERENT REQUIREMENTS. CONFIRM INSTALLATION REQUIREMENTS WITH MANUFACTURER.

H. Cafeteria surfaces—cold:

1. Adhesively joined with no exposed open or silicone-filled seams.
2. Provide expansion joints in countertop as detailed on the drawings.
3. Make cutouts to templates furnished by the manufacturer.
4. Reinforce edges and cutouts as recommended by the manufacturer.
5. Provide insulation between material and adjacent cold surfaces.
6. Thermally isolate hot applications from cold.

	Color
a. Vertical Thickness _____	_____
b. Horizontal Thickness _____	_____
c. Inlay _____	_____
d. Edge Details _____	_____
e. Finish _____	_____
f. Backsplash _____	_____
g. Sidesplash _____	_____
h. Sink _____	_____

I. Countertops with undermount stainless steel or porcelain sinks:

1. Surfaces of material adhesively joined using silicone sealant.

	Color
a. Vertical Thickness _____	_____
b. Horizontal Thickness _____	_____
c. Inlay _____	_____
d. Edge Details _____	_____
e. Finish _____	_____
f. Backsplash _____	_____
g. Sidesplash _____	_____
h. Sink _____	_____

J. Countertops with seamed undermount solid surface sinks:

1. Surfaces of material adhesively joined with inconspicuous seams.

	Color
a. Vertical Thickness _____	_____
b. Horizontal Thickness _____	_____
c. Inlay _____	_____
d. Edge Details _____	_____

e. Finish _____ _____
f. Backsplash _____ _____
g. Sidesplash _____ _____
h. Sink _____ _____

UNDERMOUNT LAVATORIES OF CHINA OR STAINLESS STEEL MAY BE USED.

K. Countertops with traditional undermount lavatories:

1. Surfaces of material adhesively joined with silicone sealant.

Color

a. Vertical Thickness _____ _____
b. Horizontal Thickness _____ _____
c. Inlay _____ _____
d. Edge Details _____ _____
e. Finish _____ _____
f. Backsplash _____ _____
g. Sidesplash _____ _____
h. Sink _____ _____

L. Integral vanity tops and lavatories:

1. Surfaces of material adhesively joined with inconspicuous seams.

Color

a. Vertical Thickness _____ _____
b. Horizontal Thickness _____ _____
c. Inlay _____ _____
d. Edge Details _____ _____
e. Finish _____ _____
f. Backsplash _____ _____
g. Sidesplash _____ _____
h. Sink _____ _____

M. Windowsills:

1. Surfaces of material adhesively joined with inconspicuous seams.

Color

a. Vertical Thickness _____ _____
b. Horizontal Thickness _____ _____
c. Inlay _____ _____
d. Edge Details _____ _____
e. Finish _____ _____

1/4", 1/2", 3/4" Sheets

Sheet Products

Vertical, Horizontal Applications

Enjoy the ultimate in design flexibility for remodeling and new construction projects.

- Offers design versatility—can be cut, shaped, and thermoformed
- Join sheets together with *Joint Adhesive for DuPont™ Corian®*—create a sheet of any size
- Can be used in vertical applications, including wall caldding and wet walls
- 1/4″ (6mm) sheet is recommended for vertical use only.
- Can be used in horizontal applications, including countertops, vanity tops, desktops, islands, tabletops, laboratory tops, work-stations and windowsills
- Custom sizes available. Minimum order quantity - 48 sheets
- Custom colors available. Minimum order quantity - 1 sheets
- See *Color Options* Section for available colors

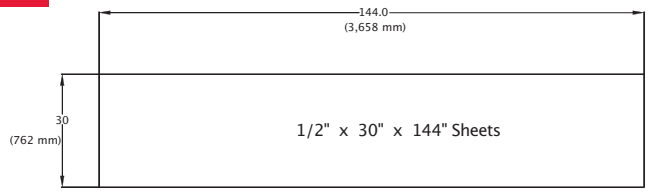
Continued on back

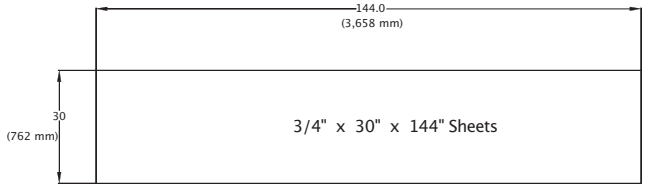
corian®

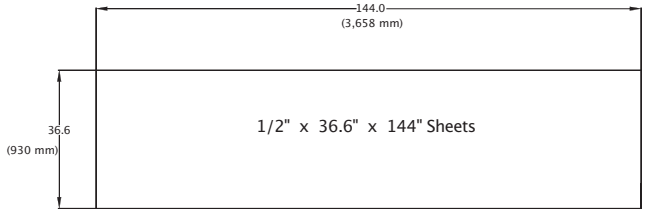
1/4", 1/2", 3/4" Sheets

HORIZONTAL OR VERTICAL APPLICATIONS (1/2", 3/4")

	Length	×	Width
1/2" (12 mm) SHEET			
inches	144		30
(mm)	(3,658)		(762)
inches	144		36.6
(mm)	(3,658)		(930)
3/4" (19 mm) SHEET			
inches	144		30
(mm)	(3,658)		(762)

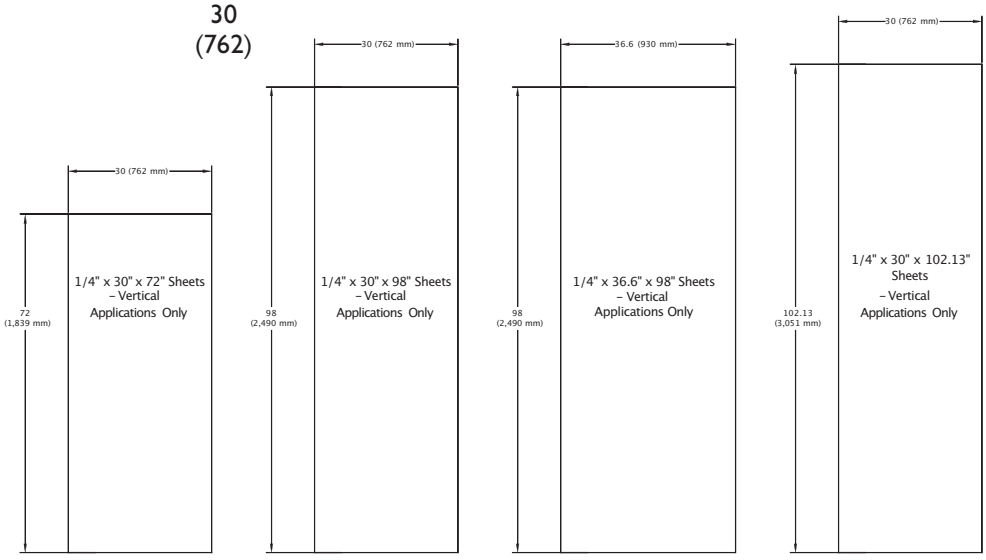






VERTICAL APPLICATIONS ONLY (1/4")

	Length	×	Width
1/4" (6 mm) SHEET			
inches	72		30
(mm)	(1,839)		(762)
inches	98		30
(mm)	(2,490)		(762)
inches	98		36.6
(mm)	(2,490)		(930)
inches	102.13		30
(mm)	(3,051)		(762)



For availability of a specific length, thickness and/or color, call your local Authorized Distributor or contact DuPont directly www.countertops.dupont.com, or 1-800-4-CORIAN (1-800-426-7426).

Metric conversions are approximate.

Removable Entrance Mat

Product: Coco Mats n' More Trigrip Removable Mat with rubber backing or approved equal

Locations/Applications: Entries

Product Requirements:

- Heavy, 100% static dissipative nylon face
- Molded rubber backing
- Passes flammability standard DOCFF170

SKU : TRIGRIP

DESCRIPTION SPECIFICATIONS

Ideal for interiors in any business, TriGrip™ mats prevent slip and fall accidents and protect carpets and floors from damaging dirt and moisture. Heavy 100% static dissipative nylon offers outstanding absorption and durability. Solid rubber backing lays flat and will not crack or curl.

- Available in custom sizes in 3 ft, 4 ft, and 5 ft widths, and long runners up to 40 ft in length
- Standard sizes: 2x3, 3x4, 3x5, 3x10, 4x6, 4x8, and 4x10
- Custom sizes available in 3, 4, 5, and 6 foot widths
- Production time: 3-5 business days

Tri-Grip: Benefits

- Heavy, 100% static-dissipative nylon face offers outstanding absorption and durability
- Tight, heat-set, UltraTwist™ yarn construction resists packing and crushing; dirt filters into the mat face rather than remaining on top
- Molded rubber backing resists curling and cracking in all types of weather
- Special TriGrip™ backing minimizes movement on most carpets and improves traction on hard surfaces
- Also available with oil and grease resistant 100% Nitrile Rubber backing when applications call for additional protection
- Passes flammability standard DOC-FF- 1-70
- Tri-Grip is not recommended for use in areas exposed to grease or petroleum products.

Please call 866-561-1921 for more pricing information

Walk-Off Mats: Carpet Tile

Product: J+J Vision Runway 7000 Modular Walk Off Tile or approved equal

Locations/Applications: Entries

Product Requirements:

- 100% Solution Dyed
- Nylon
- Textured Loop Surface Texture
- Tufted Yarn Weight of 34 oz/sy, or greater
- Anti-microbial

Specifications- product must meet or exceed requirements for the following-

- Protection from moisture penetration
- Protection from delamination Failure
- Dimensional Stability
- Tuft Bind Strength
- Fiber Performance for Wear
- Fiber Performance for Static
- Colorfastness to Light and Atmospheric Contaminants

Environmental

- Recycled content to be a minimum of 15%
- Sustainable Carpet Assessment Standard of NSF Gold is encouraged

Runway | 7000

Modular Walk Off Tile

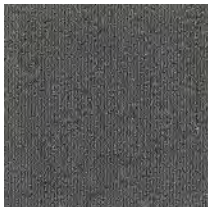
Runway | 7000
Modular Walk Off Tile

Colorways

1418
Umber Chic

1419
VIP Pass

1420
False Eyelashes


1421
Fresh Face

1422
Ready-to-Wear

1423
Top Model

Product Specifications

Construction	Textured Loop
Backing	Nexus® Modular
Dye Method	Solution Dyed
Nylon Fiber Type	Encore® SD (with recycled content)
Face Weight	34 oz/sy (1153 grams/m^2)
Pile Density	8,160 oz/sy (302.6 kg/m^3)
Pattern Repeat	N/A
Gauge	1/8 (3.15 rows/cm)
Stitches Per Inch	10.6 stitches/in (4.17 stitches/cm)
Standard Size	24" x 24" (61.0 cm x 61.0 cm)
Lifetime Warranties	Protection from Moisture Penetration, Protection from Delamination Failure, Dimensional Stability, Tuft Bind Strength (edge ravel, yarn pulls, zippering), Fiber Performance for Wear, Fiber Performance for Static, Colorfastness to Light and Atmospheric Contaminants, Stain Removal

Environmental Specifications & Tests

Sustainable Carpet Assessment Standard	NSF Gold
Indoor Air Quality	GLP 9716
Total Recycled Content	14%-19%
Pill Test	Yes
Flooring Radiant Panel	Class 1
Smoke Density	Less than 450 flaming (ASTM E 662)
Static Test	Less than 3 kv (AATCC-134)
Lightfastness	Yes
ADA Compliance	Compliant For Accessible Routes

Special Treatments

ProTex® (Soil Release)	Yes
ProSept® (Antimicrobial)	Optional
Sentir™ Odor Blocking	Optional
Stain/Bleach Resistant	Yes

Coordinating Products

Walk off Tile Collection	Catwalk

Installation Methods

Installation Methods	Quarter Turn

GSA Advantage! www.gsaadvantage.gov

Goods to Go
Quick Ship Goods

Walk-Off Mats: Pedimat Floor

Product: CS Floorometry 101

Locations/Applications: Entries

Product Requirements:

- Certified by the NFSI as safe walking surface: meets .6 wet SCOF
- Provide a minimum 500 lb per wheel rolling load
- Class I Fire Rated
- Removes 98% of foot traffic contaminants within 18’ of walking surface

C/S Floorometry® 101

Suggested Specification
Section 124813
Entrance Floor Mats and Frames

Part 1 General

1.02 References

A. American Society for Testing and Materials (ASTM)

B. The Carpet and Rug Institute (CRI)

C. The National Floor Safety Institute (NFSI)

1.03 Submittals

A. General: Submit the following in accordance with conditions of contract and Division 1 specification section 013000.

B. Product data for each type of floor mat/grid and frame specified including manufacturer's specifications and installation instructions.

C. Shop drawings in sufficient detail showing layout of mat/grid and frame specified including details indicating construction relative to materials, direction of traffic and accessories.

D. Maintenance data in the form of manufacturer's printed instructions for cleaning and maintaining floor mats/grids.

Part 2 Products

2.01 Manufacturers

A. Drawings and specifications are based on manufacturer's literature from Construction Specialties, Inc., unless otherwise indicated.

2.02 Materials

A. Aluminum - ASTM 221, alloys 6061-T5, 6063-T6, 6210-T5, and 6005-T5 for extrusions, sheet, or plate.

B. Stainless Steel - - Type 304 Stainless Steel

2.03 Floor Mats/Grids

Product Designation

Common Mud Plate and Bond Breaker

Each Floorometry™ product includes a common mud plate and bond breaker. The aluminum mud plate attaches to the floor substrate with the manufacturer's recommended adhesive (by others). Integral to the mud plate is the bond breaker, preventing the flooring adhesive from bonding to the top surface of the product. The bond breaker also provides the base of the collection reservoir which contains all contaminates removed and collected from foot traffic. Top surface sections are removable, interchangeable, and can be quarter turned, utilizing common integral attachment clips allowing for periodic maintenance by vacuuming the reservoir or power washing the product. Each

mud plate comes with four alignment pins to ensure a proper and quick connection of the removable surface to the common base. Surface removal tools to be included.

Manufacturer's Recommended Adhesives (supplied by others)

All Floorometry products require the use of the following approved adhesives:

A. Henry ® 130 Thin Spread Floor Tile Adhesive - Note: Interior Only

B. Laticrete Latapoxy ® 300 Adhesive - Note: Interior or Exterior use

Floorometry 101

Mud plate and bond breaker as described above. Top surface shall be manufactured from T-304 stainless steel alloy materials. Inserts are .090" [2.3 mm] wide S/S bars with a .145" [3.7 mm] gap in quantities and arrangement as detailed. Each module size is 18" x 18" x 3/4" [457.2 mm x 457.2mm x 19.6mm].

Each standard module provides a 57.5% free area for fall through potential. All products include a .090" [2.3 mm] thick S/S perimeter band with a horizontal drain feature. All components are tack welded. Product surface removable and replaceable. All modules packaged 6 per box for coverage: (13.5 sq ft - [1.25 sq M]). Module finish is mill. Options available. Weight is 11.8 lbs [5.4 kg] per module (Box - 72 lbs [32.6 kg]).

Include only if option selected. (Geometric Option: The surface of the module can also be cut to include custom geometries as required.) Note - Contact the manufacturer for specifics of your application.

Specifier note: Floorometry tiles include stainless steel banded edges on all sides of each individual tile. Therefore, a standard perimeter frame is not required. The stainless steel banding will provide a smooth perimeter transistion, and will protect the edges of both the Floorometry tile and the surrounding flooring. Trims from the manufacturer of the surrounding floor surface would be sufficient if desired.

Performance Data

All Floorometry Products include the following performance characteristics:

A. Certified by the NFSI as safe walking surface meets .6 wet SCOF
B. 101, 201 & 301 provide a minimum 500 lb per wheel rolling load. 401 provides a minimum 250 lb per wheel rolling load (Surface material selection can improve capacity).
C. Class I Fire Rated
D. Considered permanent grille or grate as recommended in LEED IAQ Credit 5
E. 101, 201, and 301 remove 98% of foot traffic contaminants within 18' of walking surface

DIVISION 16

INTERIOR LUMINAIRES

CANNONDESIGN

Classroom General Lighting

Product: Neo-Ray 23 DR Straight & Narrow LED or approved equal

Locations/Applications: Classrooms

Product Requirements:

- Long-life LED system coupled with electrical driver
- Recessed (standard ceiling recessed mounting)
- 3500K
- 0-10V continuous dimming driver compatible with most standard dimming devices
- Combines with other energy saving products like sensors, daylighting controls and building management systems to maximize energy savings.

NEO-RAY™

DESCRIPTION

Driven by performance and a clean aesthetic, the Straight and Narrow Series in LED represents the ultimate in simplicity; a narrow, uniform line of light. Constructed with premium materials with industry leading technology, the Straight and Narrow family is available in configurable runs and individual lengths of 2', 3', 4', 6' and 8'. Fully compatible with Cooper Controls FifthLight DALI and shipped standard with 0-10V dimming, the Straight and Narrow family integrates seamlessly with today's modern building management systems. With virtually unlimited applications, the Straight and Narrow family allows architects and designers the freedom to experiment with their designs without exceeding ever decreasing energy budgets.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

Housing extruded from premium 6063 aluminum. Nominal 2', 3', 4', 6' or 8' illuminated sections. Used in run configuration and/or individual fixtures. All components are RoHs compliant.

Lens

Available in snap-in or lay-in profiles, two diffusion options are available. Satin white provides the highest aesthetic uniformity while the high transmission lens provides the most superior efficacy.

Finish

Fixture housings are high reflectance white using electrostatically applied polyester powder coat paint.

Electrical

Long-life LED system coupled with electrical driver to deliver optimal performance. LED's are available in 3000K, 3500K or 4000K with a typical CRI ≤ 85. Projected life is 50,000 hours at 70% lumen output. Electronic drivers are available for 120-277V applications

Controls

Equipped standard with a 0-10V continuous dimming driver compatible with most standard dimming devices (refer to website for specific compatibility reference). Combine with FifthLight DALI and other energy saving products like sensors, daylighting controls and building management systems to maximize energy savings.

Mounting

Recessed.
Vertical in wall, Horizontal in wall and standard ceiling recessed mounting is available. Please specify mounting grid or substrate:

(ETG) = 15/16" Exposed T-grid
(FTG) = 9/16" Exposed T-grid
(STG) = 9/16" Screw Slot Grid
(SR) = Sheet Rock (Flanged)
(FSR) = Flangeless Sheet Rock

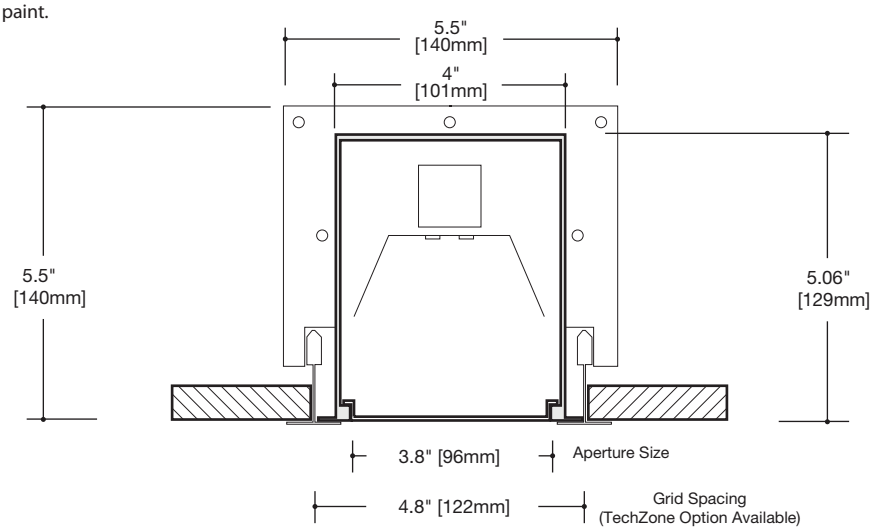
Warranty

Five year warranty.

23-DR
Straight & Narrow

LED

Recessed Direct



powered by fifthlight technology

ORDERING INFORMATION

Sample Number: S23-DR-2L35-ETG-4-U-DD-SI-S92-W

S23	D	R	–			–		–		–			–			–		

Series
S23 = Series 23

Light Output
D = Direct

Mounting
R = Recessed

LED Color Temp
L30 = LED, 3000K
L35 = LED, 3500K
L40 = LED, 4000K

Light Level
LED (3500K) per foot
1 = Light Level 1 [1]
515 Lumens, 7 Watts, 73 LPW
2 = Light Level 2 [1]
650 Lumens, 9.25 Watts, 70 LPW

Mounting Type
ETG = 15/16" Exposed T-grid
FTG = 9/16" Exposed T-grid
STG = 9/16" Screw Slot Grid
SR = Sheet Rock (Flanged)
FSR = Flangeless Sheet Rock

Length
2 = 2 foot Individual
3 = 3 foot Individual
4 = 4 foot Individual
6 = 6 foot Individual
8 = 8 foot Individual
xx = Configurable Run (Specify length in 1ft increments)

Driver Options
DD = 0-10V Dimming
5LT = FifthLight DALI
LUT = Lutron DALI

Circuiting Options
SI = Single Circuit
DU = Dual Circuit

Voltage
1 = 120V
2 = 277V
3 = 347V(remote transformer)
U = Universal Voltage

Emergency Options
EM = Battery Pack [2]
EC = Emergency Circuit

Lens Options
S93 = Satin Lay-in Lens
S93S = Satin Snap-in Lens [3]
S93HT = High Transmission Lay-in Lens
S93HTS = High Transmission Snap-in Lens [3]

Color Options
W = Matte White
S = Silver
XX = Custom Color

NOTES:

Not all options available. Please consult your local Cooper Lighting Representative for availability.
Specifications and dimensions subject to change without notice.

1. Light Level measured at 3500K; add 10% lumen output for 4000K or subtract 10% lumen output for 3000K.
2. Battery packs must be remote mounted
3. For vertical and horizontal in-wall mounting use snap-in lens

Cooper Lighting by EATON

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton's Cooper Lighting Business
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com

Specifications and dimensions subject to change without notice.

ADN130034
4/15 /2014

Classroom General Lighting - Suspended

Product: Neo-Ray 22 DP Straight & Narrow LED or approved equal

Locations/Applications: Classrooms with exposed ceilings

Product Requirements:

- Long-life LED system coupled with electrical driver
- Suspended pendant with adjustable single cable and circular canopy
- 3500K
- 0-10V continuous dimming driver compatible with most standard dimming devices
- Combines with other energy saving products like sensors, daylighting controls and building management systems to maximize energy savings.

NEO-RAY™

DESCRIPTION

Driven by performance and a clean aesthetic, the Straight and Narrow Series in LED represents the ultimate in simplicity; a narrow, uniform line of light. Constructed with premium materials with industry leading technology, the Straight and Narrow family is availible in configurable runs and individual lengths of 2', 3', 4', 6' and 8'. Fully compatible with Cooper Controls FifthLight DALI and shipped standard with 0-10V dimming, the Straight and Narrow family integrates seamlessly with today's modern building management systems. With virtually unlimited applications, the Straight and Narrow family allows architects and designers the freedom to experiment with their designs without exceeding ever decreasing energy budgets.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

Housing extruded from premium 6063 aluminum. Nominal 2', 3', 4', 6' or 8' illuminated sections. Used in run configuration and/or individual fixtures. All components are RoHs compliant.

Lens

Available in snap-in or lay-in profiles, two diffusion options are available. Satin white provides the highest aesthetic uniformity while the high transmission lens provides the most superior efficacy.

Finish

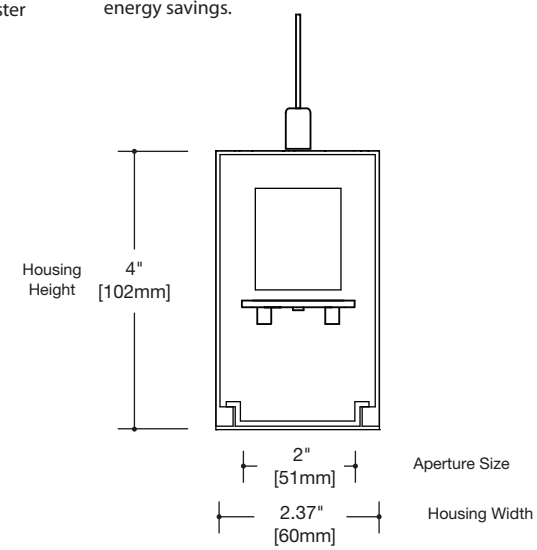
Fixture housings are high reflectance white using electrostatically applied polyester powder coat paint.

Electrical

Long-life LED system coupled with electrical driver to deliver optimal performance. LED's are available in 3000K, 3500K or 4000K with a typical CRI ≤ 85. Projected life is 50,000 hours at 70% lumen output. Electronic drivers are available for 120-277V applications

Controls

Equipped standard with a 0-10V continuous dimming driver compatible with most standard dimmming devices (refer to website for specific compatibility reference). Combine with FifthLight DALI and other energy saving products like sensors, daylighting controls and building management systems to maximize energy savings.



Mounting

Suspended.
Pendant with adjustable single cable and circular canopy. Standard length of cable is 48".

(SCST) = Single Cable - Structure
(SCETG) = Single Cable - 15/16" T-grid
(SCFTG) = Single Cable - 9/16" T-grid
(SCSTG) = Single Cable - 9/16" Slot Grid
(SCJB) = Single Cable - Junction Box (Sheet Rock)

Warranty

Five year warranty.

22-DP
Straight & Narrow
LED

Suspended
Direct

powered by fifthlight technology

ORDERING INFORMATION

Sample Number: S22-DP-2L35-ETG-4-U-DD-SI-S92-W

S22	D	P	–			–		–		–			–			–		

Series
S22 = Series 22

Light Output
D = Direct

Mounting
P = Pendant

Light Level
LED (3500K) per foot
1 = Light Level 1 [1]
440 Lumens, 7 Watts, 62 LPW
2 = Light Level 2 [1]
560 Lumens, 9.25 Watts, 60 LPW

LED Color Temp
L30 = LED, 3000K
L35 = LED, 3500K
L40 = LED, 4000K

Mounting Type
SCST = Structure
SCETG = 15/16" T-grid
SCFTG = 9/16" T-grid
SCSTG = 9/16" Slot Grid
SCJB = Junction Box (Sheet Rock)

Length
2 = 2 foot Individual
3 = 3 foot Individual
4 = 4 foot Individual
6 = 6 foot Individual
8 = 8 foot Individual
xx = Configurable Run (Specify length in 1ft increments)

Voltage
1 = 120V
2 = 277V
3 = 347V(remote transformer)
U = Universal Voltage

Driver Options
DD = 0-10V Dimming
5LT = FifthLight DALI
LUT = Lutron DALI

Circuiting Options
SI = Single Circuit
DU = Dual Circuit

Emergency Options
EM = Battery Pack [2]
EC = Emergency Circuit

Lens Options
S92 = Satin Lay-in Lens
S92S = Satin Snap-in Lens [3]
S92HT = High Transmission Lay-in Lens
S92HTS = High Transmission Snap-in Lens [3]

Color Options
W = Matte White
S = Silver
XX = Custom Color

NOTES:

Not all options available. Please consult your local Cooper Lighting Representative for availability.
Specifications and dimensions subject to change without notice.

1. Light Level measured at 3500K; add 10% lumen output for 4000K or subtract 10% lumen output for 3000K.
2. Battery packs must be remote mounted
3. For vertical and horizontal in-wall mounting use snap-in lens

Cooper Lighting by EATON

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Eaton's Cooper Lighting Business
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com

Specifications and dimensions subject to change without notice.

ADN101864
4/15 /2014

Classroom Accent Lighting

Product: Neo-Ray Wall Wash 23XR LED Gen II or approved equal

Locations/Applications: Classrooms

Product Requirements:

- Long-life LED system
- Removable modules
- Recessed
- 3500K
- 0-10V dimming control
- Aluminum extrusion providing thermal management

DESCRIPTION

23XR wall wash completes the Straight & Narrow family. Its precise optical reflector design provides wall illumination up to 10' in height with smooth gradiation from top to bottom of the wall. 23XR application is perfect for classrooms, conference rooms, corridor walls, arcades and galleries. 23XR features excellent photometrics and high efficiency while offering smooth wall wash free of striations and shadows. Runs are provided to the nearest foot and the light source is hidden from most viewing angles.

Catalog #		Type
Project		
Comments		Date
Prepared by		

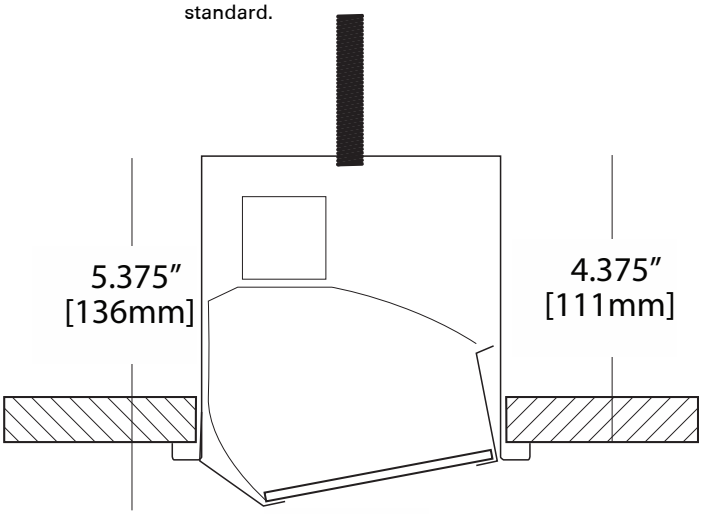
SPECIFICATION FEATURES

Construction
Housing is one-piece, die-formed, cold rolled steel. Standard 3', 4' and 5' fixture length.

Electrical
Fixture equipped with proprietary Cooper LED modules rated at 3500K. Removable module features aluminum extrusion providing exceptional thermal management. Modules are driven using universal voltage switch-mode LED drivers. Fixture and modules certified to UL and CUL standards. A 0 to 10V dimming control is available standard.

Finish
Durable, low gloss, white, powder coat acrylic. Optional custom finish.

Mounting
Recessed.



23XR-LED

WALL WASH
23XR LED
Gen II

LED

Wall Wash
Direct-Indirect

Light Distribution:
Indirect = 1%
Direct = 99%

ORDERING INFORMATION

Sample Number: S23XR-1L35-ETG4D-U-DD-SI-S92HT

Series S23X= Series 23 Wall Wash Mounting R= Recessed	Light Level LED (3500K) 4ft 1 = Light Level 1 2061 Lumens, 28.4 W 2 = Light Level 2 2635 Lumens, 37.5 W	Lamp Type LED (3500K) L30 = LED, 3000K (subtract 10% from 3500K light levels) L35 = LED, 3500K L40 = LED, 4000K (add 10% to 3500K light levels)	Ceiling Type ETG= 15/16" Exposed T-Grid FTG= 9/16" Exposed T-Grid STG= 9/16" Slot T-Grid SR= Sheet Rock FSR= Flangeless Sheet Rock	Length 3= 3' 4= 4' 5= 5'	Section D= Individual I= Intermediate B= Beginning of Run E= End of Run	Voltage 120 = 120V 277= 277V UNV = Universal (120v-277v)	Driver ED= Electronic Driver DD= Dimming Driver	Circuiting SI= Single Circuit DU= Dual Circuit Emergency EM= Emergency Pack (Consult factory)	Fusing GLR GMF

Notes:

1. Not all options available. Please consult your local Cooper Lighting Representative for availability.
2. Specification and Dimensions subject to change without notice.

DIVISION 22

COMMERCIAL WATER CLOSETS

CANNONDESIGN

Grab Bar

Product:	Bobrick 1-1/2” Diameter Stainless Steel Grab Bars with Snap Flange or approved equal
Locations/Applications:	Restrooms
Product Requirements:	Shall comply with accessible design for structural strength (including ADAAG)

BOBRICK

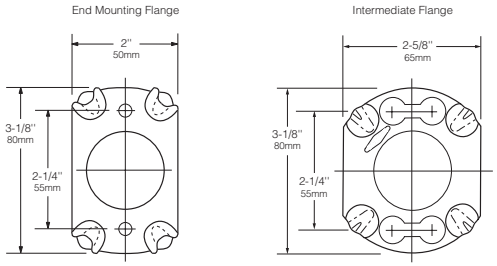
Technical Data

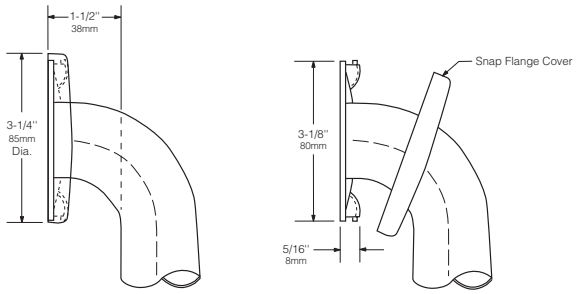
1½" (38mm) DIAMETER STAINLESS STEEL GRAB BARS WITH SNAP FLANGE

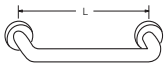
B-6806 SERIES

Specify Finish Required:

- ☐ Satin finish
- ☐ Satin finish with peened gripping surface; add suffix .99 to model number



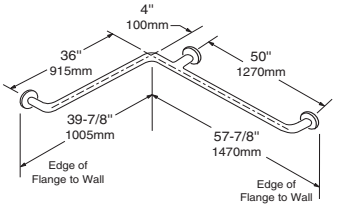




HORIZONTAL

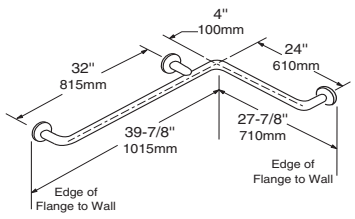
B-6806 x 12, 18, 24, 30, 36, 42, 48

VERTICAL



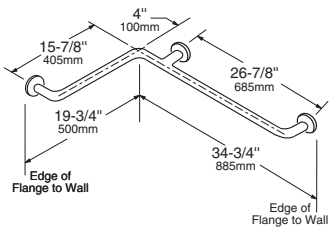
TWO-WALL WHEELCHAIR TOILET COMPARTMENT

B-68137



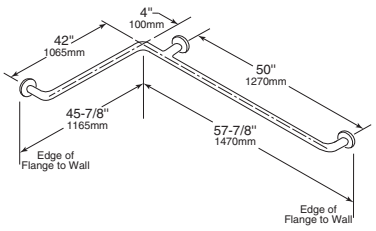
HORIZONTAL TUB / SHOWER / TOILET COMPARTMENT BAR 24 x 36

B-68616



HORIZONTAL TWO-WALL BAR for Shower Stall

B-6861



TWO-WALL TOILET COMPARTMENT BAR 42 x 54

B-6897

continued . . .

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

Rev. 8/16/13 S/B Printed in U.S.A.
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MATERIALS:

Grab Bar — 18-8 S, type-304, 18-gauge (1.2mm) stainless steel tubing with satin-finish. 1-1/2" (38mm) outside diameter. Ends are heliarc welded to flanges. Clearance between the grab bar and wall is 1-1/2" (38mm).

Concealed Mounting Flanges — 18-8 S, type-304, 1/8" (3mm) thick, stainless steel plate; end flanges 2" x 3-1/8" (50 x 80mm) with two holes for attachment to wall. Intermediate flanges 2-5/8" x 3-1/8" (65 x 80mm) wide x 3-1/8" (80mm) diameter.

Snap Flange Covers — 18-8 S, type-304, 22-gauge (0.8mm) drawn stainless steel with satin-finish. 3-1/4" (85mm) diameter x 1/2" (13mm) deep. Each cover snaps over mounting flange to conceal mounting screws.

STRENGTH:

Bobrick grab bars that provide 1-1/2" (38mm) clearance from wall can support loads in excess of 900 pounds (408kg) if properly installed. Other grab bar configurations can support loads in excess of 250 pounds (113kg) if properly installed, complying with accessible design (including ADAAG in the U.S.A.) for structural strength

Safety Warning: Grab bars are no stronger than the anchors and walls to which they are attached and, therefore, must be firmly secured in order to support the loads for which they are intended. To avoid potential injury, the building owner or maintenance personnel should remove the grab bar from service if the grab bar is not adequately secured to wall or if there is any observed damage to the welds.

INSTALLATION:

Provide concealed anchor device or backing as specified or required in accordance with local building codes before wall is finished. Fasten concealed mounting flanges to anchor device or backing with two screws in each flange. Snap flange covers over each mounting flange to conceal mounting screws. Concealed anchor devices and mounting screws are not included with Bobrick grab bars and must be specified as an accessory.

For Grab Bars with an Intermediate Flange(s), Pull Snap-Flange Covers away from mounting flanges. Place grab bar in desired mounting location. Use intermediate flange as a template to mark location of mounting screws at intermediate flange only. Mark screw locations at the center of the slot in the middle of the double-keyhole shaped mounting holes (2) in the intermediate flange. Remove grab bar from wall. Drive the intermediate flange mounting screws into wall at marked locations. **Note:** Make sure to leave a space of just over 1/8" (3.17mm) between the underside of the screw head and the wall. Install grab bar on the wall by placing the round ends of the intermediate flange double-keyhole shaped mounting holes over the mounting screws (2) are located in the middle of the flange slots. Install the mounting screws into the wall at the end flanges and secure tightly. Tighten the mounting screws at the intermediate flange. Press all snap-flange covers into place to conceal mounting flanges.

Note: Recommend use of 1/4" or #14 sheet metal or wood screws to install Intermediate Flange. #12 screws may also be used.

Important Notes:

1. **Mounting Kits —** Bobrick offers a mounting kit for installing grab bars; **one Bobrick mounting kit is required for each flange.**

Mounting Kit No.	Description
252-30	Consists of #14 x 2½" type-304 stainless steel, Phillips round-head, sheet-metal screws.

2. **Grab Bar Fastener —** Bobrick offers a grab bar fastening system that secures all Bobrick grab bar series; **one Bobrick fastener is required for each flange.** Install grab bar without backing in wall requires minimum 5/8" (16mm) thick painted or tiled drywall.

WingIt™ Fastener No.	Description
251-4	Consists of 10–32 x 5/16" round-head, Phillips 18/8 stainless steel screws. (1) WingIt grab bar fastener.

3. **Optional Anchor Device —** Bobrick grab bar anchor device includes stainless steel machine screws to be used for attaching grab bars to anchors. **one Bobrick concealed anchor device is required for each flange.**

Optional Anchor No.	Description
2583	Anchor for 3/4" to 1" (19-25mm) panel 1 anchor required for each flange.
2586	Anchor for 1/2" to 1" (13mm) panel 1 anchor required for each flange.

SPECIFICATION:

Grab bar shall be type-304 stainless steel with satin-finish. Grab bar shall have 18-gauge (1.2mm) wall thickness and 1-1/2" (38mm) outside diameter. Clearance between the grab bar and wall shall be 1-1/2" (38mm). Concealed mounting flanges shall be 1/8" (3mm) thick stainless steel plate, 2" x 3-1/8" (50 x 80mm), and equipped with two screw holes for attachment to wall. Flange covers shall be 22 gauge (0.8mm), 3-1/4" (85mm) diameter x 1/2" (13mm) deep, and shall snap over mounting flange to conceal mounting screws and/or WingIt fasteners. Ends of grab bar shall pass through concealed mounting flanges and be heliarc welded to form one structural unit. Grab bar shall comply with accessible design (including ADAAG in the U.S.A.) for structural strength.

Grab Bar shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

B-6806 Rev. 8/16/13 S/B Printed in U.S.A.
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Toilet

Product: Toto Wall-Mounted Flushometer Toilet or approved equal

Locations/Applications: Restrooms

Product Requirements:

- Wall mounted outlet
- Elongated front bowl
- Meets and exceeds ASME A112.19.2/CSA B45.1 Certifications: IAPMO (cUPC), State of Massachusetts City of Los Angeles, and others
- Code compliance: UPC, IPC, NSPC, NPC Canada, and others
- ADA Compliant

TOTO® CT708E(G) & CT708EV(G)

Wall-Mounted Flushometer Toilet, 1.28GPF when used with High Efficiency Flushometer Valve

FEATURES

- Wall-mounted outlet
- Elongated front bowl
- Optional SanaGloss® ceramic glaze - SanaGloss glaze prevents debris, and mold from sticking to ceramic surfaces, leading to fewer chemicals and less water in cleaning.

MODELS

- CT708E
  Commercial wall-mounted toilet with 1-1/2' top spud inlet, less seat
- CT708EG
  Commercial wall-mounted toilet with 1-1/2' top spud inlet, less seat with SanaGloss ceramic glaze
- CT708EV
  Commercial wall-mounted toilet with 1-1/2' back spud inlet, less seat
- CT708EVG
  Commercial wall-mounted toilet with 1-1/2' back spud inlet, less seat with SanaGloss ceramic glaze

- SC534 seat (sold separately)
- SC134 seat (sold separately)
- THU111 Retro-fit mounting bolt cap set (4 pcs sold separately)

	Flushometer Valves (sold separately)			
	Manual		EcoPower®	
	1.28 GPF	1.6 GPF	1.28 GPF	1.6 GPF
CT708E	TMT1LN32#CP	TMT1NNC-32	TET1LN32#CP	TET1GNC-32#CP
			TET6LN32#CP	TET6GNC-32#CP
CT708EV			TET3LN#31#SS	TET3GN#31#SS
			TET2LN#31#SS	TET2GN#31#SS

COLORS/FINISHES

- #01 Cotton
  #03 Bone
  #12 Sedona Beige

CODES/STANDARDS

- Meets and exceeds ASME A112.19.2/CSA B45.1
- Certifications: IAPMO (cUPC), State of Massachusetts , City of Los Angeles, and others
- Code compliance: UPC, IPC, NSPC, NPC Canada, and others
- ADA Compliant

SanaGloss

PRODUCT SPECIFICATION

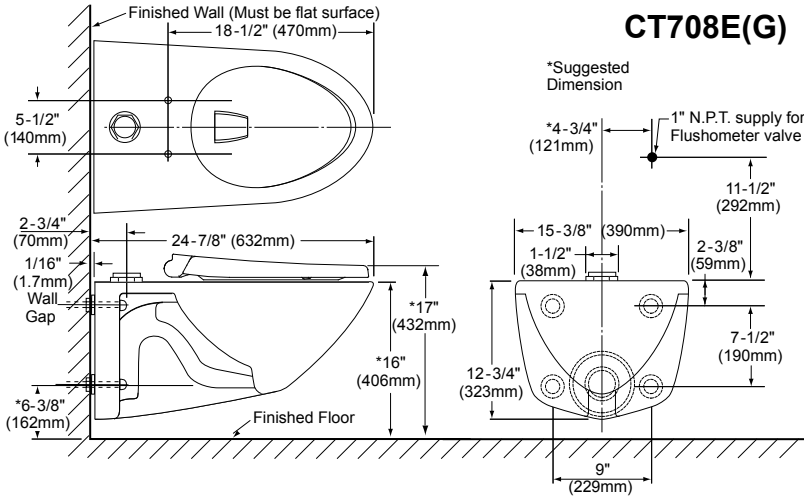
The wall-mounted, low consumption siphon jet flushing system toilet shall be 1.28GPF/4.8LPF when paired with a 1.28GPF flushometer valve and 1.6GPF/6.0LPF when paired with 1.6GPF/6.0LPF flushometer valve. Toilet shall have optional SanaGloss ceramic glaze. Toilet can be mounted at ADA height. Toilet shall be elongated front bowl. Toilet shall be TOTO Model CT708E_____.

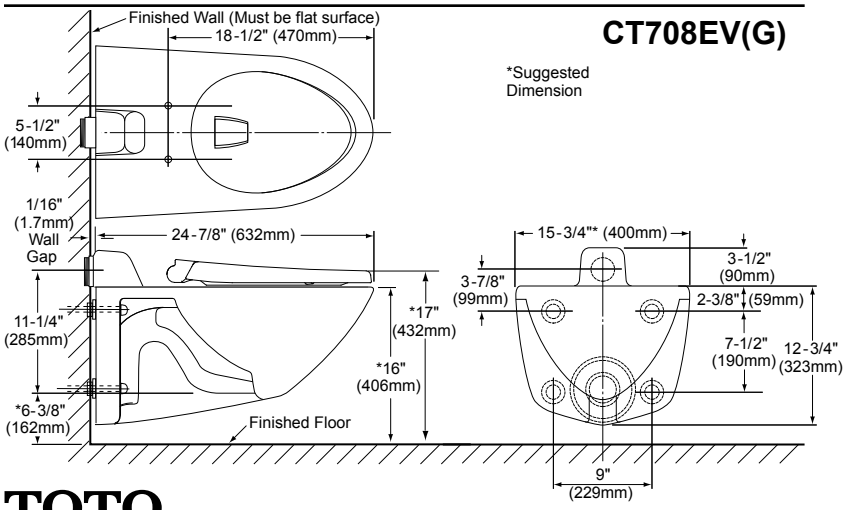
CT708E(G) & CT708EV(G)

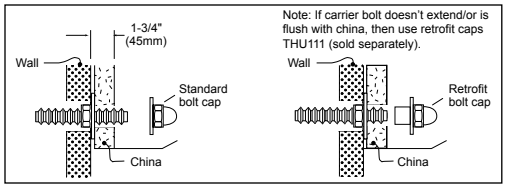
Wall-Mounted Flushometer Toilet, 1.28GPF when used with High Efficiency 1.28GPF Flushometer Valve

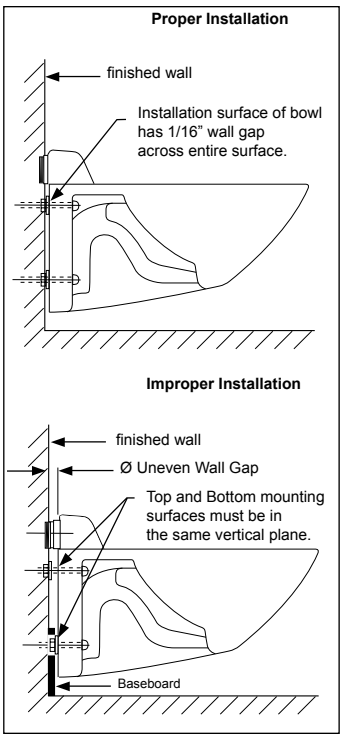
SPECIFICATIONS

- Water Use — 1.28GPF/4.8LPF (or 1.6GPF/6.0LPF when used with 1.6GPF flush valve)
- Flush System — Siphon jet flushing action
- Min. Water Pressure — 35 psi (flowing)
- Min. Flow Rate — 23 GPM
- Water Surface — 12" x 9-1/4"
- Trap Diameter — 2-1/8"
- Trap Seal — 2-5/8"
- Warranty — One Year Limited Warranty
- Material — Vitreous china
- Shipping Weight — CT708E(G) - 49lbs; CT708EV(G) - 53.5lbs
- Shipping Dimensions — CT708E(G) 17-1/8"L x 16" W x 26"H; CT708EV(G) 15-1/2"L x 15-1/2" W x 26-3/8"H









TOTO®

These dimensions and specifications are subject to change without notice

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Toilet Valve

Product: Toto High-Efficiency Toilet EcoPower Flushometer Valve, 1.28 gpf or approved equal

Locations/Applications: Restrooms

Product Requirements:

- Hydropower self-generating system
- 1.28 gpf or less
- 24 hour automatic flush for trap seal protection
- Manual override button
- Meets or exceeds ASSE 1037, CSA B125.3 Certifications: IAPMO(cUPC), ASSE, State of Massachusetts, City of Los Angeles, and others
- Code compliance: UPC, IPC, NSPC, NPC Canada, and others
- ADA Compliant

TOTO®

TET1LN Series

High-Efficiency Toilet EcoPower® Flushometer Valve, 1.28 gpf

FEATURES

- Hydropower self-generating system
- Electronic flushometer valve, neutral rough-in, complete with 1” angle stop and 1-1/2” vacuum breaker set
- 1.28 gpf or less
- Manual override button
- 24 hour automatic flush for trap seal protection

ECOPOWER™

Piston Valve

MODELS

☐ TET1LN#CP
Valve only, Left and right rough,
Polished Chrome finish

☐ TET1LN32#CP (1-1/2" Vacuum breaker)
Left and right rough, Polished Chrome finish
Complete set supplied with:
Vacuum breaker & angle stop set - VB9CP-32
- 1" Angle stop - 10077t3
- 1-1/2" Vacuum breaker - 10075t1
- Spud nut & escutcheon - 71051Nt6
- Sweat solder kit - TH559EDVSJ3

☐ Optional Part:
Z-4000-J - Adapter for ground joint angle stops

COLORS/FINISHES

- #CP Polished Chrome

CODES/STANDARDS

- Meets or exceeds ASSE 1037, CSA B125.3
- Certifications: IAPMO(cUPC), ASSE, State of Massachusetts, City of Los Angeles, and others
- Code Compliance: UPC, IPC, NSPC, NPC Canada, and others
- ADA compliant

PRODUCT SPECIFICATION

TOTO® Model No. _____
Automatic infrared sensor activated, toilet flush valve. Heavy-duty zinc die cast cover with polished chrome finish. Vandal resistant hex head screws. Low water consumption of 1.28 gallons per flush. Automatic sensor adjustment on installation. Manual override button incorporated. Piston valve and solenoid with self-cleaning mechanism. Automatic flush every twenty four hours if not used. Angle stop and vacuum breaker included with accessories. Through the use of TOTO’s EcoPower® Flush Valves, using the valve 12 flushes per day will fully recharge the valve for up to 10 years.

TET1LN Series

High-Efficiency Toilet EcoPower® Flushometer Valve, 1.28 gpf

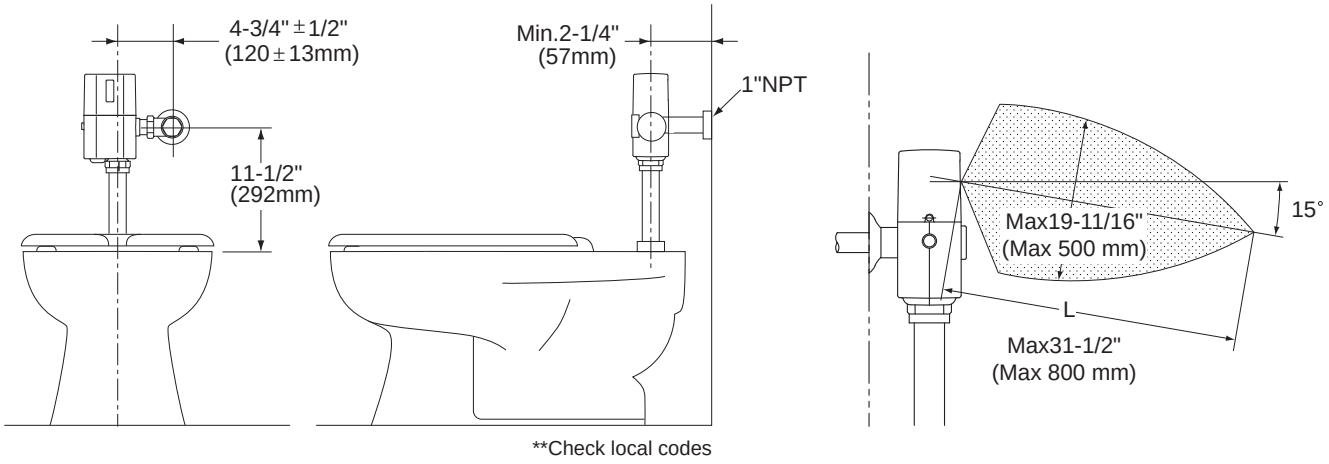
SPECIFICATIONS

• Warranty	Three Year Warranty
• Material	Bronze casting with polished chrome finish
• Power Supply	Hydropower self-generating system
• Water Supply	1" NPT
• Detection time	Factory setting at six (6) seconds minimum
• Detection range	Self-adjusting to environment
• Discharge quantity	Preset to 1.28 gpf / 4.8 lpf
• Operating temperature	32°-104°F (0°-40°C)
• Supply water pressure	35 psi (flowing) - 125 psi* (minimum flow rate of 23 gpm)
• Trap seal protection	Automatically flushes once after twenty-four (24) hours of non-use

These specifications are subject to change without notice.
*Water pressures over 80 psi are not recommended for most plumbing fixtures. Check your local plumbing code for details.

INSTALLATION NOTES

*Alternate ADA Installation
Mount grab bar at the 36” (914mm) maximum allowed height or use the split grab bars.



**Check local codes

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Toilet Seat

Product: Toto Commercial Seat or approved equal

Locations/Applications: Restrooms

Product Requirements:

- Elongated open front toilet seat
- Solid plastic with integral bumpers

TOTO®

SC534

Commercial Seat

FEATURES

- Elongated open front toilet seat
- Mounting hardware included

MODELS

- SC534

COLORS/FINISHES

- #01 Cotton

SPECIFICATIONS

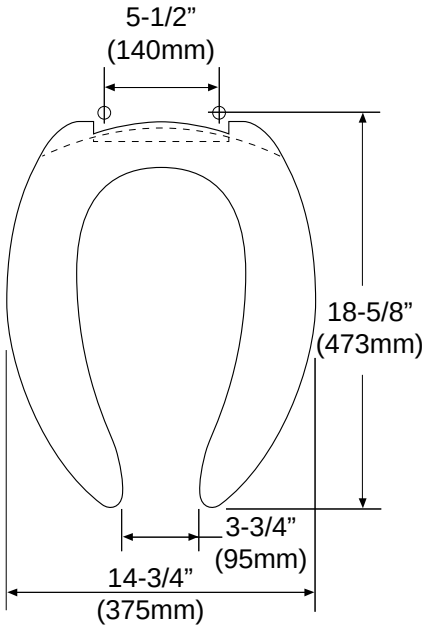
• Warranty	1-year limited warranty
• Material	Polypropylene
• Shipping Weight	6 lbs.
• Shipping Dimensions	18-1/2" x 14-1/2" x 3"

PRODUCT SPECIFICATION

Seat shall be model # SC534_____ Seat shall be solid plastic with open front seat. Seat shall have integral bumpers. Hinges to be color matched with noncorrosive nylon stud and nut.

PLEASE NOTE:

Cannot be installed with the following models: MS874114S(G), MS884114, MS914114, MS904114, CST774S, CST804S, CST414M, CST416M, CST464MF, CST412MF, & CST412MF.10. CST794EF and CST794SF



TOTO®

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SS-00340 v.06

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Urinal

Product: Toto High-Efficiency 1/8 GPF Washout Urinal or approved equal

Locations/Applications: Restrooms

Product Requirements:

- Compact urinal with concealed integral trap
- Washout flush action with 3/4” top or back spud inlet
- Include low profile dome strainer
- Meets and exceeds ASME A112.19.2/CSA B45.1,
- Certifications: IAPMO(cUPC), State of Massachusetts , City of Los Angeles
- Code compliance: UPC, IPC, NSPC, NPC Canada, and others
- Legislative compliance: California AB715, California Green Building Code
- ADA compliant

TOTO®

UT105U(V)(G)

High-Efficiency 1/8 GPF Washout Urinal

FEATURES

- Compact urinal with concealed integral trap
- Washout flush action with 3/4" top or back spud inlet
- Complete with low profile dome strainer
- Optional SanaGloss® ceramic glaze - SanaGloss glaze prevents debris and mold from sticking to ceramic surfaces, leading to fewer chemicals.

MODELS

- UT105U
  Urinal with 3/4" top spud inlet
- UT105UG
  Urinal with 3/4" top spud inlet and SanaGloss
- UT105UV
  Urinal with 3/4" back spud inlet
- UT105UVG
  Urinal with 3/4" back spud inlet and SanaGloss

RECOMMENDED FLUSH VALVES	
UT105U(G)	UT105UV(G)
TEU1UN12#CP	TEU2UN11#SS
	TEU3UN11#SS

COLORS/FINISHES

- #01 Cotton (SanaGloss optional)
  #03 Bone (special order only)
  #12 Sedona Beige (special order only)

PRODUCT SPECIFICATION

The wall-mounted, ADA compliant, high-efficiency washout urinal shall be 0.125GPF/0.47LPF when paired with a 0.125GPF flushometer valve. Urinal shall have optional SanaGloss ceramic glaze. Urinal specified shall be model UT105U___.

CODES/STANDARDS

- Meets and exceeds ASME A112.19.2/CSA B45.1,
- Certifications: IAPMO(cUPC), State of Massachusetts , City of Los Angeles
- Code compliance: UPC, IPC, NSPC, NPC Canada, and others
- Legislative compliance: California AB715, California Green Building Code
- ADA compliant

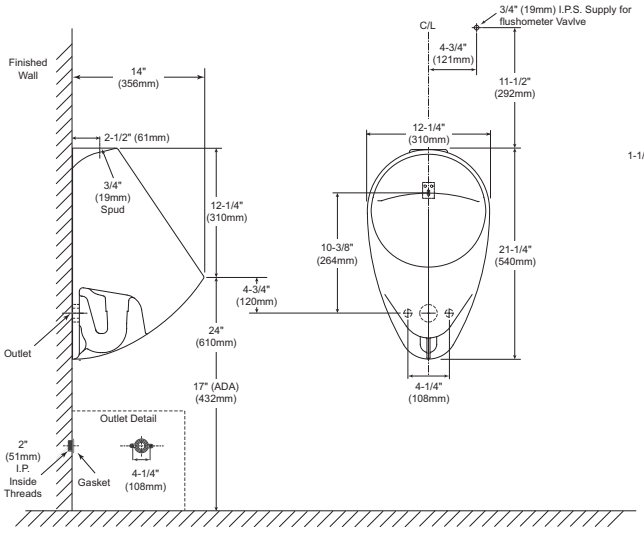
UT105U(V)(G)

High-Efficiency 1/8 GPF Washout Urinal

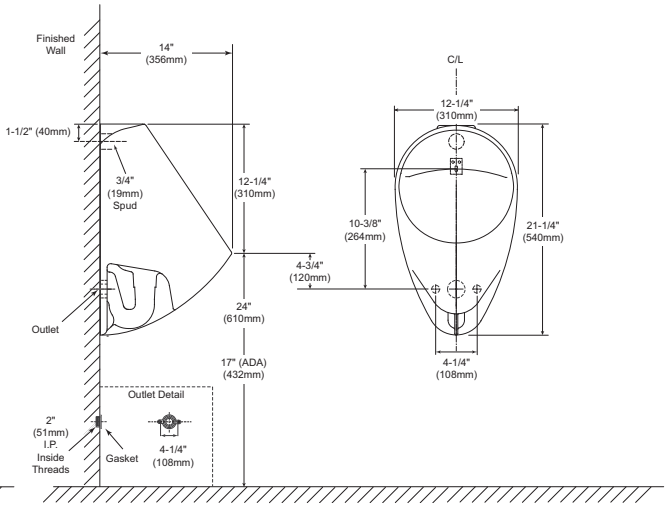
SPECIFICATIONS

- Water Use 0.125GPF/0.47LPF
- Flush System Washout flush action
- Warranty One Year Limited Warranty
- Material Vitreous china
- Min. Water Pressure 15 psi (flowing)
- Height (Urinal Only) 21-3/4"
- Width 12-1/4"
- Rim 14"
- Shipping Weight UT105U(V)(G) - 37.5lbs
- Shipping Dimensions UT105U(V)(G)
  24" L x 13-3/4" W x 17" H

Top Spud Installation



Back Spud Installation



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Urinal Valve

Product: Toto 1/8 GPF Urinal EcoPower Flushometer Valve or approved equal

Locations/Applications: Restrooms

Product Requirements:

- Electronic flushometer valve, neutral rough-in, includes 3/4” angle stop and 3/4” vacuum breaker set
- 1/8 gpf or less
- 12 hour automatic flush for trap seal protection
- Manual override button
- Meets or exceeds ASSE 1037, CSA B125.3
- Certifications: IAPMO(cUPC), ASSE, State of Massachusetts, and others
- Code compliance: UPC, IPC, NSPC, NPC Canada, California AB715, California Green Building Code and others
- ADA Compliant

TOTO®

TEU1UN Series

1/8 GPF Urinal EcoPower® Flushometer Valve

FEATURES

- Electronic flushometer valve, neutral rough-in, complete with 3/4" angle stop and 3/4" vacuum breaker set
- Hydropower self-generating system
- 1/8 GPF or less
- Manual override button
- 12 hour automatic flush for trap seal protection

ECOPOWER™

MODELS

- TEU1UN#CP
  Valve only, Left and right rough, Chrome plated finish

- TEU1UN12#CP (3/4" Vacuum breaker)
  Left and right rough, Polished Chrome finish
  Complete set supplied with:
  Vacuum breaker & angle stop set - VB9CP-12
  - 3/4" Angle stop - 10077t4
  - 3/4" Vacuum breaker - 10075t2
  - Spud nut & escutcheon - 71051Nt5
  - Sweat solder kit - TH559EDVSJ1

- Optional Part:
  Z-4000-J - Adapter for ground joint angle stops

COLORS/FINISHES

- #CP Chrome

CODES/STANDARDS (to be listed)

- Meets or exceeds ASSE 1037, CSA B125.3
- Certifications: IAPMO(cUPC), ASSE, State of Massachusetts, and others
- Code Compliance: UPC, IPC, NSPC, NPC Canada, California AB715, California Green Building Code and others
- ADA compliant

PRODUCT SPECIFICATION

TOTO® Model No. _____
Automatic infrared sensor activated, urinal flush valve. Heavy-duty zinc die cast cover with nickel chrome finish. Vandal resistant hex head screws. Automatic sensor adjustment on installation. Manual override button incorporated. Solenoid with self-cleaning mechanism. Automatic flush every twelve hours if not used. Angle stop and vacuum breaker included with accessories.

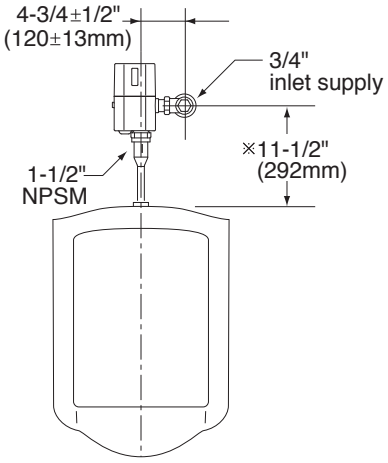
TEU1UN Series

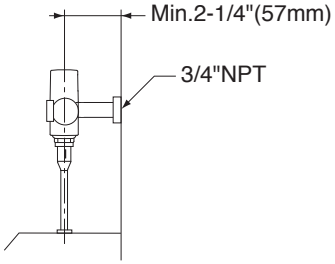
1/8 GPF Urinal EcoPower® Flushometer Valve

SPECIFICATIONS

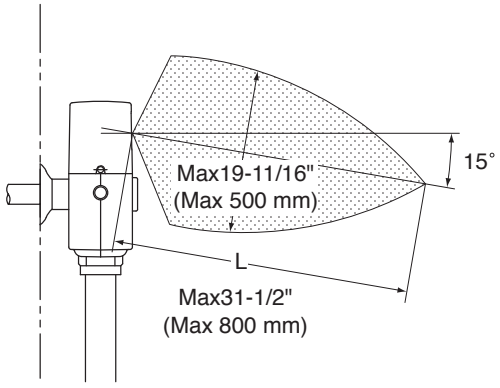
- Warranty — Three Year Warranty
- Material — Bronze casting
- Power Supply — Hydro-Power Charge
- Water Supply — 3/4" NPT
- Detection time — Factory setting at six (6) seconds minimum
- Detection range — Self-adjusting to environment
- Discharge quantity — Preset to 1/8 gpf / 0.47 lpf
- Operating temperature — 32°-104°F (0°-40°C)
- Supply water pressure — 15 psi - 125 psi*
- Trap seal protection — Automatically flushes once after twelve (12) hours of non-use

These specifications are subject to change without notice.
*Water pressures over 80 psi are not recommended for most plumbing fixtures. Check your local plumbing code for details.





*Check local codes



TOTO®

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Faucet

Product: Toto Standard EcoPower Faucet or approved equal

Locations/Applications: Restrooms

Product Requirements:

- Hydropower self-generating system
- Senson faucet with control box and mounting hardware
- NSF Compliant
- Single-hole mount
- Exceeds mandatory baseline, 0.20 gallon/cycle of California Green Building Code, CAL-Green
- Meets or exceeds ASME A112.18.1/CSA B125.1, NSF 61-9, and ASSE 1070*
- Certifications: IAPMO(cUPC), ASSE, State of Massachusetts, and others
- Code Compliance: UPC, IPC, NSPC, NPC Canada, and others
- Legislative compliance: California AB1953, Vermont S.152 & Maryland HB. 372, California Green Code, and City of Los Angeles Water Efficiency Ordinance
- ADA compliant

TOTO®

TEL3LS10/TEL5LS10

Standard EcoPower® Faucet

FEATURES

- Hydropower self-generating system
- Sensor faucet with aerated flow
- Self adjusting faucet with control box and mounting hardware, less supply lines
- NSF compliant
- Single-hole mount

ECOPOWER™

MODELS

- TEL3LS10 - Single Supply - 0.09 gpc
  Discharge: On-demand; Up to 10 seconds while activated.
- TELLS100 - Standard Spout
- TN78-9V710 - Single Supply Controller, 10 sec max
- TEL5LS10 - Thermal Mixing - 0.09 gpc
  Discharge: On-demand; Up to 10 seconds while activated.
- TELLS100 - Standard Spout
- TN78-10V710 - Thermal Mixing Controller, 10 sec max

Optional Accessories:
- TN71V100S - 4" Cover Plate
- 71244T8CC - 8" Cover Plate

COLORS/FINISHES

- #CP Polished Chrome
- #BN Brushed Nickel
- #PN Polished Nickel

PRODUCT SPECIFICATION

TOTO Model #_____ Automatic infrared sensor activated faucet. Anti-scald, thermal mixing chamber (thermal faucets only). Automatic sensor adjustment on installation.
Maximum discharge 0.09 gallon per 10 second cycle which is 55% below CALGreen's baseline.
Single hole faucet with optional 4" and 8" cover plates.

CODES/STANDARDS

- Exceeds mandatory baseline, 0.20 gallon/cycle of California Green Building Code, CALGreen
- Meets or exceeds ASME A112.18.1/CSA B125.1, NSF 61-9, and ASSE 1070*
- Certifications: IAPMO(cUPC), ASSE, State of Massachusetts, and others
- Code Compliance: UPC, IPC, NSPC, NPC Canada, and others
- Legislative compliance: California AB1953, Vermont S.152 & Maryland HB. 372, California Green Code, and City of Los Angeles Water Efficiency Ordinance
- ADA compliant

**Note: ASSE 1070 supersedes ASSE1016 for non-shower point of use devices. Applies to TEL5 series models.*

TEL3LS10 & TEL5LS10 Series

Standard EcoPower® Faucet

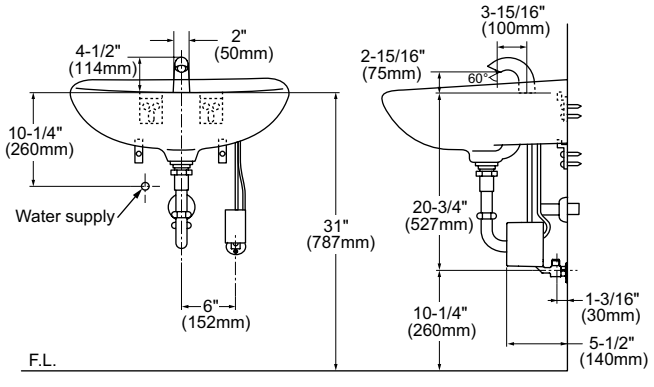
SPECIFICATIONS

• **Warranty**	Three year warranty
• **Material**	Brass
• **Power Supply**	Hydropower self-generating system
• **Hot/Cold-water Supply**	Minimum Pressure (dynamic): 20PSI (0.07MPa) Maximum Pressure (static): 80PSI (0.55MPa)
• **Flow Rate**	0.09 gallons per cycle (0.5 gallons per minute/max. 10 seconds discharge)
• **Water Supply Connect**	1/2" NPSM Male
• **Water Saving Function**	Automatically turns OFF when user removes hands Maximum continuous run time is 10 seconds
• **Detection Time**	ON feature: Immediate OFF feature: 1 second delay
• **Detection Range**	Factory set at 2-1/4" Faucet automatically sets the detection range according to the size of the basin
• **Discharge Water Temperature Control Range**	Thermal Mixing Faucet: Cold water - 104°F (Max) (When used under standard conditions)
• **Anti-scald Safety Feature**	Provides the user protection against exposure to excessive water temperature (Thermal mixing faucet, only)

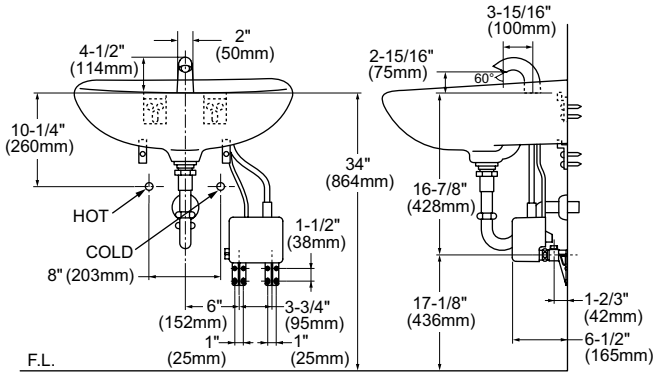
NOTE

Following the Federal mandate for water efficiency outlined in the Environmental Protection Act of 1992, Faucets can be rated for water consumption based on two categories: flow rate and water consumption. With the "Water Consumption" standard, a faucet must not use more than 0.25 gallon of water per cycle. The TOTO® faucet with a 10 second cycle uses 0.09 gallon of water, or 0.5 gallon per minute. This is a 55% below the base line of 0.25 gallon per cycle. Furthermore, an innovative design feature incorporated into all TOTO electronic faucets is an "ON-DEMAND" mode. This means that the faucet will only deliver water as needed and will not run the entire duration of its rated cycle. This guarantees additional water savings. TOTO uses water consumption standard because it is the most accurate method of measuring water use. This method of measurement can be incorporated into water usage calculations for various efficiency programs. For more information, please consult www.totousa.com

*Water pressures over 80 psi are not recommended for most plumbing fixtures.



Single Supply



Thermal Mixing

Maximum deck thickness 2" (50mm)

Wall Mounted Soap Dispenser

Product:	Bobrick ConturaSeries Surface-Mounted Soap Dispenser for Anitbaterial Soaps or approved equal
Locations/Applications:	Restrooms
Product Requirements:	• Complies with barrier-free accessibility guidelines

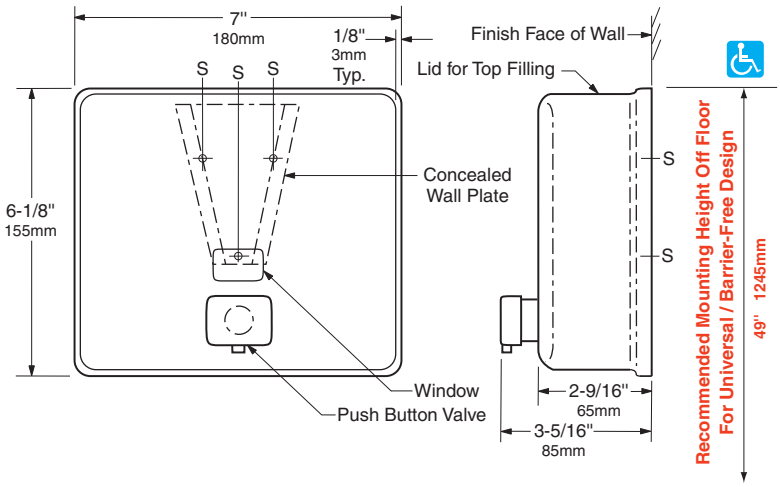
BOBRICK

Technical Data

ConturaSeries® SURFACE-MOUNTED SOAP DISPENSER FOR ANTIBACTERIAL SOAPS

(with special container made from type-316 stainless steel)

818615



MATERIALS:

Container — Body is 18-8 , type-316, 20-gauge (0.9mm) stainless steel with satin finish. Drawn, one-piece, seamless construction. Front has same degree of arc as other Bobrick ConturaSeries washroom accessories. Radius on corners and edges complement other ConturaSeries accessories. Back plate is 22-gauge (0.8mm) stainless steel with 20-gauge (0.9mm) stainless steel mounting bracket attached. Container body and back plate are epoxy-sealed to prevent warping and leakage. Concealed wall plate is 20-gauge (0.9mm) stainless steel. Equipped with a plastic soap refill-indicator window and a locked, hinged stainless steel lid for top filling. Capacity: 40-fl oz (1.2-L).

Valve — Black molded plastic push button. Soap head-holding mushroom valve. Stainless steel spring. U-packing seal and duckbill. Antibacterial-soap-resistant plastic cylinder.

OPERATION:

Corrosion-resistant valve dispenses commercially marketed all-purpose hand soaps. Valve operates with one hand, without tight grasping, pinching, or twisting of the wrist, and with less than 5 pounds of force (22.2 N) to comply with barrier-free accessibility guidelines (including ADAAG in U.S.A.). Window indicates when refill is required. The locked, hinged lid opens for top filling with special key provided. Concealed, vandal-resistant mounting.

INSTALLATION:

Secure wall plate to the wall with screws furnished at points indicated by an *S*. Slide mounting bracket of container down onto wall plate and secure unit with furnished locking-screw. For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure unit with screws furnished. For other wall surfaces, provide fiber plugs or expansion shields for use with screws furnished, or provide 1/8" (3mm) toggle bolts or expansion bolts.

Note: Surface-mount the dispenser plumb and true with valve 6" (152mm) to right or left of lavatory center. Provide 4" (102mm) minimum clearance from the lid to the underside of any horizontal projection. Push buttons should be located 44" (1120mm) maximum above the finish floor.

SPECIFICATION:

Surface-mounted soap dispenser shall be type-316 stainless steel with satin finish. Corrosion-resistant valve shall dispense commercially marketed all-purpose hand soaps. Valve shall be operable with one hand and with less than 5 pounds of force (22.2 N) to comply with barrier-free accessibility guidelines (including ADAAG in U.S.A.). Front of soap dispenser shall have same degree of arc and match other Bobrick ConturaSeries accessories in the washroom. Radius on corners and edges of soap dispenser shall complement other Bobrick ConturaSeries washroom accessories. Container body and back plate shall be epoxy-sealed to prevent warping and leakage. Soap dispenser shall have concealed, vandal-resistant mounting. Locked, hinged stainless steel lid for top filling shall require special key to open. Capacity shall be 40-fl oz (1.2-L).

Surface-Mounted Stainless Steel Soap Dispenser For Antibacterial Soaps shall be Model 818615 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

Rev. 3/10/10 Printed in U.S.A.
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Drinking Fountains

Product: Elkay SwirlFlo ADA Bi-Level Reverse Fountain or approved equal

Locations/Applications: Varies

Product Requirements:

- Wall-Mounted
- No Electrical Required
- Non-refrigerated
- Product Compliance:
  - ADA Compliant
  - UL 399
  - NSF 61
  - NSF 372 (no lead)
  - CAN/CSA 22.2.120
  - ASME A112.19.3/CSA B45.4

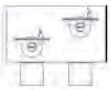

Image May Not Reflect Selected Options

SwirlFlo® ADA Bi-Level Reverse Fountain

EDFPBVM117FPRAK

$4,281
(List price shown in US dollars. Actual selling price may vary.)
WHERE TO BUY

Share Pin it Tweet Save

PRODUCT FEATURES | PRODUCT SPECIFICATIONS | DOWNLOADS

FINISH	Stainless Steel
MATERIAL	Stainless Steel
FEATURES	Freeze Resistant
POWER	No Electrical Required
BUBBLER STYLE	Vandal-Resistant
MOUNTING OPTION	Wall Mount (On-Wall)
CHILLING OPTION	Non-refrigerated
INSTALLATION LOCATION	INDOOR/OUTDOOR
NO. OF STATIONS	Two Station
FOUNTAIN DIMENSIONS	L: 38-1/2" W: 19" H: 21-15/16"
SHIPPING WEIGHT	97 lbs
PRODUCT COMPLIANCE	ADA UL 399 NSF 61 NSF 372 (no lead) CAN/CSA 22.2 120 ASME A112.19.3/CSA B45.4 Buy American Act

ASSEMBLED IN USA

ADA COMPLIANT

Includes:

- Fountain
- Freeze Resistant Box

Drinking Fountains with Bottle Filler

Product: Elkay No Lead Two-Level SwirlFlo Wall Mount, Barrier Free Drinking Fountain with EZH2O Bottle Filling Station or approved equal

Locations/Applications: Varies

Product Requirements:

- Wall-Mounted
- Non-refrigerated
- Bottle Filler:
  - No-touch, sensor-activated bottle filler.
  - Auto 20-second shut-off.
  - Integrated Silver Ion Anti-microbial Protection in key areas.
  - Quick Fill Rate: 1.5 gpm.
  - Laminar Flow provides minimal splash.
  - Real Drain System eliminates standing water.
- Product Compliance:
  - ADA Compliant
  - UL 399
  - ANSI/NSF 61
  - NSF 372
  - CAN/CSA 22.2.120
  - GreenSpec Listed (Recommended)

ELKAY®

SPECIFICATIONS

No Lead Two-Level SwirlFlo®
Wall Mount, Barrier-Free
Drinking Fountain with EZH2O® Bottle Filling Station
Model EZWS-EDFPBM117K

Rated for Indoor Use Only

PRODUCT SPECIFICATION

Architectural fountains with integral bottle filling station.
EZWS-EDFPBM117K shall deliver non-chilled drinking water unless connected to a remote water chiller. Units shall be stainless steel construction with plastic ABS alcove. Sensor-activation with an auto 20-second shut-off timer. Shall include Green Ticker™ displaying count of plastic bottles saved from waste. Bottle filler shall provide 1.5 gpm flow rate with laminar flow to minimize splashing and 1.1 gpm flow rate when connected to a remote water chiller. Shall include integrated silver ion anti-microbial protection in key areas. Unit shall meet ADA guidelines. Unit shall be lead-free design which is certified to NSF/ANSI 61 and 372 and meets Federal and State low-lead requirements. Unit shall be certified to UL399 and CAN/CSA 22.2 No. 120.

FOUNTAINS GENERAL

Fully exposed two-level fountain basins are #18 gauge, 300 series stainless steel polished to a lustrous satin finish with high shine outer edge. #16 gauge, 300 series tubular stainless steel support arms incorporate unique recess to be integrated with basin. One fountain positioned lower on the right for wheel-chair use. The other positioned on the left at standing height.

Fountains have contoured basin that minimizes splashing. Flexi-Guard® Safety bubblers are keyed in location to prevent rotation. Fully functional, vandal-resistant front push button. Flow regulator provides constant stream from 20 to 105 psi water pressure.

BOTTLE FILLER FEATURES

- No-touch, sensor-activated bottle filler.
- Auto 20-second shut-off.
- Integrated Silver Ion Anti-microbial Protection in key areas.
- Quick Fill Rate: 1.5 gpm.
- Laminar Flow provides minimal splash.
- Real Drain System eliminates standing water.
- Visual User Interface display includes:
  - Innovative Green Ticker™ counts bottles saved from waste.

OPTIONAL FEATURES (Additional Cost)

- For front access to bottle filler electricals or drain, use access panel (Item #ACCESS12X38-5)

Shown with two optional access panels installed

Warranty: Electrical components and water system are warranted for 12 months from date of installation or 18 months from factory shipment, whichever date falls first.

Model
EZWS-EDFPBM117K

CONSTRUCTION

EZWS-EDFPBM117K two-level fountain furnished complete with Flexi-Guard® fully assembled with front push button, flow regulator (120 to 105 psi), stainless steel back panel. No traps are furnished.

- Stainless Steel bottle filler construction with ABS plastic alcove.
- Furnished with wall mounting frame constructed of galvanized steel.
- Mounting can be ordered separately for pre-install.

CERTIFICATIONS / STANDARDS

- ADA Compliant
- UL399 and CAN/CSA 22.2 No. 120 Certified
- ANSI/NSF 61 and 372 Certified
- GreenSpec® Listed

This specification describes an Elkay product with design, quality and functional benefits to the user. When making a comparison of other producer's offerings, be certain these features are not overlooked.

In keeping with our policy of continuing product improvement, Elkay reserves the right to change specification without notice. Please visit elkaypro.com for the most current version.

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OakBrook, IL 60523
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SPEC00045 (02/2014)

No Lead Two-Level SwirlFlo®
Wall Mount, Barrier-Free
Drinking Fountain with EZH2O® Bottle Filling Station
Model EZWS-EDFPBM117K

ELKAY®

ROUGH-IN DIMENSIONS

INSTALLER NOTE:

THIS DRINKING FOUNTAIN IS FURNISHED WITH A BUBBLER AND VALVE INCLUDING ALL CONNECTING FITTINGS WHICH ARE MANUFACTURED OF COMPLETELY LEAD FREE MATERIAL. SHUTOFF VALVE (NOT FURNISHED) TO ACCEPT 3/8" O.D. UNPLATED COPPER TUBE.

WALL OPENING

IMPORTANT: It is necessary to create a wall opening 37 ½" W x 31 ¾" H and 25" above the floor line.

ELECTRICAL DATA

Electrical outlet, three (3) conductor grounded. Locate within safe reach of power cord.

MOUNTING INSTRUCTIONS

Refer to rough-in for location of plumbing and electrical sources. The support frame is to be installed first. Hang upper panel to hanger on frame. Fountains are to be attached to panel and wall frame. Water service lines, waste lines and electrical are assembled as required. Perform a final check for leaks and correct functions of fountains and chiller. (For details see the installation instructions.)

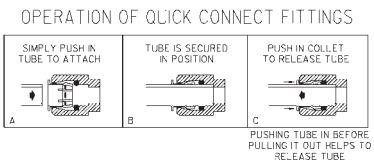
Installation requires trap to be installed in wall. Trap and service stop not included.

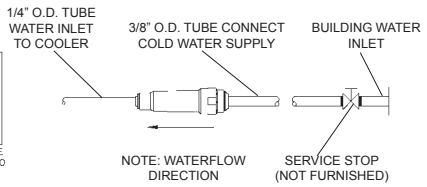
Job Name: _____

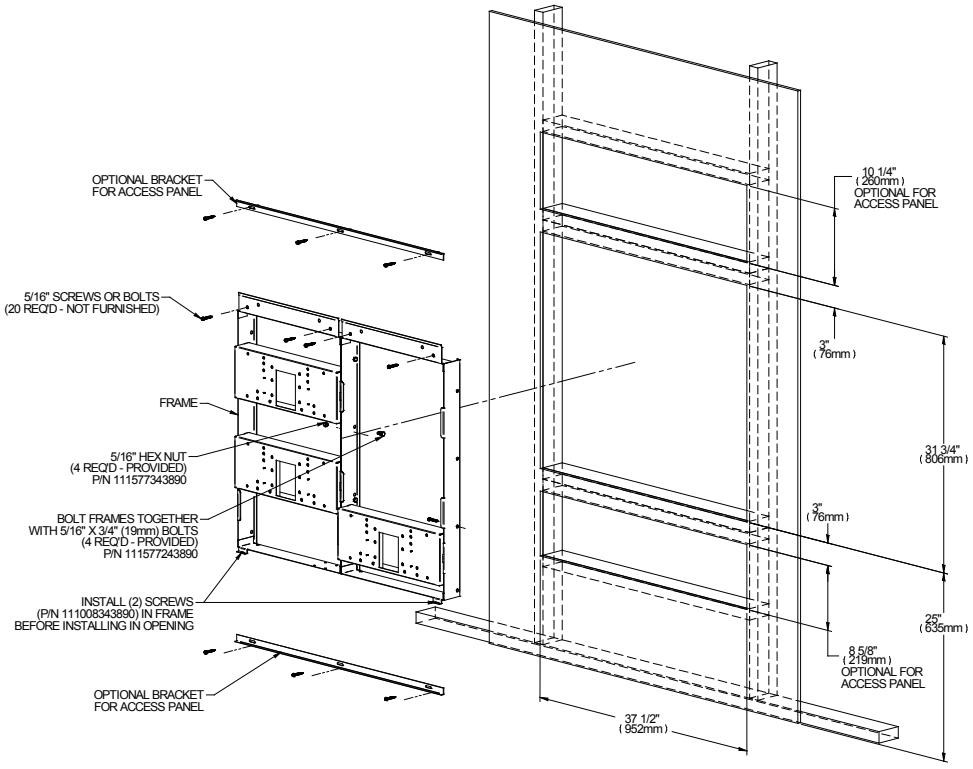
Date: _____ Qty. _____

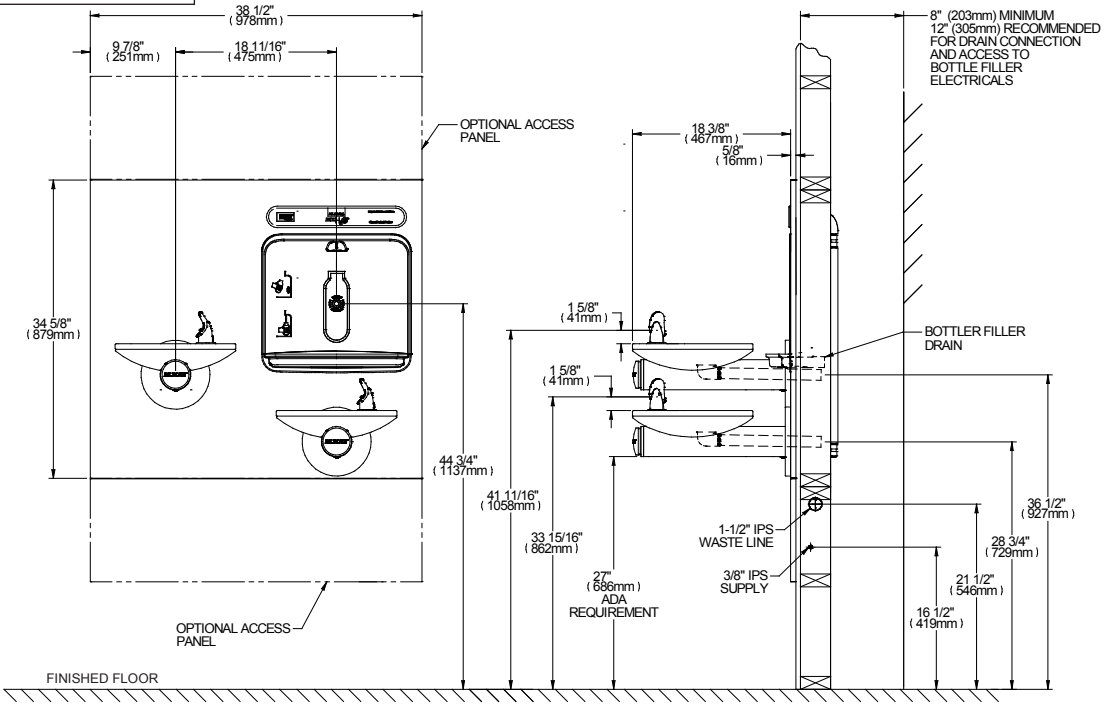
Contact Info (Name, Phone, Email): _____

Approval: _____









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Drinking Fountains with Bottle Filler (Refrigerated)

Product: Elkay No Lead Two-Level SwirlFlo Filtered Wall Mount, Barrier Free Refrigerated Drinking Fountain with EZH2O Bottle Filling Station or approved equal

Locations/Applications: Varies

Product Requirements:

- Wall-Mounted
- Refrigerated
- Bottle Filler:
  - No-touch, sensor-activated bottle filler.
  - Auto 20-second shut-off.
  - Integrated Silver Ion Anti-microbial Protection in key areas.
  - Quick Fill Rate: 1.1 gpm.
  - Laminar Flow provides minimal splash.
  - Real Drain System eliminates standing water.
- Product Compliance:
  - ADA
  - UL 399
  - ANSI/NSF 61
  - NSF 372
  - CAN/CSA 22.2.120
  - ANSI/NSF 42 and 53 Certified (Filter Only)
  - GreenSpec Listed (Recommended)

ELKAY®

SPECIFICATIONS

No Lead Two-Level SwirlFlo® Filtered Wall Mount, Barrier-Free Refrigerated Fountain with EZH2O® Bottle Filling Station Model LZWS-LRPBM28K

PRODUCT SPECIFICATION

Architectural fountains with integral bottle filling station.
LZWS-LRPBM28K shall deliver 8 GPH of 50°F drinking water at 90°F ambient and 80°F inlet water. Units shall be stainless steel construction with plastic ABS alcove. Sensor-activation with an auto 20-second shut-off timer. Shall include Green Ticker™ displaying count of plastic bottles saved from waste. Bottle filler shall provide 1.1 gpm flow rate with laminar flow to minimize splashing. Shall include the Water Sentry® Plus 3000-gallon capacity filter, certified to NSF/ANSI 42 and 53, with visual monitor to indicate when replacement is necessary. Shall include integrated silver ion anti-microbial protection in key areas. Unit shall meet ADA guidelines. Unit shall be lead-free design which is certified to NSF/ANSI 61 and 372 and meets Federal and State low-lead requirements. Unit shall be certified to UL399 and CAN/CSA 22.2 No. 120.

FOUNTAINS GENERAL

Fully exposed two-level fountain basins are #18 gauge, 300 series stainless steel polished to a lustrous satin finish with high shine outer edge. #16 gauge, 300 series tubular stainless steel support arms incorporate unique recess to be integrated with basin. One fountain positioned lower on the right for wheel-chair use. The other positioned on the left at standing height.

Fountains have contoured basin that minimizes splashing. Flexi-Guard® Safety bubblers are keyed in location to prevent rotation. Fully functional, vandal-resistant front push button. Flow regulator provides constant stream from 20 to 105 psi water pressure.

BOTTLE FILLER STANDARD FEATURES

- No-touch, sensor-activated operation.
- Auto 20-second shut-off.
- WaterSentry® Plus 3000-gallon capacity Filtration System, certified to NSF/ANSI 42 & 53 (Lead, Class 1 Particulate, Chlorine, Taste & odor).
- Integrated Silver Ion Anti-microbial Protection in key areas.
- Quick Fill Rate: 1.1 gpm.
- Laminar Flow provides minimal splash.
- Real Drain System eliminates standing water.
- Visual User Interface display includes:
  - Innovative Green Ticker™ counts bottles saved from waste.
  - LED Visual Filter Monitor shows when replacement is necessary.
- Includes lower panel for easy access and servicing.

OPTIONAL FEATURES (Additional Cost)

- For front access to bottle filler electricals, use access panel Item #ACCESS12X38-5)

Shown with one optional access panel installed

COOLING SYSTEM

- Compressor: Hermetically-sealed, reciprocating type, single phase. Sealed-in lifetime lubrication.
- Condenser: Fan cooled. Fan motor is permanently lubricated.
- Cooling Unit: Combination tube-tank type. Continuous copper tubing with stainless steel tank. Fully insulated with EPS foam which meets UL requirements for self-extinguishing material.
- Refrigerant control: Refrigerant R134a is controlled by accurately calibrated capillary tube.
- Temperature Control: Enclosed adjustable thermostat is factory preset. Requires no adjustment other than for altitude requirements, easily accessible by removing lower grille panel.

CAPACITIES CHART

Model	Voltage / Hertz	Chilling Capacity	F.L. Amps	Rated Watts	Approx. Ship Wt.
LZWS-LRPBM28K	115V / 60Hz	8 GPH	5.0	370	174

Rated for Indoor Use Only

Model
LZWS-LRPBM28K

CONSTRUCTION

LZWS-LRPBM28K two-level fountain furnished complete withFlexi-Guard® fully assembled with front push button, flow regulator (120 to 105 psi), stainless steel back panel and surface mounting plate. No traps are furnished.

- Stainless Steel bottle filler construction with ABS plastic alcove.
- Includes stainless steel lower panel.
- Furnished with wall mounting frame constructed of galvanized steel.
- Mounting can be ordered separately for pre-install.

Replacement Filters: Available as Singles and Multi-packs. Order part numbers:

- 51300C (single)
- 51300C_3PK (three)
- 51300C_12PK (twelve)
- 51300C_24PK (twenty-four)
- 51300C_48PK (forty-eight)

Warranty: 5 year limited warranty on the unit's refrigeration system. Electrical components and water system are warranted for 12 months from date of installation or 18 months from factory shipment, whichever date falls first.

CERTIFICATIONS / STANDARDS

- ADA Compliant
- UL399 and CAN/CSA 22.2 No. 120 Certified
- ANSI/NSF 42 and 53 Certified (Filter Only)
- ANSI/NSF 61 and 372 Certified
- GreenSpec Listed

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2013 Elkay
SPEC00048 (Rev 08/2013)

No Lead Two-Level SwirlFlo®
Filtered Wall Mount, Barrier-Free
Refrigerated Fountain with EZH2O® Bottle Filling Station
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ROUGH-IN DIMENSIONS

INSTALLER NOTE:

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WALL OPENING

IMPORTANT: It is necessary to create a wall opening 37 ½" W x 51-15/16" H and 4-1/2" above the floor line.

ELECTRICAL DATA

Junction box for a (3) wire 10 AMP branch circuit. Standard 120 Volt, 60 Hz, single phase.

Electrical outlet, three (3) conductor grounded. Locate within safe reach of power cord.

MOUNTING INSTRUCTIONS

Refer to rough-in for location of plumbing and electrical sources. The support frame is to be installed first. Hang upper panel to hanger on frame. Fountains are to be attached to panel and wall frame. Water service lines, waste lines and electrical are assembled as required. Perform a final check for leaks and correct functions of fountains and chiller. (For details see the installation instructions.)

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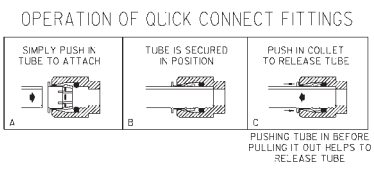

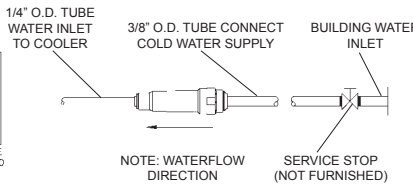

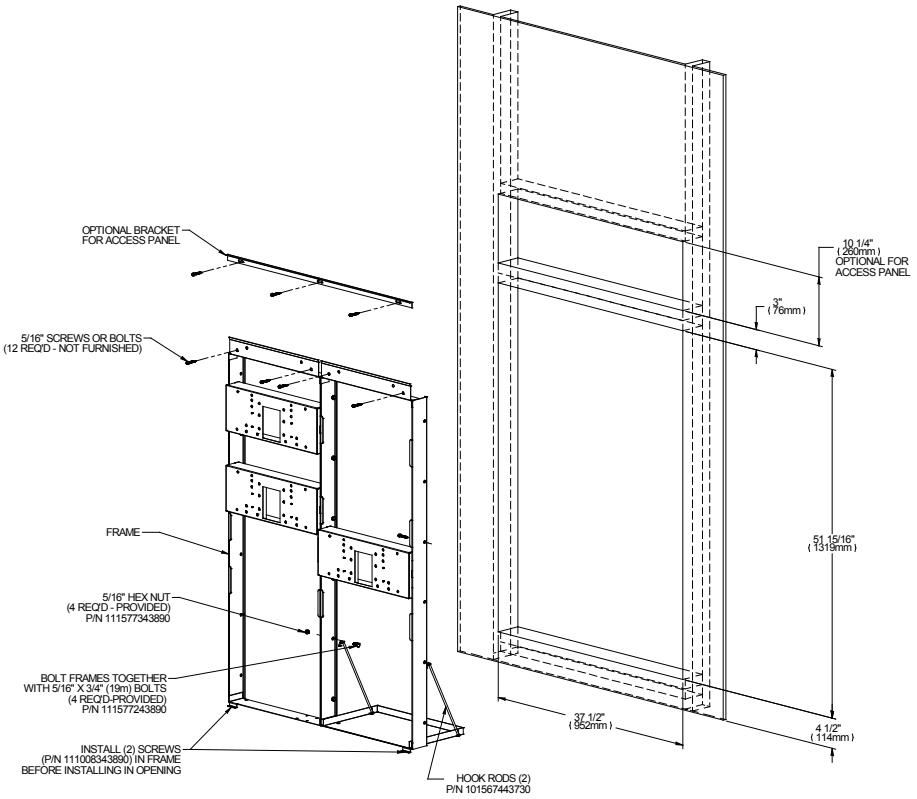

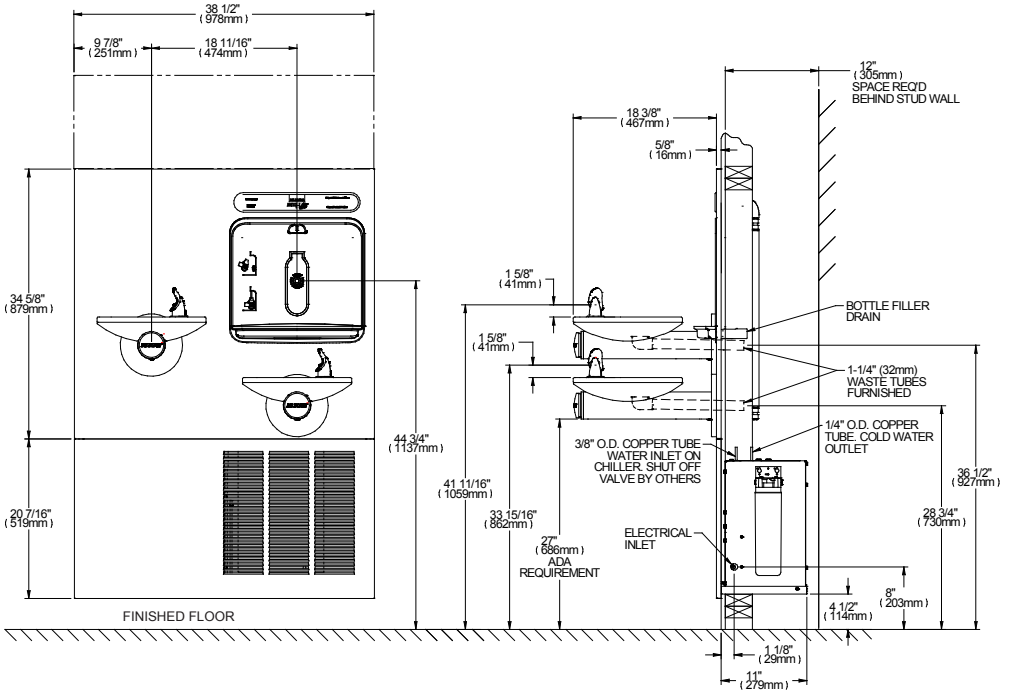

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ROOM TYPOLOGIES

CANNONDESIGN

ROOM TYPOLOGIES OVERVIEW

A. PUBLIC

A1. ATRIUM
A2. CORRIDOR
A3. DINING
A4. FOOD PREP
A5. ELEVATOR, FREIGHT
A6. ELEVATOR, PASSENGER
A7. LACTATION ROOM
A8. RESTROOM
A9. STAIRS, CONNECTING
A10. STAIRS, EXITING

B. SEMI-PUBLIC

B1. AUDITORIUM
B2. CLASSROOM, LOW-TECH
B3. CLASSROOM, HIGH-TECH
B4. STUDY/COLLABORATION ROOM
B5. COMPUTER LAB
B6. FITNESS CENTER
B7. LAB
B8. LECTURE HALL

C. PRIVATE

C1. BOARD ROOM
C2. CONFERENCE ROOM
C3. OFFICE, STAFF
C4. OFFICE, DIRECTOR
C5. OPEN PLAN
C6. RECEPTION AREA
C7. STAFF LOUNGE

D. BACK OF HOUSE

D1. CUSTODIAL CLOSET
D2. ELECTRICAL ROOM
D3. MECHANICAL ROOM
D4. SERVER ROOM

SECTION A: PUBLIC

A1. ATRIUM

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - FIBERGLASS (see 095113)

Note: Specialty Ceilings are to be reviewed by NCC at the initial stages of design for approval.

FLOORS

- TERRAZZO - TILE (see 096616)
- TERRAZZO - POURED IN PLACE (see 096613)
- PORCELAIN TILE (see 093013)

Note: Selection of new floor finishes should be based on existing conditions and material transitions should be ADA compliant.

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, HEAVY TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL IF REQUIRED (see 122413)

Note: Specialty metal or wood baseboards are to be reviewed by NCC at the initial stages of design for approval.

LIGHTING

- AS REQUIRED BY DESIGN
- LED DOWNLIGHTS, DIMMABLE
- LED LENSED DIMMABLE WALL WASH LUMINAIRES

Note: Specialty lighting is to be reviewed by NCC at the initial stages of design for approval.

MILLWORK

AV / POWER

- AS REQUIRED BY DESIGN

REMARKS

A2. CORRIDOR

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - FIBERGLASS (see 095113)

Note: Specialty Ceilings are to be reviewed by NCC at the initial stages of design for approval.

FLOORS

- CARPET TILE (see 096813)

Note: Other finishes including hard surfaces and resilient flooring to be reviewed by NCC at the initial stages of design for approval.

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, HEAVY TRAFFIC (see 096513)

Note: Specialty metal or wood baseboards are to be reviewed by NCC at the initial stages of design for approval.

LIGHTING

- 2x4 OR 2x2 HIGH PERFORMANCE (NON-PLANAR) T8 OR LED RECESSED NON DIM TROFFER

Note: All luminaires to be UL Rated for the application.

Note: Other lighting strategies to be reviewed by NCC at the initial stages of design for approval.

MILLWORK

AV / POWER

REMARKS

A3. DINING

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - FIBERGLASS (see 095113)

Note: Specialty Ceilings are to be reviewed by NCC at the initial stages of design for approval.

FLOORS

- TERRAZZO - TILE (see 096616)
- TERRAZZO - POURED IN PLACE (see 096613)
- PORCELAIN TILE (see 093013)

Note: Selection of new floor finishes should be based on existing conditions and material transitions should be ADA compliant.

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, HEAVY TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

Note: Specialty metal or wood baseboards are to be reviewed by NCC at the initial stages of design for approval.

LIGHTING

- AS REQUIRED BY DESIGN
- LED DOWNLIGHTS, DIMMABLE
- LED LENSED DIMMABLE WALL WASH LUMINAIRES

Note: Specialty lighting is to be reviewed by NCC at the initial stages of design for approval.

MILLWORK

AV / POWER

- AS REQUIRED BY DESIGN.

REMARKS

A4. FOOD PREP

CEILINGS

- 100% ACOUSTICAL CEILING TILE - MINERAL FIBER, WET AREAS (see 095113)

FLOORS

- BIO-BASED TILE (see 096519)
- QUARRY TILE (see 093013)

WALLS

- PAINT (see 099123)
- CERAMIC TILE (see 093013)
- QUARRY TILE BASEBOARD (see 093013)

LIGHTING

- LED OR FLUORESCENT
- UL LISTED FOR WET LOCATIONS
- IP65 INGRESS PROTECTION RATED

MILLWORK

AV / POWER

REMARKS

A5. ELEVATOR, FREIGHT

CEILINGS

- MODULAR STAINLESS STEEL SATIN FINISH

FLOORS

- BIO-BASED TILE (see 096519)

WALLS

- RIGIDIZED STAINLESS STEEL SATIN
- 4” TALL STAINLESS STEEL TOE KICK
- STAINLESS STEEL HANDRAIL ON REAR & SIDE WALLS

LIGHTING

- LED AMBIENT LIGHT
- STANDARD CALL BUTTONS
- STANDARD SCREEN HALL FIXTURES AND OPERATING PANEL

MILLWORK

AV / POWER

REMARKS

A6. ELEVATOR, PASSENGER

CEILINGS

- MODULAR STAINLESS STEEL SATIN FINISH

FLOORS

- CARPET TILE (see 096813)
- RESILIENT FLOOR (see 096519)
- HARD SURFACES

WALLS

- MODULAR STAINLESS STEEL SATIN OR TEXTURED FINISH
- 4” TALL STAINLESS STEEL TOE KICK
- STAINLESS STEEL HANDRAIL ON REAR & SIDE WALLS

Note: Specialty finishes is to be reviewed by NCC at the initial stages of design for approval.

LIGHTING

- LED AMBIENT LIGHT
- LED ILLUMINATED FLUSH CALL BUTTONS
- LCD SCREEN HALL FIXTURES AND OPERATING PANEL

MILLWORK

AV / POWER

REMARKS

A7. LACTATION ROOM

CEILINGS

- GWB - WET AREAS (see 092900)
- 100% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- CARPET TILE (see 096813)

WALLS

- PAINT (see 099123)
- SOLID SURFACES (see 123661)
- RUBBER BASEBOARD, HEAVY TRAFFIC (see 096513)

LIGHTING

- AMBIENT LIGHTING FIXTURES WITH DIMMABLE BALLASTS
- HIGH PERFORMANCE NON-PLANAR TROFFER
- OR NARROW APERTURE LENSED FLUORESCENT
- OR LED LUMINAIRES AND SEPARATE WALL WASH LUMINAIRES

MILLWORK

- SOLID SURFACE COUNTERTOP (see 123661)
- HIGH PRESSURE LAMINATE (see 123623.13)

AV / POWER

REMARKS

A8. RESTROOM

CEILINGS

- GWB - WET AREAS (see 092900)

FLOORS

- PORCELAIN TILE (see 093013)

WALLS

- PAINT (see 099123)
- CERAMIC TILES ALL WALLS (see 093013)
- PORCELAIN TILE BASE (see 093013)
- FULL WIDTH SAFETY MIRROR GLASS
- SOLID SURFACE COUNTER WITH INTEGRAL SINK (see 123661)

LIGHTING

- LED OR FLUORESCENT
- UL LISTED FOR WET LOCATION
- IP65 INGRESS PROTECTION RATED

MILLWORK

- SOLID SURFACE COUNTER (see 123661)

AV / POWER

REMARKS

A9. STAIRS, CONNECTING

CEILINGS

- 100% GWB (see 092900)

Note: Specialty Ceilings are to be reviewed by NCC at the initial stages of design for approval.

FLOORS

- CARPET TILE (see 096813)

Note: Selection of new floor finishes should be based on existing conditions and material transitions should be ADA compliant.

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, HEAVY TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

Note: Specialty metal or wood baseboards are to be reviewed by NCC at the initial stages of design for approval.

LIGHTING

- FLUORESCENT LED NON-DIMMABLE

MILLWORK

AV / POWER

REMARKS

A10. STAIRS, EXITING

CEILINGS

- 10-20% GWB (see 092900)

FLOORS

- RUBBER FLOOR AT LANDINGS, STAIR TREADS, AND RISERS (see 096519)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, HEAVY TRAFFIC (see 096513)

LIGHTING

- FLUORESCENT OR LED NON-DIMMABLE

MILLWORK

AV / POWER

REMARKS

SECTION B: SEMI-PUBLIC

B1. AUDITORIUM

CEILINGS

Ceilings as per acoustical design, to be reviewed by NCC at the initial stages of design for approval.

FLOORS

- BROADLOOM CARPET (see 096816)
- HARD SURFACE

WALLS

Walls as per acoustical design, to be reviewed by NCC at the initial stages of design for approval.

LIGHTING

- AS PER LIGHTING DESIGN

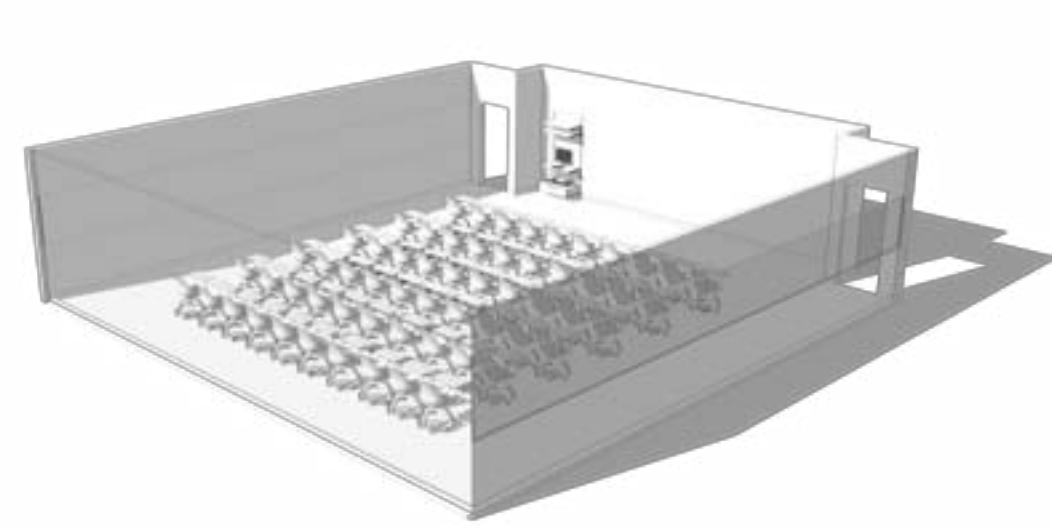
MILLWORK

AV / POWER

- AS REQUIRED BY USERS

REMARKS

B2. CLASSROOM, LOW-TECH



CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- CARPET TILE (see 096813)

WALLS

- PRESENTATION DRY ERASE WALL COVERING (see 101146)
- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

CLASSROOM LIGHTING TO INCLUDE AMBIENT LIGHTING FIXTURES (NARROW APERTURE (see 1093013) LENSED LED LUMINAIRES) AND SEPARATE WALL WASH (see 1093013) LUMINAIRES. FRONT AND SIDE WALLS TO RECEIVE ILLUMINATION. TARGET LIGHT LEVELS 30-45 HORIZONTAL FOOTCANDLES.

MILLWORK

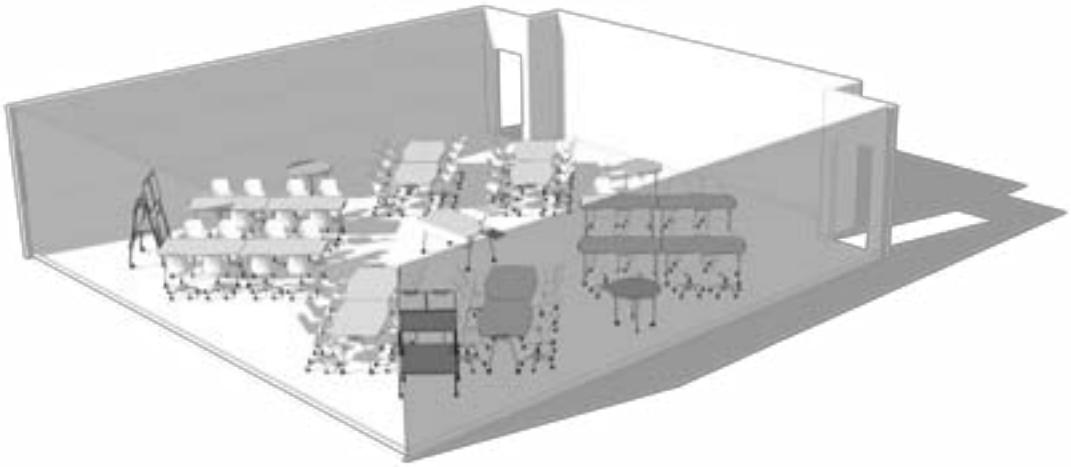
- SOLID SURFACES (see 123661)
- HIGH PRESSURE LAMINATE (see 123623.13)

AV / POWER

- AS REQUIRED BY USERS

REMARKS

B3. CLASSROOM, HIGH-TECH



CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- CARPET TILE (see 096813)

WALLS

- PRESENTATION DRY ERASE WALL COVERING (see 101146)
- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

CLASSROOM LIGHTING TO INCLUDE AMBIENT LIGHTING FIX-TURES (EITHER NON-PLANAR TROFFER OR NARROW APERTURE LENSED FLUORESCENT OR LED LUMINAIRES) AND SEPARATE WALL WASH LUMINAIRES. FRONT AND SIDE WALLS TO RECEIVE ILLUMINATION. TARGET LIGHT LEVELS 30-45 HORIZONTAL FOOTCANDLES.

MILLWORK

AV / POWER

- AS REQUIRED BY USERS

REMARKS

B4. STUDY/COLLABORATION ROOM

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- CARPET TILE (see 096813)

WALLS

- CLEAR WRITABLE COATING (see 101100)
- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

- 2X4 HIGH PERFORMANCE (NON-PLANAR) T8 OR LED RECESSED NONDIM TROFFER WITH DIMMING BALLAST

MILLWORK

AV / POWER

- AS REQUIRED BY USERS

REMARKS

B5. COMPUTER LAB

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - FIBERGLASS (see 095113)

FLOORS

- CARPET TILE (see 096813)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)
- PRESENTATION DRY ERASE WALL COVERING (see 101146)

LIGHTING

CLASSROOM LIGHTING TO INCLUDE AMBIENT LIGHTING FIX-TURES (EITHER NON-PLANAR TROFFER OR NARROW APERTURE LENSED FLUORESCENT OR LED LUMINAIRES) AND SEPARATE WALL WASH LUMINAIRES. FRONT AND SIDE WALLS TO RECEIVE ILLUMINATION. TARGET LIGHT LEVELS 30-45 HORIZONTAL FOOTCANDLES.

MILLWORK

AV / POWER

- AS REQUIRED BY USERS

REMARKS

B6. FITNESS CENTER

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - FIBERGLASS (see 095113)

FLOORS

- RUBBER FLOORING (see 096519)
- CARPET TILE (see 096813)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, HEAVY TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

MILLWORK

AV / POWER

REMARKS

B7. LAB

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - FIBERGLASS (see 095113)

FLOORS

- RUBBER FLOORING (see 096519) WITH HEAT WELDED SEAMS AND INTEGRAL BASE
- EPOXY FLOORING NEEDED FOR CHEMISTRY LABS, WITH INTEGRAL BASE

WALLS

- PRESENTATION DRY ERASE WALL COVERING (see 101146)
- PAINT (see 099123)
- INTEGRAL RUBBER BASEBOARD, HEAVY TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

LAB LIGHTING TO INCLUDE AMBIENT LIGHTING FIXTURES (EITHER NON-PLANAR TROFFER OR NARROW APERTURE LENSED FLUORESCENT OR LED LUMINAIRES) AND SEPARATE WALL WASH LUMINAIRES. FRONT AND SIDE WALLS TO RECEIVE ILLUMINATION. TARGET LIGHT LEVELS 30-45 HORIZONTAL FOOTCANDLES.

MILLWORK

- EPOXY OR STAINLESS STEEL COUNTERTOPS DEPENDING ON EQUIPMENT AND PROCESS USE. CONSULT WITH NCC.

AV / POWER

- AS REQUIRED BY USERS

REMARKS

B8. LECTURE HALL

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- CARPET TILE (see 096813)

WALLS

- PRESENTATION DRY ERASE WALL COVERING (see 101146)
- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

CLASSROOM LIGHTING TO INCLUDE AMBIENT LIGHTING FIXTURES (EITHER NON-PLANAR TROFFER OR NARROW APERTURE LENSED FLUORESCENT OR LED LUMINAIRES) AND SEPARATE WALL WASH LUMINAIRES. FRONT AND SIDE WALLS TO RECEIVE ILLUMINATION. TARGET LIGHT LEVELS 30-45 HORIZONTAL FOOTCANDLES.

MILLWORK

- SOLID SURFACES (see 123661)
- HIGH PRESSURE LAMINATE (see 123623.13)

AV / POWER

- AS REQUIRED BY USERS

REMARKS

SECTION C: PRIVATE

C1. BOARD ROOM

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

Note: Specialty Ceilings are to be reviewed by NCC at the initial stages of design for approval.

FLOORS

- CARPET TILE (see 096813)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, SOUND ABSORBING (see 122413)

Note: Specialty metal or wood baseboards are to be reviewed by NCC at the initial stages of design for approval.

LIGHTING

BOARD ROOM LIGHTING TO INCLUDE AMBIENT LIGHTING FIXTURES (EITHER NON-PLANAR TROFFER OR NARROW APERTURE LENSED FLUORESCENT OR LED LUMINAIRES) AND SEPARATE WALL WASH LUMINAIRES. FRONT AND SIDE WALLS TO RECEIVE ILLUMINATION. TARGET LIGHT LEVELS 30-45 HORIZONTAL FOOTCANDLES.

Note: Specialty lighting is to be reviewed by NCC at the initial stages of design for approval.

MILLWORK

AV / POWER

- AS REQUIRED BY USERS

REMARKS

C2. CONFERENCE ROOM

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

Note: Specialty Ceilings are to be reviewed by NCC at the initial stages of design for approval.

FLOORS

- CARPET TILE (see 096813)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, SOUND ABSORBING (see 122413)

Note: Specialty metal or wood baseboards are to be reviewed by NCC at the initial stages of design for approval.

LIGHTING

CONFERENCE ROOM LIGHTING TO INCLUDE AMBIENT LIGHTING FIXTURES (EITHER NON-PLANAR TROFFER OR NARROW APERTURE LENSED FLUORESCENT OR LED LUMINAIRES) AND SEPARATE WALL WASH LUMINAIRES. FRONT AND SIDE WALLS TO RECEIVE ILLUMINATION. TARGET LIGHT LEVELS 30-45 HORIZONTAL FOOTCANDLES.

Note: Specialty lighting is to be reviewed by NCC at the initial stages of design for approval.

MILLWORK

AV / POWER

- AS REQUIRED BY USERS

REMARKS

C3. OFFICE

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- CARPET TILE (see 096813)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

- 2X4 HIGH PERFORMANCE (NON-PLANAR) T8 OR LED RECESSED NONDIM TROFFER WITH DIMMING BALLAST

MILLWORK

AV / POWER

REMARKS

C4. OFFICE, DIRECTOR

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 096813)

FLOORS

- CARPET TILE (see 096813)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

- 2X4 HIGH PERFORMANCE (NON-PLANAR) T8 OR LED RE-CESSED NONDIM TROFFER WITH DIMMING BALLAST

MILLWORK

AV / POWER

REMARKS

C5. OPEN PLAN

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- CARPET TILE (see 096813)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

- 2X4 HIGH PERFORMANCE (NON-PLANAR) T8 OR LED RE-CESSED NONDIM TROFFER WITH DIMMING BALLAST

MILLWORK

AV / POWER

REMARKS

C6. RECEPTION

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- CARPET TILE (see 096813)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

RECEPTION LIGHTING TO INCLUDE AMBIENT LIGHTING FIXTURES (EITHER NON-PLANAR TROFFER OR NARROW APERTURE LENSED FLUORESCENT OR LED LUMINAIRES) AND SEPARATE WALL WASH LUMINAIRES. FRONT AND SIDE WALLS TO RECEIVE ILLUMINATION. TARGET LIGHT LEVELS 30-45 HORIZONTAL FOOTCANDLES.

MILLWORK

- SOLID SURFACE COUNTERTOPS (see 123661)
- HIGH PRESSURE LAMINATE (see 123623.13)

AV / POWER

- AS REQUIRED BY DESIGN

REMARKS

C7. STAFF LOUNGE

CEILINGS

- 10-20% GWB (see 092900)
- 90-80% ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- CARPET TILE (see 096813)
- LUXURY VINYL TILE (see 096519)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- WINDOW TREATMENT, PRIVACY / GLARE CONTROL (see 122413)

LIGHTING

- 2X4 HIGH PERFORMANCE (NON-PLANAR) T8 OR LED RE-CESSED NONDIM TROFFER WITH DIMMING BALLAST

MILLWORK

- SOLID SURFACE (see 123661)
- HIGH PRESSURE LAMINATE (see 23623.13)

AV / POWER

REMARKS

SECTION D: BACK OF HOUSE

D1. CUSTODIAL

CEILINGS

- EXPOSED

FLOORS

- RUBBER FLOORING (see 096519)

WALLS

- PAINT (see 099123)
- FRP WAINSCOT TO 7’0 AFF WITH INTEGRAL COVE BASE
- VINYL SHEET GOODS (see 096516)

LIGHTING

MILLWORK

AV / POWER

REMARKS

D2. ELECTRICAL

CEILINGS

- ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- RUBBER FLOORING (see 096519)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- PLYWOOD CONSTRUCTION PANELS ON WALLS FROM 1’6” AFF TO 9’6” AFF

LIGHTING

MILLWORK

AV / POWER

REMARKS

D3. MECHANICAL

CEILINGS

- EXPOSED

FLOORS

- RUBBER FLOORING (see 096519)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)

LIGHTING

MILLWORK

AV / POWER

REMARKS

D4. SERVER

CEILINGS

- ACOUSTICAL CEILING TILE - MINERAL FIBER (see 095113)

FLOORS

- RUBBER FLOORING (see 096519)

WALLS

- PAINT (see 099123)
- RUBBER BASEBOARD, MODERATE TRAFFIC (see 096513)
- PLYWOOD CONSTRUCTION PANELS ON WALLS FROM 1’6” AFF TO 9’6” AFF

LIGHTING

MILLWORK

AV / POWER

REMARKS