Seneca Way - Finish Color Chart

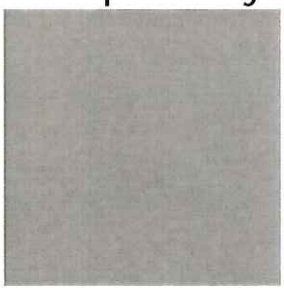
Sandpebble

EIFS Finish

Classic Bronze

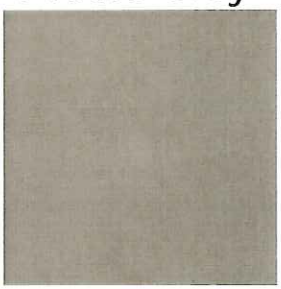
Mansard Roofing

Antique Gray



EIFS Accent Color

Pebble Gray

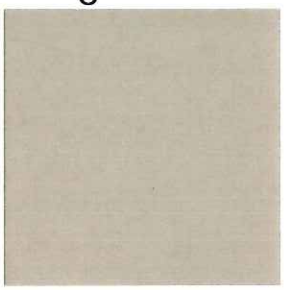


Window Frames

Lite Cinnamon

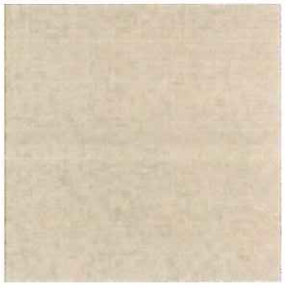
EIFS Light Color

Light Stone



Louvers & Sunshades

Whole Wheat



EIFS Dark Color

Red Sunset

Brick

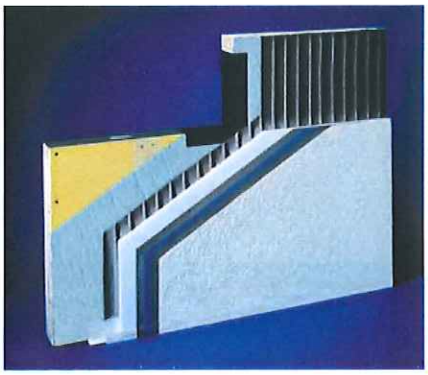
Outsulation® Plus MD System®

DS445

The High-Performance Moisture Drainage System
That Incorporates An Air and Water-Resistive Barrier

Summary

Dryvit offers a family of performance-based systems that allows architects and owners to meet the specific demands of any given project. Dryvit's original Outsulation System has been installed on over 400,000 buildings worldwide. Today, due to the increased demands for a wall system to be able to drain away incidental moisture, the Outsulation concept has grown into a family of related systems, each building upon the other to achieve specific performance goals.



System Components

1. Backstop® NT Air/Water-Resistive Barrier Coating (available in Texture or Smooth)
2. Dryvit Grid Tape™
3. Dryvit AquaFlash® System or Flashing Tape™ and Surface Conditioner™
4. Dryvit Drainage Track™ (Shown) or Dryvit Drainage Strip™ adhered with Dryvit AP Adhesive®
5. Dryvit Adhesive in vertical notched trowel configuration
6. Insulation Board
7. Dryvit Reinforced Base Coat
8. Dryvit Finish

Efficient and Economical

Outsulation Plus MD expands upon the proven weatherability and insulating qualities of Outsulation by adding a second line of defense against air, moisture and weather. This is accomplished with a coating of Backstop NT and by applying Dryvit's AquaFlash System or flashing tape at all sills of openings. Outsulation Plus MD goes one step further through the use of adhesive channels to provide moisture drainage. These channels work in tandem with either of two system termination options, resulting in an efficient and economical system that is easy to install.

Why Backstop NT?

The adhesive channels present in Outsulation Plus MD will evacuate incidental moisture that may find its way behind the insulation board. Backstop NT prevents this moisture from coming into contact with the substrate as it drains. Developed specifically for this purpose, it is a specially formulated, flexible, polymer-based, noncementitious coating that provides a watertight membrane. Always used in conjunction with a waterproof flashing material such as Dryvit AquaFlash System or flashing tape, Backstop NT is an essential element of the Outsulation Plus MD System. Full details regarding the performance of Backstop NT are available upon request.

Dryvit...Proven For Over 35 Years

Dryvit Systems, Inc. is an ISO 9001:2000 and ISO 14000 certified company. ISO standards have been established worldwide as a common denominator for product excellence. Dryvit is the recognized leader in construction technology. With leadership comes an obligation and commitment to research and development. The Outsulation Plus MD System is an example of our determination to continuously evaluate market demands and develop new and exciting products.

Warranty

Dryvit Systems, Inc. shall provide a written moisture drainage and limited materials warranty against defective material upon written request. Dryvit shall make no other warranties, expressed or implied. Dryvit does not warrant workmanship. Full details are available from Dryvit Systems, Inc.

Dryvit Systems, Inc.
P. O. Box 1013
One Energy Way
W. Warwick, RI 02893
(800) 556-7752
www.dryvit.com

Printed in USA R6:03-07-08

dryvit®
An RPM Company

Series 403
2" x 4 1/2" Thermal Storefront Framing

CONFIGURATIONS
Shear Block • Screw Spline

This economical flush glaze system is available in both shear block and screw spline fabrication methods. Series 403 Storefront can accommodate all standard 1 3/4" Entrances as well as WV410 vents. This series is thermally broken, enhancing energy savings potential. Vertical mullions will accept steel reinforcement to enhance structural performance.

Features	Benefits
Thermally broken frames	Enhanced thermal performance
Screw spline construction	Allows assembly of sections prior to installation
	Decreases installation time
Shear block construction	Ability to erect on the job site
The optional Roto-Vent™ ventilator	Allows fresh air into the room, yet maintains security
2-way corner mullions (90° & 135°)	Design flexibility
3-way corner mullions (T-mullions)	Multifaceted elevations
0°-15° and 15°-30° variable mullions	Custom applications
Accommodates up to 1 1/16" glazing	Expands design and energy savings options
Uniform glazing gasket is used for exterior and interior	Allows optimized use of gasket
	Simplifies ordering and installation
Various height intermediate horizontals and sills	Ability to maintain desired sight line
Accessory line of perimeter anchors, pocket fillers, door adaptors, etc.	Increased product versatility
Anodized or painted finishes available	Multiple options to answer economic and aesthetic concerns

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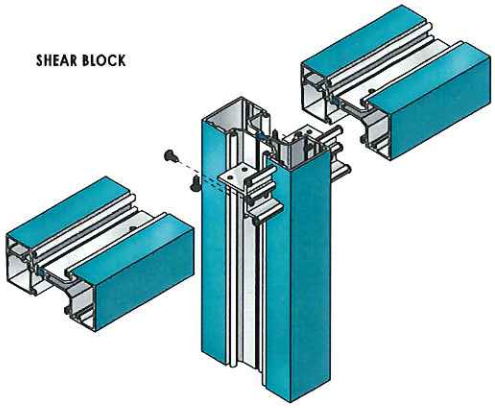
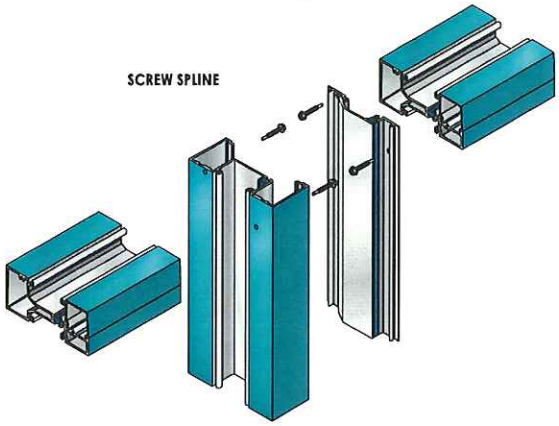
Series 403
2" x 4 1/2" Thermal Storefront Framing

SHEAR BLOCK



SCREW SPLINE



PERFORMANCE DATA

SYSTEM 403 STOREFRONT SCREW SPLINE FRAMING

AIR INFILTRATION	<.06 CFM/SF @ 6.24 PSF
WATER	NO LEAKAGE @ 12.0 PSF
STRUCTURAL	visit MyEFCO at www.efcocorp.com
CRF-FRAME (1503-98)	57[E]
CRF-GLASS (1503-98)	70[E]

SYSTEM 403 STOREFRONT SHEAR BLOCK FRAMING

AIR INFILTRATION	<.06 CFM/SF @ 6.24 PSF
WATER	NO LEAKAGE @ 12.0 PSF
STRUCTURAL	visit MyEFCO at www.efcocorp.com
CRF FRAME (1503-98)	57[A,E]
CRF-GLASS (1503-98)	70[A,E]

A = Estimated values and/or designations
B = Non-standard size or configuration
C = Dual glazed
D = 1" Insulated - 1/4" clear, 1/2" air, 1/4" clear
E = 1" Insulated - 1/4" clear (Low Emissivity), 1/2" air, 1/4" clear
F = 1" Insulated - 1/4" clear (LowEmissivity), 1/2" argon, 1/4" clear
G = 1" Insulated - 1/4" clear, 1/2" air, 1/4" clear (Low Emissivity)

403 THERMAL U-FACTORS*		
CENTER OF GLASS U-FACTOR	CONFIGURATION AND SIZE	
	FIXED** 78 3/4" X 78 3/4"	FIXED 120" X 120"
0.46	0.55	0.52
0.34	0.46	0.41
0.30	0.42	0.38
0.24	0.38	0.33
0.20	0.34	0.29

* Based on NFRC 100
**NFRC Gateway size

GLAZING

SYSTEM 403 CAN BE INSIDE OR OUTSIDE GLAZED WITH EXTRUDED ALUMINUM, SNAP-IN GLAZING BEAD. GLASS IS "DRY GLAZED" WITH TOP LOAD GASKET. GLAZINGS OF 3/16" TO 1-1/16" INFILL PANELS ARE ACCOMMODATED. SEE GLAZING CHART BELOW FOR EXACT SIZE.

SYSTEM 403 GLAZING CHART	POLYCARBONATE			GLASS OR PANEL												
	3/16"	1/4"	5/16"	3/16"	1/4"	1/4"**	5/16"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	15/16"	1"	1-1/16"
MONOLITHIC GLASS	C	C	C	C	C	C	C									
INSULATED GLASS												C		C	A	C

*-Obscure glass thickness
**-Laminated glass thickness

A-Available glazing option
C -Adaptor and/or gasket required
Blank - N/A

EFCO
a Pella Company

All Ultrex® Series

Manufactured to be green.

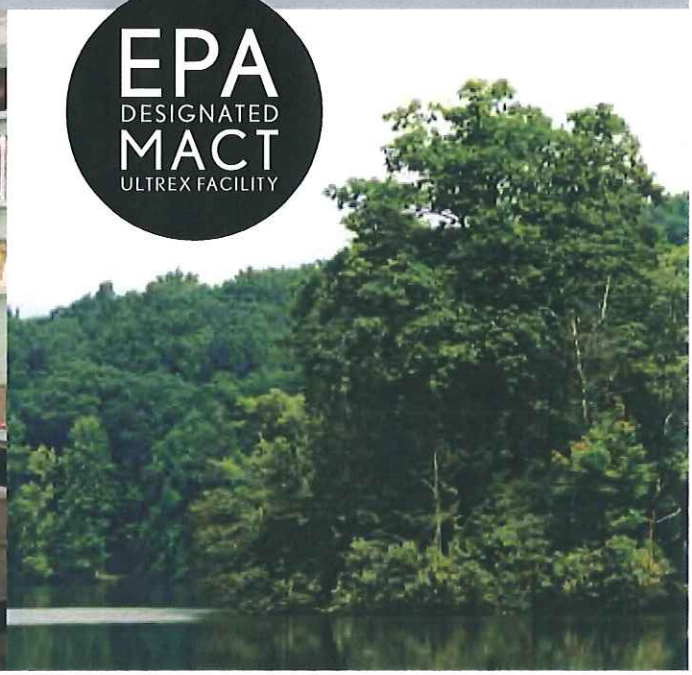
If you've ever struggled with an ill-fitting, dinged or cracked window, there's good news: Ultrex. Ultrex is superior to vinyl and roll-form aluminum in virtually every way–strength, beauty, stability, durability, and energy-efficiency. From easy installation to trouble-free maintenance (with virtually no call backs), Ultrex is a great window and door material that translates into a hassle-free experience.

And it's from Integrity® from Marvin Windows and Doors, the global leader in composite windows for more than a decade.

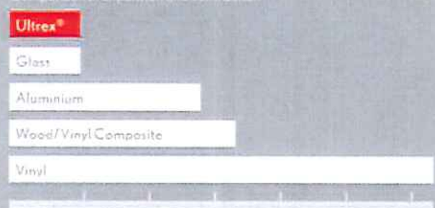
Everyday, Integrity® from Marvin Windows and Doors approaches our business with one question, "How can we do it better?" From creating energy efficient windows with a life cycle that far outlasts the competition to ensuring we lessen our impact in all steps of manufacturing, we provide windows that make the homes we build part of a greener and brighter future.

- Ultrex® requires 39% less energy to produce than vinyl.
- Ultrex is made from silica sand – a safe and abundant natural resource – and takes considerably less energy to create than most other window and door materials.
- The Ultrex manufacturing facility fully complies with the EPAs 1990 Clean Air Act and has been designated as a MACT (Maximum Achievable Control Technology) facility.
- Integrity was also designated the Greener North Dakota Company of the Year for 2005-presented by North Dakota Solid Waste & Recycling Association (NDSWRA).
- Our Fargo facility is ISO-9001-2000 and ISO-14001-2004 certified for both Quality Management and Environmental Management Systems.
- The insulated glass in our products contains 15% - 33% recycled content.
- Integrity offers ENERGY STAR qualified products.
- We recycle 800 tons of aluminum, 300 tons of cardboard, 100 tons of plastic and 90 tons of paper each year.

EPA DESIGNATED MACT ULTREX FACILITY



EXPANSION MEASUREMENT
SHORTER IS BETTER
Comparison of expansion and contraction



STIFFNESS MEASUREMENT
LONGER IS BETTER
Average Modulus

8X STRONGER THAN VINYL

Built to last.

- Low-maintenance, high-durability Ultrex has low conductivity, offers unmatched strength and is corrosion resistant.
- Patented Ultrex premium finish offers superior performance reducing chalking, fading, scratching, UV degradation and worries.
- Unlike vinyl, which can distort in extreme heat or streak and crack in fluctuating temperatures, Ultrex expands at virtually the same rate as glass, so the entire window stays tightly sealed, resisting leaks, seal failures, and stress cracks over the long term.
- 15+ years of proven experience have led to superior tooling and fabrication capabilities, meaning all Ultrex parts are optimized for performance requirements.
- Benefit from exceptional fit and finish, including detailed profiles, radius profiles and clean, balanced sightlines for an architecturally inspired appearance.

FOR EVEN MORE INFORMATION ON ALL ULTREX, VISIT
INTEGRITYWINDOWS.COM/ALLULTREX

Designed for beauty. Engineered for life.

THE ALL ULTREX® SERIES

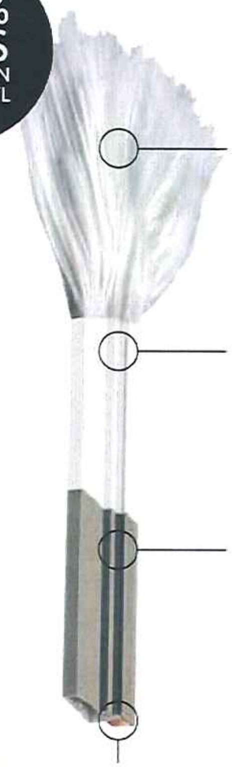
833% LESS EXPANSION THAN VINYL

Built for ease.

SPECIAL SIZES

DELIVERY

INSTALLATION ACCESSORIES



Built to please.

FINISHES

Stone White (exterior and interior)
Cashmere (exterior)
Pebble Gray (exterior)
Bronze (exterior)
Evergreen (exterior)
Ebony (exterior)

HARDWARE

White
Almond Frost
Brass
Satin Nickel
Oil Rubbed Bronze

Proprietary pultrusion technologies deliver **PROVEN COMPOSITE PERFORMANCE**

GLAZING

* Argon gas not available in high elevations where capillary tubes are required.

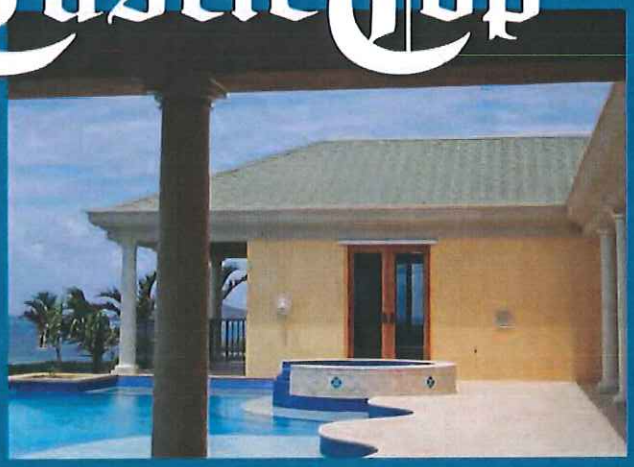
GRILLES

** Not available in polygons except direct-glaze rectangles.

Integrity from MARVIN Windows and Doors
Built to perform.

- Diamond shaped flat metal tile for a unique roof appearance
- May be used for re-roofing or new construction
- Easy to install – similar to traditional shingle installation
- Durable, yet lightweight – may be installed over existing roofs if conditions and local building codes allow
- Castle Top shingles have a turned down edge on the front and a turned up edge on the back, for double sealing protection
- The overlapping design allows for expansion and contraction
- Withstands high winds
- Concealed fasteners are used to install the shingles

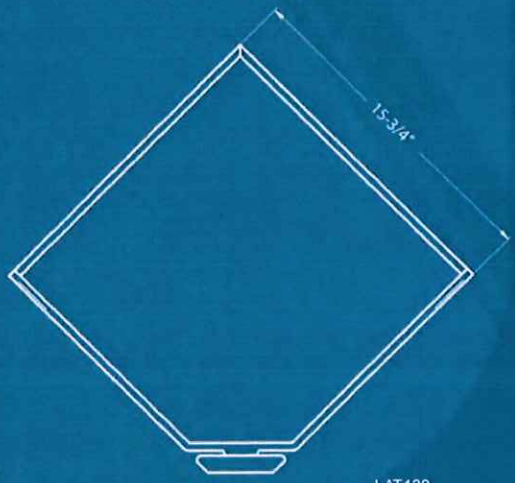
CastleTop®



- Lightweight metal shingles, 16" square (14" exposed)
- There are 78 shingles per square (100 square feet)
- Recommended minimum slope 3:12
- Matching or contrasting trim pieces and accessories are available

- Metal will release snow from the roof easily, thus reducing snow and ice build-up
- Expanded polystyrene backer board gives the tile added strength to allow for foot traffic during and after installation
- Florida building code approval
- Limited 50 year product warranty
- Aluminum – Embossed only
- Different colors may be mixed to create interesting patterns
- Available in the following:

Metal	Gauge	Finish	Color Choices
Aluminum	.032	KYNAR/ HYLAR*	30 Colors
Aluminum	.032	Anodized	2 Colors
Copper	16 oz.	Natural	Original
Zinc	.028	Pre Weathered	Original



InSpire Wall Performance Monitoring

This program provides real-time and historical performance data for the ATAS InSpire™ Wall.

ATAS Spec Program

Use this program to create specifications using ATAS products.
Note: Must be logged in

PenumWall Introduced By ATAS; Complements InSpire Transpired Solar Collector

PenumWall, a structural wall panel offering design freedom for all building types, is a new versatile innovation from ATAS International, Inc.

ATAS Adds New Equipment

CastleTop®

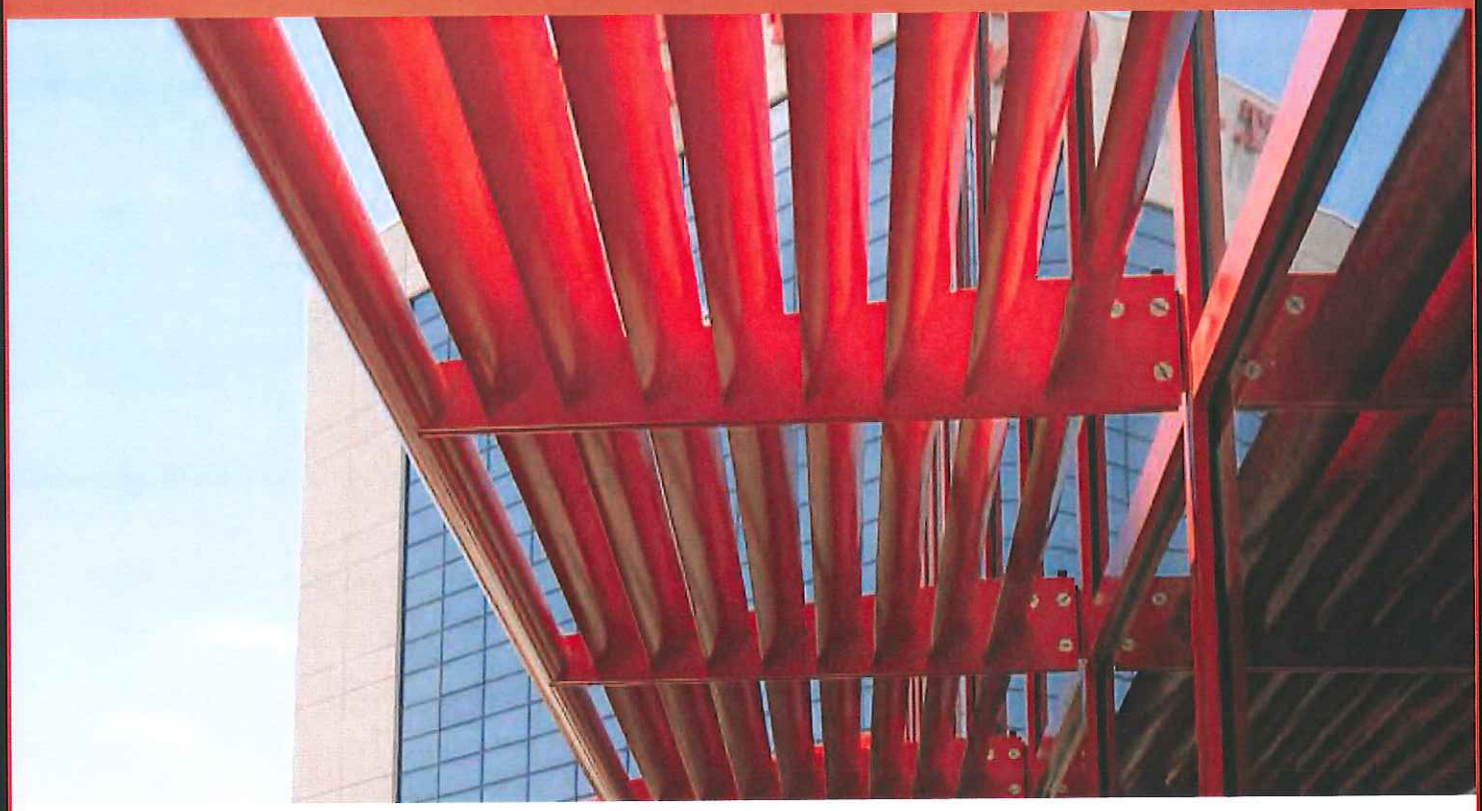
Product Overview | Product Info | CAD Details | Colors | Gallery | Tech Data

CastleTop is a diamond shaped flat metal tile for a unique roof appearance. Easy to install from eave to ridge with concealed fasteners. An expanded polystyrene backer board gives strength to allow for foot traffic during installation. In some cases, the shingles may be applied directly over the existing roof, eliminating the need for tear-off and disposal (subject to local codes). Different colors may be combined to create interesting patterns. CastleTop may be used for commercial or residential roof applications with a recommended slope of 3:12; also suitable for walls, and mansards.

- SKU: HCT160
- Gauge:
  - .032 Aluminum
  - .028 Zinc
  - 16 oz. Copper
- Panel Size: 15 ¾" by 15 ¾"; actual exposure is 13 ½" by 13 ½"
- Finish: KYNAR 500® PVDF or HYLAR 5000® PVDF
- Anodized: Clear, Dark Bronze
- Texture: Embossed (Aluminum only), Smooth (Copper and Zinc only)
- Color: 30 standard colors in aluminum only
- Accessories: A complete line of trim (ridge, hip, valley, edge) is available in matching colors.
- Fasteners: Concealed fasteners
- Minimum pitch: 3:12
- Inquire for availability

E-Shade™ Sunshades

see color chart for EFCO windows for proposed sunshade color



CONFIGURATIONS

System 5500, System 5600, System 5900

EFCO's E-Shade™ product family is designed to provide an economical solution for reducing solar heat gain and glare while allowing natural daylight into the building. E-Shade is available in 5 standard lengths and is designed to integrate with EFCO Curtain Wall Systems.

Features	Benefits
Sunshade "Arms" available in (5) standard lengths: 20", 24", 28", 32" and 36".	Design flexibility
Screw spline construction	Ease of installation at job site
Sunshade "Blades" available in seven standard shapes: 2 1/2" deep to 4" deep by 3/4" wide.	Design flexibility
All Sunshade components fabricated from 6063-T6 aluminum.	Consistent quality, finish to match curtain wall
Sunshade "Clip" and "Arm" are fabricated on CNC machine.	Consistent quality, design flexibility
Sunshade designed specifically for EFCO curtain wall systems.	"Seamless" design, single source responsibility
Anodized and painted finishes available	Multiple options to answer economic and aesthetic concerns

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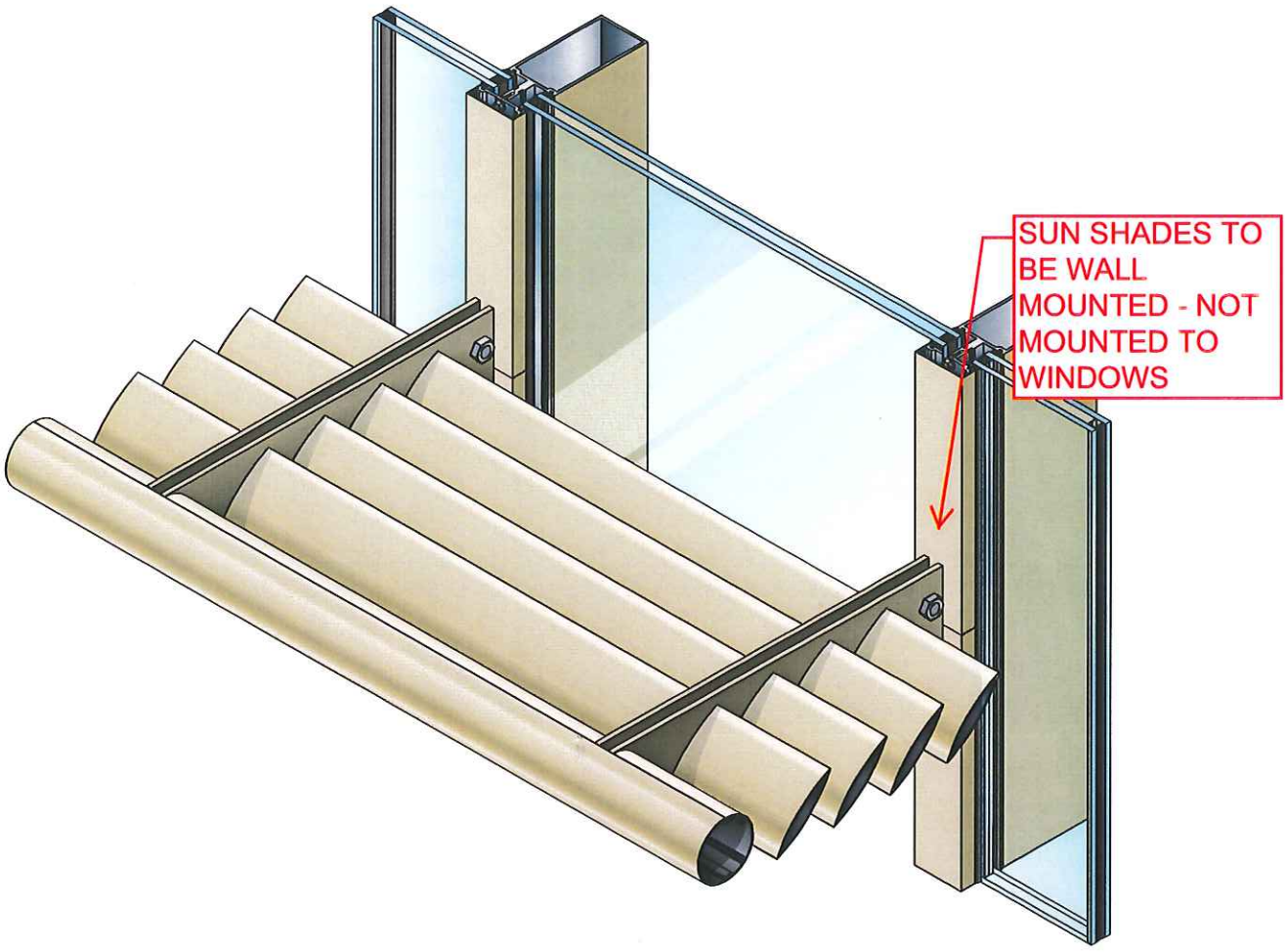
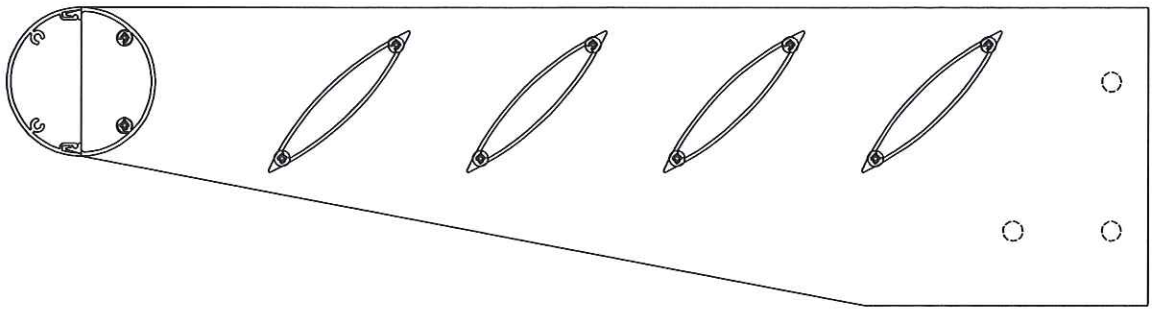
E-Shade™ Sunshades





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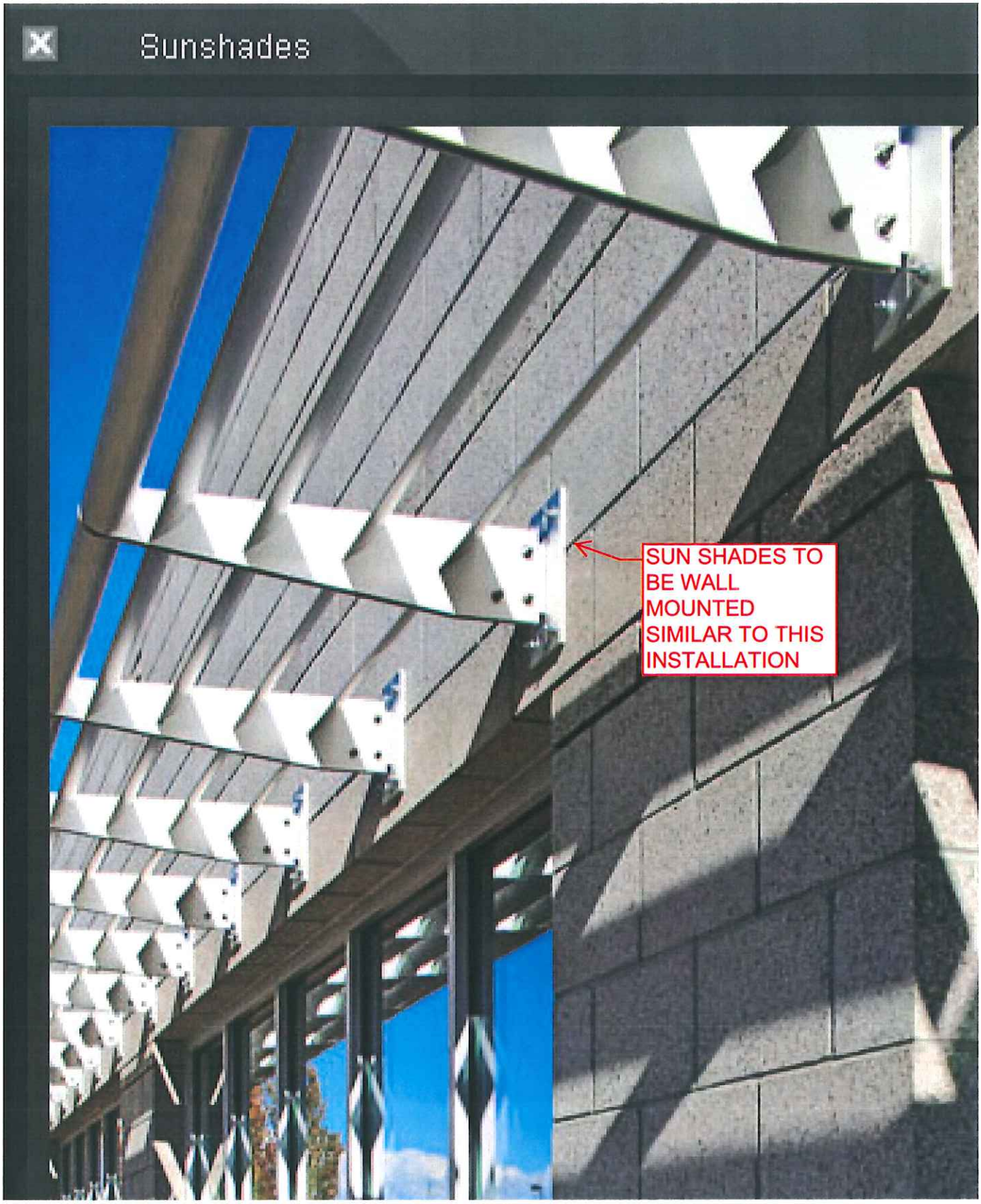
Sunshades

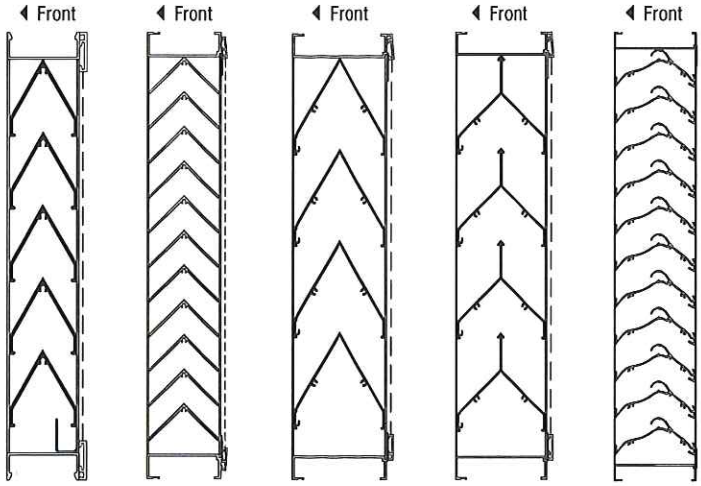


Extruded Alumninum Louvers

Sightproof

ELF22V, ELF40V, ELF40Y, ELF30V, ELF40Y, ELF520DD

These models give visual screening and light duty security while concealing mechanical equipment. Blades can be positioned vertically or horizontally.



Specification

Furnish and install, where shown on plans, Ruskin Louver Model (specify), which shall be sightproof type contained within a single frame. Frame and blade material to be 6063-T5 aluminum alloy. Frame shall contain integral caulking slots. Blades shall be supported with hidden mullions for continuous appearing stationary blades (ELF40V only). Intermediate support mullions shall not interrupt blade exterior appearance. Screen shall be contained within a removable frame.

Design shall incorporate structural supports required to withstand a wind load of 20 lbs. per sq. ft. (.96 kPa); specifier may substitute any loading required.

Louvers shall receive (specify from finish pages) finish.

SPECIFICATIONS								PERFORMANCE 48" x 48" UNIT				
Louver Model	Blade Material (Nom.)	Blade Style	Blade Angle	Blade Centers (Nom.)	Frame Material (Nom.)	Frame Depth	Bird Screen	Free Area (Nom.)	Sq. Ft. Free Area	Max. Rec. Air Flow Thru Free Area FPM	Air Flow CFM	Maximum Pressure Drop, Inches w.g.
ELF22V	6063-T5 .060" (1.5) ext. alum.	Chevron	60°	2" (51)	6063-T5 .060" (1.5) ext. alum.	2" (51)	5/8" x .040" (16 x 1) alum.	28%	4.51 (.42m²)	500 (152 m/min)	2255 (64 m³/min)	Not Avail.
ELF30V	6063-T5 .080" (2.0) ext. alum.	Chevron	45°	1-7/16" (37)	6063-T5 .080" (2.0) ext. alum.	3" (76)	5/8" x .040" (16 x 1) alum.	56%	8.92 (.83m²)	660 (201 m/min)	5887 (167 m³/min)	.10 (.03 kPa)
ELF40V	6063-T5 .080" (2.0) ext. alum.	Chevron	60°	4" (102)	6063-T5 .080" (2.0) ext. alum.	4" (102)	5/8" x .040" (16 x 1) alum.	35%	5.50 (.51m²)	500 (152 m/min)	2410 (68 m³/min)	.10 (.03 kPa)
ELF40Y	6063-T5 .080" (2.0) ext. alum.	Inverted "Y"	45°	4" (102)	6063-T5 .080" (2.0) ext. alum.	4" (102)	5/8" x .040" (16 x 1) alum.	33%	5.22 (.48m²)	500 (152 m/min)	2610 (74 m³/min)	Not Avail.
ELF520DD	6063-T5 .063" (1.6) ext. alum.	Drainable	20°	2"	6063-T5 .080" (2.0) ext. alum.	5" (127)	5/8" x .040" (16 x 1) alum.	49%	7.76 (.72m²)	1024 (312 m/min)	7946 (225 m³/min)	.25 (.06 kPa)

Dimensions in parentheses ( ) indicate millimeters.

For up-to-date information visit www.ruskin.com

landscapeforms®

austin™

Very Very Contemporary

The Austin Bench, designed by landscape architect Robert Chipman, is a study in beautiful balance. Inspired by architecture of the 20s and classic modern furniture of the 50s, it expresses familiar themes in thoroughly contemporary terms. Austin balances lightness and substance, is relaxed, yet refined, poised but never boring. The cantilever version is a natural for minimalist spaces, the four-legged version a fine fit within a range of architectural styles. Composed of minimal parts, (just two extrusions create the seat and back in all versions) Austin masters the details, from its tapered slats to the lovely winged shape of its end piece. In aluminum or wood Austin is a high-design solution — and a breath of fresh air — for corporate and healthcare courtyards, atria, small-scale public places, and private retail space.

Our Purpose Is To Enrich Outdoor Spaces

We believe in the power of design and its ability to elevate experience and help create a sense of place in public environments. Our high quality products and outstanding customer service have earned us a reputation as one of the world's premier designers and manufacturers of outdoor commercial furnishings.

Austin™ Specifications

Seat

Austin benches are available in backed or backless, and in a selection of interior and exterior woods, as well as aluminum extruded boards. Unique cantilever style or freestanding/surface mount supports are cast iron.

Cantilever		Freestanding/Surface Mount		
				
backed	backless	backed	backless	
24" x 33" x 72"	22" x 18" x 72"	24" x 35" x 67"	24" x 35" x 67"	d x h x l

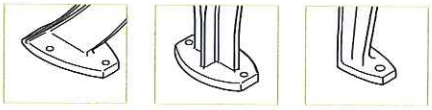
Arm Options

Optional arms may be added to both ends, as well as the center position. Arms are available for either backed or backless benches. All arms are cast aluminum and attached to the seat boards.

center position | end arms

Mounting Options

Austin benches with freestanding/surface mount supports ship with glides which may be removed for surface mounting. All cantilever supports must be surface mounted into concrete.



cantilever surface mount | surface mount | freestanding

Finishes

Interior woods are finished with Landscape Forms' exclusive LF-80 wood finish, a clear, catalyzed acrylic catalyzed acrylic lacquer. Special stain may be specified for an upcharge.

Exterior woods are unfinished and will weather to a soft pewter gray, requiring no future maintenance.

Metal is finished with Landscape Forms' proprietary Pangard II® polyester powercoat, a hard yet flexible finish that resists rusting, chipping, peering and fading. Call for standard color chart. A wide array of optional colors may be specified for an upcharge.

To Specify

Select the Austin bench in backed or backless option. Specify surface mount cantilever or freestanding/surface mount support. Specify wood type and/or powdercoat color. Specify number of arms. Benches may be specified in FSC certified woods. Visit landscapeforms.com; click Design Tools, Materials/Colors link for standard offerings, including FSC wood options.

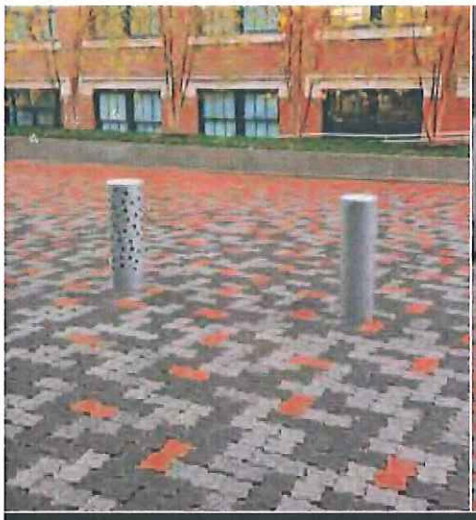
Austin may be specified with FSC Certified woods; call for pricing and lead times. Powdercoat finish on metal parts contains no heavy metals, is HAPS-free and has extremely low VOCs. Bench materials are 100% recyclable.

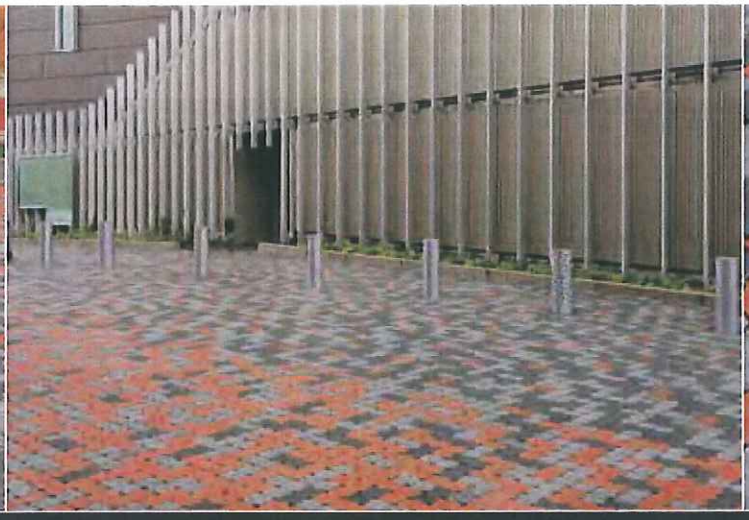
Landscape Forms is proud to specify FSC and Green-e certified paper. This paper meets the Forest Stewardship Council's standards for responsible forest management and is made using certified renewable energy.

www.landscapeforms.com
Download product photos, brochures, color charts, SketchUp components, technical information, CAD details, CSI specifications, assembly instructions.

Austin is designed by Robert Chipman, ASLA.
Specifications are subject to change without notice.
Austin is manufactured in U.S.A.
Austin design is protected by U.S. Patent Nos.
D481,210, D481,211, D482,885, D483,960.
Austin meets BIFMA performance and safety standards.
Location photography: Lady Bird Johnson Wildflower Center, Austin, TX
Landscape Forms supports the LAF at the Second Century level.

landscapeforms
800.521.2546 269.381.3455 fax
431 Lawndale Avenue, Kalamazoo, MI 49048
www.landscapeforms.com

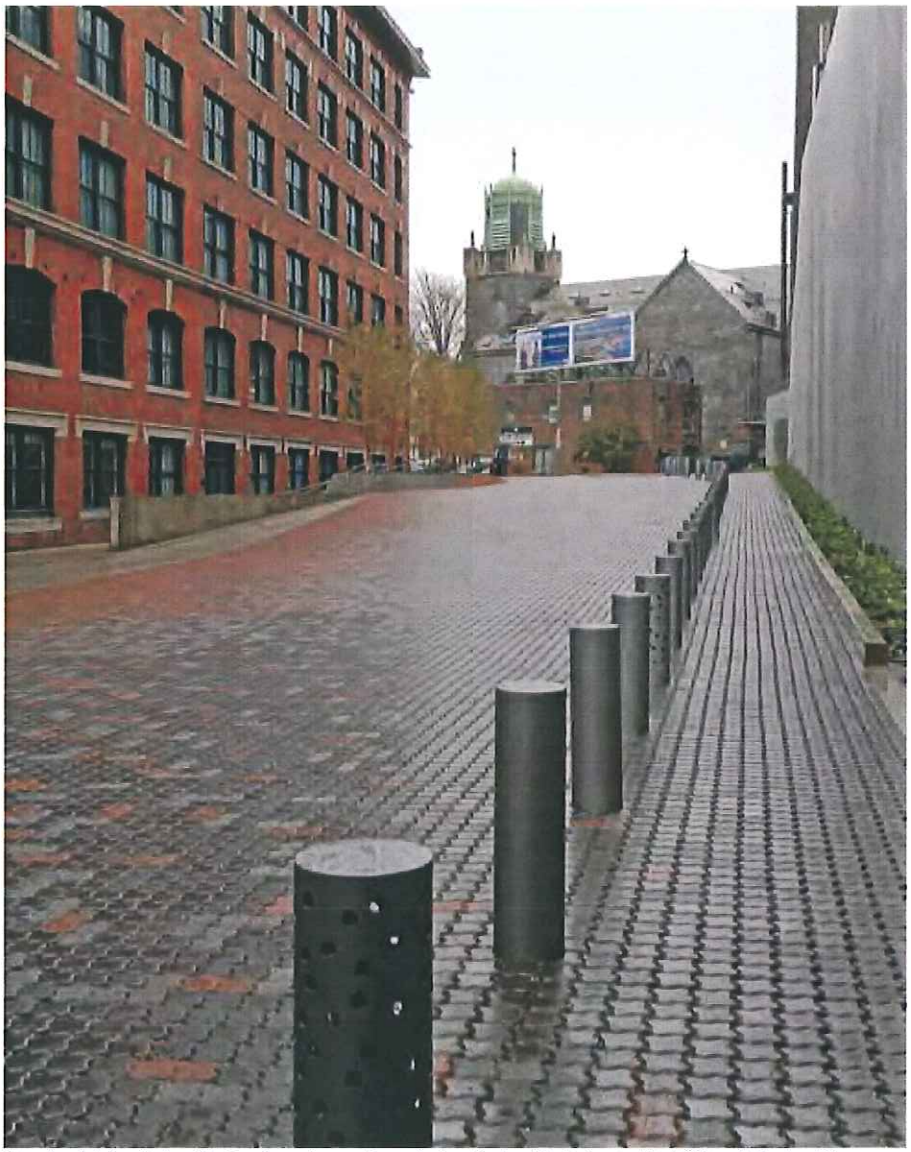




Hanover® Architectural Products | Permeable Paving Units

The Problem. With urban development comes excessive stormwater runoff. Runoff occurs in urban and suburban areas where impervious surfaces such as streets, parking lots and sidewalks prevent rainwater from absorbing into the soil. As water runs across these surfaces, it collects contaminants and deposits them into stormdrains or directly into receiving waters, such as rivers and lakes. As waters are polluted, they become unusable to people and a dangerous to fish and other aquatic life.

Under the Clean Water Act, developers must comply with the regulations for stormwater management which often means the loss of valuable land to build large, expensive retention ponds.



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®

The Solution. Hanover's Permeable Paving Units allow for stormwater drainage and manage excessive runoff. This stormwater is directed through a series of natural filtration systems - through joints or voids in the pavers and into the subgrade below before entering streams or rivers, reducing groundwater pollution. The need for retention ponds is eliminated. The result is more flexibility in design options and more efficient use of the total building site, while maintaining an effective stormwater management system. Benefits of using permeable pavers are numerous. Permeable pavers have been proven to be very beneficial because:

- Erosion and stormwater runoff are reduced.
- Land-use is increased through more efficient use of the total building site.
- Water quality is improved.
- Project costs for drainage and retention systems are reduced.
- Access for underground repairs is permitted.
- Design options increase.
- Several attractive textures

Green Building trends are on the rise as large cities and small towns are making great strides toward managing runoff and creating environment-friendly developments. The need for Sustainable Design will continue as natural resources become increasingly scarce.

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.

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.

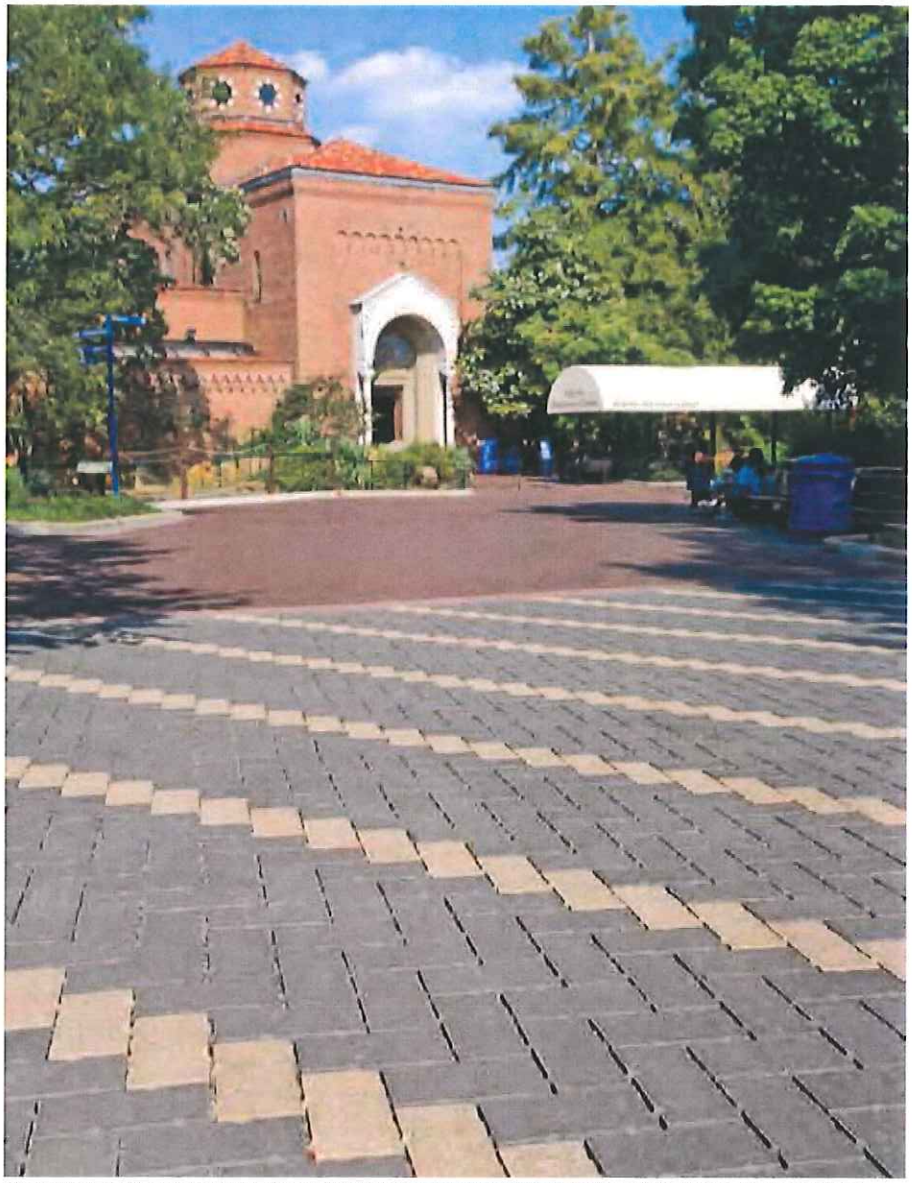
Above and Bottom Right Photos: Private Residence, Fenwick Island, DE; Size & Color: 4" x 8" , Aqua-Loc®, South Mountain Sand, Charcoal; Finish: Natural

- 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

The Permeable 4" x 9" is Hanover's newest concrete permeable paver. Produced with a 1/16" bevel and hidden spacers, the Permeable 4" 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" 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" 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.

Above Photo: Office Building; Size & Color: Permeable 4" x 9", Limestone Gray; Finish: Natural

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



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

- 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

The U.S. Green Building Council (USGBC) provides standards for green building design and construction based on LEED Green Building Rating System. Building projects earn points for compliance with Sustainable Sites (SS) Credits. LEED (Leadership in Energy and Environmental Design) is a point rating system devised by the United States Green Building Council (USGBC) to evaluate the environmental performance of a building and encourage market transformation towards sustainable design. Understanding the LEED rating system will enable Hanover®, in collaboration with architects, specifiers and contractors, to respond to the market and develop more sustainable products and procedures.

Clipper Mill, Baltimore, MD; Owner/Developer: Struever Bros, Eccles & Rouse; Size & Color: EcoGrid®, Natural; Finish: Natural

Using concrete permeable paving systems can facilitate the process of obtaining LEED Green Building certification. There are two applicable LEED Site Credits that pertain to Hanover® Permeable Paving Units: Stormwater Management and EPA Best Management Practices.

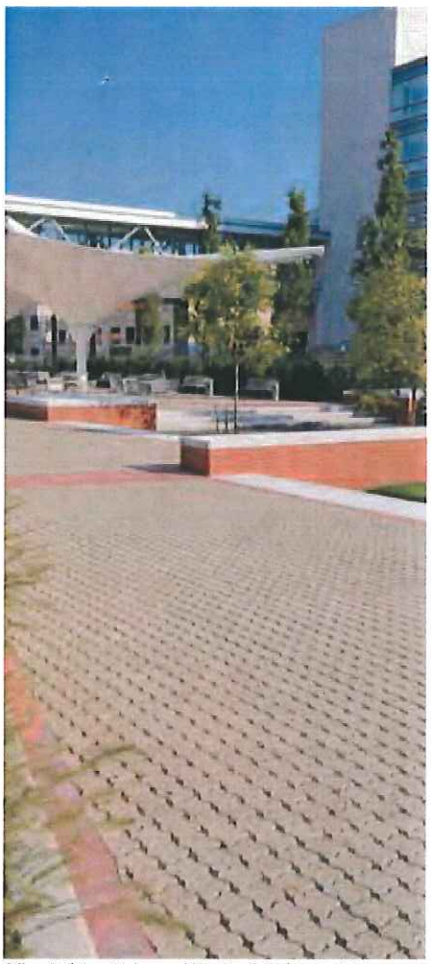
Ferguson Township, State College, PA; Site Designer: Pennoni Associates Inc., State College, PA ; Size & Color: Aqua-Loc®, Red/Charcoal Blend; Finish: Natural

Stormwater Management

LEED awards 1 point for measures taken to manage or reduce stormwater runoff. Permeable paving systems reduce runoff by allowing infiltration of rain into the subsurface. LEED has a simplified calculation to demonstrate compliance based solely on the runoff coefficient of site surfaces. The runoff coefficient relates the amount of runoff to the amount of precipitation received. The coefficient of runoff (c value) for level permeable pavements installed over recommended drainage coarse base elements has been proven to be 0.15. In comparison, asphalt, a non-permeable pavement, is 0.98 using the rational method. For unit paver installations, a minimum 1% grade is suggested, creating a c value of 0.25. It is suggested the design value be established at 0.40 to allow for 50% clogging of the permeable joints in the first 5 years. It is likely that permeable paving systems will need to be combined with additional measures like green roof assemblies or rain water harvesting to fully comply with this LEED credit.

EPA Best Management Practices

Permeable paving can also help a project earn a second LEED point within the stormwater management credit for stormwater treatment/quality control. For this point, LEED requires EPA Best Management Practices that effectively remove at least 80% of the total suspended solids (TSS) and 40% of total phosphorus (TP) from stormwater volumes leaving the site. As with the credit above, additional measures like infiltration basins may be required for a project to fully comply with this credit, but permeable paving systems do contribute toward compliance.



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

LITHONIA LIGHTING®

Catalog Number	KVR1-150M-SYMFL-120-SCWA-RPD-DBL-LPI
Notes	
Type	

FEATURES & SPECIFICATIONS

INTENDED USE – Use for parking lots, streets and surrounding areas.

CONSTRUCTION – Heavy-gauge, spun aluminum housing. Integral structural support plate for mounting arm and electrical components ensures rigidity and strength. Hinged aluminum door frame incorporates stainless steel hardware. Continuous silicone gasketing surrounds lens for weather-tight seal.

Lens: Thermal, shock-resistant, tempered flat or drop glass lens.

Standard finish is dark bronze, electrostatically applied powder paint. Linear embossed accent reveals are standard. Additional architectural colors and striping are available.

OPTICS – Most flat-lens configurations meet full-cutoff criteria. See www.lithonia.com for details. Vertical-lamp reflectors are one-piece spun and formed anodized aluminum. High-performance segmented aluminum reflectors also are used with horizontal lamps. Reflectors are rotatable and interchangeable.

ELECTRICAL – Ballast: High pressure sodium ballast is high-reactance, high power factor. Metal halide 50-150W ballasts are high-reactance, high power factor and are standard with pulse-start ignitor technology. "SCWA" not required. Constant wattage autotransformer for 175W MH (CSA, NOM or INTL required for probe start shipments outside the U.S.) Super CWA (pulse start ballast), 88% efficient and EISA legislation compliant, is required for 175-200W MH (SCWA option) for U.S. shipments only. Pulse start ballast (SCWA) is required for 200W MH. Ballast is 100% factory-tested.

Socket: Porcelain, horizontally mounted medium base socket with copper alloy, nickel-plated screw shell and center contact.

INSTALLATION – Arms are available for use with various poles, wall mounting and unique configurations. 4" aluminum fitter for open-top pole also is available.

LISTINGS – Listed and labeled to UL standards for 25°C ambient and wet locations. Listed and labeled to CSA standards (see Options). NOM Certified (see Options).

Note: Specifications subject to change without notice.

Round Area Full-Cutoff Lighting

KVR1

METAL HALIDE: 50-200W
HIGH PRESSURE SODIUM: 70-150W
10' to 20' Mounting

Specifications

Diameter: 17 (43.1)

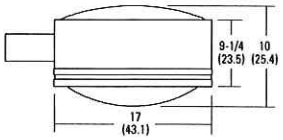
Flat lens height: 9-1/4 (23.5)

Drop lens height: 10 (25.4)

Arm mount	Post top
EPA: 1.8 ft² (0.17 m²)	EPA: 1.9 ft² (0.18 m²)
*Weight: 29.0 lbs (13.2 kg)	Overall Height: 18-3/4 (47.6)

* Weight as configured in example below.

Dimensions in inches (centimeters).



Mounting Option	Drilling Template
SPDxx, RPDxx,	5
WBDxx	6
WWDxx	7

ORDERING INFORMATION For shortest lead times, configure products using **bolded options.**

Example: KVR1 100M SYMFL TB RPD09 L/LP

KVR1	150M			SYM-FL	120	SCWA	RPD	
Series	**Wattage**			**Distribution**[7]	**Voltage**	**Ballast**	**Mounting**	
KVR1	Metal halide 50M[1,2] 70M[1,2] **100M**[2] 150M 175M[3,4] 200M[3,4,5]	Ceramic Metal halide[6] 50MHC[1,2] 70MHC[1,2] 100MHC[2] 150MHC	High pressure sodium[2] 70S 100S 150S	Vertical lamp: **SYM**___ Symmetric square **ASY**___ Asymmetric High-performance horizontal lamp: SR2___ Type II roadway SR3___ Type III asymmetric SR4SC___ Type IV forward throw, sharp cutoff SR5S___ Type V square	**120** 208[8] 240[8] **277** **347** 480[8] **TB**[9] 23050HZ[10]	**(blank)** Magnetic ballast CWI Constant wattage isolated Pulse Start Note: For shipments to U.S. territories, SCWA must be specified to comply with EISA.	Type **RPD**___ Round pole SPD___ Square pole WBD___ Wall bracket WWD___ Wood pole or wall PT4 Post top - 4" O.D. opentop pole	Length[11] **04** 4" arm 06 6" arm **09** 9" arm 12 12" arm

DBL						LPI
Finish[19]	**Options**					**Lamp**[21]
(blank) Dark bronze **DBL** Black DGC Charcoal gray DMB Medium bronze DNA Natural aluminum DWH White CR Corrosion resistant CRT Non-stick protective coating[20]	Shipped installed in fixture **SF** Single fuse 120, 277, 347V[12] DF Double fuse 208, 240, 480V[12] DC12 Emergency circuit 12V; 35W lamp included[13] 2DC12 Emergency circuit 12V; two 35W lamp included[13] DC2012 Emergency circuit 12V; 20W lamp included[13] 2DC2012 Emergency circuit 12V; two 20W lamp included[13]	EC Emergency circuit[13,14] PE Photoelectric cell — button type[1,12] QRS Quartz restrike system[13,14] QRSTD Time delay[13,14] KW1 KiloWatch® 120V control relay[15] KW4 KiloWatch® 277V control relay[165] EHS External houseside shield black (matches fixture finish)[16,17,18]	EHSB External houseside shield black (painted black to maximize light control)[16,17] **CSA** Listed and labeled to comply with Canadian Standards NOM NOM certified[10] INTL Available for 175M probe start shipping outside the U.S. Shipped separately[16] VG Vandal guard[17,18]	**LPI** Lamp included L/LP Less lamp	

NIGHTTIME FRIENDLY
Consistent with LEED® goals & Green Globes™ criteria for light pollution reduction

Accessories: Tenon Mounting Slipfitter[22]
Order as separate catalog number.

Tenon O.D.	One	Two@180°	Two@90°	Three@120°	Three@90°	Four@90°
2-3/8 (6.0)	T20-190	T20-280	T20-290	T20-320	T20-390	T20-490
2-7/8 (7.3)	T25-190	T25-280	T25-290	T25-320	T25-390	T25-490
4 (10.2)	T35-190	T35-280	T35-290	T35-320	T35-390	T35-490

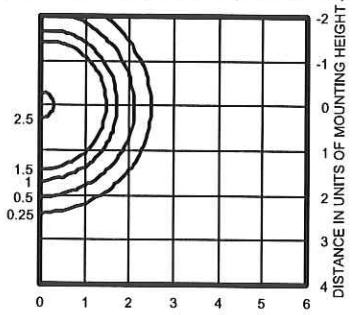
Notes

1 Not available with 480V.
2 Not available with SCWA.
3 Not available SCWA with horizontal distributions.
4 These wattages do not comply with California Title 20 regulations.
5 Must be ordered with SCWA.
6 Not available L/LP.
7 For drop lens, specify DL. For flat lens, specify FL. Example: SYMDL or SYMFL.
8 Must specify CWI for use in Canada.
9 Optional multi-tap ballast (120, 208, 240, 277V; 120, 277, 347V in Canada).
10 Consult factory for available wattages.
11 12" arm required when two or more luminaires are oriented on a 90° drilling pattern.
12 Not available with TB. Must specify voltage.
13 EC, QRS, QRSTD and DC options cannot be ordered together.
14 Maximum allowable wattage lamp included.
15 Only available with 200M, ASY or SYM.
16 May be ordered as an accessory.
17 Prefix with KVR1 when ordered as accessory.
18 Specify finish when ordered as an accessory.
19 See www.lithonia.com/archcolors for additional color options.
20 Black finish only.
21 Must be specified.
22 Arm mount only.

KVR1 Arm-Mounted or Post-Top Area Lighting

KVR1 150S SYMFL TEST NO: LTL15490

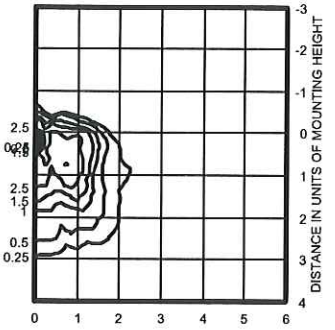
ISOILLUMINANCE PLOT (Footcandle)



150W lamp, rated 15800 lumens.
Footcandle values based on 20' mounting height.
Classification: Type V, Full Cutoff

KVR1 150MHC SR4SCDL BM TEST NO: LTL15550P

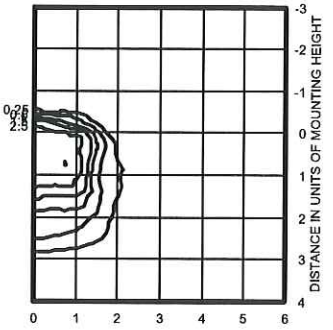
ISOILLUMINANCE PLOT (Footcandle)



150W pulse start metal halide lamp, rated 14000 lumens. Footcandle values based on 20' mounting height.
Classification: Unclassified (Type IV, Very Short), Cutoff

KVR1 150MHC SR4SCFL TEST NO: LTL15553P

ISOILLUMINANCE PLOT (Footcandle)



150W pulse start metal halide lamp, rated 14000 lumens. Footcandle values based on 20' mounting height.
Classification: Unclassified (Type III, Very Short), Cutoff

Notes

1 Photometric data for other distributions can be accessed from the Lithonia Lighting Web site (www.lithonia.com)

2 For electrical characteristics, consult outdoor technical data specification sheets on www.lithonia.com.

3 Tested to current IES and NEMA standards under stabilized laboratory conditions. Various operating factors can cause differences between laboratory and actual field measurements. Dimensions and specifications are based on the most current available data and are subject to change.

Mounting Height Correction Factor

(Multiply the fc level by the correction factor)

25 ft.= 0.64

30 ft.= 0.45

$$\left(\frac{\text{Existing Mounting Height}}{\text{New Mounting Height}}\right)^2 = \text{Correction factor}$$

OUTDOOR: One Lithonia Way Conyers, GA 30012 Phone: 770.922.9000 Fax: 770-918-1209 www.lithonia.com