From: Scala, Mary Joy

Sent: Tuesday, November 24, 2015 3:47 PM

**To:** Charlie Armstrong (CharlesA@southern-development.com)

Cc: Kevin Lewis (klewis@TheBCGroup.com); Andrew Garlock (agarlock@TheBCGroup.com)

Subject: BAR Action - Ridge and Cherry - November 2015

November 24, 2015

Cherry Avenue Investments, LLC 170 S Pantops Dr. Charlottesville, VA 22911

## **RE: Certificate of Appropriateness**

BAR 15-08-04 NW Corner of Ridge and Cherry Tax Parcel 290145000-147000, 290149000-151000, 290157000 Cherry Avenue Investments LLC, Owner and Applicant Proposal for a new Marriot Hotel on Cherry and Ridge

Dear Applicant,

The above referenced project was discussed before a meeting of the City of Charlottesville Board of Architectural Review (BAR) on November 17, 2015. The following action was taken:

Miller moved to find that the proposed new construction satisfies the BAR's criteria and is compatible with this property and other properties in the Ridge Street ADC district, and that the BAR approves (6-0) the proposed new building [including building materials] with the following items and details to come back to the BAR for approval:

- Ridge Street corner [including glass canopies] and plaza;
- Further site plan and planting plan development;
- Exploration of a livelier color at the Cherry edge and entry [Cherry Avenue pedestrian entrance and lower garage entry]
- Exterior lighting plan and signage.

Additional work was recommended on the rear retaining wall, such as more terracing or landscaping.

You may submit your final details when ready.

Sincerely yours,

Mary Joy Scala, AICP Preservation and Design Planner

## Mary Joy Scala, AICP

Preservation and Design Planner
City of Charlottesville
Department of Neighborhood Development Services
City Hall – 610 East Market Street
P.O. Box 911
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# CITY OF CHARLOTTESVILLE BOARD OF ARCHITECTURAL REVIEW STAFF REPORT November 17, 2015



Certificate of Appropriateness Application
BAR 15-08-04
NW Corner of Cherry Avenue and Ridge Street
Tax Parcel 290145000-147000, 290149000-151000, 290157000
Cherry Avenue Investments LLC, Owner and Applicant
Proposed new construction of a Marriot Hotel

# **Background**

All the parcels fronting on Ridge Street are located within the Ridge Street ADC district. The parcels fronting on Cherry Avenue are not in a design control district. However, the recently approved Planned Unit Development included a requirement that "The entire William Taylor Plaza Planned Unit Development (PUD), all phases, shall be subject to the Board of Architectural Review (BAR) as it applies all pertinent design standards and guidelines to this project in keeping with the Ridge Street Architectural Design Control (ADC) District."

May 18, 2004 – On the same parcels but different applicant: Preliminary Discussion with the BAR on "Cherry Ridge Commons," William Atwood, architect.

<u>July 20, 2004</u> – Preliminary discussion with the BAR on "Cherry Ridge Commons," William Atwood, architect.

October 6, 2008 - City Council agreed to convey two parcels of City-owned land to the developer.

January 20, 2009 - Preliminary discussion with BAR and current applicant.

<u>July 21, 2009 Preliminary</u> – Preliminary discussion with the BAR. The Chair requested that staff summarize the BAR's discussion.

<u>September 9. 2009</u> – The Planning Commission recommended approval of the PUD with proffers. The proffers will be revised prior to City Council's consideration. Please note that the landscaped pedestrian median that is shown on the plan in Ridge Street is not required by the proffers.

<u>September 15, 2009</u> - The BAR accepted (5-0-1 with Adams recusing) applicant's deferral. The application was not properly before the BAR since the rezoning is still pending.

<u>November 2, 2009</u> – City Council approved the rezoning to Planned Unit Development (PUD) with proffers.

November 17, 2009 - The BAR approved the application (6-1-1 with Brennan against and Adams recused) in concept, with the stipulation that detailed architectural designs, building materials, colors, and detailed site/landscaping design shall come back to the BAR for approval, also the BAR voiced strong support for a landscaped median on Ridge Street.

July 20, 2015 - City Council approved amendments to the 2009 William Taylor Plaza PUD.

August 19, 2015 - The BAR had a preliminary discussion.

Consensus was the proposal was too suburban; lacked pedestrian engagement along Ridge and Cherry; lacked inviting design at plaza/ important intersection corner and at rear retaining wall; lacked quality building materials; the design of the Ridge Street entrance was incompatible; and the building needs to relate in massing and scale to context of neighborhood and surrounding buildings in historic district.

<u>September 14, 2015</u> – The BAR held a work session on a revised design. Consensus was the design was moving in a better direction; need larger spatial break at Cherry Avenue entrance; modulate fenestration; resolve corner space to engage Ridge Street; need a good landscape design; re-design the rear retaining wall; large, shared vehicle entrance on Ridge is problematic; historicist design less important than quality materials, details, and construction.

October 20, 2015- Schwarz moved to find that the proposed new construction, including massing, and general site layout generally satisfies the BAR's criteria and is compatible with this property and other properties in the Ridge Street ADC district, and that the BAR approves only the massing and general site layout, with the following modifications: that the applicant look at the lobby entryway and the corner at Ridge and Cherry, and continue to explore color. Mohr seconded. (8-0).

# **Application**

The current owner is requesting a certificate of appropriateness for Phase One of a new mixed-use Planned Unit Development on the corner of Ridge Street and Cherry Avenue. The proposed project will be built on a total of 2.9 acres.

The BAR previously received a correct and updated copy of the PUD approval from July 20, 2015, "Approved Plan." That packet includes the ordinance, amended proffers, and drawings such as Existing Conditions, Land Use Plan, Phasing Plan, and Matrix of permitted Use Types.

Two phases are proposed, the 2.4 acre Cherry Avenue Phase (Phase One) and the 0.4 acre Ridge Street Phase (Phase Two). Since the developer is choosing to develop the Cherry Avenue Phase first, the plan stipulates that existing trees in the Ridge Street phase shall remain undisturbed until site plan approval has been granted for the Ridge Street phase, except invasive species may be removed.

Phase One includes a proposed hotel, **retail space**, parking, and the arboretum area. No residential units are proposed in Phase One. Phase Two may be residential or mixed use.

## The BAR is asked this evening to review the drawings for the final COA.

The new hotel is designed with 4 levels, with 2 levels of parking under the building. On the main level there is a rear drive-up entrance with a *porte cochere* that provides access to a lobby, and a pedestrian entrance from Cherry Avenue that leads into **a corridor** to the same lobby. On the second level at the Ridge Street end there is a commercial space and a secondary entrance to hotel, both accessed from a small plaza on Ridge Street. There is also a **meeting** room that has only an interior access. The third and fourth levels are all guest rooms.

There are two levels of parking under the building. The lower level has a vehicular entrance on the west side, visible from Cherry Avenue, and a bike room with outside bike racks at the SW corner of the building. The second level has a vehicular entrance on the north (rear) side, and a pedestrian entrance from Cherry Avenue.

- In addition to the garage parking, there is a surface parking lot below the level of the future Ridge Street buildings. The proffers state that a minimum of 60% of the total project parking will be accommodated in structured parking under the buildings. Parked cars will not be visible from Ridge Street.
- The arboretum must occupy at least 25% of the site, with public access during daylight hours.
- The Phase Two area must provide an effective buffer from the surface parking lot.

The building re-design shows three layers with different materials.

Layer 1: Brick running bond, Cushwa Redland (corbl every other course below water table) Storefronts and windows are Milk White aluminum.

Layer 2: Fine texture stucco in Sherwin Williams Anonymous or Camelback. Storefronts and windows are Night Hawk Gray.

Layer 3: Hardie fibercement clapboard (smooth face with bead) in color Cobblestone Windows are color Sea Wolf Gray.

Precast stone watertables, lintels – Arctic White (smooth)
Perforated decorative metal panels on garage openings – Grecian pattern, color-Milk White
Porous concrete pavers- Umbriano style, color Winter Marvel
PTAC exterior grilles – linear louvres, color to match window frame
Marquee canopy/porte cochere cladding - beige
Cherry Avenue areaway railings – agate gray with stainless steel cable
Retaining wall guardrail – matte black aluminum
Picket fence and vehicle guardrail – dark walnut stain
Segmental retaining wall system – AB Fieldstone Europa – Abbey blend
Light fixtures – matte black
Awnings – Sunbrella Sapphire (stripe)

# Zoning

The property is now zoned PUD with the Ridge Street ADC District historic overlay remaining on the property where it was located previous to the rezoning of the underlying R-2 district in 2009.

## Criteria, Standards and Guidelines

# **Review Criteria Generally**

Sec. 34-284(b) of the City Code states that,

In considering a particular application the BAR shall approve the application unless it finds:

- (1) That the proposal does not meet specific standards set forth within this division or applicable provisions of the Design Guidelines established by the board pursuant to Sec.34-288(6); and
- (2) The proposal is incompatible with the historic, cultural or architectural character of the district in which the property is located or the protected property that is the subject of the application.

## Pertinent Standards for Review of Construction and Alterations include:

(1) Whether the material, texture, color, height, scale, mass and placement of the proposed addition, modification or construction are visually and architecturally compatible with the site and the applicable design control district;

- (2) The harmony of the proposed change in terms of overall proportion and the size and placement of entrances, windows, awnings, exterior stairs and signs;
- (3) The Secretary of the Interior Standards for Rehabilitation set forth within the Code of Federal Regulations (36 C.F.R. §67.7(b)), as may be relevant;
- (4) The effect of the proposed change on the historic district neighborhood;
- (5) The impact of the proposed change on other protected features on the property, such as gardens, landscaping, fences, walls and walks;
- (6) Whether the proposed method of construction, renovation or restoration could have an adverse impact on the structure or site, or adjacent buildings or structures;
- (8) Any applicable provisions of the City's Design Guidelines.

# **Pertinent Design Guidelines for New Construction**

#### D. MASSING & FOOTPRINT

While the typical footprint of commercial building from the turn of the twentieth century might be 20 feet wide by 60 feet long or 1200 square feet per floor, new buildings in the downtown can be expected to be somewhat larger. Likewise, new buildings in the West Main Street corridor may be larger than this district's historic buildings. It is important that even large buildings contribute to the human scale and pedestrian orientation of the district.

- 1) New commercial infill buildings' footprints will be limited by the size of the existing lot in the downtown or along the West Main Street corridor. Their massing in most cases should be simple rectangles like neighboring buildings.
- 2) New infill construction in residential sub-areas should relate in footprint and massing to the majority of surrounding historic dwellings.
- 3) Neighborhood transitional buildings should have small building footprints similar to nearby dwellings.
  - a. If the footprint is larger, their massing should be reduced to relate to the smaller-scaled forms of residential structures.
  - b. Techniques to reduce massing could include stepping back upper levels, adding residential roof and porch forms, and using sympathetic materials.
- 4) Institutional and multi-lot buildings by their nature will have large footprints, particularly along the West Main Street corridor and in the 14th and 15th Street area of the Venable neighborhood.
  - a. The massing of such a large scale structure should not overpower the traditional scale of the majority of nearby buildings in the district in which it is located.
  - b. Techniques could include varying the surface planes of the buildings, stepping back the buildings as the structure increases in height, and breaking up the roof line with different elements to create smaller compositions.

#### E. HEIGHT & WIDTH

The actual size of a new building can either contribute to or be in conflict with a historic area. This guideline addresses the relationship of height and width of the front elevation of a building mass. A building is horizontal, vertical, or square in its proportions. Residential buildings' height often relates to the era and style in which they were built. Houses in the historic districts for the most part range from one to three stories with the majority being two stories. Most historic residential buildings range in width from 25 to 50 feet. While some commercial buildings are larger, the majority are two to three stories in height. Most historic commercial buildings range from 20 to 40 feet in width. The West Main

Street corridor has a greater variety of building types. Early nineteenth-century (Federal and Greek Revival) and early-twentieth-century (Colonial Revival) designs often have horizontal expressions except for the townhouse form which is more vertical. From the Victorian era after the Civil War through the turn of the century, domestic architecture is usually 2 to 2 1/2 stories with a more vertical expression. Commercial buildings may be divided between horizontal and vertical orientation depending on their original use and era of construction.

- 1. Respect the directional expression of the majority of surrounding buildings. In commercial areas, respect the expression of any adjacent historic buildings, which generally will have a more vertical expression.
- 2. Attempt to keep the height and width of new buildings within a maximum of 200 percent of the prevailing height and width in the surrounding sub-area.
- 3. In commercial areas at street front, the height should be within 130 percent of the prevailing average of both sides of the block. Along West Main Street, heights should relate to any adjacent contributing buildings. Additional stories should be stepped back so that the additional height is not readily visible from the street.
- **4.** When the primary façade of a new building in a commercial area, such as downtown, West Main Street, or the Corner, is wider than the surrounding historic buildings or the traditional lot size, consider modulating it with bays or varying planes.
- 5. Reinforce the human scale of the historic districts by including elements such as porches, entrances, storefronts, and decorative features depending on the character of the particular

sub-area.

6. In the West Main Street corridor, regardless of surrounding buildings, new construction should use elements at the street level, such as cornices, entrances, and display windows, to reinforce the human scale.

#### F. SCALE

Height and width also create scale, the relationship between the size of a building and the size of a person. Scale can also be defined as the relationship of the size of a building to neighboring buildings and of a building to its site. The design features of a building can reinforce a human scale or can create a monumental scale. In Charlottesville, there is a variety of scale. For instance, an institutional building like a church or library may have monumental scale due to its steeple or entry portico, while a more human scale may be created by a storefront in a neighboring commercial building.

- 1. Provide features on new construction that reinforce the scale and character of the surrounding area, whether human or monumental. Include elements such as storefronts, vertical and horizontal divisions, upper story windows, and decorative features.
- 2. As an exception, new institutional or governmental buildings may be more appropriate on a monumental scale depending on their function and their site conditions.

# G. ROOF

Roof design, materials, and textures should be consistent with the existing structures in the historic districts. Common roof forms include hipped roofs, gable roofs, flat roofs, and gambrel roofs, as well as combinations of the above. In general, the roof pitch of an older dwelling is steeper than a new tract house, and this factor is more important than the type of roof in most neighborhoods.

- 1. Roof Forms and Pitches
- a. The roof design of new downtown or West Main Street commercial infill buildings generally should be flat or sloped behind a parapet wall.
- b. Neighborhood transitional buildings should use roof forms that relate to

- the neighboring residential forms instead of the flat or sloping commercial form.
- c. Institutional buildings that are freestanding may have a gable or hipped roof with variations.
- d. Large-scale, multi-lot buildings should have a varied roof line to break up the mass of the design using gable and/or hipped forms.
- e. Shallow pitched roofs and flat roofs may be\_appropriate in historic residential areas on a contemporary designed building.
- f. Do not use mansard-type roofs on commercial buildings; they were not used historically in Charlottesville's downtown area, nor are they appropriate on West Main Street.

# 2. Roof Materials

Common roof materials in the historic districts include metal, slate, and composition shingles. a. For new construction in the historic districts, use traditional roofing materials such as standing-seam metal or slate.

- b. In some cases, shingles that mimic the appearance of slate may be acceptable.
- c. Pre-painted standing-seam metal roof material is permitted, but commercial-looking ridge caps or ridge vents are not appropriate on residential structures.
- d. Avoid using thick wood cedar shakes if using wood shingles; instead, use more historically appropriate wood shingles that are thinner and have a smoother finish.
- e. If using composition asphalt shingles, do not use light colors. Consider using neutral-colored or darker, plain or textured-type shingles.
- f. The width of the pan and the seam height on a standing-seam metal roof should be consistent with the size of pan and seam height usually found on a building of a similar period.

# 3. Rooftop Screening

- a. If roof-mounted mechanical equipment is used, it should be screened from public view on all sides.
- b. The screening material and design should be consistent with the design, textures, materials, and colors of the building.
- c. The screening should not appear as an afterthought or addition the building.

#### H. ORIENTATION

Orientation refers to the direction that the front of the building faces.

- 1. New commercial construction should orient its façade in the same direction as adjacent historic buildings, that is, to the street.
- 2. Front elevations oriented to side streets or to the interior of lots should be discouraged.

#### I. WINDOWS & DOORS

- 1. The rhythm, patterns, and ratio of solids (walls) and voids (windows and doors) of new buildings should relate to and be compatible with adjacent historic facades.
  - a. The majority of existing buildings in Charlottesville's historic districts have a higher proportion of wall area than void area except at the storefront level.
    - b. In the West Main Street corridor in particular, new buildings should reinforce this traditional proportion.

- 2. The size and proportion, or the ratio of width to height, of window and door openings on new buildings' primary facades should be similar and compatible with those on surrounding historic facades.
  - a. The proportions of the upper floor windows of most of Charlottesville's historic buildings are more vertical than horizontal.
  - b. Glass storefronts would generally have more horizontal proportions than upper floor openings.
- 3. Traditionally designed openings generally are recessed on masonry buildings and have a raised surround on frame buildings. New construction should follow these methods in the historic districts as opposed to designing openings that are flush with the rest of the wall.
- 4. Many entrances of Charlottesville's historic buildings have special features such as transoms, sidelights, and decorative elements framing the openings. Consideration should be given to incorporating such elements in new construction.
- 5. Darkly tinted mirrored glass is not an appropriate material for windows in new buildings within the historic districts.
- 6. If small-paned windows are used, they should have true divided lights or simulated divided lights with permanently affixed interior and exterior muntin bars and integral spacer bars between the panes of glass.
- 7. Avoid designing false windows in new construction.
- 8. Appropriate material for new windows depends upon the context of the building within a historic district, and the design of the proposed building. Sustainable materials such as wood, aluminum-clad wood, solid fiberglass, and metal windows are preferred for new construction. Vinyl windows are discouraged.
- 9. Glass shall be clear. Opaque spandrel glass or translucent glass may be approved by the BAR for specific applications.

# J. PORCHES

Most of Charlottesville's historic houses have some type of porch. There is much variety in the size, location, and type of porches, and this variety relates to the different residential areas, strong consideration should be given to including a porch or similar form in the design of any new residence in these sub-areas.

1. Porches and other semi-public spaces are important in establishing layers or zones of intermediate spaces within the streetscape.

#### K. STREET-LEVEL DESIGN

- 1. Street level facades of all building types, whether commercial, office, or institutional, should not have blank walls; they should provide visual interest to the passing pedestrian.
- 2. When designing new storefronts or elements for storefronts, conform to the general configuration of traditional storefronts depending on the context of the sub-area. New structures do offer the opportunity for more contemporary storefront designs.
- 3. Keep the ground level facades(s) of new retail commercial buildings at least eighty percent transparent up to a level of ten feet.
- 4. Include doors in all storefronts to reinforce street level vitality.
- 5. Articulate the bays of institutional or office buildings to provide visual interest.
- 6. Institutional buildings, such as city halls, libraries, and post offices, generally do not have storefronts, but their street levels should provide visual interest and display space or first floor windows should be integrated into the design.
- 7. Office buildings should provide windows or other visual interest at street level.

- 8. Neighborhood transitional buildings in general should not have transparent first floors, and the design and size of their façade openings should relate more to neighboring residential structures.
- 9. Along West Main Street, secondary (rear) facades should also include features to relate appropriately to any adjacent residential areas.
- 10. Any parking structures facing on important streets or on pedestrian routes must have storefronts, display windows, or other forms of visual relief on the first floors of these elevations.
- 11. A parking garage vehicular entrance/exit opening should be diminished in scale, and located off to the side to the degree possible.

#### L. FOUNDATION and CORNICE

Facades generally have a three-part composition: a foundation or base that responds at the pedestrian or street level, the middle section, and the cap or cornice that terminates the mass and addresses how the building meets the sky. Solid masonry foundations are common for both residential and commercial buildings. Masonry piers, most often of brick, support many porches.

- Distinguish the foundation from the rest of the structure through the use of different materials, patterns, or textures.
- 2. Respect the height, contrast of materials, and textures of foundations on surrounding historic buildings.
- 3. If used, cornices should be in proportion to the rest of the building.
- 4. Wood or metal cornices are preferred. The use of fypon may be appropriate where the location is not immediately adjacent to pedestrians.

#### M. MATERIALS & TEXTURES

- 1. The selection of materials and textures for a new building should be compatible with and complementary to neighboring buildings.
- 2. In order to strengthen the traditional image of the residential areas of the historic districts, brick, stucco, and wood siding are the most appropriate materials for new buildings.
- 3. In commercial/office areas, brick is generally the most appropriate material for new structures. "Thin set" brick is not permitted. Stone is more commonly used for site walls than buildings.
- 4. Large-scale, multi-lot buildings, whose primary facades have been divided into different bays and planes to relate to existing neighboring buildings, can have varied materials, shades, and textures.
- 5. Synthetic siding and trim, including, vinyl and aluminum, are not historic cladding materials in the historic districts, and their use should be avoided.
- 6. Cementitious siding, such as HardiPlank boards and panels, are appropriate.
- 7. Concrete or metal panels may be appropriate.
- 8. Metal storefronts in clear or bronze are appropriate.
- 9. The use of Exterior Insulation and Finish Systems (EIFS) is discouraged but may be approved on items such as gables where it cannot be seen or damaged. It requires careful design of the location of control joints.
- 10. The use of fiberglass-reinforced plastic is discouraged. If used, it must be painted.
- 11. All exterior trim woodwork, decking and flooring must be painted, or may be stained solid if not visible from public right-of-way.

#### **Discussion and Recommendations**

It is important to read all the proffers and notes included in the "Approved Plan."

Previously the BAR received emails from Paul Josey with the Tree Commission, requesting large canopy street trees on 40 ft. centers; and from Lucia Stanton, requesting a professional archaeological survey of Tax Parcel 290157000, located in the SW corner of the PUD property, and believed to be the location of the Allen Hawkins family burial ground. An abutting neighbor requested a fence (not solid) around the arboretum to prevent trespassing.

The BAR should focus their review on this site as a major gateway to the City, in addition to the neighborhood context, and whether the design meets the pertinent design guidelines and is compatible with the Ridge Street ADC historic district.

The clearness (visible light transmittance and reflectance) of the glass should be specified. The photometric sheet was too small to read.

The mechanical and trash areas and screening are not shown on the layout plan. The number of signs permitted and the aggregate signage area allowed is being determined by Zoning. Ridge Street ADC District only permits 12 square foot signage on the Ridge Street façade. No signage has been shown for the retail space. The BAR may want to see canopy details.

# **Suggested Motion**

Having considered the standards set forth within the City Code, including City Design Guidelines for New Construction, I move to find that the proposed new construction satisfies the BAR's criteria and is compatible with this property and other properties in the Ridge Street ADC district, and that the BAR approves the proposed new building and site designs with the following modifications... and the following details to come back to the BAR for approval.

not insignificant that they appear on the 1920 Sanborn and remain until now. While I understand the cultural significance of the storefront and diner additions to the life of the street, it is really curious that they are the elements singled out to be retained. The fact that these are the two remaining residential structures along West Main is not insignificant, either.

As far as the new scheme, I think what we are dealing with here is a street front width issue with the replacement of two historically-scaled buildings with one new one (additions retained adjacent to the sidewalk aside). What's the regular module for a single storefront in the area, 60 feet? I am having flashbacks of form-based code and the perceived desire to limit building width along the street (a la The Flats). This width/scale concern is actually divorced from a discussion of by-right zoning versus the possible future zoning in this area; the heights proposed for new construction are not necessarily a negative impact on the district. (This is a tough one)!

J. Sarafin comments 11/17/2015

Cherry and Ridge

Extensive packet; the multiple renderings and cut sheets are appreciated.

What is the status of the archaeological investigation? I hesitate to grant a final COA without assurance that it is being handled in a timely fashion and will be concluded before it's too late to turn back, as it were. This proposal is not "too big to fail..."

All in all, it seems like we have lost a sense of occasion up at the Ridge Street corner. But turning the corner, the 3-layer articulated façade that runs down Cherry Ave does seem to minimize the singular mass of the building. The least convincing view is what one would see heading on Cherry toward the intersection at Ridge; the four storeys (including and above the parking entrance) behind the brick-faced corner, and the services/utilities walled in around the corner toward the rear porte-cochere façade, might present a more welcoming face to Cherry Ave with richer materials there; it just feels a bit like a service corridor but is the view from the Cherry Ave approach as well as the main auto entrance to the site.

# Scala, Mary Joy

From:

Andrew Garlock <agarlock@TheBCGroup.com>

Sent:

Friday, November 13, 2015 3:32 PM

To:

Scala, Mary Joy

Subject:

RE: BAR agenda and staff report

**Attachments:** 

Pilkington Glazing Specs - Dual Low-E Coatings.pdf

Mary Joy,

The material for the rooftop screen would be aluminum, color to be Sea Wolf Gray (matches 3<sup>rd</sup> façade windows).

We've had internal design discussions concerning the garage openings screens and what color they should be. We debated between white, tan, and a light gray color, all of which would complement our color palette. We would welcome a discussion about the color of these at the BAR meeting next week.

FYI, I just received the retaining wall and glazing samples from the manufacturers. We will be bringing these items to the BAR meeting next week and distributing them. I've also attached a PDF which provides the Transmittance, Reflectance, U-factor, etc. for the specified glazing. I will bring copies of this to the meeting as well.

I appreciate your helpfulness Mary Joy. We've really enjoyed working with you and the rest of the review board.

Thank you, Andrew

#### ANDREW T. GARLOCK | NCARB

**Registered Architect** 

#### **BCA ARCHITECTS & ENGINEERS**

Ithaca | Syracuse | Watertown

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From: Scala, Mary Joy [mailto:scala@charlottesville.org]

Sent: Friday, November 13, 2015 3:05 PM

To: Andrew Garlock

Subject: RE: BAR agenda and staff report

Thank you for the clarification. Do you know the material for the rooftop screen?

Do you think the garage window screens would be less obvious if you used a color other than white? And did you consider adding more storefront on the left side of the commercial space facing Ridge? Signage on that facade is limited to 12 sq feet since it's in the Ridge Street historic overlay.

#### Mary Joy Scala, AICP

Preservation and Design Planner City of Charlottesville Department of Neighborhood Development Services City Hall – 610 East Market Street P.O. Box 911 Charlottesville, VA 22902 Ph 434.970.3130 FAX 434.970.3359 scala@charlottesville.org

**From:** Andrew Garlock [mailto:agarlock@TheBCGroup.com]

Sent: Friday, November 13, 2015 1:49 PM

To: Scala, Mary Joy

Subject: RE: BAR agenda and staff report

Thank you Mary Joy.

I noticed in the staff report that it indicates the mechanical and trash areas are not shown on the site layout plan. If you look to the north of the 2<sup>nd</sup> level parking garage entrance, you will see the dedicated dumpster/trash location with screening walls. Also, all of the exterior mechanical units will be located on the roof, within the 5' high screening provided around them (see renderings). There won't be any mechanical units on the ground. If you want me to provide a roof plan that shows and dimensions the rooftop mechanical space, I can quickly get that to you.

Best regards, Andrew

ANDREW T. GARLOCK | NCARB

Registered Architect

**BCA ARCHITECTS & ENGINEERS** 

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From: Scala, Mary Joy [mailto:scala@charlottesville.org]

Sent: Friday, November 13, 2015 12:27 PM

**To:** Charlie Armstrong (CharlesA@southern-development.com)

Cc: Andrew Garlock; Kevin Lewis Subject: BAR agenda and staff report

#### Mary Joy Scala, AICP

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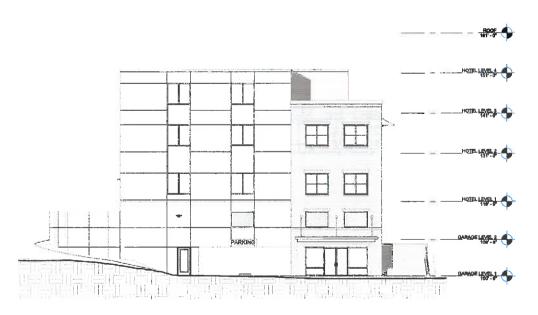
# 1 SOUTHWEST ELEVATION SCALE: 3/32" = 1'-0"



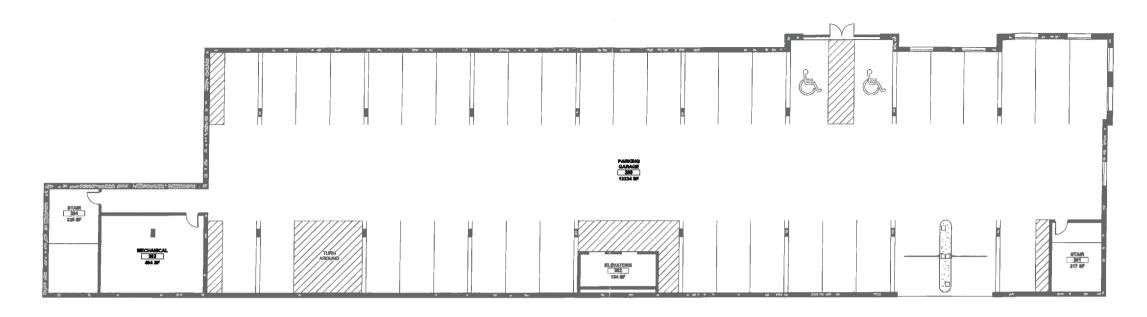
2 SOUTHEAST ELEVATION
SCALE: 932" - 11:0"





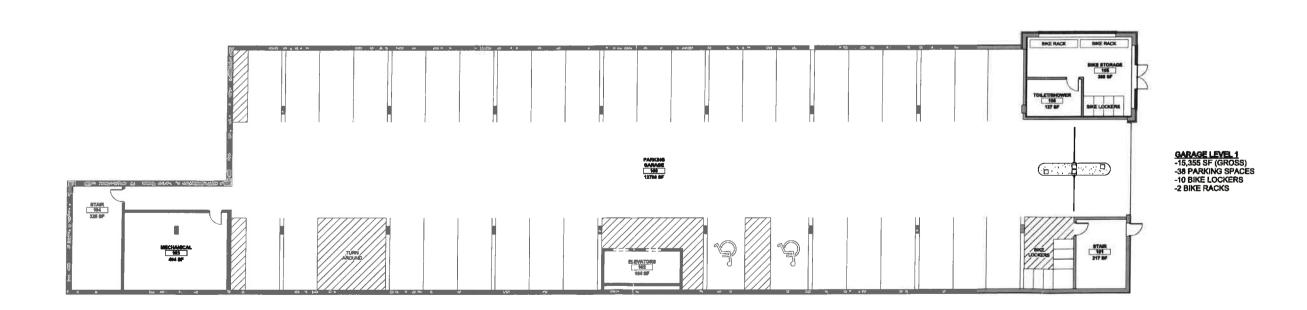


NORTHWEST ELEVATION
SCALE: 3/32" = 1'-0"



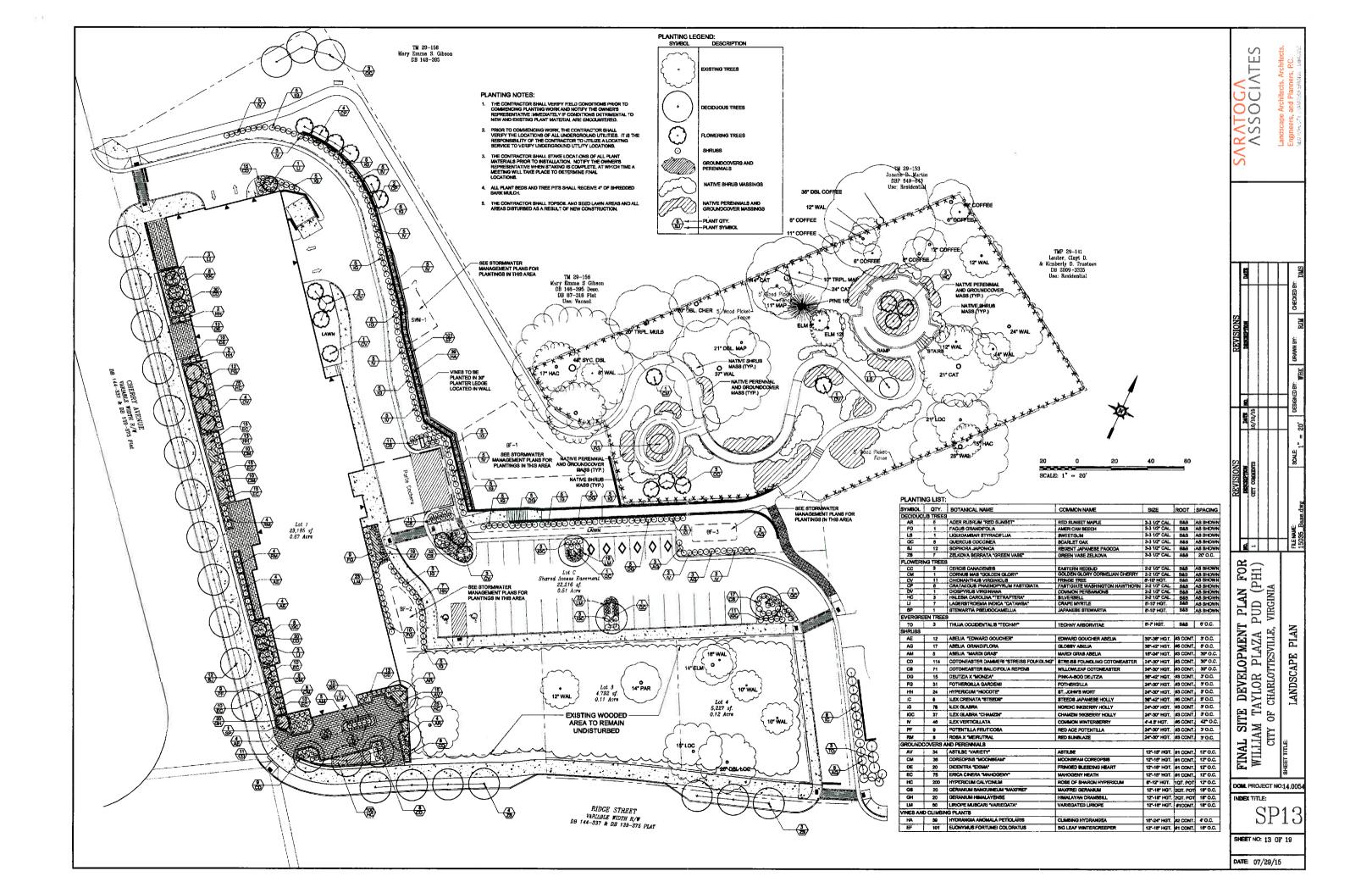
GARAGE LEVEL 2 -15,438 SF (GROSS) -39 PARKING SPACES

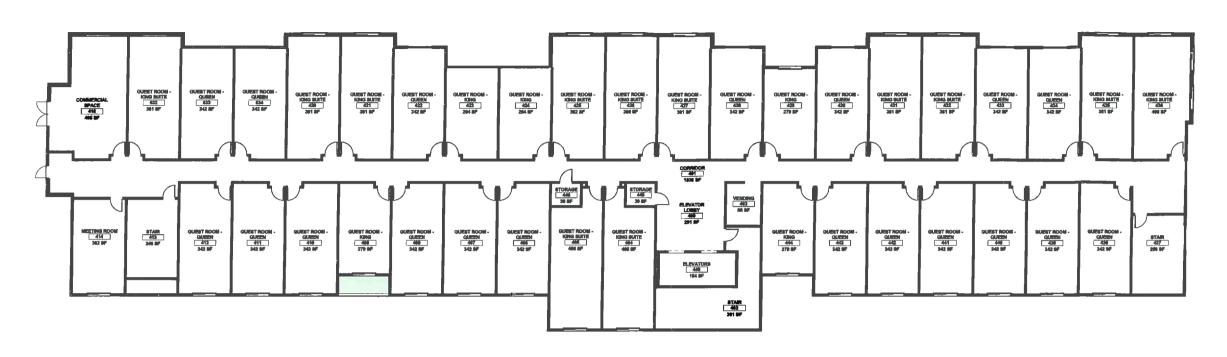




GARAGE LEVEL 1







HOTEL LEVEL 2 PLAN
SCALE: 3/32" = 1'-0"

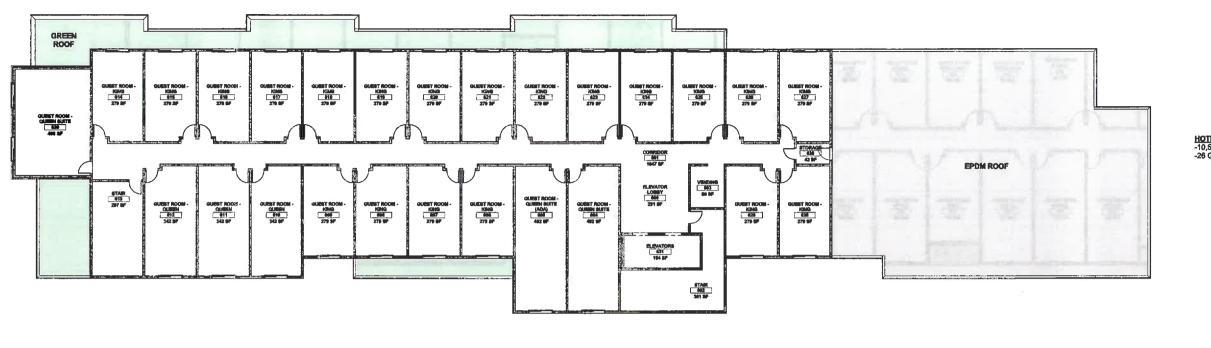


HOTEL LEVEL 1 -15,861 SF (GROSS) -18 GUEST ROOMS



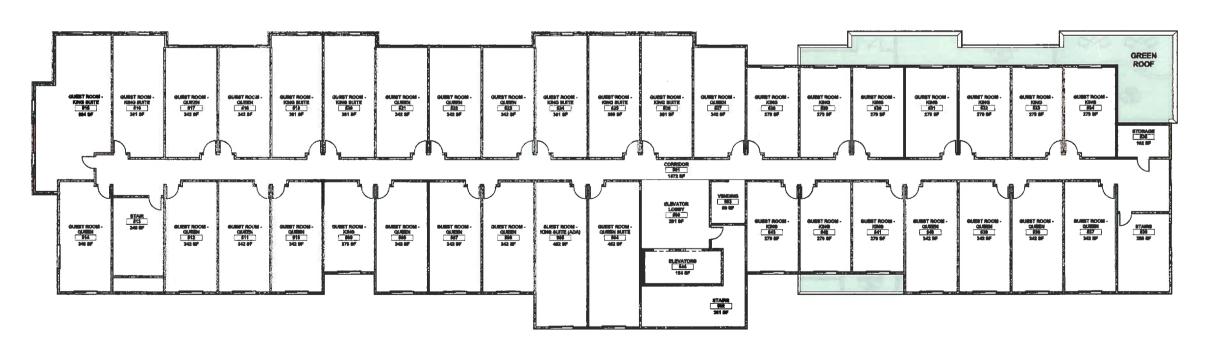






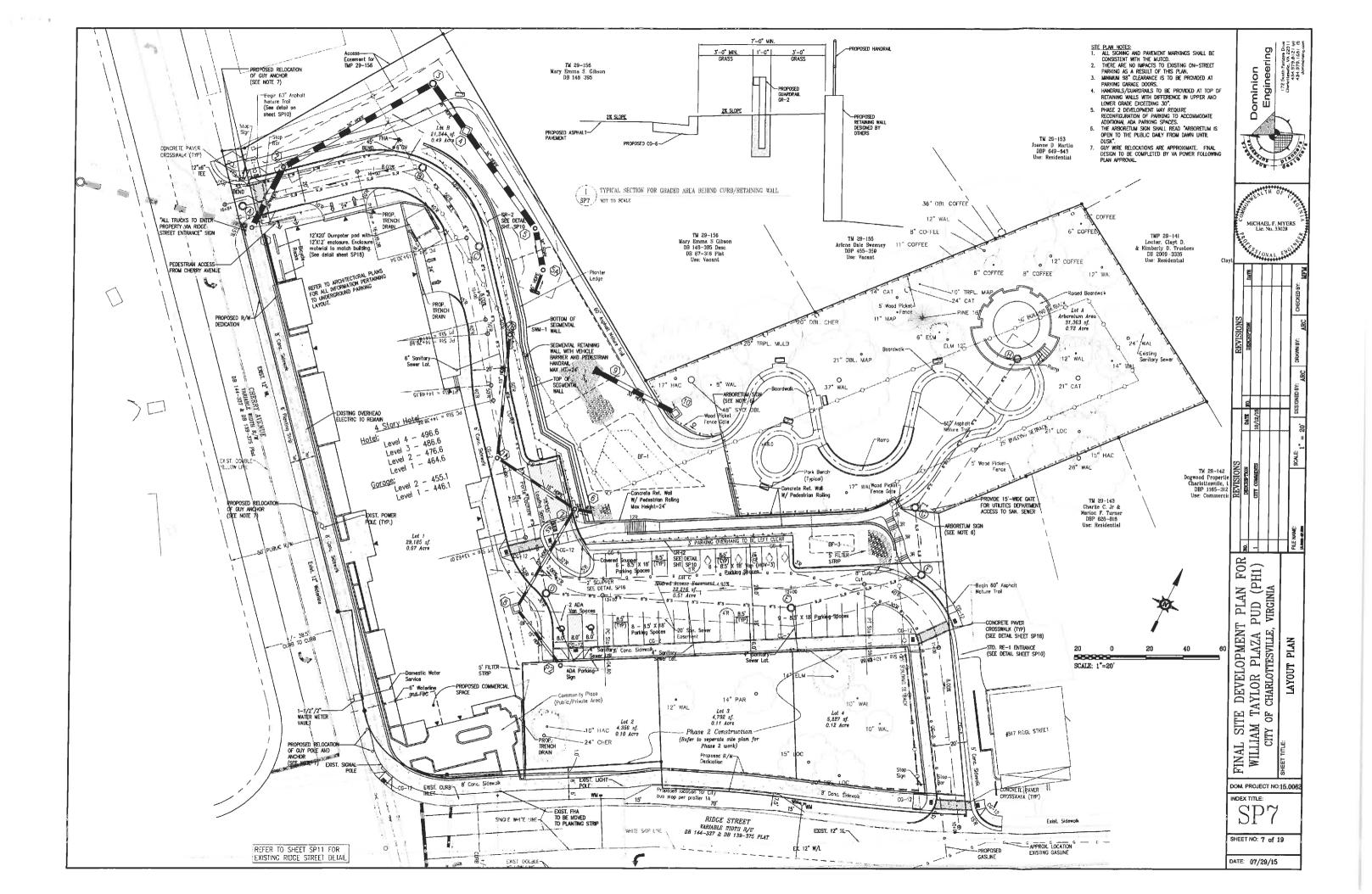
HOTEL LEVEL 4 -10,552 SF (GROSS) -26 GUEST ROOMS

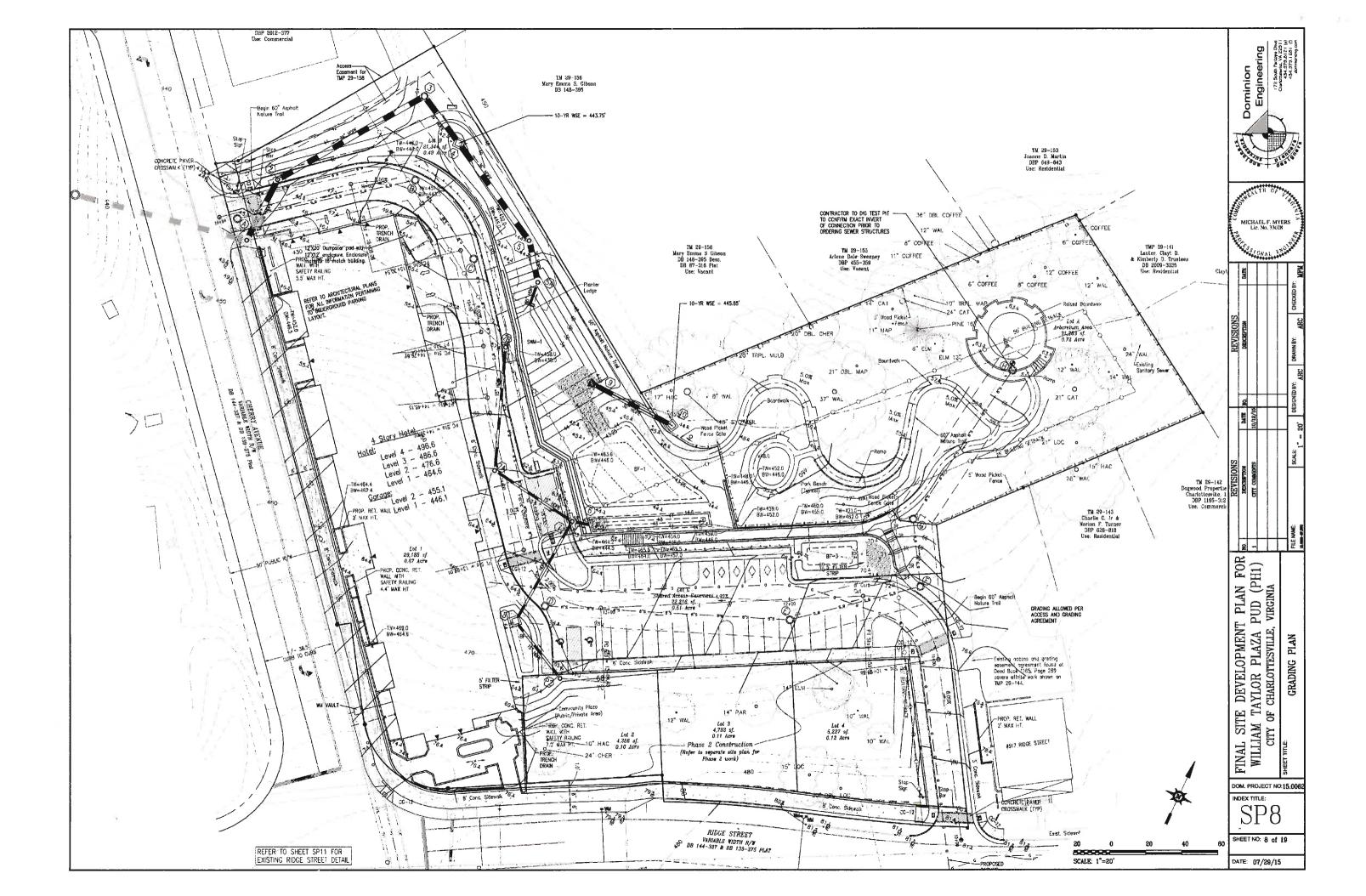


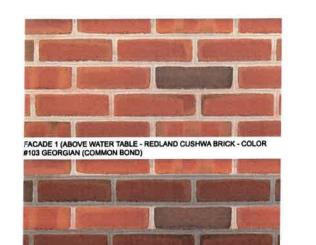


HOTEL LEVEL 3 -17,006 SF (GROSS) -37 GUEST ROOMS









FACADE 1 (BELOW WATER TABLE) - REDLAND CUSHWA BRICK - COLOR #103 GEORGIAN (COMMON BOND, CORBEL EVERY OTHER COURSE)



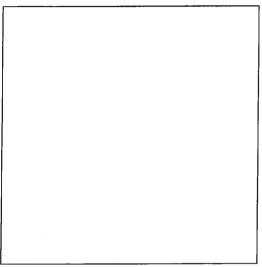
FACADE 2 - STUCCO - SHERWIN WILLIAMS PAINT - COLOR SW7048 ANONYMOUS



FACADE 2 - STUCCO - SHERWIN WILLIAMS PAINT - COLOR SW6122 CAMELBACK



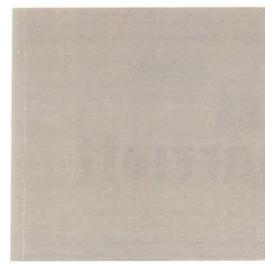
FACADE 3 - JAMES HARDIE FIBER CEMENT CLAPBOARD - COLOR COBBLESTONE (SMOOTH FACE WITH BEAD)



FACADE 1 STOREFRONTS AND WINDOWS - COLOR MILK WHITE

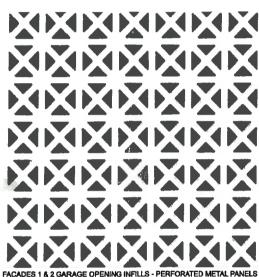


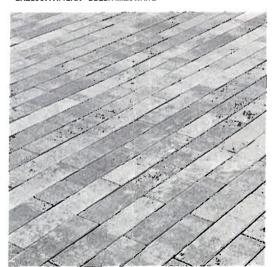
FACADE 2 STOREFRONTS AND WINDOWS - COLOR NIGHT HAWK GRAY



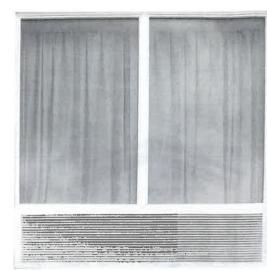
FACADE 3 WINDOWS - COLOR SEA WOLF GRAY







LINEAR CONCRETE PAVERS - UMBRIANO STYLE - COLOR WINTER



FACADE 1, 2, & 3 PTAC GRILLES - LINEAR LOUVERS - COLOR TO MATCH WINDOW FRAME



RETAINING WALL RAILINGS - COLOR BLACK MATTE





CHERRY AVENUE CABLE RAILING - COLOR AGATE GRAY WITH STAINLESS STEEL CABLES

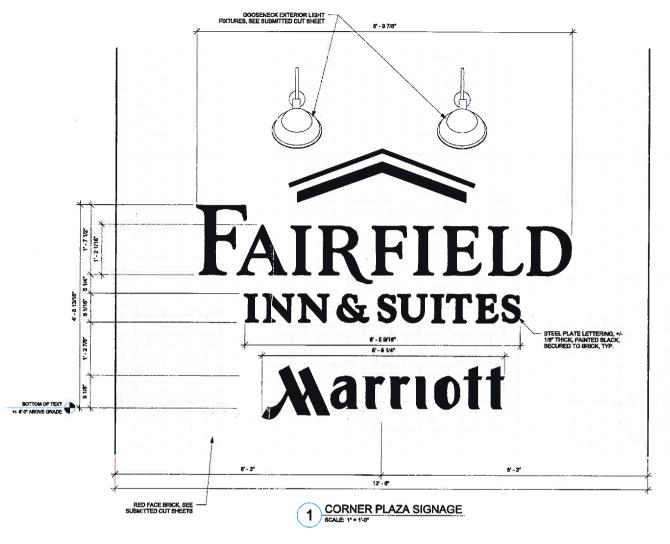


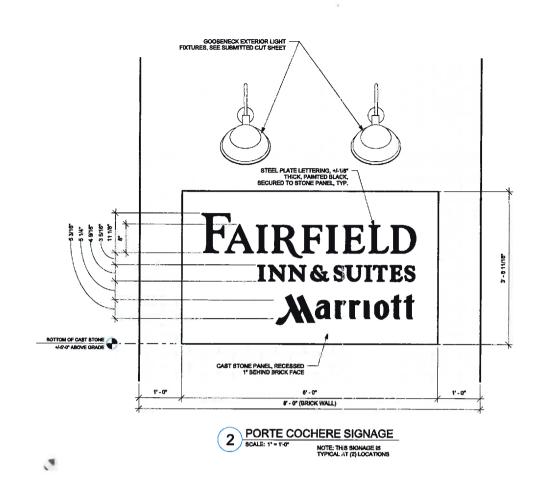
SEGMENTAL RETAINING WALL SYSTEM - ALLAN BLOCK FIELDSTONE EUROPA COLLECTION - COLOR ABBEY BLEND

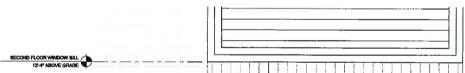


SITE AND BUILDING MOUNTED LIGHT FIXTURES - COLOR BLACK MATTE

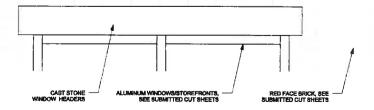


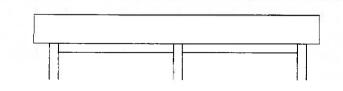






FAIRFIELD INN& SUITES Marriott





3 CHERRY AVE SIGNAGE

SIGNAGE TEXT SIZE IS SIMILAR TO CORNER PLAZA SIGNAGE TEXT SIZE, SEE DETAIL '1' ON THIS SHEET.

PROPOSED BUILDING SIGNAGE DETAILS





RECEIVED May 1 1 2015 NEIGHBURHOOD DEVELOPMENT SERVICES











































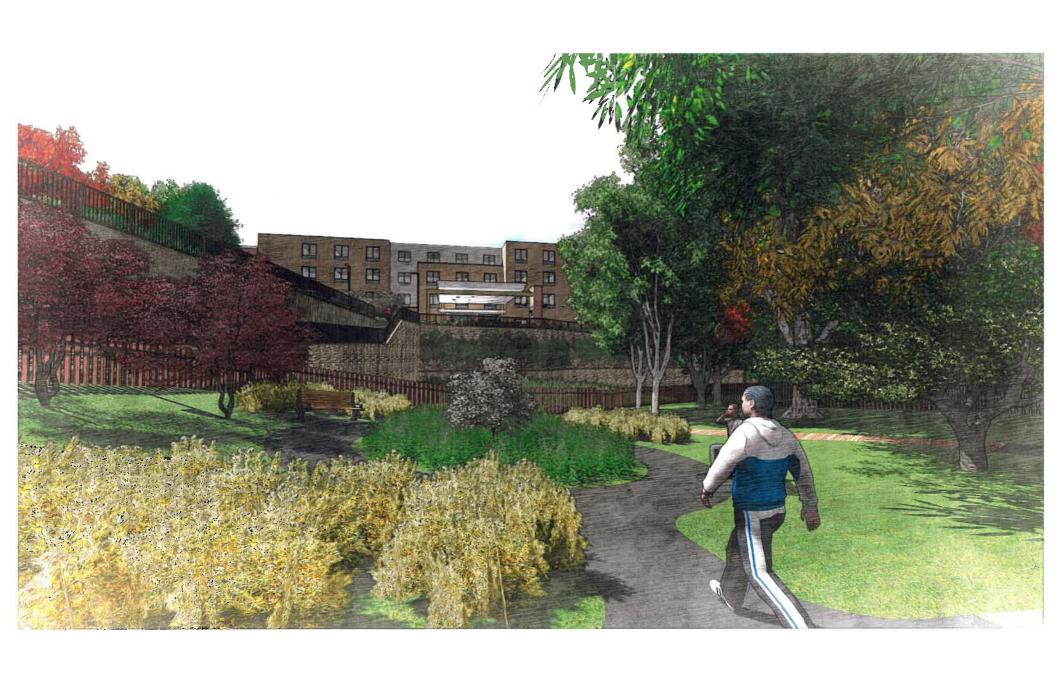


































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### **Pilkington Sun Management Calculator Results**

11 November 2015, 9:44

### Details

Outboard: 6 mm (1/4") Pilkington Energy Advantage™ on the #2 surface Fill: Air 13 mm (1/2") Inboard: 6 mm (1/4") Pilkington Energy Advantage™ on the #3 surface

Visible Light	Transmittance	68%	UV Transmittance	29%
	Exterior Reflectance	17%	U-Factor Summer (W/m2 °C)	1.70
	Interior Reflectance	17%	U-Factor Summer (Btu/hr.sq.ft °F)	0.30
Solar Energy	Transmittance	47%	U-Factor Winter (W/m2 °C)	1.76
	Reflectance	15%	U-Factor Winter (Btu/hr.sq.ft.°F)	0.31
Damage-Weighted	Trans. Tdw - ISO	0.55	Solar Heat Gain Coefficient	0.60
			Shading Coefficient	0.69

Click here for Tech Bulletins

IGDB Version 30 0 Values are calculated using the LBNL Window 6.3 program and represent the 'center-of-glass' region of the glazing.



## **Pilkington Sun Management Calculator Results**

17 November 2015, 10:54

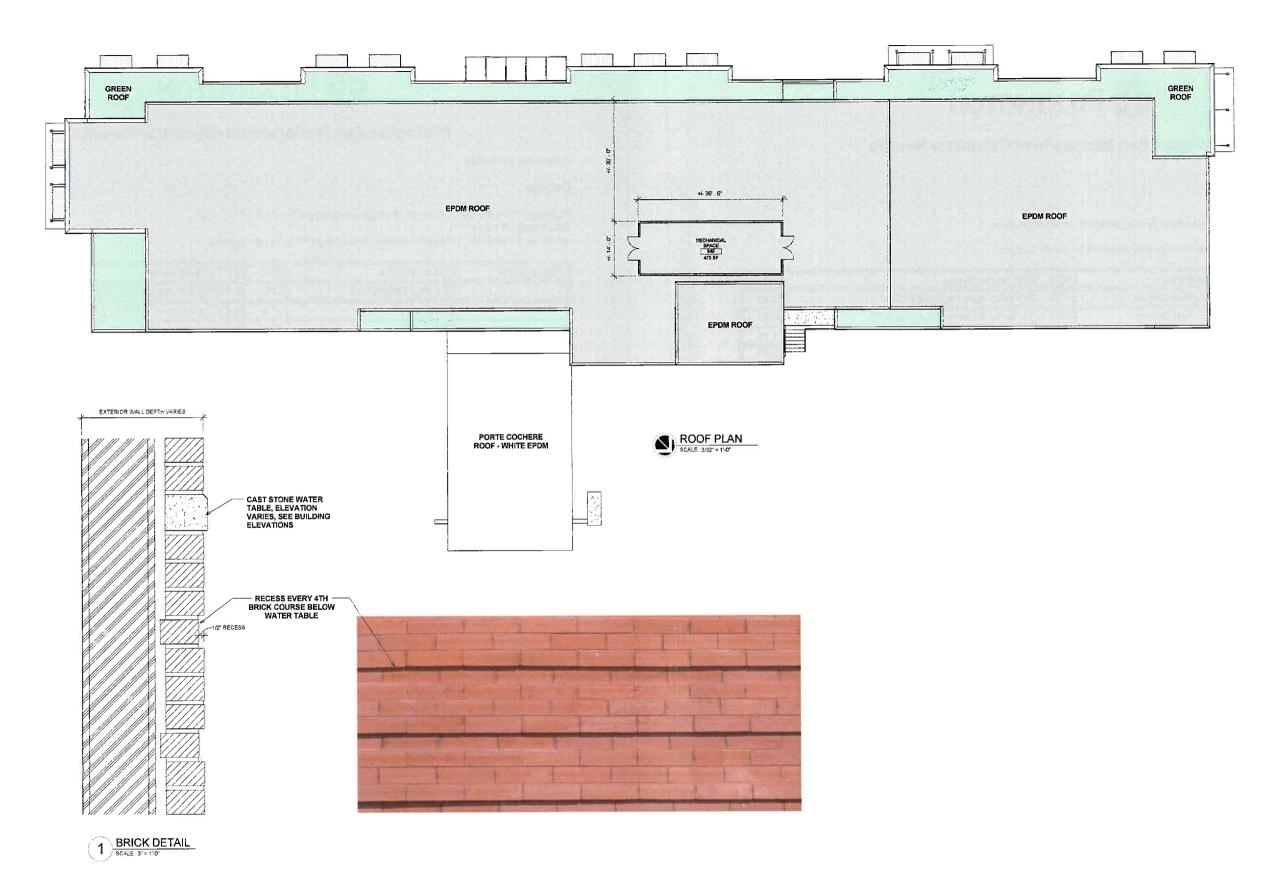
### Details

Outboard: 6 mm (1/4") Pilkington Energy Advantage™ on the #2 surface Fill: Argon 13 mm (1/2") Inboard: 6 mm (1/4") Pilkington Energy Advantage™ on the #3 surface

Visible Light	Transmittance	68%	UV Transmittance	29%
	Exterior Reflectance	17%	U-Factor Summer (W/m2 °C)	1.36
	Interior Reflectance	17%	U-Factor Summer (Btu/hr.sq ft.ºF)	0.24
Solar Energy	Transmittance	47%	U-Factor Winter (W/m2 °C)	1.48
	Reflectance	15%	U-Factor Winter (Btu/hr.sq.ft.ºF)	0.26
Damage-Weighted	Trans. Tdw - ISO	0.55	Solar Heat Gain Coefficient	0.60
			Shading Coefficient	0.69

Click here for Tech Bulletins

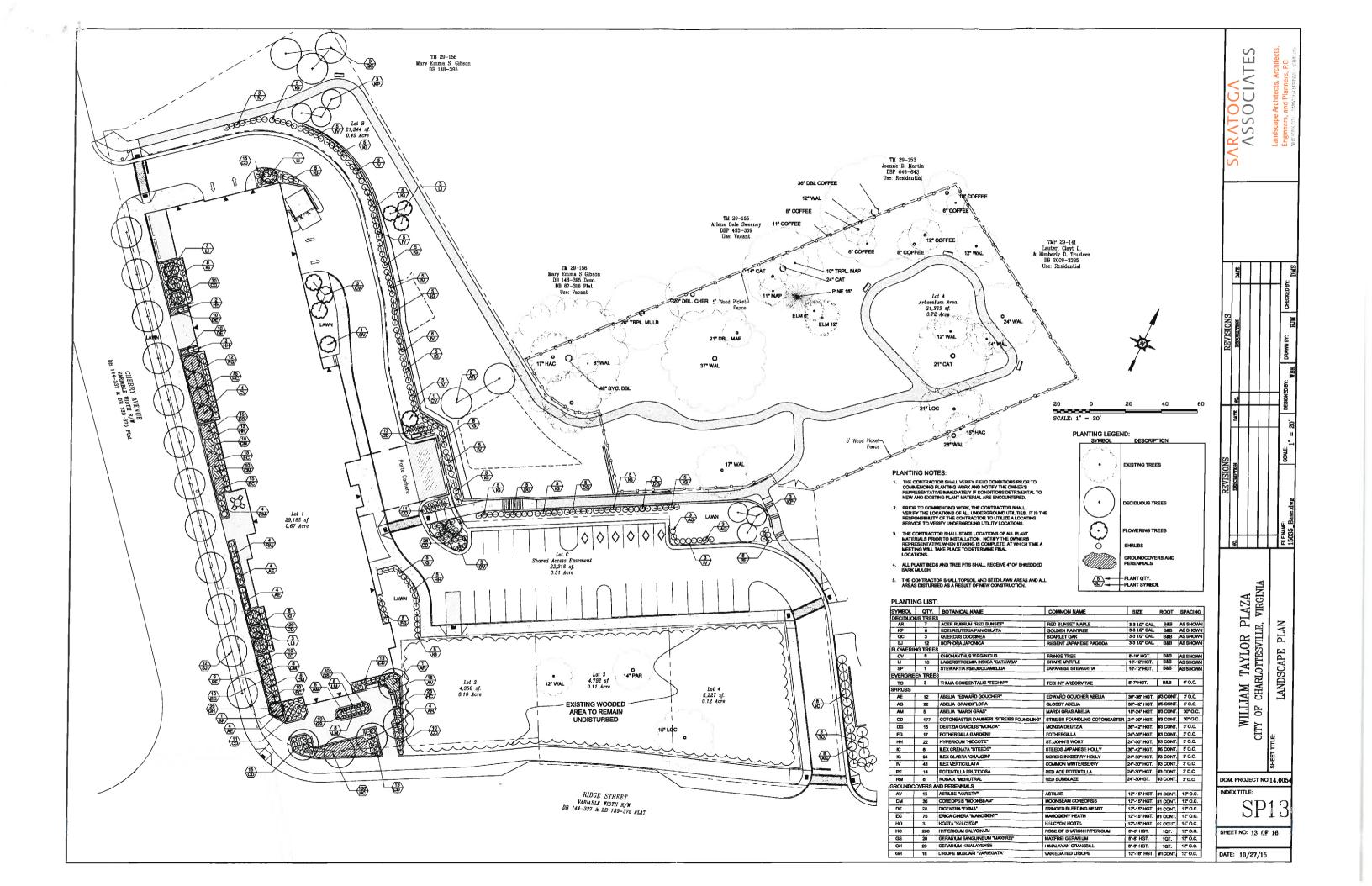
IGD8 Version 30 0 Values are calculated using the LBNL Window 6 3 program and represent the 'center-of-glass' region of the glazing.



WILLIAM TAYLOR PLAZA - FAIRFIELD HOTEL
PROPOSED ROOF PLAN AND BRICK DETAIL

BCA ARCHITECTS AND ENGINEERS

BAR SUBMISSION (REVISED) - NOV. 10, 2015



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Statistics Description	Symb ol	Avg	Max	Min	Max/Mi n	Avg/Mi n
Cherry Street Canopy	<b>♦</b>	7.4 fc	18.0 fc	0.3 fc	60.0:1	24.7:1
Community Plaza	<b>♦</b>	1.6 fc	3.2 fc	0.6 fc	5.3:1	2.7:1
Property Line	0	0.1 fc	0.5 fc	0.0 fc	N/A	N/A
Willian Taylor Plaze Site	<b>♦</b>	2.1 fc	14.8 fc	0.0 fc	N/A	N/A

			Location			
No.	Label	×	٧	z	МН	Titt
1	В	996.53	415.79	15.00	15.00	0.00
2	В	1041.2	360.54	15.00	15.00	0.00
3	В	1050.9 0	316.53	12.00	12.00	0.00
4	В	1032.1	301.38	12.00	12.00	0.00
5	В	874.66	534.64	15.00	15.00	0.00
6	В	902.07	533.13	15.00	15.00	0.00
7	В	926.45	503.83	15.00	15.00	0.00
В	В	952.86	470.44	15.00	15.00	0.00
1	E	1276.2 6	410.56	15.00	15.00	0.00
5	E	1227.9 5	440.95	15.00	15.00	0.00
6	E	830.78	541.99	15.00	15.00	0.00
1	F	1003.3	491.38	20.00	20.00	0.00
2	F	932.52	571.67	20.00	20.00	C.00
3	F	1068.9	429.10	20.00	20.00	0.00
4	F	1043.7 9	458.05	15.00	15.00	0.00
5	F	1154.6 2	475.48	20.00	20.00	0,00
6	F	1240.3 5	484.56	15.00	15.00	0.00
7	F	1153.3 8	404.41	20.00	20.00	0.00
1	G	990.44	453.54	15.00	15.00	0.00
2	G	1001.3	437.72	15.00	15.00	0.00
3	G	1004.9	463.39	15.00	15.00	0.00
4	G	1015.3	448.87	15.00	15.00	0.00
5	G	1017.1	472.98	15.00	15.00	0.00
б	G	1029.3	457.42	15.00	15.00	0.00
7	G	899.68	440.07	15.00	15.00	0.00



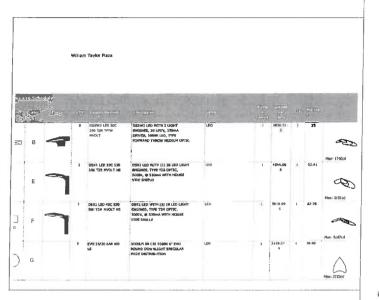


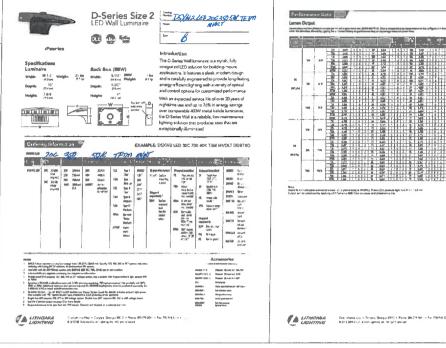
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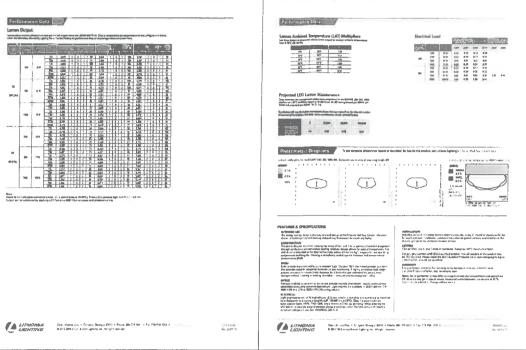
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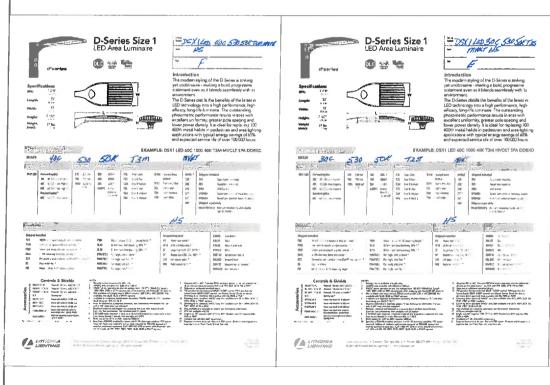
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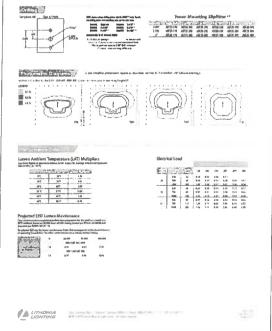
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SHEET NO: 17 of 19



# 1 SOUTHWEST ELEVATION SCALE: 3/32\* = 1'-0"



2 SOUTHEAST ELEVATION
SCALE: 3/32\* > 1-0\*

















































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8



how do you make a better brick?

## INNOVATING TO BUILD A better world

#### HOW DO YOU MAKE A BETTER BRICK?

The production of clay bricks has remained essentially the same for thousands of years. Bricks are fired to 2,000°F for up to four days in kilns that operate around the clock for months at a time. As a result, each clay brick you see is responsible for emitting almost a pound of CO<sub>2</sub> and consuming more than 6,000 BTUs of energy. In a typicalyear, U.S. brick kilns can generate as much CO<sub>2</sub> as over half a million cars and use about as much energy as the households of 1 million people.

#### Make it sustainable.

CalStar has developed a patented formula and manufacturing process to make a better and more sustainable brick. With no firing and no Portland cement, CalStar's process consumes 81% less energy and releases 84% less CO<sub>2</sub>. Plus, we use 37% post-industrial recycled material that would otherwise wind up in a landfill.

#### Make it economical.

CalStar proves that sustainability doesn't need to be more expensive. By replacing mined clay with recycled by-products and reducing manufacturing energy, we take cost out of the equation; the same innovations that make our products sustainable also make them affordable.

#### And make it perform.

Of course, we've retained all the features that everyone loves about brick. CalStar's brick durability, low maintenance, and in-wall performance are comparable to clay brick. Many masons can't tell the difference; it handles and installs the same. Additionally, the warm, rich appearance is suited to a wide range of building styles, from traditional to ultra-modern.

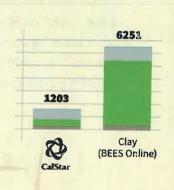


#### How do we stack up?

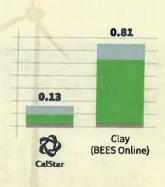
CalStar brick is installed the same way clay brick is. The big differences in the life cycles of CalStar and clay brick result from differences in raw material extraction and manufacturing phases (known as the "Cradle-to-Gate" life cycle). Below is a Cradle-to-Gate comparison of CalStar and the average fired clay brick of the same size.



EMBODIED ENERGY	CalStar	Clay
Manufacturing electricity	552	1151
Manufacturing gas	465	4844
Raw material extraction/ transportation	186	256
Total (BTUs)	1203	6251
	{81% Savings}	



CARBON FOOTPRINT	CalStar	Clay
Manufacturing electricity	0.10	0.15
Manufacturing gas	0.02	0.62
Raw material extraction/ transportation	0.01	0.04
Total (lbs.)	0.13	0.81
	{84% Savings}	



#### SHAPES AND DIMENSIONS

Modular	35/8" x 2 1/4" x 7 5/8"
Utility	35/8" x 35/8" x 115/8"
King	23/4" x 25/8" x 95/8"
Roman	35/8" x 15/8" x 115/8"

Monarch	35/8" x 35/8" x 155/8"
Engineer	35/8" x 2 3/4" x 7 5/8"
Royale	90mm x 79mm x 257mm
Norman	35/8" x 2 1/4" x 11 5/8"
Ambassador	35/8" x 2 1/4" x 15 5/8"



"CalStar has created a beautiful, sustainable alternative to an age-old, energy-intensive product."

- Justin Zahner, Architect



## What else can we make better?



#### **PAVERS**

Holland, 4" x 8" x 60mm Permeable, 5" x 10" x 80mm 12" x 12" x 60mm



#### STRUCTURAL UNITS

8" X 4" X 16"

12" X 4" X 16"

8" X 8" X 16"

12" x 8" x 16"



4" x 8" x 16"

4" x 4" x 24"

4" X 8" X 24"

4" x 12" x 24"

81% less energy

84% less CO.

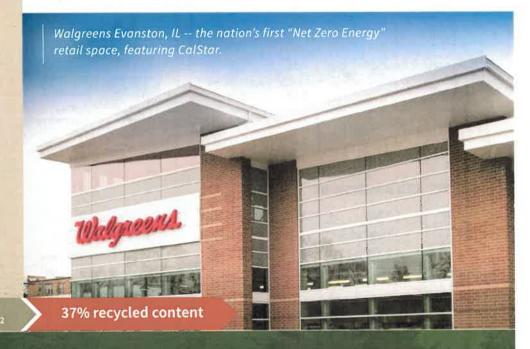
#### Don't take our word for it.

CalStar worked with leading architectural firm Perkins+Will to perform an ISO-compliant life cycle assessment (LCA) for brick. We've had our CalStar LCA results third-party verified and published our findings in the first environmental product declaration (EPD) for brick. The CalStar EPD outlines 13 different environmental impacts over the entire life cycle of our product, from raw material extraction through end-of-life.

CalStar brick has achieved SMaRT© Sustainable Platinum rating. Sustainable Materials Rating Technology (SMaRT) is the world's leading sustainable product standard and is approved for credit by the US Green Building Council's LEED program globally and the Canada Green Building Council.









Headquarters: 105 South Mangum Street, Durham, NC 27701

Plant #1: 2825 4 Mile Road, Racine, WI 53404

Plant #2: 340 Charleigh D. Ford Junior Drive, Columbus, MS 39701

Research Labs: Silicon Valley

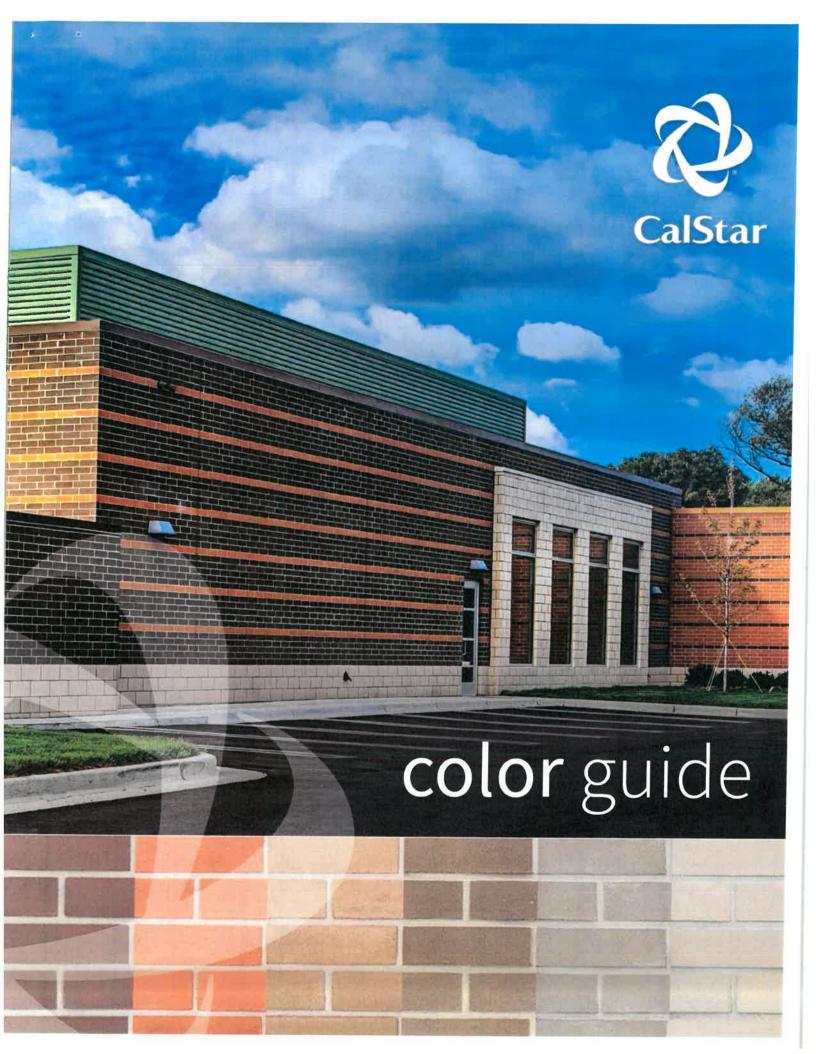
877.700.9501 calstarproducts.com











## QUICK REFERENCE GUIDE

#### ARCHITECTURAL SERIES™



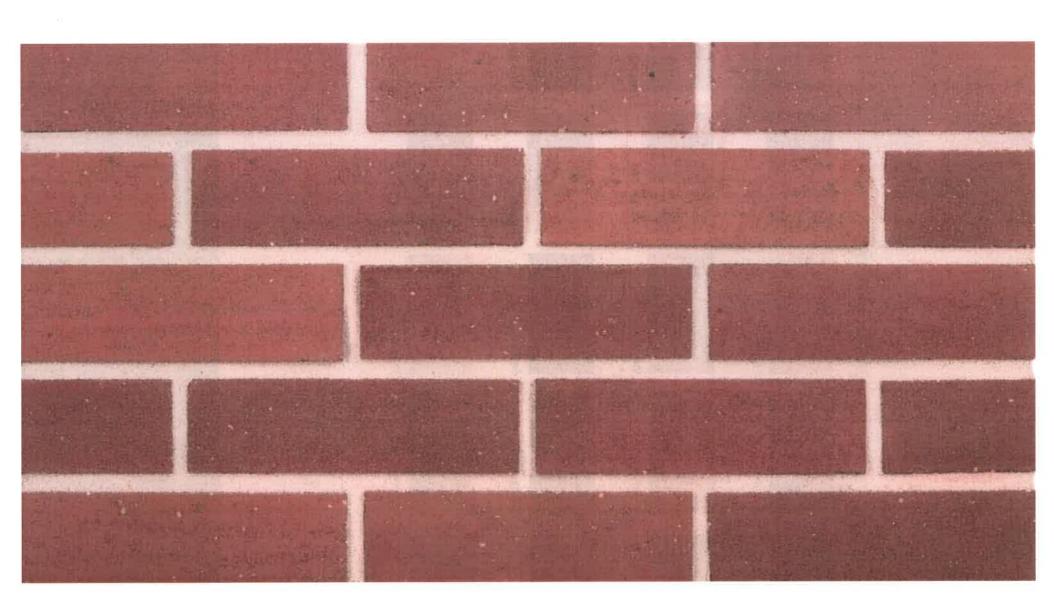
Custom colors, blends and ranges are also available with additional lead times.

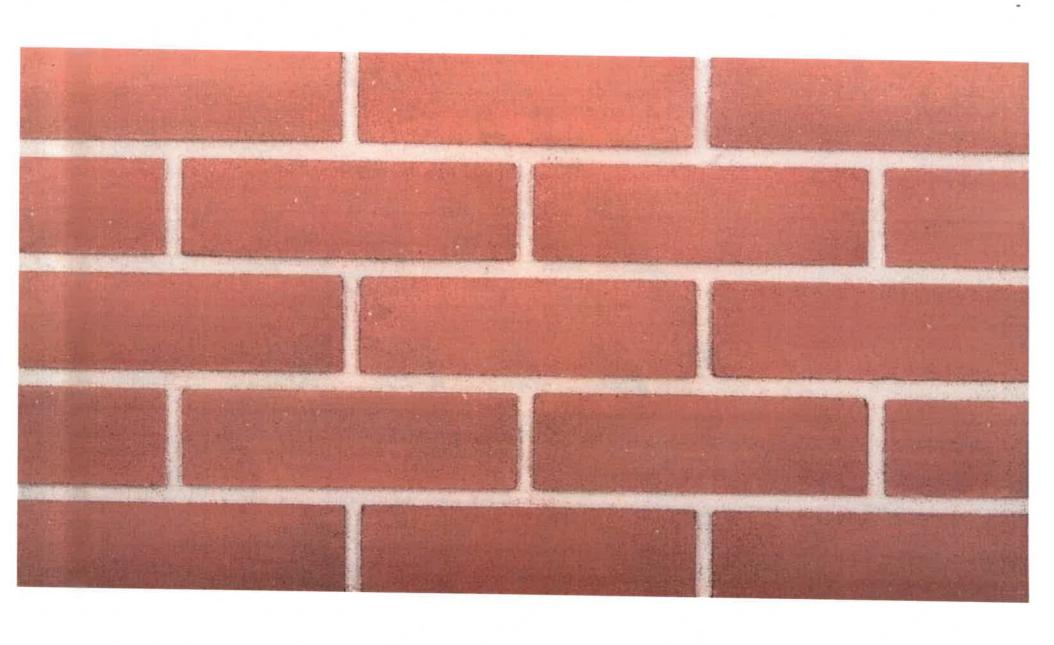
#### CLASSIC SERIES™

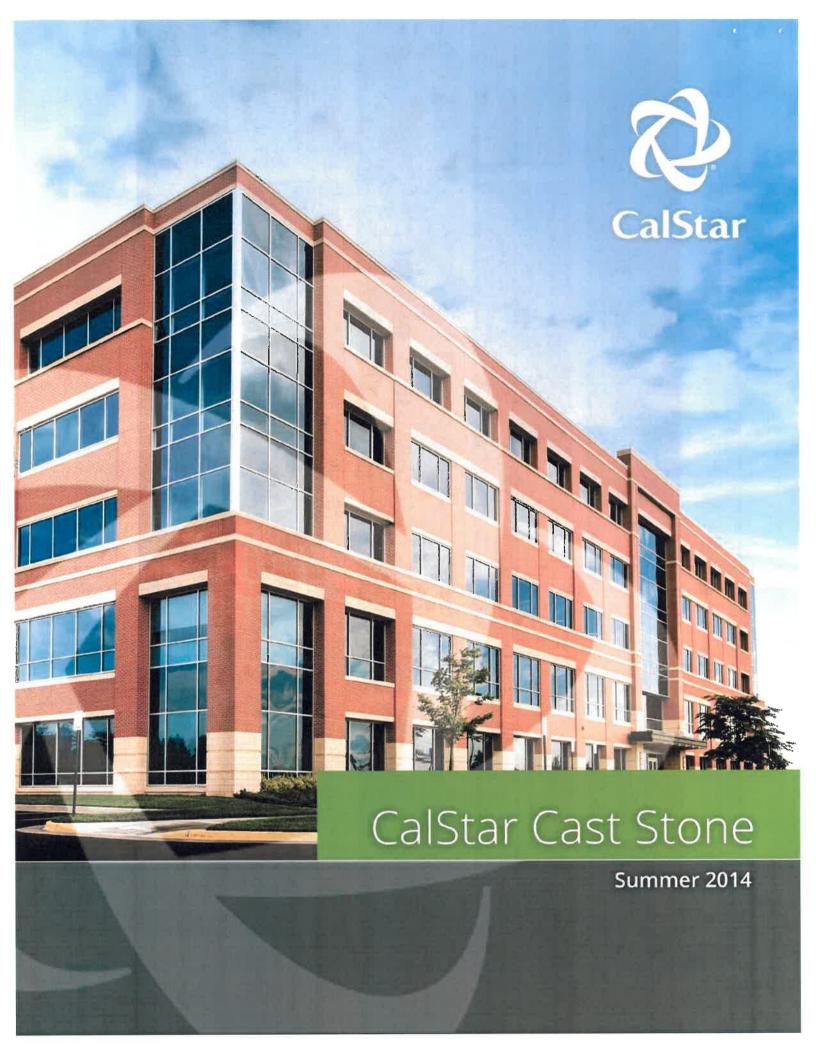


### See the entire spectrum.

For more information on all of the CalStar products, visit calstar products.com.







## Introducing CalStar cast stone products

To manufacture CalStar cast stone trim and accent pieces, we use our innovative technology together with molds made from natural stone. This enables us to offer the texture and beauty of limestone without the negative environmental attributes that come with quarrying it. Relative to other products in the market, CalStar cast stone not only looks great — it's also more affordable.

At the same time, specifying CalStar cast stone alongside our other masonry products enables you to achieve greater consistency across your projects, both in terms of performance and aesthetics.

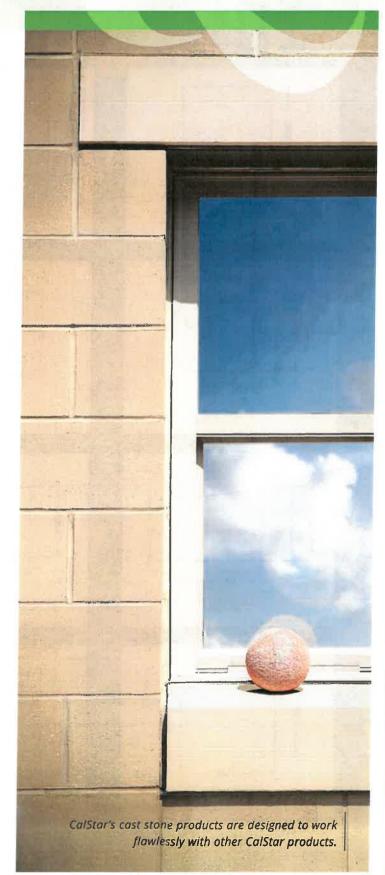


**BULLNOSE SILL** 

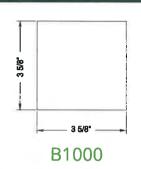


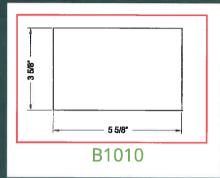
<sup>&</sup>lt;sup>1</sup>This color is only available in wet cast.

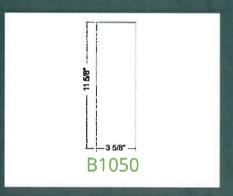
<sup>&</sup>lt;sup>2</sup>There may be a slight variance in color between a wet cast piece and our standard dry pressed materials.

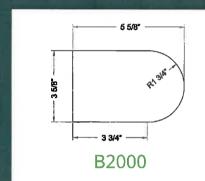


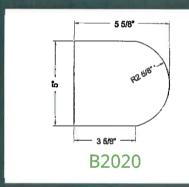
#### BANDS

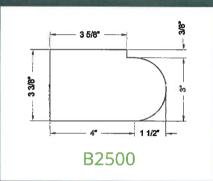


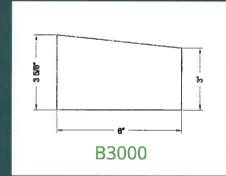


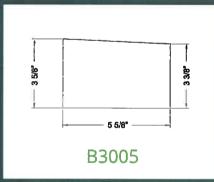


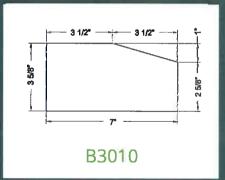


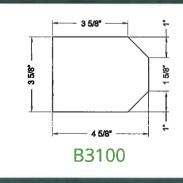


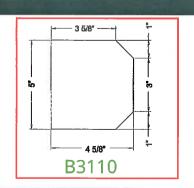












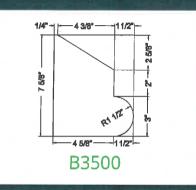


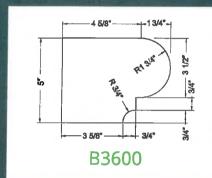
# attractive and affordable

#### **BANDS**

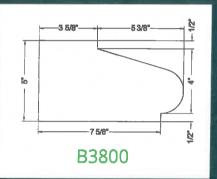




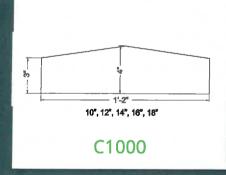


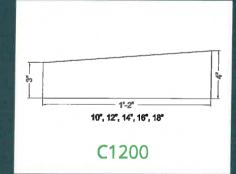


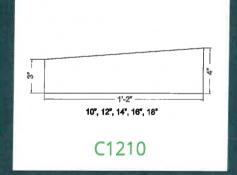


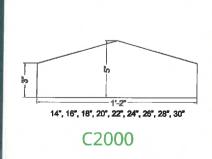


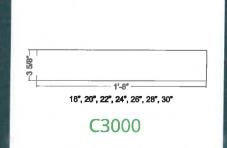
#### **COPINGS**











**Custom cast stone shapes** and sizes are available.

For the most up-to-date information, be sure to visit our website at calstarproducts.com.

A decorative band or water table provides an attractive architectural feature as a transition between different sizes or types of material.

## Edge Band B3500

CalStar cast stone offers a through-color formulation, offering durability and consistency over time.

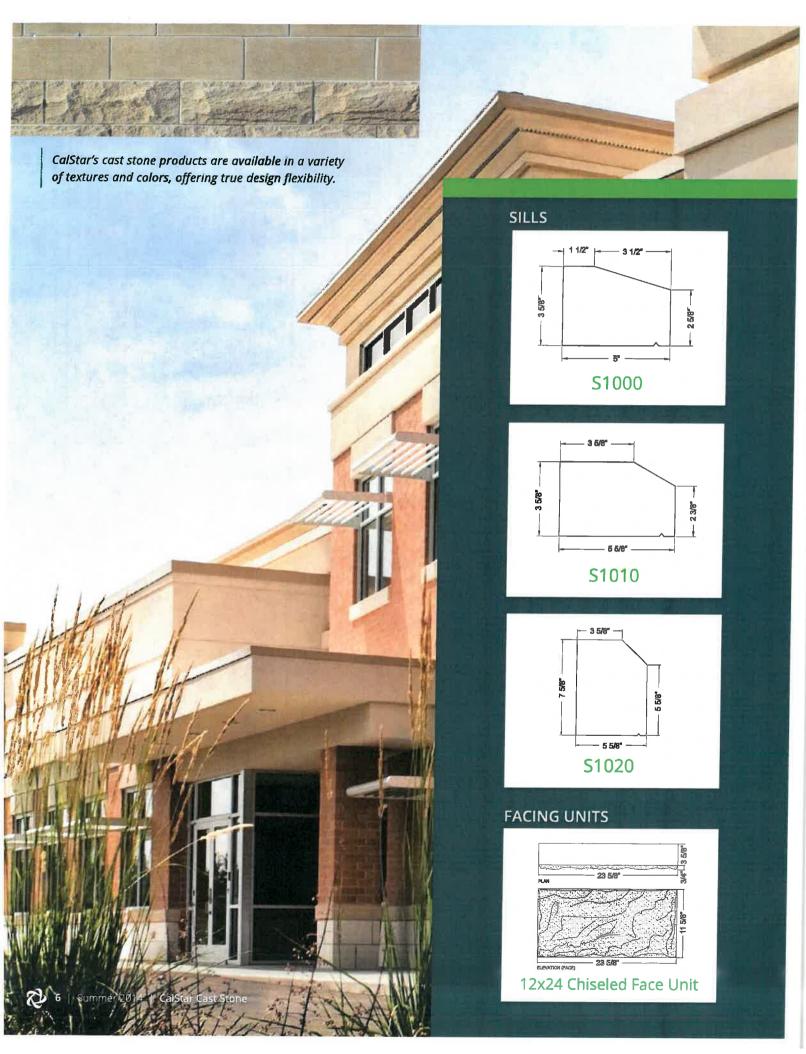




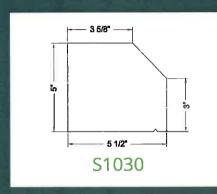


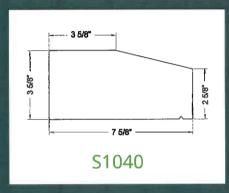
To manufacture CalStar cast stone trim and accent pieces, we use our innovative technology together with molds cast from natural stone. This enables us to offer the texture and beauty of limestone, while providing the sustainable benefits of CalStar's products.

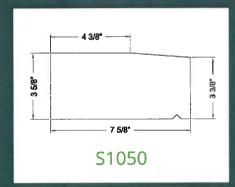


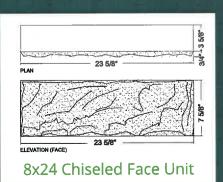


# low-energy and low-carbon





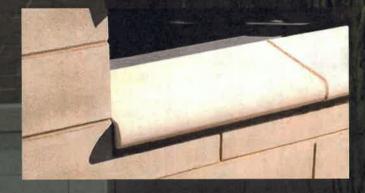




Combining CalStar brick units with our cast stone products offers an excellent combination of design flexibility and performance. Our products are engineered to work flawlessly together.

Unlike competitive products, CalStar's cast stone may be used at or below grade.

Our cast stone products are easy to install and provide significant savings—both time and money—on the jobsite.



## PFS PREMIUM FIBERED STUCCO

888.702.9915 www.totalwall.com

Concentrate Premium Fibered Stucco

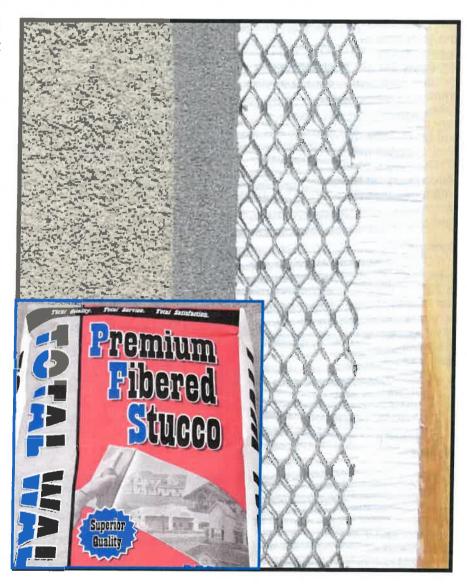
AMERICA'S EIFS AND STUCCO COMPANY!

TOTAL WALL Premium Fibered Stucco Concentrate is a dry mix containing Portland cement, chopped strand fiberglass reinforcement, micro-fibers for added strength and crack resistance, graded aggregates, and specialty modifiers designed to enhance workability and cure.

TOTAL WALL Premium Fibered Stucco Concentrate requires sand to be added in addition to water.

TOTAL WALL Premium Fibered Stucco Concentrate:

- Can be used as standard stucco or as one-coat, hi-lift stucco.
- Is available in 50# bags in standard gray or in a white finish grade without the larger fibers.
- May be top-coated with TOTAL WALL Premium Fibered Stucco White Finish (Tintable), T-Wall Lastic Elastomeric Coating, or any TOTAL WALL Synthetic Textured Finish Coat.



## Features.

- Standard, One-Coat or Hi-Lift
- High Impact Resistance
- Extremely High Impact Resistance
- O Fireproof and Mildew Resistant
- O Pre-Sanded, Just Add Water

## Coverage

**Estimated Coverage Per 50 LB Bag Of Mix:** 

55-65 square feet at 1/4"

35-40 square feet at 3/8"

25-30 square feet at 1/2"

20-25 square feet at 5/8"

18-20 square feet at 3/4"

15-18 square feet at 7/8"

## TOTAL WAR

product data

**Description Mixing Instructions** 

Add up to 120 punds of clean silica sand per 50 pound bag of Total Wall Premium Fibered Stucco Concentrate. Add approximately 2-3/4 gallons of clean water per batch (50-pound bag of TOTAL. WALL Premium Fibered Stucco and 10 punds of sand). Use lowspeed mixing. After initial mixing, allow the mix to stand for 2-5 minutes then remix, adding a small amount of water to adjust workability if necessary. Mix pot-life will vary depending on temperature and batch size. An average pot-life of 40 minutes can be anticipated. TOTAL WALL Premium Fibered Stucco may be re-tempered one time if mix becomes too stiff. Final consistency should be a creamy light and easily trowelable mixture.

**Options** 

- 1. TOTAL WALL Liquid acrylic Additive may be used to replace up to 20% of the mix water during job site mixing. TOTAL WALL Liquid acrylic Additive will improve the physical strength characteristics of the product and reduce the incidence of cracking.
- 2. TOTAL WALL Tinted-Liquid Acrylic Additive may be added to TOTAL WALL Premium Fibered Stucco White Finish to achieve a limited range of pastel colors at the job site.
- 3. TOTAL WALL Synthetic Finishes or T-Wall Lastic may be used for an attractive and durable finish coating. TOTAL WALL Synthetic Finishes and T-Wall Lastic are available in several textures and unlimited colors.

**Application** 

TOTAL WALL Premium Fibered Stucco may be applied directly to sound raw masonry without the use of netting or lath or other reinforcement. If desired or specified, a T-Wall Bonding Agent may be applied to the substrate prior to application. If application is over painted masonry, mechanically fastened lath reinforcement plus joint and trim accessories are required. For wood or gypsum-based sheathing, a moisture barrier is required as the first layer over the

sheathing followed by mechanically fastened lath reinforcement with joint and trim accessories. All lathing must be galvanized and self-furring. Trim accessories must be galvanized, solid zinc or custom PVC components. Apply TOTAL WALL Premium Fibered Stucco using a trowel in one or more passes or lifts to achieve the prescribed thickness. When useful, employ tools such as a darby or slicker to assist in leveling the coating. If TOTAL WALL Liquid Acrylic Additive or Acrylic Tint has been added to the mix, do not moist cure the coating as the acrylic assists in the proper cure process. Coating thickness may range from a minimum of 1/4" and a maximum of 1 1/2". TOTAL WALL Premium Fibered Stucco Finish Coat may be applied once the combination brown and scratch coat base is firm and dry. TOTAL WALL Synthetic Finish may be applied within 18 hours. It is advisable to allow the TOTAL WALL Premium Fibered Stucco to cure at least 48 hours before applying T-Wall Lastic Coating.

Handling and Storage

Do not apply to frozen or saturated surfaces. Do not apply if precipitation is forecast within 8 hours of application. Do not apply if the temperature cannot be maintained above 40F for 24 hours. Shelf life in unopened bags is 12-18 months when stored in dry conditions. Store under cover.

#### Maintenance

If damage occurs to an installed system, please contact Total Wall for information on repair.

#### **Precautions**

This product is a Portland cement based material. Do not ingest. Avoid contact with skin and eyes. In case of contact with product or mix, flush with water. For contact with eyes, get immediate medical attention in addition to flushing. Wear safety glasses and protective clothing. Keep out of reach of children and pets.eyes, get immediate medical attention in addition to flushing. Wear safety glasses and protective clothing.

#### Limitations

Apply in accordance with standard lath and plastering practices. Do not apply to frozen walls or in temperatures below freezing. Use only clean potable mix water. When possible, schedule work to avoid application in direct sun. Moist curing of product is acceptable unless TOTAL WALL Liquid acrylic Additive has been added.



## Technical Data.

Meets ASTM C595 specifications for Blended Hydraulic Cement

Chemistry - Portland cement meets standard ASTM C150

Aggregates - meet standards ASTM C33 ASTM C144 and ASTM C

**Aggregates** - meet standards ASTM C33, ASTM C144 and ASTM C778 **Hydration Control** - balanced lime blend meets standard ASTM C207

**Modifiers** - specialty hydrating agents and wetting agents

Reinforcement - natural mineral fibers plus chopped strand fiberglass

**Appearance**: Dry, gray powder

**pH (wet):** Approx. 10.5

Density (wet): 1.6-1.8 grams/cc

**Chemistry:** Portland cement

888.702.9915 Phone 888.702.9916 Fax www.totalwall.com





## SUPERPAINT®

**Exterior Latex** A80-1100 Series

As of 06/30/2015, Complies with:					
OTC	Yes	LEED® 09 CI	N/A		
SCAQMD	Yes	LEED® 09 NC	N/A		
CARB	Yes	LEED® 09 CS	N/A		
CARB SCM 2007	Yes	LEED® H	N/A		
MPI		NGBS	_N/A		

### **CHARACTERISTICS**

SuperPaint Exterior Latex Flat, improved resistance to early dirt pick up, provides outstanding performance properly prepared aluminum and vinyl siding, wood, hardboard, masonry, cement, brick, block, stucco, and metal down to a surface and air temperature of 35°F.

VinylSafe™ Color Technology allows the use of many darker colors on vinvi siding that cannot be made in most other coatings.

Most colors To optimize hide and color development, always use the recommended P-Shade primer

350 - 400 sq ft/qal Coverage: @ 4 mils wet; 1.4 mils dry

Drying Time, @ 50% RH:

@ 35-45°F @ 45°F+ Touch: 2 hour 2 hours 24-48 hours Recoat: 4 hours Drying and recoat times are temperature, humidity,

and film thickness dependent Flash Point: N/A

Finish: 0-5 units @ 85° Tinting with CCE:

Base oz/gai Strength Extra White 0-5 100% Deep Base 4-12 100% Ultradeep Base 100% 4-12 Light Yellow 4-12 100% Vehicle Type: Acrylic

Extra White A80W01151 VOC (less exempt solvents):

<50 g/L; <0.42 lb/gal As per 40 CFR 59.406 and SOR/2009-264, s.12

Volume Solids:  $36 \pm 2\%$ Weight Solids:  $53 \pm 2\%$ Weight per Gallon: 11.38 lb WVP Perms (US) 30.1 grains/(hr ft² in Hg)

#### Mildew Resistant

This coating contains agents which inhibit the growth of mildew on the surface of this coating film.

## **SPECIFICATIONS**

SuperPaint Exterior Latex Flat can be selfpriming when used directly over existing coatings, or bare drywall, plaster and masonry (with a cured pH of less than 8). The first coat acts like a coat of primer and the second coat provides the final appearance and performance. Please note that some specific surfaces require specialized treatment.

Siding1. Aluminum & Aluminum Galvanized Steel<sup>1</sup>, Vlnyl Siding 2 cts. SuperPaint Exterior Latex

Concrete Block, CMU, Split Face Block 1 ct. Loxon Block Surfacer

2 cts. SuperPaint Exterior Latex

Brick 1 ct. Loxon Conditioner<sup>2</sup>

2 cts. SuperPaint Exterior Latex **Cement Composition Siding/Panels** 

1 ct. Loxon Concrete & Masonry Primer<sup>2</sup>

Loxon Conditioner<sup>2</sup> 2 cts. SuperPaint Exterior Latex

Stucco, Cement, Concrete

1 ct. Loxon Concrete & Masonry Primer<sup>2</sup>

2 cts. SuperPaint Exterior Latex

Plywood

1 ct. Exterior Latex Wood Primer

2 cts. SuperPaint Exterior Latex

Wood (Cedar, Redwood)3

1 ct. Exterior Oil-Based Wood Primer<sup>2</sup>

2 cts. SuperPaint Exterior Latex

On large expanses of metal siding, the air, surface. and material temperatures must be 50°F or higher. Not for use at temperatures under 50°F. See

specific primer label for that product's application conditions.

Knots and some woods, such as redwood and cedar, contain a high amount of tannin, a colored wood extract. For best results on these woods, use a coat of Exterior Oil-Based Wood Primer.

Other primers may be appropriate. Standard latex primers cannot be used below 50°F. See specific primer label for that product's application conditions.

When repainting involves a drastic color change, a coat of primer will improve the hiding performance of the topcoat color.

## SURFACE PREPARATION

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 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.

Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Scrape and sand peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc. with the appropriate primer/ sealer.

#### **Aluminum and Galvanized Steel**

Wash to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, wire brush, or other abrading method.

Cement Composition Siding/Panels

Remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. If the surface is new, test it for pH, if the pH is higher than 8. prime with Loxon Concrete & Masonry Primer.



## SUPERPAINT®

**Exterior Latex** A80-1100 Series

#### **SURFACE PREPARATION**

#### Masonry, Concrete, Cement, Block

All new surfaces must be cured according to the supplier's recommendations usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Concrete & Masonry Primer. Cracks, voids, and other holes should be repaired with an elastomeric patch or sealant.

#### Steel

Rust and mill scale must be removed using sandpaper, wire brush, or other abrading method. Bare steel must be primed the same day as cleaned.

#### Stucco

Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 7 days and prime with Loxon Concrete & Masonry Primer. Repair cracks, voids, and other holes with an elastomeric patch or sealant.

### Vinvl

Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

#### Wood, Plywood, Composition Board

Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

#### Caulking

Gaps between windows, doors, trim, and other through-wall openings can be filled with the appropriate caulk after priming the surface.

#### SURFACE PREPARATION

#### Mildew

Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, 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.

### APPLICATION

When the air temperature is at 35°F, substrates may be colder, prior to painting, check to be sure the air. surface, and material temperature are above 35°F and at least 5°F above the dew point. Avoid using if rain or snow is expected within 2-3 hours.

Do not apply at air or surface temperatures below 35°F or when air or surface temperatures may drop below 35°F within 48 hours.

No reduction necessary.

#### Brush

Use a nylon/polyester brush. Roller

Use a 3/8" - 3/4" nap synthetic cover. Spray—Airless

#### **CLEANUP INFORMATION**

Clean spills, spatters, hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with a compliant cleanup solvent to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using solvents.

#### **CAUTIONS**

For exterior use only. Protect from freezing. Non-photochemically reactive. Not for use on floors.

CAUTION contains CRYSTALLINE SILICA and ZINC. Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH approved). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.

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The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative or visit www.paintdocs.com to obtain the most current version of the PDS and/or an SDS.



For Gray Stucco Facades

SW 2821 Downing Stone



#### **Color Details**

Color Family: Historic Colors RGB Value: R-166 | G-163 | B-151 Hexadecimal Value: #A6A397

LRV: 36

Due to individual computer monitor limitations, colors seen here may not accurately reflect the selected color. To confirm your color choices, visit your neighborhood Sherwin-Williams store and refer to our in-store color cards.

#### STORE NEAR YOU

491 FACTORY ST Watertown, NY 13601-2765 (315) 788-3130 NOTES:

#### **FAVORITE STORE**

491 FACTORY ST Watertown, NY 13601-2765 (315) 788-3130

We can also be reached by phone at: 1-800-4-SHERWIN (1-800-474-3794)





SW 7540 Artisan Tan

For Tan Stucco **Facades** 











#### **Color Details**

Color Family: Timeless Colors RGB Value: R-176 | G-152 | B-121 Hexadecimal Value: #B09879

LRV: 33

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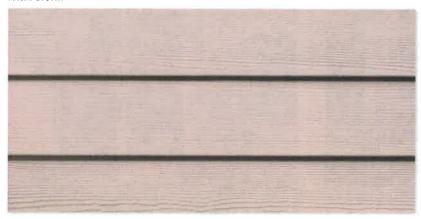
HardiePlank® Lap Siding

HardiePanel® Vertical Siding

HardieShingle® Siding

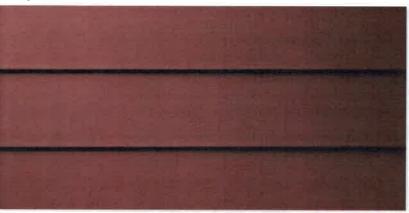
## **SELECT CEDARMILL°**

Khaki Brown



### **SMOOTH**

Countrylane Red



## **BEADED CEDARMILL°**

Light Mist



## **BEADED SMOOTH**



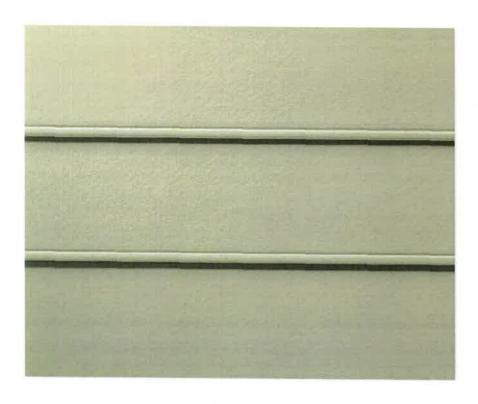
Products are available primed or with ColorPlus Technology finishes. For more details, visit jameshardie.com



HardiePlank<sup>®</sup> Lap Siding

HardiePanel® Vertical Siding

HardieShingle® Siding



### **BEADED SMOOTH\***

Heathered Moss

Thickness 5/16 in.
Length 12 ft. planks
Width 8.25 in.
Exposure 7 in.
ColorPlus Pcs./Pallet 210
Prime Pcs./Pallet 240
Pcs./Su 14.3

Available Colors



View all HardiePlank Lap Siding Products

\*Seaded Smooth not aviolable primed in Pittsburgh, Philadelphia and New England.





## HardieTrim® Batten Boards



### 5/4 NT3° SM00TH

Arctic White

Length

Thickness 1 in.

12 ft. boards

 Width
 3.5 in.
 4.5 in.
 5.5 in.
 7.25 in.
 11.25 in.

 Pcs./Pallet
 240
 200
 160
 120
 80

#### Available Colors



View all HardieTrim Boards



Plank, Panel, Batten and Shingle Colors

### **Trim and Soffit Colors**

## Color **Selection**

Explore our color palettes and differentiate your homes with stunning curb appeal. These distinctive tones are drawn from natural environments, complementing your design with the look of America's idyllic neighborhoods.













**NAVAJO BEIGE** 

**COBBLE STONE** 

SOFT GREEN

LIGHT MIST

**BOOTHBAY BLUE** 











SAIL CLOTH

**SANDSTONE BEIGE** 

**MONTEREY TAUPE** 

**HEATHERED MOSS** 

EVENING BLUE

TUSCAN GOLD















**WOODLAND CREAM** 

**AUTUMN TAN** 

**WOODSTOCK BROWN** 

MOUNTAIN SAGE

IRON GRAY

**CHESTNUT BROWN** 

Selecting a color? Request a product sample at jameshardie.com/samples













**COUNTRYLANE RED** 

**KHAKI BROWN** 

**TIMBER BARK** 



Plank, Panel, Batten and Shingle Colors

## Trim and Soffit Colors

## **Express the** true nature of a home's character with ColorPlus® **Technology**











**NAVAJO BEIGE** 

SAIL CLOTH

**SANDSTONE BEIGE** 











MONTEREY TAUPE

**AUTUMN TAN** 

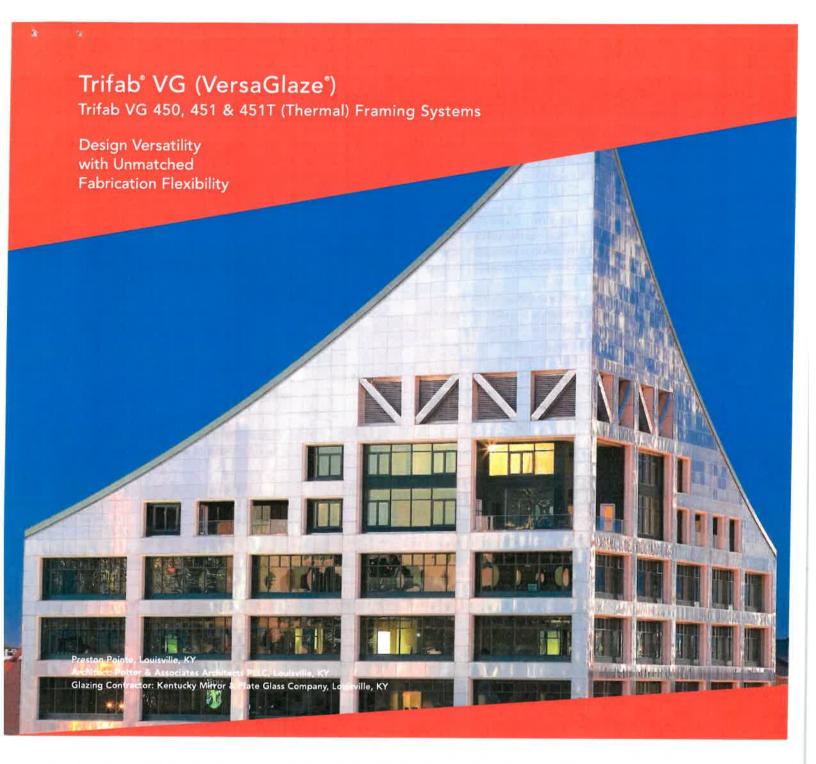
**WOODSTOCK BROWN** 

**KHAKI BROWN** 

**TIMBER BARK** 

Selecting a color? Request a product sample at jameshardie.com/samples





Trifab\* VG (VersaGlaze) is built on the proven and successful Trifab platform – with all the versatility its name implies. Trifab set the standard and Trifab\* VG improves upon it. There are enough fabrication, design and performance choices to please the most discerning building owner, architect and installer. Plus the confidence a tried and true framing system instills. Select from four glazing applications, four fabrication methods and multiple infill choices. Consider thermal options and performance, SSG and Weatherseal alternatives and your project takes an almost custom shape whether your architecture is traditional or modern and the building is new or retrofitted.

#### **Aesthetics**

Trifab® 450 has 1-3/4" sight lines and both Trifab® 451 and Trifab® 451T have 2" sight lines, while all three have a 4-1/2" frame depth. Designers can not only choose front, center or back glass planes, they can now add the versatility of multi-plane glass applications, thus allowing a greater range of design possibilities for specific project requirements and architectural styles. Structural Silicone Glazing (SSG) and Weatherseal options further expand the designer's choices.



Trifab® VG can be used on almost any project due to virtually seamless incorporation of Kawneer entrances, Sealair® windows or GLASSvent™ for visually frameless ventilators. These framing systems can also be packaged with Kawneer curtain walls and overhead glazing, thereby providing owner, architect and installer with proven, tested and quality products from a single source supplier.

#### **Economy**

Trifab® VG offers four fabrication choices to suit your project:

- Screw Spline for economical continuous runs utilizing two piece vertical members. Provides the option to pre-assemble units with controlled shop labor costs and smaller field crews for handling and installation.
- Shear Block for punched openings or continuous runs using tubular moldings. Provides the option to pre-assemble multi-lite units using shear block clips under controlled shop labor conditions. Clips provide tight joints for transporting large units.
   Less field time is necessary to fill large openings.
- Stick for fast, easy field fabrication. Field measurements and material cuts can be done when metal is on the job.
- Type B for multi-lite punched openings. Provide option for pre-assembled units for installation into single openings and controlled shop labor costs. Head and sill running through provide fewer joints and require less time to fill large openings.



Brighton Landing, Cambridge, MA Architects: ADD Inc., Cambridge, MA Glazing Contractors: Ipswich Bay Glass Company,Inc., Rowley, MA

Trifab® VG 450, 451 and 451T can be flush glazed from either the inside or outside. The Weatherseal option provides an alternative to the structural silicone glazed vertical mullions. ABS/ASA rigid polymer extrusion allows complete inside glazing and creates a flush glass appearance on building exterior, without the added labor of scaffolding or swing stages. Optional patented HP Flashing™ and HP Interlock

clip are engineered to eliminate the perimeter sill fasteners and their associated blind seals and are compatible with all glass planes.

#### **Performance**

Kawneer's IsoLock™ Thermal Break option is available on Trifab® VG 451T. This process creates a composite section and prevents dry shrinkage.

U-factor, CRF values and STC ratings for Trifab® VG vary depending upon the glass plane application. Project specific U-factors can now be determined for each individual project. (See Kawneer Architectural Manual or Website for additional information)

#### Performance Test Standards

Air Performance	ASTM E 283
Water	AAMA 501 and ASTM E 331
Structural	ASTM E 330
Thermal	AAMA 1503
Thermal Break	AAMA 505 and AAMA TIR-A8
Acoustical	AAMA 1801 and ASTM E 1425





#### **Finishes**

Permadonic Anodized finishes are available in Class I and Class II in seven different colors.

Painted Finishes, including fluoropolymer that meet or exceed AAMA 2605, are offered in many standard choices and an unlimited number of specially-designed colors.

Solvent-free powder coatings add the "green" element with high performance, durability and scratch resistance that meet the standards of AAMA 2604.

Kawneer Company, Inc. Technology Park / Atlanta 555 Guthridge Court Norcross, GA 30092 kawneer.com 770 . 449 . 5555



FC 97911-43 **FEATURES** 

### **Features**

- Trifab® VG 451/451T is 4-1/2" deep with a 2" sightline
- Front, Center, Back or Multi-Plane glass applications
- Flush glazed from either the inside or outside
- Screw Spline, Shear Block, Stick or Type-B fabrication
- SSG / Weatherseal option
- Isolock® lanced and debridged thermal break option with Trifab® VG 451T
- Infill options up to 1-1/8" thickness
- Permanodic® anodized finishes in 7 choices
- Painted finishes in standard and custom choices

## **Optional Features**

- High performance interlocking flashing
- Acoustical rating per AAMA 1801 and ASTM E 1425
- Project specific U-factors (See Thermal Charts)

## **Product Applications**

- Storefront, Ribbon Window or Punched Openings
- Single-span
- Integrated entrance framing allowing Kawneer standard entrances or other specialty entrances to be incorporated
- Kawneer Sealair® windows or GLASSvent® are easily incorporated

For specific product applications, Consult your Kawneer representative.



Laws and bullding and safety codes governing the design and use of glazed entrance, whidow, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

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LAWS AND BUILDING AND SAFETY CODES GOVERNING THE DESIGN AND USE OF GLAZED ENTRANCE, WINDOW, AND CURTAIN WALL PRODUCTS VARY WIDELY. KAWNEER DOES NOT CONTROL THE SELECTION OF PRODUCT CONFIGURATIONS, OPERATING HARDWARE, OR GLAZING MATERIALS, AND ASSUMES NO RESPONSIBILITY THEREFOR.

Metric (SI) conversion figures are included throughout these details for reference. Numbers in parentheses ( ) are millimeters unless otherwise noted.

The following metric (SI) units are found in these details:

m - meter

cm - centimeter

mm - millimeter

s - second

Pa - pascal

MPa - megapascal

Kawneer reserves the right to change configurations without prior notice when deemed necessary for product improvement.



DETAILS

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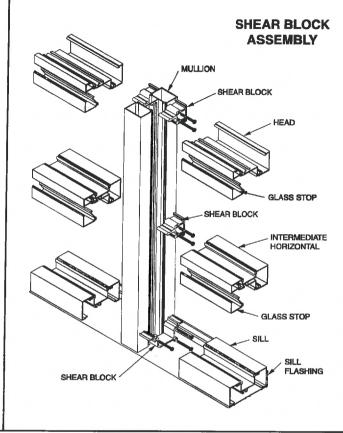
PICTORIAL VIEW (CENTER)

**DETAILS** 

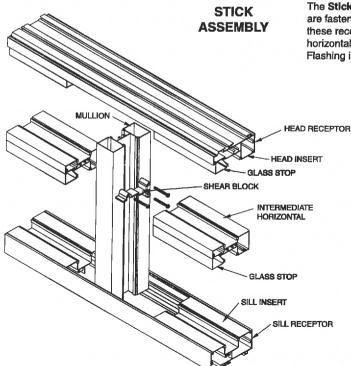
The split vertical in the Screw Spline system allows a frame to be installed from unitized assemblies. Screws are driven through the back of the verticals into splines extruded in the horizontal framing members. The Individual units are then snapped together to form a complete frame.

**SCREW SPLINE ASSEMBLY** MULLION SNAP-IN FILLER SPLINE SCREWS HEAD GLASS STOP INTERMEDIATE HORIZONTAL GLASS STOP SILL FI ASHING

The Shear Block system of fabrication allows a frame to be preassembled as a single unit. Horizontals are attached to the verticals with shear blocks.



The Stick system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.



#### NOTE:

If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified windload (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 14)

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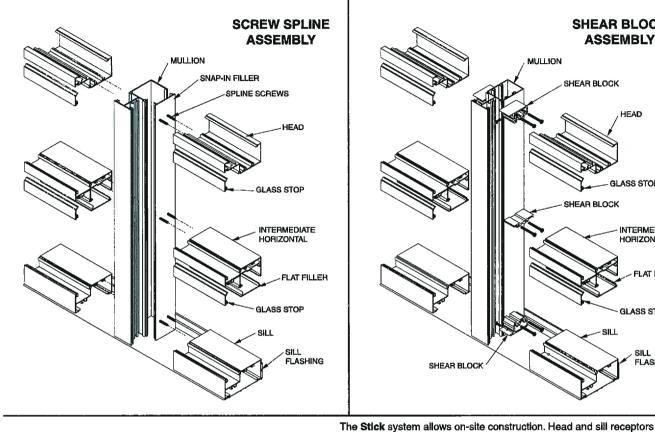
Laws and building and safety codes governing the design and use of glazed entrance, window, and outfail wall products vary widely. Kawneer close not call eslection of product configurations, operating hardware, or glazing matert and assumes no responsibility therefor.

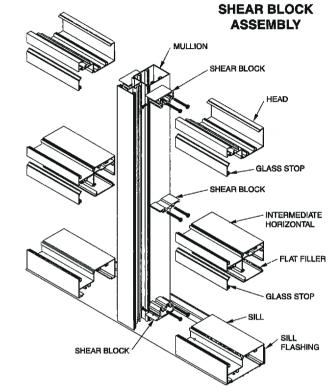
PICTORIAL VIEW (FRONT)

EC 97911-43

The split vertical in the Screw Spline system allows a frame to be installed from unitized assemblies. Screws are driven through the back of the verticals into splines extruded in the horizontal framing members. The Individual units are then snapped together to form a complete frame.

The Shear Block system of fabrication allows a frame to be preassembled as a single unit. Horizontals are attached to the verticals with shear blocks.





are fastened to the surround. Vertical mullions are then installed in STICK these receptors and are held in place by snap-in inserts. Intermediate **ASSEMBLY** horizontal members are attached to the verticals with shear blocks. Flashing is not required. HEAD RECEPTOR MULLION

GLASS STOP

GLASS STOP

SILL INSERT

SHEAR BLOCK

HEAD INSERT

INTERMEDIATE

RECEPTOR

HORIZONTAL



If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified windload (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 36)

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

codes governing the design and use of glazed is wall products vary widely. Kawneer does not control jurations, operating hardware, or glazing materials, therefor.



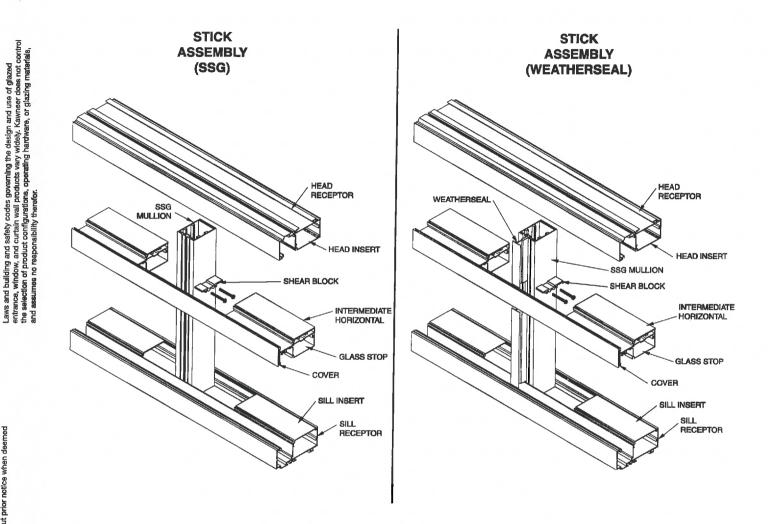
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PICTORIAL VIEW (FRONT)

DETAILS

The Stick system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.



#### NOTE:

If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified windload (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 36)

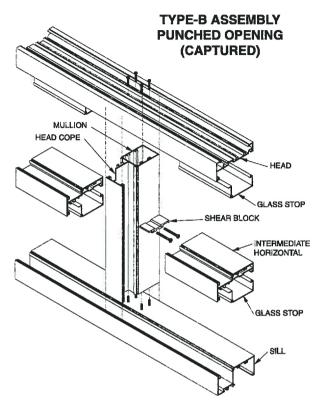


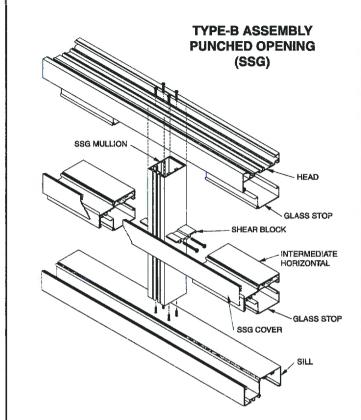
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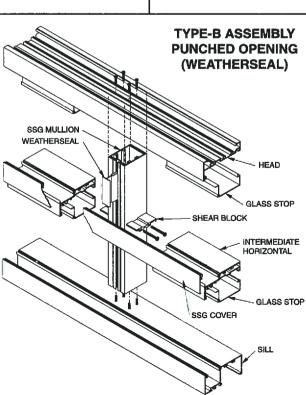
PICTORIAL VIEW (FRONT)

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The **TYPE-B** punched opening fabrication allows a frame to be pre-assembled and installed as a single unit. Screws are driven through the back of the head and sill members into splines extruded in the vertical framing members. Intermediate horizontals are attached to the verticals with shear blocks.







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The Shear Block system of fabrication allows a frame to be pre-

assembled as a single unit. Horizontals are attached to the verticals with

PICTORIAL VIEW (BACK)

**DETAILS** 

The split vertical in the Screw Spline system allows a frame to be installed from unitized assemblies. Screws are driven through the back of the verticals into splines extruded in the horizontal framing members.

The Individual units are then snapped together to form a complete frame.

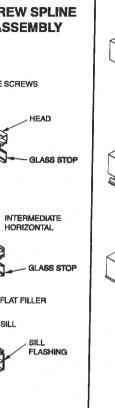
MULLION

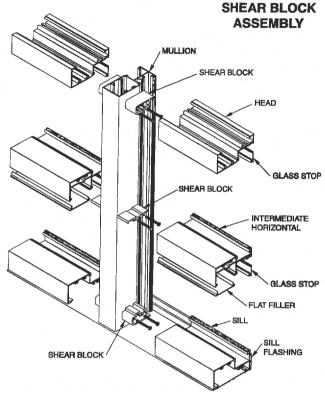
FLAT FILLER

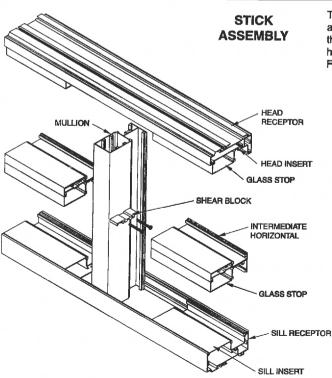
SPLINE SCREWS

**SCREW SPLINE ASSEMBLY** 

shear blocks.







The Stick system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.

If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified windload (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used.

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INDEX (CENTER)

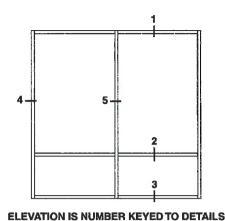
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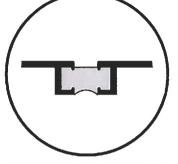
**DETAILS** 

BASIC FRAMING DETAILS (CENTER - Outside Glazed)

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SCALE 3" = 1'-0"



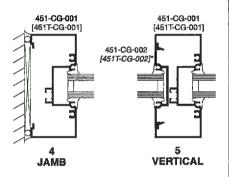


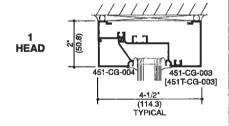
**NUMBERS IN BRACKETS ARE** THERMALLY BROKEN MEMBERS

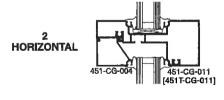
\*Note: See Misc. Details for Thermal Pocket Filler and Thermal Flashing.

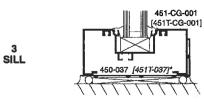
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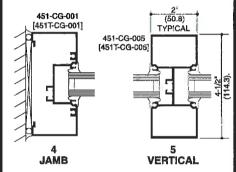


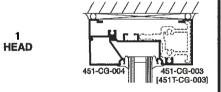


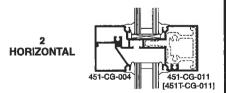
\*See Page 14 for Thermal Flashing and Optional High Performance Flashing

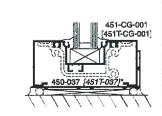
### SHEAR BLOCK

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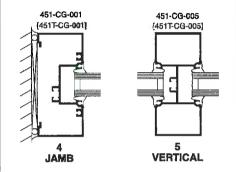


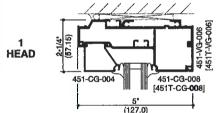
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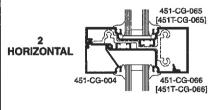
3 SILL

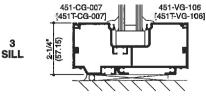
## **STICK**

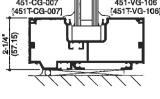
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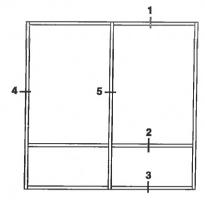
BASIC FRAMING DETAILS (CENTER - Inside Glazed)

**DETAILS** 

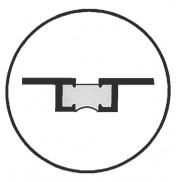
SCALE 3" = 1'-0"

\*Note: See Misc. Details for Thermal Pocket Filler

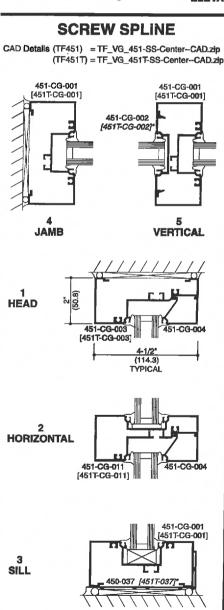
and Thermal Flashing.



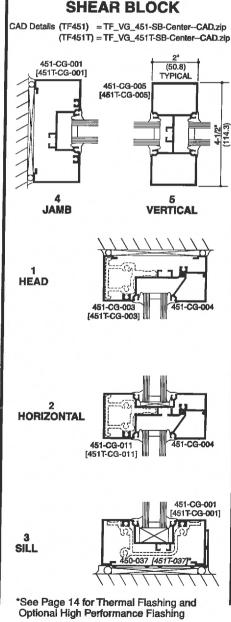
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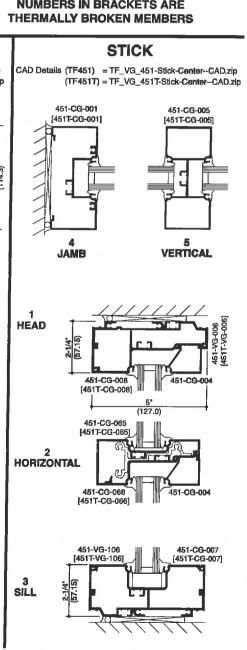


**NUMBERS IN BRACKETS ARE** 



\*See Page 14 for Thermal Flashing and Optional High Performance Flashing

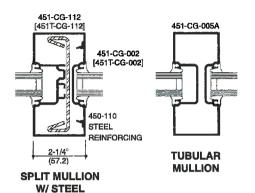




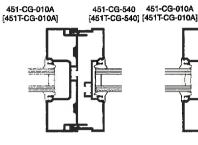


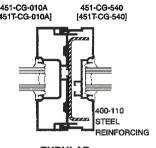
#### **SCALE 3" = 1'-0"**

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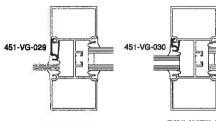




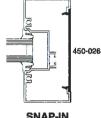


**TUBULAR EXPANSION MULLION** 

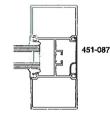
**TUBULAR EXPANSION MULLION** WITH OPTIONAL STEEL



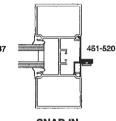




SNAP-IN THERMAL **FLAT FILLER FLAT FILLER** 

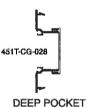


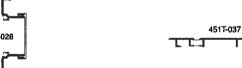
SNAP-IN **FLAT POCKET FILLER** 



SNAP-IN **DOOR STOP** 









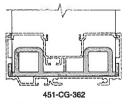
451T-026

THERMAL FLASHING

HIGH PERFORMANCE **FLASHING** 

CLIP

#### THERMAL POCKET FILLERS

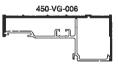


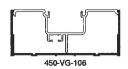


#### NOTE:

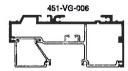
If the end reaction of the mullion (mullion spacing (ft.) times height (ft) times specified windload (psf), divided by two) is more than 500 LBS., the optional mullion anchor must be used. Consult Application Engineering.

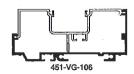
Mullion Anchor not used with Lightwieght Receptor.





**OPTIONAL LIGHTWEIGHT CAN RECEPTORS** 





**OPTIONAL UNEQUAL LEG CAN RECEPTORS** 

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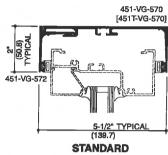
EC 97911-43

MISCELLANEOUS FRAMING (CENTER)

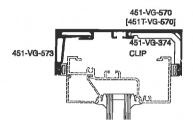
**DETAILS** 

### SCALE 3" = 1'-0"

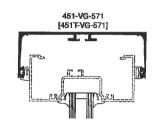
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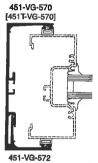
HEAD
COMPENSATING RECEPTOR



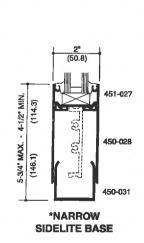
HEAVY WEIGHT
HEAD
COMPENSATING RECEPTOR

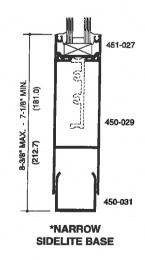


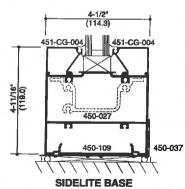
ONE PIECE HEAD COMPENSATING RECEPTOR

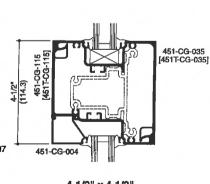


JAMB
COMPENSATING RECEPTOR









4-1/2" x 4-1/2" HORIZONTAL

#### SIDELITE BASES ARE NON-THERMAL APPLICATIONS

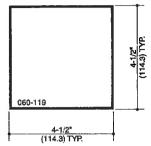
\*NARROW SIDELITE BASES REQUIRE THE USE OF NON-THERMAL 2-PIECE VERTICALS ONLY.

NOTE: SIDELITE BASES SHOWN ARE FOR USE WITH SCREW SPLINE AND SHEAR BLOCK SYSTEMS ONLY.

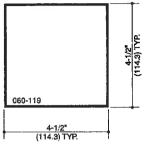
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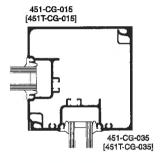
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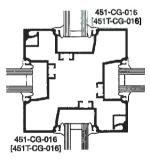


4-1/2" X 4-1/2" TUBE

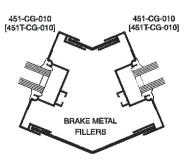




TWO POCKET 90° CORNER



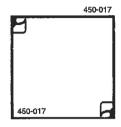
**FOUR POCKET** 90° CORNER



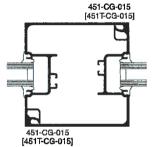
**VARIABLE DEGREE BRAKE METAL CORNER** 

#### CAD Details - SHEAR BLOCK

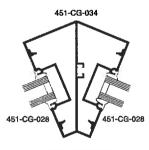
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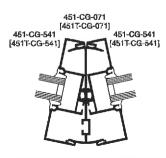
**TWO PIECE** NO POCKET CORNER



**TWO POCKET CORNER POST** 



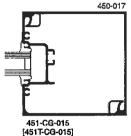
135° CORNER (NON-THERMAL)



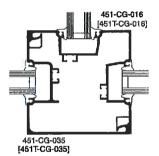
155° TO 180° PIVOT MULLION (OUTSIDE CORNER)

#### CAD Details - STICK

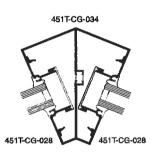
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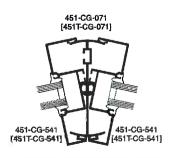
**ONE POCKET** CORNER



THREE POCKET 90° CORNER



135° CORNER (THERMAL)



155° TO 180° PIVOT MULLION (INSIDE CORNER)

Kawneer raserves the right to change configuration without prior notice when deemed necessary for product improvement.

Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control that selection of product conflaguations, operating hardware, or glazing materials, and assumas no responsibility therefor.

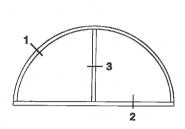
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EC 97911-43

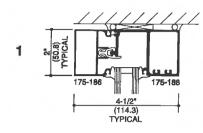
**CURVING & TRIM DETAILS** 

DETAILS

## SCALE 3" = 1'-0"

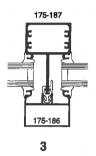


**CURVING DETAILS** (Center Plane Only)



2

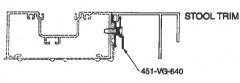
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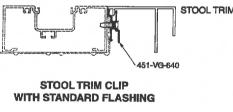


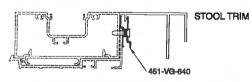
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CAD Details - SHEAR BLOCK (TF451) = TF\_VG\_451-SB-Center--CAD.zip (TF451T) = TF\_VG\_451T-SB-Center--CAD.zip

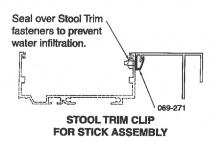
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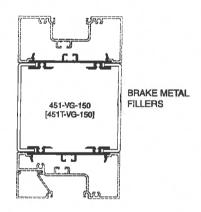




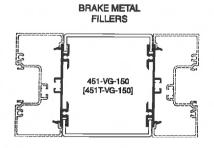


STOOL TRIM CLIP WITH HIGH PERFORMANCE **FLASHING** 





**BRAKE METAL ADAPTOR AT HORIZONTAL** 



**BRAKE METAL ADAPTOR AT VERTICAL** 



**ENTRANCE FRAMING (CENTER)** 

EC 97911-43

SCALE 3" = 1'-0"

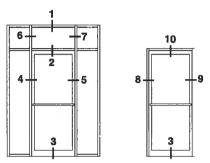
CAD Details - ENTRANCE

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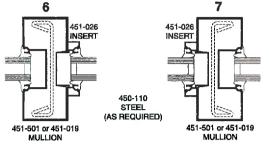
### TRIFAB® VG 451 FRAMING INCORPORATING KAWNEER® "190" DOORS. DOOR FRAMING NON-THERMAL ONLY

NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM.

SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

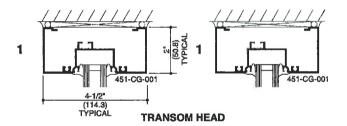


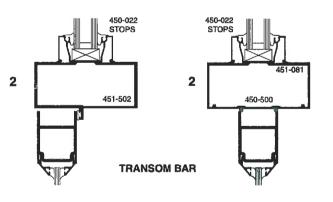
**ELEVATIONS ARE NUMBER KEYED TO DETAILS** 

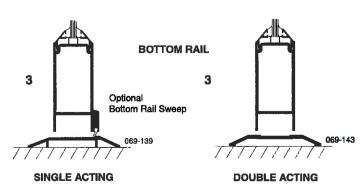


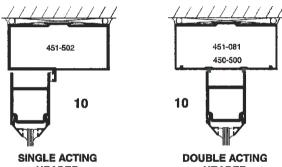
#### **TRANSOM JAMBS**

Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert with or without steel reinforcing.

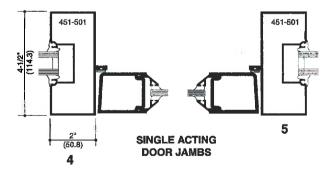


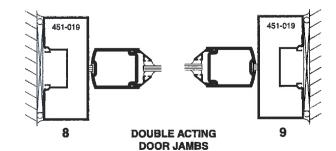






**HEADER HEADER** 





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**CAD Details - ENTRANCE** 

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EC 97911-43

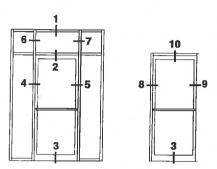
SCALE 3" = 1'-0"

ENTRANCE FRAMING (CENTER - Open Back)

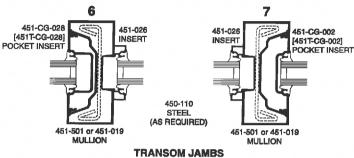
DETAILS

## TRIFAB® VG 451 FRAMING INCORPORATING KAWNEER® "190" DOORS. DOOR FRAMING NON-THERMAL ONLY

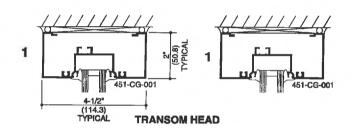
NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM. SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

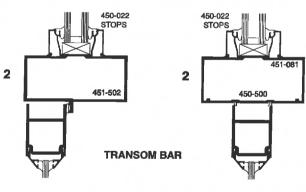


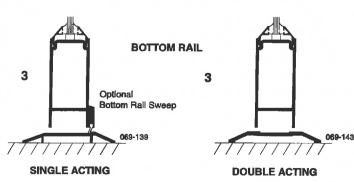
**ELEVATIONS ARE NUMBER KEYED TO DETAILS** 

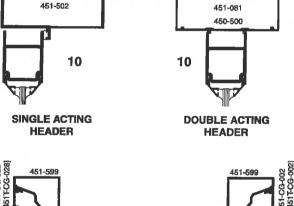


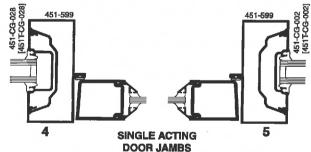
Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert with or without steel reinforcing.



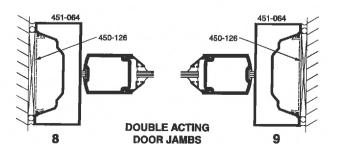








**NOTE:** Sidelite mullions must be oriented to provide at least one (1) deep vertical pocket per lite to facilitate glazing.





**DETAILS** 

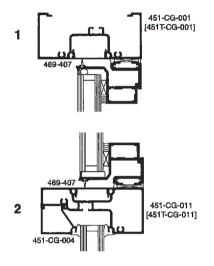
GLASSvent® (CENTER)

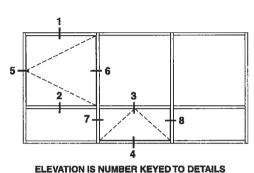
EC 97911-43

#### SCALE 3" = 1'-0"

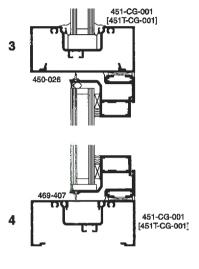
CAD Details - SCREW SPLINE (TF451) = TF\_VG\_451-SS-Center--CAD.zip (TF451T) = TF\_VG\_451T-SS-Center--CAD.zip CAD Details - SHEAR BLOCK (TF451) = TF\_VG\_451-SB-Center--CAD.zip (TF451T) = TF\_VG\_451T-SB-Center--CAD.zip CAD Details - STICK (TF451) = TF\_VG\_451-Stick-Center--CAD.zip (TF451T) = TF\_VG\_451T-Stick-Center--CAD.zip

## OUTSWING CASEMENT VERTICAL SECTION

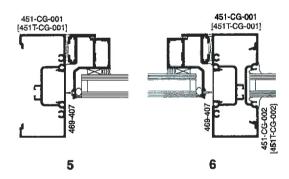




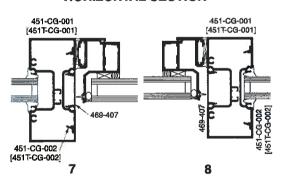
## PROJECT-OUT VERTICAL SECTION



## **OUTSWING CASEMENT**HORIZONTAL SECTION



## PROJECT-OUT HORIZONTAL SECTION



NOTE: Bronze spacer is recommended when 1" insulating glass is used.

#### **MAXIMUM / MINIMUM SIZES (1" INFILL)**

**PROJECT-OUT** 

MAXIMUM 60" x 36"

MINIMUM 14" x 14"

**OUTSWING CASEMENT** 

MAXIMUM 36" x 60"

MINIMUM 14" x 14"

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ng and safety codes governing the design and use of glazed w, and curtain wall products vary widely. Kawneer does not control product configurations, operating hardware, or glazing materials,

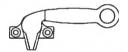
GLASSvent®(CENTER)

DETAILS

#### STOREFRONT GLASSvent® HARDWARE SELECTION GUIDE

DESCRIPTION	PROJECT - OUT	OUTSWING CASEMENT
Stainless steel 4-bar hinge	STANDARD	STANDARD
Cast white bronze cam lock	STANDARD	STANDARD
Cast white bronze cam lock with pole ring	OPTIONAL	OPTIONAL
Cast white bronze custodial lock with removable handle	OPTIONAL	OPTIONAL
Cast white bronze concealed lock with removable hex key	OPTIONAL	OPTIONAL
Cast white bronze pole/pull ring	OPTIONAL	
Pivot-shoe roto-operator	OPTIONAL	
Multi-point lock with cast white bronze locking handle		OPTIONAL
Insect screen	OPTIONAL	OPTIONAL

CAM LOCK



CAM LOCK
WITH POLE RING



**PULL RING** 



CUSTODIAL



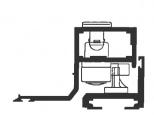
REMOVABLE HANDLE



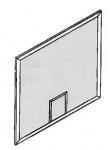
PIVOT SHOE ROTO-OPERATOR



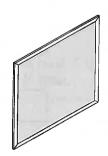
STAINLESS STEEL 4 BAR HINGES



**CONCEALED LOCK** 



INSECT SCREEN
WITH STANDARD WICKET



INSECT SCREEN WITH FULL WICKET



Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

**DETAILS** 

**VENTS (CENTER)** 

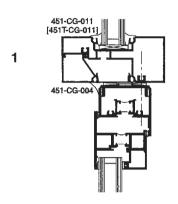
EC 97911-43

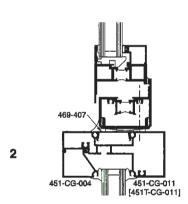
#### SCALE 3" = 1'-0"

CAD Details - SCREW SPLINE (TF451) = TF\_VG\_451-SS-Center--CAD.zip (TF451T) = TF\_VG\_451T-SS-Center--CAD.zip CAD Details - SHEAR BLOCK (TF451) = TF\_VG\_451-SB-Center--CAD.zip (TF451T) = TF\_VG\_451T-SB-Center--CAD.zip

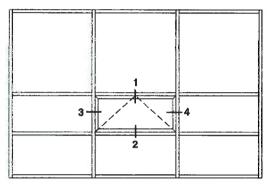
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#### **PROJECT-OUT VERTICAL SECTION**



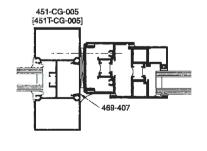


#### 8225T•L VENTS SHOWN NOTE: OTHER VENT TYPES CAN BE ACCOMMODATED, CONSULT YOUR KAWNEER REPRESENTATIVE FOR OTHER OPTIONS

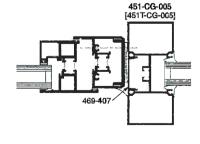


**ELEVATION IS NUMBER KEYED TO DETAILS** 

#### **PROJECT-OUT** HORIZONTAL SECTION



3



4

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# Traco TR-6800 Horizontal Sliding **Architectural Thermal Window** Clean Lines Meet Robust Thermal Performance Residences on the Avenue (Square 54) | 2200 Pennsylvania Avenue, Wash Architect: Hickok Cole Architects, Washington, D.C. & Pelli Clarke Pelli Ar eered Construction Products, Ltd., Frederick, N hy: © Marilyn Ott-Close / Progress Photo

Choose a window that is at home virtually anywhere. The simple, clean design of Traco TR-6800 Horizontal Sliding Architectural Thermal Windows blend seamlessly with a variety of architectural styles. The clean sightlines are as appealing in apartment buildings as they are in classrooms or municipal buildings. An excellent option for mixed-use construction, these windows let the true personality of any project shine through.

The sturdy, weather-resistant aluminum construction, combined with insulating glass, provides robust thermal performance. With optional internal or exterior muntins, the contemporary good looks of this window can be easily transformed to a more traditional appearance. Easy to operate and easy to maintain, Traco TR-6800 Horizontal Sliding Architectural Thermal Windows continue to perform long after installation, adding comfort and beauty to any project.



#### **Performance**

Traco TR-6800 Horizontal Sliding Architectural Thermal Windows are manufactured with long-lasting finishes and durable hardware to stand up to the effects of daily operation and seasonal weather extremes. Designed to meet current building codes and high quality standards, Traco TR-6800 windows have been tested in accordance with AAMA/WDMA/CSA 101/I.S.2 and A-440-08 designations. Adding to the performance features of this window is a weep system that ensures water drains to the exterior. Sturdy aluminum construction ensures that Traco TR-6800 windows will not rot, warp or buckle when exposed to weather or moisture.

Model	Traco TR-6800
Function	Single Horizontal Sliding
Frame Depth	3-1/4"
AAMA/WDMA/CSA 101/I.S.2/A-440-08 DESIGNATION	AW-PG50-HS
Water Resistance (psf)	10
U-Factor (per NFRC 100)	0.45

#### **Operation and Maintenance**

The simple beauty of Traco TR-6800 Horizontal Sliding Architectural Thermal Windows are carried through to their easy operation. Full-height pull handles allow comfortable, accurate sash operation from the window sill. Precision engineering allows the rolling sash to move freely, yet the window seals tightly when closed. Adjustable wheels ensure proper sash alignment for a window that always moves smoothly. For safety and security, black zinc automatic locks are standard.

After removing the anti-takeout stop, the sashs lift out virtually without effort, providing for easy maintenance and cleaning from the interior. If it is desired or necessary to change hardware, it may be replaced with standard tools.

#### Aesthetics and Versatility

With several configurations available, these versatile windows feature a 3-1/4" frame depth for an aesthetically pleasing narrower interior to exterior transition. Options for single-glazed or double-glazed windows, along with exterior or internal muntins, expand design possibilities for this architectural-grade window.

Traco TR-6800 Horizontal Sliding Architectural Thermal Windows offer several standard features, including:

- Sash: X = operating; O = fixed;
   primary = interior; secondary = exterior
- 1" insulating glass
- Adjustable wheels
- Black zinc automatic lock; XO or OX (specify choice)

For enhanced design flexibility, additional options are available for Traco TR-6800 windows, including:

- OXO (specify slide direction); XOX
- Full protection, half insect or full insect exterior screens
- Exterior or internal muntins
- Single glazing, to a maximum of 1/4"
- Dual glazing (split sash), to a maximum of 1/4"



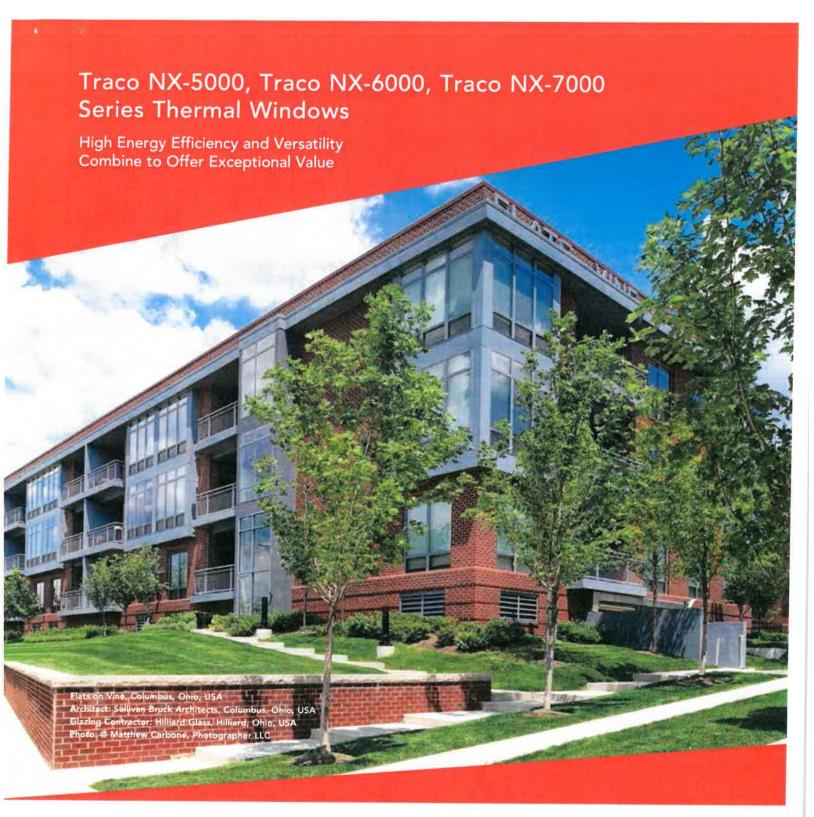
Residences on the Avenue (Square 54)
2200 Pennsylvania Avenue, Washington, D.C.
Architect: Hickok Cole Architects, Washington, D.C. & Pelli Clarke Pelli
Architects, New York, New York
Window Installer: Engineered Construction Products, Ltd., Frederick, Maryland
Photography: @ Marilyn Ott-Close / Progress Photo

Kawneer Company, Inc. 555 Guthridge Court Norcross, GA 30092 770 . 449 . 5555 TEL kawneer.com kawneergreen.com 770 . 449 . 5555









As building budgets grow increasingly tight, architects, owners and facility managers look for solutions that will lower operating costs while offering aesthetic appeal and energy efficiency. The Traco NX-5000, Traco NX-6000 and Traco NX-7000 Series Thermal Windows are a revolutionary product series for the commercial market segment designed to deliver the thermal performance and versatility required by today's demanding market.

Available in a range of configurations, the 3-1/4" deep series offers increased design flexibility and enhanced daylighting. With exceptional value and outstanding air and water performance, the Traco NX-5000, Traco NX-6000 and Traco NX-7000 Series Thermal Windows are the perfect fit for new or retrofit construction in the commercial, institutional and multi-family segments.



#### **Performance**

The Traco NX-5000, Traco NX-6000 and Traco NX-7000 Series Thermal Windows combine the longevity and structural integrity of aluminum with exceptional U-values. By incorporating the high-performance energy spacer and high-performance thermal barrier system, these windows offer outstanding energy efficiency and increased comfort for occupants.

Thermal efficiency also makes the windows ideal for buildings seeking to earn LEED®\* (Leadership in Energy and Environmental Design) certification with the U.S. Green Building Council. Made from aluminum, these high-performing windows offer unlimited finish options, installation flexibility and sustainable benefits such as recyclability. Furthermore, the window will never rot, warp or buckle due to moisture and weather exposure.

The series includes various hung and sliding configurations and has been tested in accordance with AAMA/WDMA/CSA 101/I.S.2 and A-440-08 designations.

MODEL	FUNCTION	AAMA/WDMA/ CSA 101/I.S.2 A-440-08 DESIGNATION	WATER RESISTANCE	UNIFORM LOAD STRUCTURAL	U-FACTOR (PER NFRC 100)
TRACO NX-5000	DOUBLE HUNG TILT	CW-PG50-H	10 PSF	50 PSF	0.38
TRACO NX-5400	SINGLE HUNG TILT	CW-PG50-HS	10 PSF	45 PSF	0.37
TRACO NX-6000	DOUBLE SLIDE	CW-PG50-HS	10 PSF	50 PSF	0.39
TRACO NX-6400	SINGLE SLIDE	CW-PG50-HS	10 PSF	45 PSF	0.36
TRACO NX-7400	FIXED	CW-PG50-FW	10 PSF	50 PSF	0.32

#### Fabrication and Installation

A range of installation options are available for the windows, including snap-in nailing fin, trim and clip, preset panning, wraparound panning, receptor, sub sills and more.

#### Aesthetics and Versatility

The 3-1/4" deep commercial window's configuration options offer increased design flexibility for a range of applications. A dual color option provides the flexibility to vary interior and exterior finishes.

All configurations come with muntins and grid options. Extruded aluminum screens (either half or full) are available on the full range of windows

The window series can fit the aesthetics of almost any project with reliability, affordability and thermal performance.



Overmont House, Philadelphia, Pennsylvania, USA Glazing Contractor: Graboyes Commercial Window Company, Philadelphia, Pennsylvania, USA











#### **Kawneer Anodize finishes**

Kawneer gives you a wide variety of anodized finishes with attractive alternatives. The benefit of a durable, anodized finish is married to the beauty of some very dynamic and exciting colors.

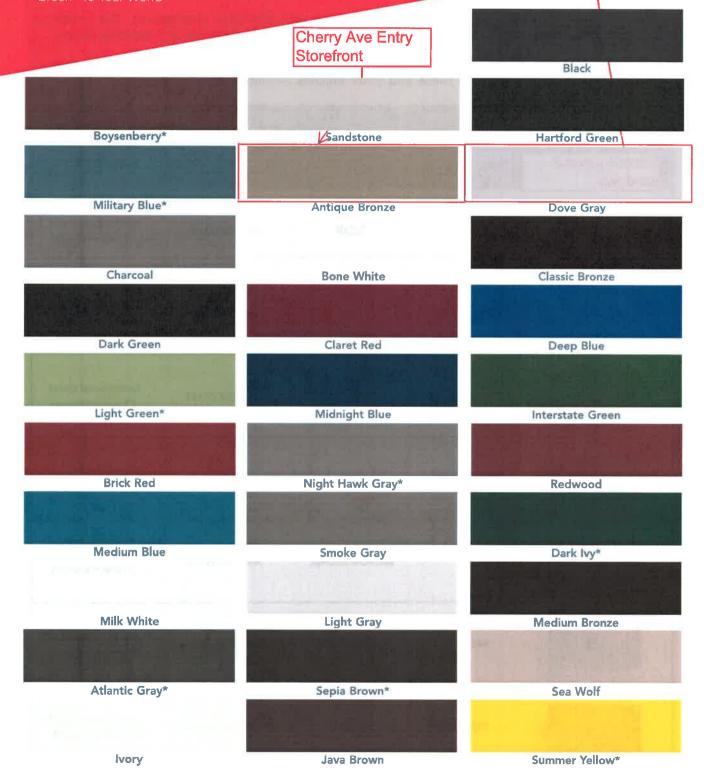
At the start of every design, there's a choice of how you want to finish. Contact your Kawneer sales rep for the information on these and other finishes available from Kawneer.

Facade Level 3 windows	KAWNEER FINISH NO.	COLOR	ALUMINUM ASSOCIATION SPECIFICATION	OTHER COMMENTS
	#14	CLEAR	AA-M10C22A41	Architectural Class I (.7 mils minimum)
	#17	CLEAR	AA-M10C22A31	Architectural Class II (.4 mils minimum)
	#18	CHAMPAGNE	AA-M10C22A44	Architectural Class I (.7 mils minimum)
	#26	LIGHT BRONZE	AA-M10C22A44	Architectural Class I (.7 mils minimum)
	#28	MEDIUM BRONZE	AA-M10C22A44	Architectural Class I (.7 mils minimum)
	#40	DARK BRONZE	AA-M10C22A44	Architectural Class I (.7 mils minimum)
	#29	BLACK	AA-M10C22A44	Architectural Class I (.7 mils minimum)

## Permacoat™ Powder Coatings

Facade Level 2 windows

Solvent-Free Finishes That Add High Performance, Durability And More "Green" To Your World



<sup>\*</sup> Denotes non-standard color



## Today's Technology for Tomorrow's Environment Independently Certified to Meet AAMA 2604

As communities throughout the world recognize the need to preserve natural resources, governments have imposed stricter safety controls and increased pressure to reduce emissions such as paint solvents into the atmosphere. Building owners and architects have responded to these environmental concerns while also requiring higher performance, superior durability and more color choices for their projects.

Kawneer now offers a solution – Permacoat™ Powder Coatings – for new or remodel projects requiring a solvent-free finish that:

- Meets the exacting requirements of AAMA 2604
- Demonstrates outstanding gloss and color retention
- Complies with most environmental regulations
- Provides optimal corrosion resistance
- Exhibits durability, excellent mechanical properties and abrasion resistance
- Competes with solvent-based paints in all respects
- Offers standard and custom finish colors
- Offers higher glass levels contact your Kawneer Sales Representative for information
- Offers additional custom shades subject to technical approval

#### Performance Table

Mechanical Performance	AAMA 2604 Reference	Permacoat Performance					
Dry Film Hardness	Section 7.3	Pass	Н				
Dry Film Adhesion	Section 7.4.1.1	Pass	No film disbondment				
Impact Resistance	Section 7.5	Pass	No film disbondment				
Abrasion Resistance	Section 7.6	Pass	>20 liters per mil				
Chemical Resistance	AAMA 2604 Reference	Perma	coat" Performance				
Muriatic Acid Resistance	Section 7.7.1	Pass	No visual change or blistering				
Mortar Resistance	Section 7.7.2	Pass	No visual change or loss of adhesion				
Nitric Acid Resistance	Section 7.7.3	Pass	Color change ≤5 <b>^</b> E (Hunter)				
Detergent Resistance	Section 7.7.4	Pass	No film removal or blistering				
Corrosion Tests	AAMA 2604 Reference	Perma	coat* Performance				
Wet Adhesion	Section 7.4.1.2	Pass	No film removal or blistering				
Boiling Water Adhesion	Section 7.4.1.3	Pass	No film removal or blistering				
Humidity Resistance	Section 7.8.1	Pass	No blisters > "few No.8" (ASTM D 714)				
Salt Spray Resistance	Section 7.8.2	Pass	<1.6 mm creep from scribe				
Weathering 5 Years Florida	AAMA 2604 Reference	Permac	oat* Performance				
Color Retention	Section 7.9.1.2	Pass	Color change ≤5∆E (Hunter)				
Chalking Resistance	Section 7.9.1.3	Pass No more than No 8 rating (ASTM D 421					
	Section 7.9.1.4	Pass	≥ 30% gloss retention				
Gloss Retention	3ection 7.7 1.4	1 0.50	E 0070 group retermon				

Note: These color samples are as dose as possible to actual colors offered within the limitations of printing techniques. Final color specification shall be as per approved color samples.



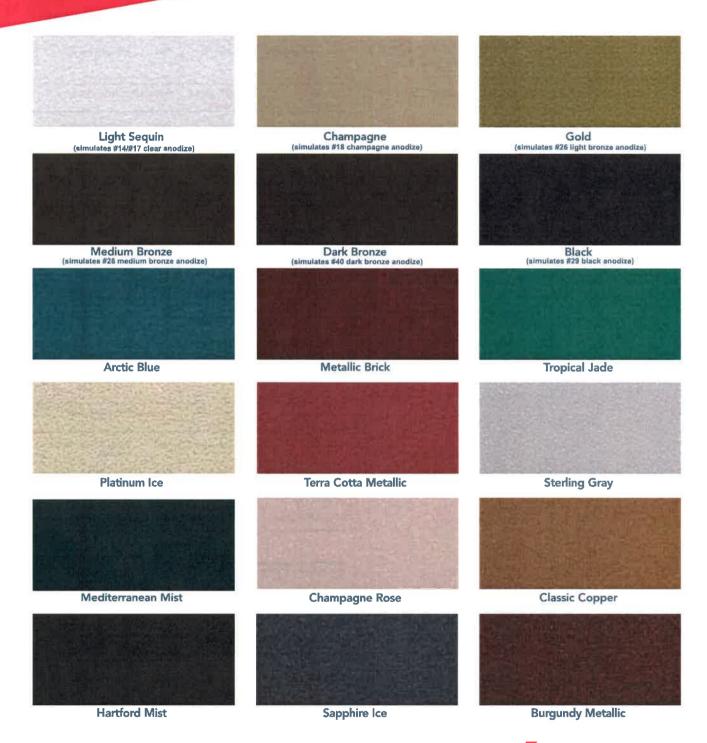
Kawneer Company, Inc. Technology Park / Atlanta 555 Guthridge Court Norcross, GA 30092

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### Permadize® Hardcoat Finishes

Highlight Your Architectural Achievements





## High Performance Coatings That Meet AAMA 2604 Requirements

Permadize® Hardcoat Finishes combine the proven durability of 50% fluoropolymer resins with a rich metallic pearlescence to create vibrant colors that transform your perception of a finish. The Permadize® secret is its formulation process in which the pearlescent highlights are combined with texturizers—minute metallic-like particles—that add increased abrasion resistance. The result is a hard finish that blends beauty with everyday toughness and mar resistance.

#### Performance

Permadize® finishes stand up to normal use, abuse and weathering. And ultimately, they help to hold down building maintenance costs. Proven performers, Permadize® Hardcoat Finishes are tested to meet the most stringent standards and have surpassed the AAMA 2604 testing requirements. The specification allows non-chrome pretreatment and covers a period of five years South Florida exposure, as well as tough abrasion, gloss retention and adhesion tests (see table opposite). The added hardness of the 50% Kynar formulation enhances protection against finish damage and touchups that are sometimes required during transportation, installation and everyday use.

#### **Aesthetics**

The hard finish and greater mar resistance of Permadize® Hardcoat Finishes make them ideal for ground floor installations such as storefronts and entrances that must withstand heavy traffic and constant usage. In addition, Permadize® Finishes provide excellent resistance to chalking and fading. Colors include earth tones as well as vivid blues and greens and the metallic sheen suggests custom anodized colors.

#### Permadize® Hardcoat Finishes

- For colors that complement today's designs
- · For hard finish and mar resistance
- For long-lasting performance
- For sparkle that brings life to color

#### Performance Table

Mechanical Performance	AAMA 2604 Reference	Permadize* Hardcoat Finish Performance					
Dry Film Hardness	Section 7.3	Pass	2H Minimum				
Dry Film Adhesion	Section 7.4.1.1	Pass	No film discondment				
Impact Resistance	Section 7.5	Pass	No film disbondment				
Abrasion Resistance	Section 7.6	Pass	>20 liters per mil				
Chemical Resistance	AAMA 2604 Reference		dize* Hardcoat Finish mance				
Murietic Acid Resistance	Section 7.7.1	Pass	No visual change or blistering				
Mortar Resistance	Section 7.7.2	Pass	No visual change or loss of adhesion				
Nitric Acid Resistance	Section 7.7.3	Pass	Color change ≤5∆E (Hunter)				
Detergent Resistance	Section 7.7.4	Pass	No film removal or blistering				
Corrosion Tests	AAMA 2604 Reference	Permadize® Hardcoat Finish Performance					
Wet Adhesion	Section 7.4.1.2	Pass	No film removal or blistering				
Boiling Water Adhesion	Section 7.4.1.3	Pass	No film removal or blistering				
Humidity Resistance	Section 7.8.1	Pass	No blisters > "few No.8 (ASTM D 714)				
Salt Spray Resistance	Section 7.8.2	Pass	<1.6 mm creep from scribe				
Veathering Years Florida	AAMA 2604 Reference	Permad Perform	ize* Hardcoat Finish				
Color Retention	Section 7.9.1.2	Pass	Color change ≤5∆E (Hunter)				
Chalking Resistance	Section 7.9.1.3	Pass	No more than No.8 rating (ASTM D 4214)				
Bloss Retention	Section 7.9 1.4	Pass	≥ 30% gloss retention				
rosion Resistance	Section 7.9.1.5	Pass	< 10% Film loss				

Note: These color samples are as close as possible to actual colors offered within the limitations of printing techniques. Final color specification shall be as per approved color samples. Permadize® finishes are formulated by The Velspar Corporation for Kawneer Company, Inc.



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### Permafluor™ Architectural Finishes

High Performing Paints That Let You Design In Vibrant Living Color



## Superior Performance Coatings That Meet AAMA 2605 Requirements

There's a painted finish as expressive and enduring as the buildings you design. Permafluor™ Architectural Coatings combine beauty and successful performance as only a 70% fluoropolymer based coating can.

Permafluor™ colors add life to your architectural expressions. Fifteen standard colors and a limitless pallet of custom colors can satisfy your creative needs. The standard colors are always in stock at Kawneer Paint Facilities for fast turn around while the Permafluor™ custom colors can be formulated to meet your needs.

This is a paint that endures along with your architectural statement. Permafluor™ is formulated to maintain integrity for years. Outstanding durability translates to substantial maintenance savings over the life of the building.

Thousands of buildings throughout the world are a testament to the lasting beauty and performance of Kawneer standard Permafluor™ Architectural Coatings.

#### Kawneer #22 Stock Permafluor™ Architectural Coatings

The 15 standard Permafluor™ colors shown on this chart are Kawneer #22 stock coatings. They are stocked at Kawneer Paint Facilities for fast turn around of painted projects.

The following specifications are required for the proper application and end-use results of Permafluor™. Performance properties represent minimum results when Permafluor™ is applied according to specifications.

#### **Guide Specifications**

Permafluor™ coating will meet or exceed test requirements of AAMA 2605, Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

The following are guidelines for specifying and applying Permafluor™: Pretreatment – The aluminum shall be thoroughly cleaned using a multi-stage cleaning process to remove organic and inorganic surface soils and residual oxides. Apply a chemical conversion coating to which organic coatings will firmly adhere.

Primer – The cleaned and treated substrate shall be primed to a thickness of 0.2-0.3 mils using approved factory application methods. Paint – The Permafluor<sup>TM</sup> paint system shall contain 70% PVDF (Hylar 5000° or Kynar 500°) resin and durable ceramic pigments. It shall be factory applied and oven baked for a topcoat film thickness of 1.0 mil minimum. Clear topcoat, if required, shall be applied at 0.4-0.8 mils.

#### Performance Table

Criteria	Performance
AAMA 2605	Meets or Exceeds
Substrate	Aluminum only
Pretreatment	Multi-Stage Cleaning and Conversion Coating
Dry Film Thickness (ASTM D 7091)	1.2 mil
Specular Gloss (ASTM D 523)	Low and Medium
Dry Film Hardness ASTM D 3363)	F minimum
mpact Resistance	1/10" Deformation No Loss of Adhesion
Abrasion Resistance ASTM D 968)	Coefficient of 40 minimum
Salt Spray ASTM G85 Annex <b>A5)</b>	Hours: 2,000 Scribe or cut edges: Rating 7 Field: Rating 8
dumidity Resistance ASTM D 2247 or ASTM D4585)	Hours: 4,000 Few #8 Blisters Max.
0 Years South Florida	Color Change: 5ΔE (Hunter) Units Max. Chalk Resistance: Rating 8 Max.
0% Muriatíc Acid pot Test	15 min. No Blistering <b>or Vis</b> ual Change
fortar (Alkali) Resistance	24 Hour Spot Test, No Visual Change
2 Hour Detergent nmersion (@ 100° F)	No Loss of A <b>dh</b> esi <b>on</b>
oiling Water Adhesion	No removal of film after 20 min. exposure

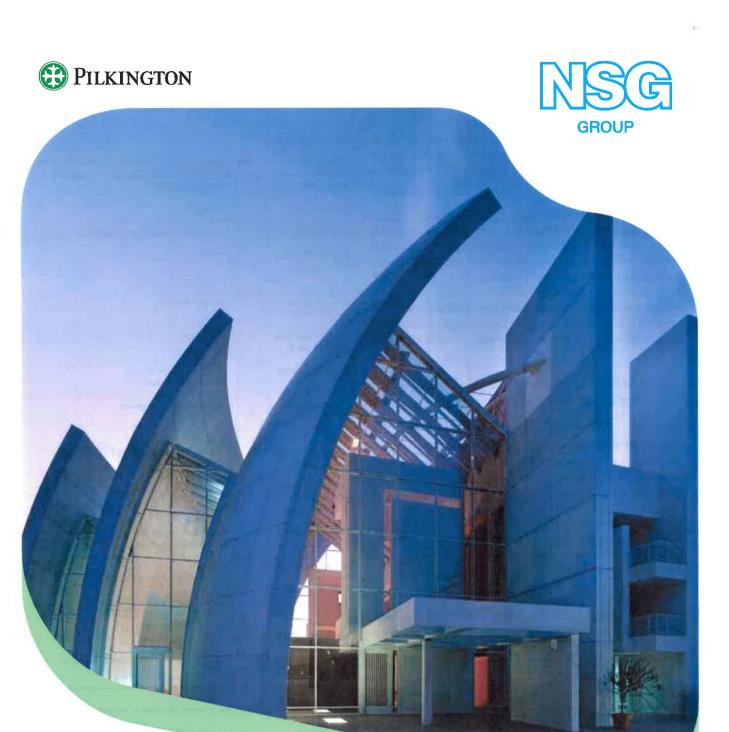
Hylar 5000° is a registered trademark of Solvay Solexis, Inc., Kynar  $500^{\circ}$  is a registered trademark of Arkema Inc.

\* Note: These color samples are as close as possible to actual colors offered within the limitations of printing techniques. Final color specification shall be as per approved color samples. Permafluor finishes are formulated for Kawneer Company, Inc.

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## Low-e 4<sup>th</sup> Surface Commercial Technology with Pilkington **Energy Advantage™** Low-e.

Lower U-factor • Improved Clarity • Greater Energy Savings.

## For additional information visit www.pilkington.us/technicalbulletins:

ATS 193 Low-e 4th Surface Technology: Guidelines for use

ATS 137-4 Improvements in the Appearance of Installed Pilkington **Energy Advantage™** 

ATS 138 How Low-e Glass Works

ATS 138-D Window Energy Efficiency with Multiple Low-e Coatings

#### Here's how it works.

Pilkington Energy Advantage™ Low-e coatings applied to the #2 and #4 surfaces of an insulating unit reduce the center of glass U-factor by about 20%, compared to an IGU with a pyrolytic low-e and an uncoated clear lite. This proven technology improves thermal performance in a new or reglazed commercial building.

Durability is critical for coatings applied to the 4th surface of an insulating unit. Pyrolytic coatings are extremely durable and difficult to damage. Pilkington pyrolytic coating technology has been used on exposed surfaces successfully for over 20 years globally.

With superior clarity, unrivaled by any other pyrolytic glass, Pilkington **Energy Advantage™** has been used for more than 10 years in North America as a 4th Surface Low-e product.

#### **Features and Benefits**

- Durability of a pyrolytic
- Low U-factor and reduced solar heat gain
- Superior thermal control
- Improved darity
- High light transmittance
- Energy savings
- Easy to clean surface with standard techniques
- Superior aesthetics for any building
- Can help projects achieve LEED® credit
- No additional SKUs

## Enhanced thermal performance without investing in triple-pane windows.

Fewer low-e products to inventory, with installation on #2 and #4 surfaces

No additional raw materials required

No additional capital investments necessary

Easily integrated into current fabrication process

Lighter construction

Less reflection than with triple glazing

Durability of a pyrolytic

No edge deletion required for an IGU

Easily handled, tempered, cut, bent, laminated,

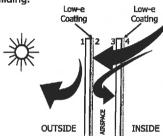
insulated and heat-strengthened

Virtually unlimited shelf-life

#### How is glazing performance improved?

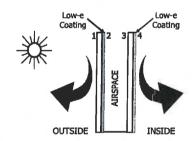
#### **Cold Weather Conditions**

The coating on the #2 surface reduces room heat (or far IR energy) loss by reflecting it back toward the space. By adding a second low-e coating to the #4 surface the thermal insulation is further improved. More infrared heat (room heat) is reflected back into the building.



#### **Warm Weather Conditions**

The low-e coating on the #4 surface reflects more solar heat than one lite of low-e glass, reducing cooling loads.





#### **Pyrolytic Power**

Pilkington **Energy Advantage™** Low-e is coated using a pyrolytic process, which allows for the coating to be chemically-bonded to the glass at a molecular level. This process produces a coating which is extremely durable and will not scratch or degrade over time. The coating has been used globally for over 20 year with proven success.

#### Performance Data 1, 10

Nomina Thick	al Glass mess			S	iolar Energ	JY²		R	U-Fa	ctor <sup>5</sup>	91111			ng ent*	
		26	Refle	ctance	9/02	8	%	U.S. St	ımmer*	U.S. V	Vinter*	nter European			
in.	mm	Transmittance	Outside	Inside	Transmittance <sup>29</sup> %	Reflectance*%	UV Transmittance <sup>29</sup> / <sub>6</sub>	Air	Argon	Air	Argon	¥	Argon	Solar Heat Gain Coefficient	Shading Coefficient*
Pilkingtor	Energy A	Advantage	e™ Outer Lit	e (#2 surfi	ace) and Pil	kington Op	tifloat" C	ear Inner L	ite		1				
3/16	5	74	17	17	55	14	41	0.33	0.28	0.33	0.29	1.8	1.5	0.63	0.73
1/4	6	73	16	17	52	13	37	0.33	0.28	0.33	0.29	1.8	1.5	0.62	0.71
5/16	8	71	15	16	47	12	32	0.33	0.28	0.33	0.28	1.8	1.5	0.59	0.67
3/8	10	69	15	16	43	12	29	0.32	0.27	0.33	0.28	1.8	1.5	0.56	0.64
1/2	12	67	15	16	39	11	27	0.32	0.28	0.32	0.28	1.8	1.5	0.53	0.61
Pilkingtor	n Energy A	Advantage	e" Outer Lit	e (#2 surfi	ace) and Pil	kington En	ergy Adva	ntage" In	ner Lite (#	4 surface)			l .		
3/16	5	69	18	19	49	15	33	0.24	0.21	0.26	0.23	1.6	1.3	0.59	0.68
1/4	6	68	17	18	47	14	29	0.24	0.21	0.26	0.23	1.5	1.3	0.58	0.66
5/16	8	66	17	18	42	13	26	0.24	0.21	0.26	0.23	1.5	1.3	0.54	0.62
3/8	10	64	16	17	38	12	23	0.24	0.21	0.26	0.22	1.5	1.3	0.51	0.59
1/2	12	63	16	18	36	11	24	0.24	0.21	0.26	0.23	1.5	1.3	0.49	0.57
Double S	liver Sputte	er Coat Lov	v-e Outer Li	te (#2 sur	face) and P	lkington E	nergy Adva	ntage" Ir	ner Lite (#	4 surface)					
3/16	5	66	13	15	31	32	16	0.21	0.17	0.23	0.20	1.3	1.1	0.36	0.42
1/4	6	65	12	14	30	30	14	0.21	0.17	0.23	0.19	1.3	1.1	0.36	0.41
5/16	8	63	12	14	29	25	13	0.21	0.17	0.23	0.19	1.3	1.1	0.35	0.40
3/8	10	62	12	14	27	23	12	0.21	0.17	0.23	0.19	1.3	1.0	0.35	0.40
1/2	12	61	11	13	26	18	11	0.21	0.17	0.23	0.19	1.3	1.0	0.34	0.39
Triple Silv	ver Sputter	Coat Low-	e Outer Lite	#2 surfa	ce) and Pilk	ington Ene	ergy Advar	' 'tage" Inn	er Lite (#4	surface)					<u> </u>
3/16	5	59	13	16	22	39	4	0.20	0.16	0.23	0.19	1.3	1.0	0.26	0.30
1/4	6	58	13	15	22	36	4	0.20	0.16	0.23	0.19	1.3	1.0	0.26	0.30
5/16	8	56	12	15	21	31	4	0.20	0.16	0.23	0.19	1.3	1.0	0.26	0.30
3/8	10	55	12	14	20	28	3	0.20	0.16	0.22	0.19	1.3	1.0	0.26	0.30
1/2	12	54	12	15	19	22	3	0.20	0.16	0.22	0.19	1.3	1.0	0.26	0.30
Pilkington	Energy /	Advantage	OW Oute	r Lite (#2	surface) an	d Pilkingtor	Optiwhit	e™ Low Iro	n Inner Lit	e		1		L	
1/4	5	76	17	18	68	17	59	0.33	0.28	0.33	0.29	1.8	1.5	0.70	0.81
Pllkington	Energy /	Advantage	o™ OW Oute	r Lite (#2	surface) an	d Pilkingtor	Energy A	dvantage	OW Inne	r Lite (#4	surface)				
1/4	6	70	18	20	60	18	47	0.24	0.21	0.26	0.23	1.5	1.3	0.66	0.76
Double Si	ilver Sputte	er Coat Low	v-e Outer Li	te (#2 surl	ace) and Pi	lkington <b>E</b> l	nergy Adva	intage" 0	W Inner Li	te (#4 surf	ace)				
1/4	6	66	13	15	32	30	17	0.21	0.17	0.23	0.19	1.3	1.1	0.37	0.42
Triple Silv	er Sputter	Coat Low-	e Outer Lite	(#2 surfa	ce) and Pilk	ington Ene	ergy Advar	tage" OW	Inner Lite	: (#4 surfa:	ce)				
1/4	6	59	13	16	23	36	5	0.20	0.16	0.23	0.19	1.3	1.0	0.26	0.30

An insulating unit consists of two lites of equal glass thickness, and a 1/2 in. airspace.

<sup>\*</sup>U.S. U-Factor (Btu/hr.sq ft. °F) is based on NFRC/ASTM standards, \*\*\*European U-Factor (W/sq m K) is based on EN 410/673 (CEN) standard.

All performance values are center-of-glass values calculated using the LBNL Window 6.3 program. See Pilkington Architectural Product Guide for explanation of references - 1,10, The 'OW' descriptor (n 'Pilkington **Energy Advantage**" OW' Indicates the base substrate is low iron, such as Pilkington **Optiwhite**".

#### Performance Data 1, 10

	Nom	inal	Vi	Visible Light <sup>2</sup>			olar Ene	rgy <sup>2</sup>	U-Factor <sup>5</sup>				-			
	Gla Thick		ance		flec- ce <sup>4</sup> %	ance	nce*	ance <sup>2</sup>		J.S. nmer	U.S.	Winter	Euro	pean <sup>6</sup>	at Gain	ling dent
	in.	mm	Transmittance <sup>3</sup>	Outside	Inside	Transmittance <sup>3</sup>	Reflectance*	UV Transmittance <sup>2</sup>	Air	Argon	Air	Argon	Air	Argon	Solar Heat Gain Coefficient?	Shading
Pilkington Solar-E™	(coating o	n #2 sı	urface) o	outer lite	and Pill	kington <b>E</b>	nergy A	dvantage	™ Low-e	(coating o	n the #4	surface) i	nner lite			
Clare	1/4	6	49	11	17	32	9	26	0.24	0.22	0.26	0.23	1.6	1.3	0.41	0.47
Clear	5/16	8	48	11	17	29	9	23	0.24	0.21	0.26	0.23	1.5	1.3	0.40	0.45
Pilkington Solar-E	Plus (coat	ing on a	#2 surfa	ce) oute	er lite an	d Pilking	ton <b>Ener</b> į	gy Advant	tage™ Lo	w-e (coati	ng on the	#4 surface	) inner l	ite		
Dive Contra	1/4	6	34	8	17	18	6	12	0.25	0.22	0.26	0.23	1.6	1.3	0.27	0.31
Blue-Green	5/16	8	32	7	16	15	6	9	0.24	0.22	0.26	0.23	1.6	1.3	0.24	0.28
F C	1/4	6	31	8	17	13	6	5	0.25	0.22	0.26	0.23	1.6	1.3	0.22	0.25
EverGreen	5/16	8	28	7	17	11	5	3	0.24	0.22	0.26	0.23	1.6	1.3	0.19	0.22
Complete Dive	1/4	6	23	6	16	17	6	13	0.25	0.22	0.26	0.20	1.6	1.3	0.29	0.34
Graphite Blue	5/16	8	25	7	16	16	6	11	0.24	0.22	0.26	0.23	1.6	1.3	0.26	0.29
Arctic Blue	1/4	6	25	6	16	13	5	7	0.25	0.22	0.26	0.23	1.6	1.3	0.21	0.25
Arcuc blue	5/16	8	22	6	16	11	5	5	0.24	0.22	0.26	0.23	1.6	1.3	0.19	0.22
Grey	1/4	6	20	6	17	14	6	8	0.25	0.22	0.26	0.23	1.6	1.3	0.23	0.26
Grey	5/16	8	16	6	16	11	5	5	0.24	0.22	0.26	0.23	1.6	1.3	0.20	0.23
Pilkington Eclipse A	dvantage <sup>1</sup>	™ (coati	ing on #	2 surfa	ce) oute	r lite and	Pilkingto	n Energy	Advanta	ge™ Low-	e (coating	on #4 st	ırface) ir	ner lite		
Clear	1/4	6	56	30	30	41	22	19	0.25	0.23	0.27	0.24	1.6	1.4	0.51	0.58
Cical	5/16	8	55	29	30	37	20	17	0.25	0.23	0.27	0.24	1.6	1.4	0.48	0.55
Blue-Green	1/4	6	48	22	29	26	12	10	0.25	0.23	0.27	0.24	1.6	1.4	0.35	0.40
bide Green	5/16	8	44	20	29	21	11	8	0.25	0.23	0.27	0.24	1.6	1.4	0.30	0.35
EverGreen	1/4	6	40	18	30	18	9	5	0.25	0.23	0.27	0.24	1.6	1.4	0.26	0.30
LVEIGREEN	5/16	8	36	15	29	14	8	3	0.25	0.23	0.27	0.24	1.6	1.4	0.23	0.26
Arctic Blue	1/4	6	33	14	29	17	9	7	0.25	0.23	0.27	0.24	1.6	1.4	0.26	0.30
recor blue	5/16	8	27	11	29	13	7	5	0.25	0.23	0.27	0.24	1.6	1.4	0.22	0.25
Bronze	1/4	6	32	13	29	24	11	7	0.25	0.23	0.27	0.24	1.6	1.4	0.34	0.39
DI VIIZC	5/16	8	26	10	28	19	9	5	0.25	0.23	0.27	0.24	1.6	1.4	0.29	0.33
Grey	1/4	6	27	11	29	20	9	7	0.25	0.23	0.27	0.24	1.6	1.4	0.30	0.35
a. a.y	5/16	8	21	8	29	15	7	5	0.25	0.23	0.27	0.24	1.6	1.4	0.25	0.29

An insulating unit consists of two lites of equal glass thickness, and a 1/2 in. airspace.

\*U.S. U-Factor (Btu/hr.sq ft. °F) is based on NFRC/ASTM standards, \*\*European U-Factor (W/sq m K) is based on EN 410/673 (CEN) standard.

All performance values are center-of-glass values calculated using the LBNL Window 6.3 program. See Pilkington Architectural Product Guide for explanation of references - 1, 10,

To the fullest extent permitted by applicable laws, Nippon Sheet Glass Co. Ltd. and its subsidiary companies disclaim all liability for any error in or omission from this publication and for all consequences of relying on it.



#### **Pilkington North America**

811 Madison Ave., Toledo, OH 43604-5684
Main Office: 419 247 3731 Fax: 419 247 4517
buildingproducts.pna@nsg.com
www.pilldngton.com/na

## Sliding Door Besam SL500 EcoDoor™

ASSA ABLOY

ASSA ABLOY Entrance Systems

The global leader in door opening solutions



## Automatic Sliding Door Solutions For Sustainable Buildings



Entrance automation is the first step to managing excessive energy usage. ASSA ABLOY Entrance Systems intelligent products provide a range of options to help minimize energy loss, improve indoor air quality, increase daylight, control air circulation, and optimize the overall energy performance of any building

The Besam SL500 EcoDoor is available with a variety of configurations and features to help you meet your

sustainability goals. Whether air infiltration reduction, energy consumption savings, improved customer comfort or compliance with energy codes such as ASHRAE 90.1. there's a Besam SL500 EcoDoor configuration to suit your needs.

Consult the architectural SpecDesk at 1-877-SPEC-123, specdesk.na.aaes@assaabloy.com to discuss your project needs and receive your customized energy analysis.



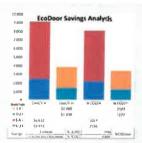
#### **Meeting Your Sustainability Requirements**

Proper feature selection can make a tremendous difference in the sustainability performance of your Besam automatic sliding door. The Besam SL500 EcoDoor automatic sliding door can be equipped with a variety of features to radically reduce air infiltration in your facility and reduce energy costs.



#### **U-factor Package**

The Besam SL500 EcoDoor U-factor package is equipped with EcoDoor seals and U-factor rated glass; independently tested to ASHRAE 90.1 to provide you with the most energy efficient sliding door available. Your ASSA ABLOY Entrance Systems representative will help you specify a package to comply with local ASHRAE 90.1 requirements. Request a customized energy analysis to see the demonstrable savings you can achieve with EcoDoor Seals and U-factor glass.



#### **Customized Energy Calculations**

Consult your local representative for your customized energy savings analysis and see the savings you can achieve with a Besam EcoDoor package. Whether your goal is to lower energy costs, reduce CO2 emissions or improve indoor comfort by reducing drafts and air infiltration, the Besam SL500 EcoDoor can help you achieve your sustainability requirements.



#### **EcoDoor Seals & EcoMode**

Significantly reduce air infiltration and energy costs with Besam EcoDoor seals. The unobtrusive seals are mounted on all door leafs and available on your new equipment or to retrofit onto your existing Besam doors. Request your customized energy analysis to see the demonstrable savings you can achieve with Besam EcoDoor Seals.

Utilize the Besam EcoMode EcoMode to reduce the sliding door opening, allowing less infiltration of air to control heating and cooling costs. With Besam's auto-width intelligence, your opening width will adjust automatically when traffic increases and reduce to partial opening when traffic subsides.



#### **Magnetic Catches**

A small bump from a shopping cart, luggage trolley or a pedestrian can cause an automatic door to slightly come off typical ball catches leaving the door open and non-operational. Keep your doors operational and tightly weather sealed with Besam magnetic catches which relatch doors under this condition. Available for new equipment and retrofit onto existing Besam equipment.



#### **Hydraulic Closers**

Hydraulic closers are an outstanding way to keep your new Besam sliding door equipment latched, operational and weather tight. Concealed hydraulic closers are offered with Besam magnetic catches. Together, they bring a broken out door back closed from any position after breakout, putting your door back in operation automatically. This provides tremendous convenience while allowing you to maintain a weather tight seal that saves you money in heating and cooling costs.



#### **LEED Certification Contribution**

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED promotes a whole-buildingapproach to sustainability by recognizing performance in seven key areas of human and environmental health.

ASSA ABLOY Entrance Systems can help to achieve prerequisites and accumulate points and credit areas of LEED. For further information, please refer to our website: www.assaabloyentrance.us/sustainability.





ASSA ABLOY is a member of the USGBC and CaGBC
U.S. Green Building Council logo is a trademark owned by the U.S. Green Building
Council and is used with permission.



#### **Pro-Active Care Service**

Keep your doors at optimal performance levels with ASSA ABLOY Entrance Systems Pro-Active Care Service. A variety of programs are available to evaluate and transform your current entrance to improve energy performance. Ask about retrofits of Besam EcoDoors seals to your existing Besam sliding door equipment as well as the addition of directional motion sensors for all brands of equipment.



#### **Application Expertise**

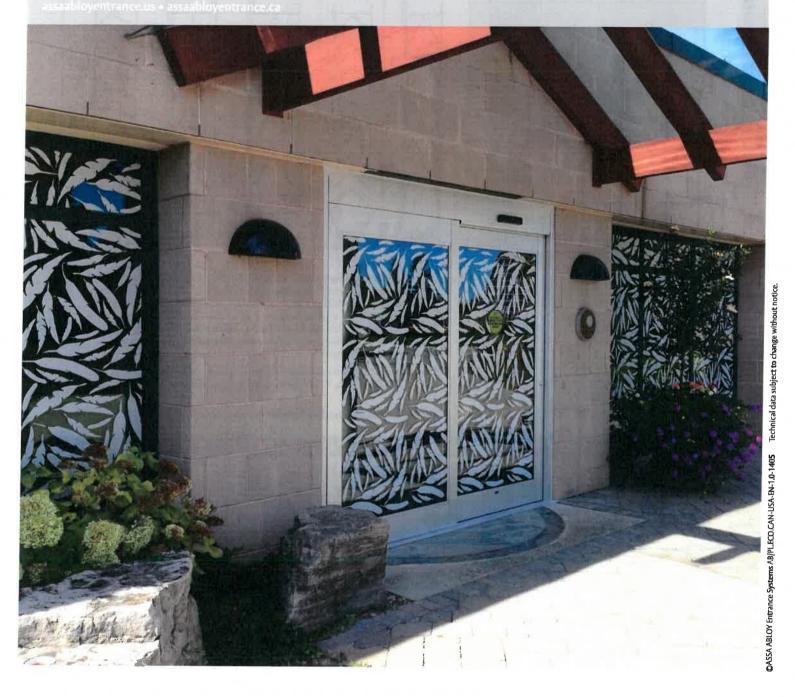
Vestibule placement, insulated glass selection and properly adjusted motion sensors all help contribute to the efficiency of your entrance. Consult the experts at ASSA ABLOY Entrance Systems for designing your new building or reconfiguring your existing doorway for optimal sustainability performance.

ASSA ABLOY Entrance Systems is a leading supplier of entrance automation solutions for efficient flow of goods and people. With our globally recognized product brands Besam, Crawford, Megadoor and Albany, we offer products and leavices dedicated to satisfying end-user needs for safe, secure, convenient and sustainable operations.

ISSA ABLOY Entrance Systems is a division within ASSA ABLOY.

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**ASSA ABLOY Entrance Systems** 

Tel: 1-866-237-2687 (US) • 1-888-608-9242 (Canada) info.na.aaes@assaabloy.com assaabloyentrance.cs • assaabloyentrance.ca

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Please enter ASSA ABLOY Entrance in the channel's search field.

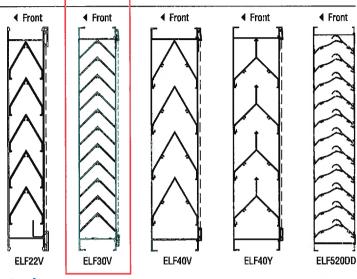
## Extruded Alumninum Louvers

**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.

			SPEC		F	PERFORMANCE 48" x 48" UNIT						
Louver Model	Blade Material (Nom.)	Blade Style	Blade Angle	Blade Centers (Nom.)	Frame Material (Nom.)	France Depth	Bird Screen	Free Area (Nom.)	Sg. Ft. Free Area	Mex. Rec. Air Flew Thre 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/miπ)	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 m²/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°	<b>2</b> "	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







RUSKIN finishes enhance product appearance to blend with other colors selected. These same finishes provide extended weathering resistance similar to adjacent building surfaces. RUSKIN provides most finishes available to architects and engineers. The standard finishes described herein represent those finishes usually selected, specified, or required for most applications.

### FINISHES AND COLOR GUIDE

#### FLUROPON® AND BAKED ENAMEL - STANDARD COLORS

Louver Color to Match
Window/Storefront Frame

The 15 colors below are available in Fluropon (70% PVDF) or Baked Enamel (50% PVDF) finishes omy.



#### PEARLEDIZE 70 AND PEARLEDIZE 50 STANDARD COLORS

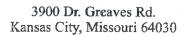
The 9 colors below are available in Pearledize 70, Pearledize 50, Clear or Color Anodize finishes only, and may be more expensive than the Fluropon and Baked Enamel colors shown above. Italicized color names and codes are available in Anodized Finish.



The colors shown herein are only a sample of thousands of colors available.

Please contact RUSKIN for information regarding custom color matching.

Disclaimer: This color card is for reference only and is not meant to be used for color matching or final color approval. Shades may vary due to the color and resolution of the computer screen or print-out. Ruskin is not responsible for color matches made with this online color chart.





## **RUSKIN**<sup>®</sup> FINISHES AND COLOR GUIDE



Factory finishes by *RUSKIN* are designed for low VOC emissions and eliminate the risk of VOC emissions found in louver finishes that are applied on site. All *RUSKIN* manufacturing facilities operate in full compliance with all applicable air permitting regulations. All facilities maintain ISO 14001 Environmental Management Systems which include VOC emission reduction strategies including state of the art spray equipment and operator training.

#### TYPE OF FINISH

#### FINISH SPECIFICATIONS

#### FLUROPON® OR 70% PVDF

RUSKIN Superior Finish: 70% PVDF paint finishes provide maximum resistance against color fade and chalking. This carbon/fluorine bond, unique to the resin, when coupled with the finest inorganic pigments, produces the most durable and long fasting finish in the industry. These finishes are resistant to most chemicals, acid rain, sait spray and general air pollution. RUSKIN offers a twenty-year warranty on these finishes in standard colors on standard extruded aluminum products. All standard colors meet or exceed AAMA 2605-11.\*

Before paint application, louvers shall be thoroughly cleaned and pretreated to assure maximum performance. Fluropon or PVDF finish shall be applied to provide 1.2 mils (30µm) factory applied, baked-on film in accordance with AAMA 2605-11" "Voluntary Specification Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Architectural Extrusions and Panels". Color shall be RUSKIN (specify color name and number).

#### **BAKED ENAMEL - 50% ACROFLUR/PVDF**

RUSKIN'S High Performance Finish: Acroflur or 50% PVDF finishes provide fluoropolymer benefits such as long color life and resistance to chalking and chemicals. For optimization of the price-benefit ratio, they are appropriate coatings for today's non-monumental projects. Twenty-year warranty for standard color on standard extruded aluminum products is also available for RUSKIN'S Baked Enamel.

Louvers shall receive factory applied, baked-on Acroflur or 50% PVDF based color coating following thorough cleaning and prefreatment of metal. The finish shall be applied at 1.2 mils (30µm) total dry film thickness in accordance with AAMA 2604-05† Section 4.2 and 4.3. Color shall be RUSKIN (specify color name and number).

#### PRIME COAT

Preparation for field painting. Finish may be topcoated with epoxy, vinyl, urethane and other heavy-duty coatings within six months of applications. Prime coat contaminations always occurs before field painting and requires thorough field cleaning prior to painting.

Louvers shall receive prime coating following thorough cleaning and pretreatment of metal. Field topcoat with epoxy, vinyl, urethane or other heavy-duty coating within six months of application. Prime coat shall be a minimum of  $.3\pm .1$  mils  $(8\pm 3\mu n)$  thick.

#### PEARLEDIZE 70 AND PEARLEDIZE 50

RUSKIN'S High Pearlescent Finish. Pearledize is a PVDF-based finish that utilizes pearlescent mica pigments to simulate the metallic appearance of anodized and metallic paint finishes. Available as Pearledize 70 (70% PVDF) and Pearledize 50 (50% PVDF). Pearledize 70 meets the AAMA 2605-11\* specification while Pearledize 50 meets the AAMA 2604-05† specification. A twenty-year warranty is available on standard colors on standard extruded aluminum products.

Louvers shall receive thorough cleaning and pretreatment as described above. Pearledize coating shall be applied and baked to achieve a hard durable finish in compliance with either AAMA 2605-11\* or AAMA 2604-051 as selected and specified. Color shall be RUSKIN (specify color name and number).

#### **COLOR ANODIZE**

Electrolytically deposited coating on aluminum: The color anodize process specified in Aluminum Association Code AA-C22A44 electrolytically deposits inorganic color pigment finish to a 0.7 mil (18µm) minimum surface depth on sulferic acid anodized aluminum. Treated aluminum is sealed to convert a freshly formed aluminum oxide finish to a corrosion resistant, hert condition. Available only on aluminum. Some shade variation may occur.

Louvers shall receive electrolytically deposited color anodized finish complying with Aluminum Association Code AA-C22A44. Finish is applied to 0.7 mils (18µm) minimum thickness onto chemically etched and pretreated aluminum. Color shall be RUSKIN (specify color name).

#### **CLEAR ANODIZE**

Clear oxide coating for aluminum: Clear anodize preoxidizes the aluminum surface for uniform clear finish not easily affected by natural oxidizing influences. Improved metallic fuster appearance is similar to mill finish. 204-R1 (Aluminum Association Code AA-C22A31) provides 0.4 mi (10µm) minimum surface depth treatment recommended for normal weather exposure. 215-R1 (Aluminum Association Code AA-C22A41) provides 0.7 mils (18µm) minimum surface depth recommended for severely corrosive and abrasive atmospheric exposure. Both finish types available only on aluminum.

Louvers shall receive a 204-R1 clear anodize finish complying with Aluminum Association Code-C22A31. Finish is applied to chemically etched and pretreated aluminum to 0.4 mils (10µm) minimum surface depth by a 30 minute anodizing process. Louvers shall receive a 215-R1 clear anodize finish complying with Aluminum Association Code AA-C22A41. Finish is applied to chemically etched and pretreated aluminum to 0.7 mils (18µm) minimum surface depth by a 60 minute anodizing process.

Dimensions in parenthases ( ) indicate indicate. Fluropoin is registered trademark of Valspar

RUSKIN'S Fluropon-based finishes (Fluropon, Baked Enamel, Pearledize 50 and Pearledize 70) and prime coat finishes are provided by Valspar Twenty-year warranties are only available on extruded attribution products, and are subject to restrictions. Consult RUSKIM for additional information.





<sup>\*</sup>AAMA 2605-11 is the most sungest performance specification for organic contings or exterior aluminum finishes in the industry, requiring 10 years south Florida exposure †AAMA 2604-05 supersedes AAMA 605 and requires 5 years of south Florida exposure.

## McNICHOLS® DESIGNER METALS





















#### The Hole Story

## Bob McNichols, Founder (1922 - 1981)

#### McNICHOLS CO.

has grown from a small family business to an industry leader, while the spirit of Founder Bob McNichols lives on.

During his service in World War II, Bob made a solemn vow that if he came out of

the war alive, he would put God first and make Him his partner.

The bombardier of a Boeing B-17 Flying Fortress, Bob was the only member of the plane's nine-man crew to survive an attack by Nazi fighters on October 6, 1944. He spent months in a German prisoner-of-war camp before he and fellow POWs were liberated on May 1, 1945. Bob returned to America and united with his wife, Phyllis, and his six-month-old daughter, Barbara.

Bob began **McNICHOLS** with Phyllis on May 1, 1952.

He trademarked "The Hole Story" as a tribute to the perforated and expanded metal products he carried. The slogan's debut in the McNICHOLS® Master Catalog in 1975 initiated a legacy of "Hole" references, such as "Hole Products" and "The Hole Team."

The company suffered the unexpected loss of Bob in 1981. By this time, **McNICHOLS** had built a national base of customers and relocated its headquarters to Tampa, FL, from Cleveland, OH.

Bob's son, Gene, took over leadership and opened a new chapter of "The Hole Story."

In 1990, Gene made "Service, Quality and Performance" McNICHOLS' official mission. The words embody the spirit of the organization. They represent the highest level of customer service, quality worthy of the International Organization for Standardization's 9001:2008 Certification, and performance that surpasses customer expectations.

McNichols will celebrate its 63rd anniversary this year. Led by Scott McNichols, President, members of the family's third generation are ready to advance the legacy of their father and grandfather.

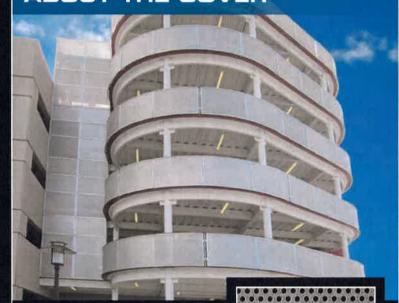
Service, Quality and Performance... that's The Hole Story®!

## Our Architectural Products Team Is Inspired to Serve You!

Architects, contractors and designers choose to incorporate **MCNICHOLS® Besigner Metals** into their projects because of the products' versatility and beauty. Selections include perforated and expanded metal, wire mesh and textured metals in a myriad of materials and styles.

Our Architectural Products Team understands how options like configuration, material type, gauge, open area, recycled content, finish and other variables may influence your design for a successful project. We are inspired and ready to serve you!

#### ABOUT THE COVER



The University of Houston added the five-story, 1,500-space East Parking Garage to accommodate the influx of students expected to enroll in the coming years.

The design features railing with infill panels of



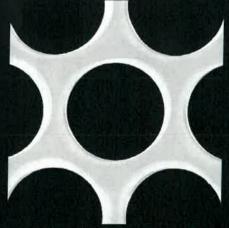
1/16" Round on 7/64" Staggered Aluminum 30% Open Area

#### McNICHOLS® Quality

Perforated Metal - 1/16" Round on 7/64" Staggered in Aluminum. This product not only allows light and air circulation but also adds an element of visual appeal and security to the parking garage.

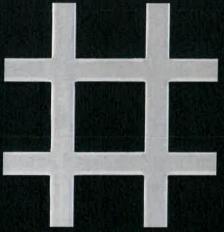


## McNICHOLS® Designer Perforated Metal: Breathable

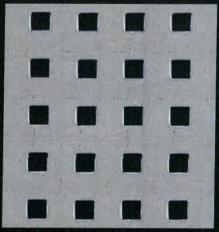


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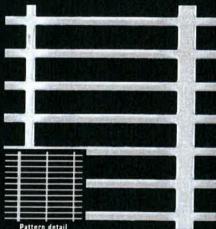
1" Round on 1-1/4" Staggered Centers 58% Open Area



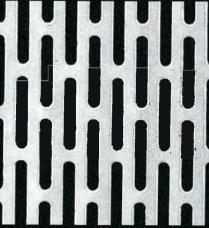
3/4" Square on 1" Straight Centers 56% Open Area



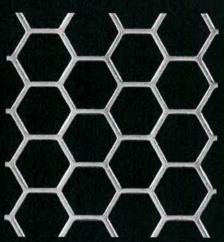
.200" Square on 1/2" Straight Centers 16% Open Area



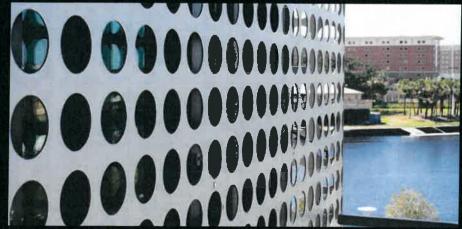
Airline - 1/4" x 1-1/2" Rectangular Slots 68% Open Area



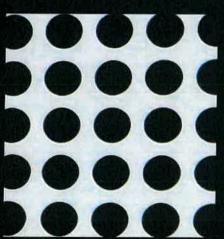
Moire - 1/8" x 3/4" Round End Slot 41% Open Area



1/2" Hexagon - 9/16" Centers 80% Open Area



Over 3,700 panels of **McNichols**\* Anodized Aluminum Perforated Metal, 3" round holes on 4" straight centers were used to create a facade for the Tampa Museum of Art.



3" on 4" Straight Row Centers 45% Open Area

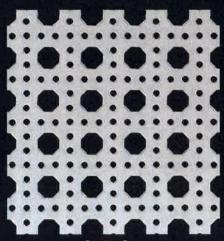
## McNICHOLS® Designer Perforated Metal: Sustainable



McNICHOLS® Designer Perforated Metal infill panels in an Octagon Cane pattern give this kitchen a vintage touch.



**Grecian** Designer Perforated Metal infill panel adds elegance to this linen closet.



Octagon Cane 36% Open Area



Full Cloverleaf - 1/2" Staggered Clovers 51% Open Area



Linco 19% Open Area



Grecian 35% Open Area



Mosaic 3310 40% Open Area



Windsor 45% Open Area



## McNICHOLS since 1952

## McNICHOLS Quality Decorative Perforated, 22 Gauge Plain Steel, Grecian, 36.0000" x 120.0000"

Visit us online at http://www.mcnichols.com

Order Now: 1-877-884-4653 or email sales@mcnichols.com

#### Print

#### **Item Specifications:**

Item Number :
Product Line :
Product Type :
Weight :
Class :

Trade Name :
Major Material :
Minor Material :
Gauge (Thickness) :
Pattern Name :
Surface Finish :
Percent Open Area :

Width:

Length (Span for Grating):

SKU Type : End Pattern :

Margins Parallel to Length: Margins Parallel to Width:

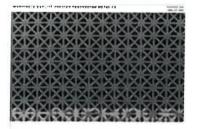
HS Item Number:

1684002231 Perforated Decorative 0.83 #/SF

Decorative Pattern McNICHOLS® Plain Steel Cold Rolled

Grecian
Mill
35
36.0000
120.0000
Sheet
None

Min Safe Both Sides Sheared Through 1684002231



#### Accessories:

**U** Edging

#### **Options:**

Angle Cutting Anodizing

Bending Bolt Holes

Circle Cutting Cleaning Perforated Straight line cutting to produce an angle other than 90 degrees

The process of coating aluminum electrolytically, resulting in a thin film of aluminum oxide of extreme hardness. Can be processed either clear or in colors. The bending of material in a flat state by along a straight line to a defined angle.

The punching or drilling of holes at specific locations in material in order to

provide a means to bolt the material in place.

Shearing or sawing material in a circular path to a specified dimension.



Fabric Awnings

Standing Seam/ Metal Clad

Tension Structures

Custom Lettering and Graphics

Commercial and Industrial Coverings

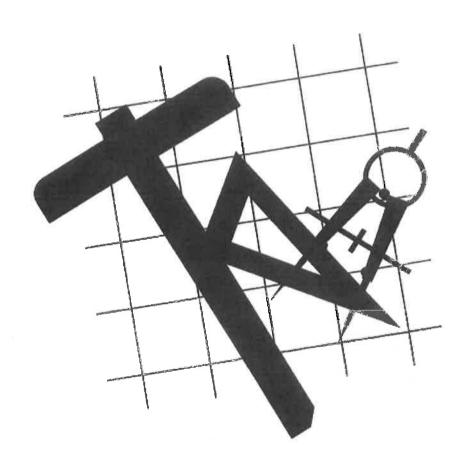
Exhibit Components

Tension Structures

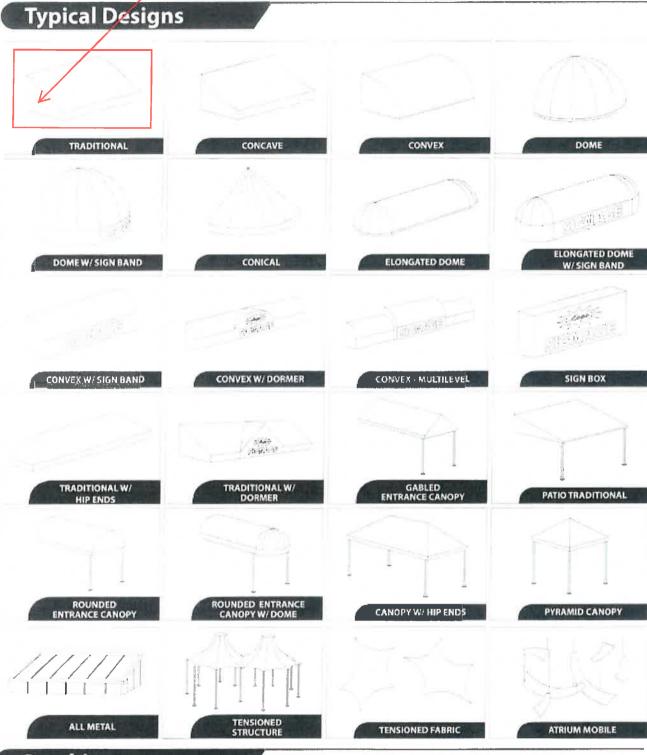
Banners

Automated Cutting & Patterning

## **Typical Fabric Structure Specifications Guide**



Lawrence Fabric Structures 3509 Tree Court Industrial Blvd. St. Louis, MO 63122 (636) 861-0100 (636) 861-0150 Fax (800) 527-3840 sales@lawrencefabric.com



## Graphics

We use a variety of graphic techniques to achieve the desired look. Today's fabric structures can be enhanced with anything from simple lettering to custom printed patterns or digital printed photographs. Following is a list of common techniques available today:

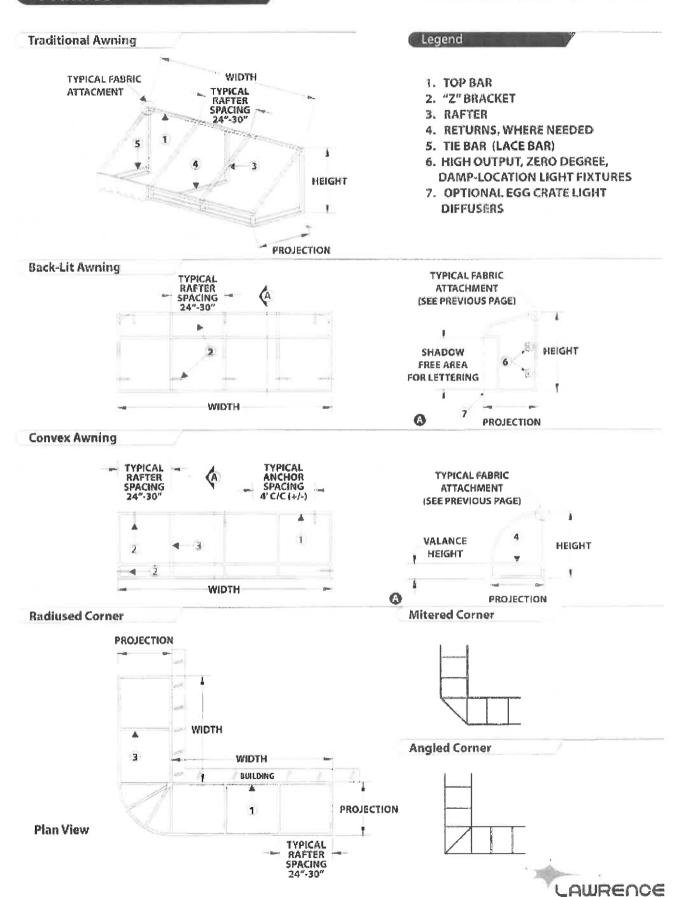
- Stencil Painted
- Applied Vinyl Decals
- Sunbrella Graphic
- System\*
- •R/F Welded
  •Ink Jet Printed
- Eradicated
- •Screen Printed
- Dye Sublimation
- Digital Printing



Fahre Strugtures his

#### **Frames**

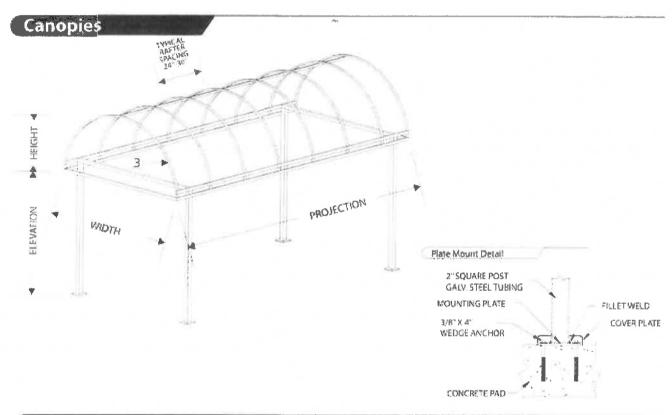
#### TYPICAL SPECIFICATIONS



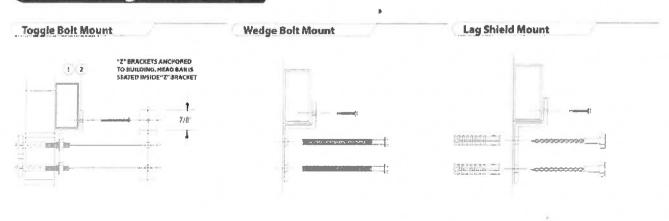
#### **Frames**

All Lawrence awnings and canopies are custom made. The following information is to be used for detailing purposes. Frame size and rafter spacing may vary according to application and engineering requirements. Most frames (unless otherwise requested) are made with T6063 extruded aluminum.

- Welded aluminum frames will not rust.
- Galvanized steel frames available when structurally necessary.
- Frames by Lawrence Fabric Structures are warranted for 5 years against defects in materials & workmanship.
- Frames can be painted with epoxy coatings at customer's request. Painting of aluminum or galvanized frames is for appearance only and is not necessary to improve frame quality.



### **Mounting Methods**





#### **Fabrics**

#### TYPICAL SPECIFICATIONS

At Lawrence Fabric Structures we stay informed of the latest advances in the fabric industry by actively participating in the industrial Fabrics Association International. New fabrics and fibers are rapidly entering the market, improving the appearance, strength, and life of every product we manufacture. We will help you determine the best fabric solution for your particular project. Some of the most common choices are as follows:

Acrylic Fabrics - are made of 100% acrylic solution dyed fabrics, with a fluorocarbon finish. Acrylics are extremely resistant to color and strength loss due to ultraviolet exposure. They are warranted against any fading for a period of five years, under normal exposure conditions.

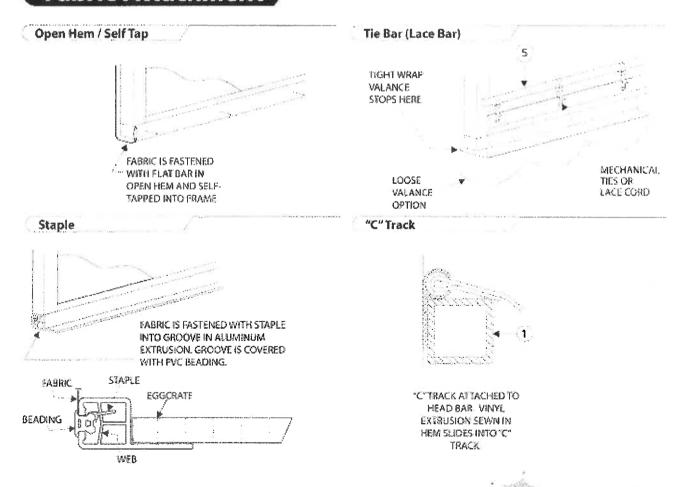
Acrylics are by far the most recommended and most often used fabrics in our Midwestern areas. Acrylic trade names include Sunbrolla and Otekson.

Back-Lit Awning Fabrics - are any of a group of vinyl coated or laminated fabrics specially formulated for backlighting. They are unique due to the special pigmentation in the vinyl material that allow these fabrics to be translucent and light up at night. These fabrics are fire retardant, and generally more costly than other awning fabrics. A few of the most common trade names are: Awnit, Premier, Awnmax, 3M Panaflex, Etaclifite, Nitetite and Benchmark. Various methods of using graphics with these fabrics can greatly affect the cost of back-lit awning projects.

Vinyl Laminates - are m-layer fabrics. Top and bottom layers are vinyl; the interior is a woven polyester or nylon scrim. Weights usually range from 14 to 18 oz. per square yard. They are resistant to abrasion, tears, water, mildew, and ultraviolet light. Flame retardancy is inherent in vinyl laminates, and it has excellent dimensional stability. Major advantages are ease in clearing and a high degree of strength. The disadvantage is that some people prefer a "Fabric" or "soft cloth" appearance over vinyl. Common trade names are: Weblon, Ferrari, Patio, Profee and Nazil. These fabrics accept various forms of graphics.

Acrylic Coated Polyester Fabrics - are the latest generation of coated awaiing fabrics. Known for their smooth surface and sharp appearance, these materials are resistant to cirt build-up, and will not stretch or leak. They also offer a high level of fade resistance. They are lightweight - from 9oz to 15oz - and accept a variety of graphic applications. Warranted for five years, the acrylic coated polyester fabrics include Mainstreet, Event Banner and Avenue.

#### Fabric Attachment



#### **Stock Metal Goods**

Most frames are made with 1" & 2" aluminum tubing. Other tubing types are available as size and load limits require.

A. 1"x 1"x .075 wall

6.3

- B. 1"x 2"x .100 wall
- C. Tm" x 3"x .125wall
- D. 1 % "x 1 % "x .125 wall
- E. 1 34 "x 1 34 "x .125 wall
- F. 2" x 2" x .093 wall
- G. 2 1/2" x 2 1/2" x .188 wall
- G. 1/2"round x .088 wall
- H. 2 1/2" round SCH. 40 STEEL
- 1. 2" x 3" x .125 wall STEEL

'alance	SCALLOP CUTS
Straight	
Standard Circular	
Keyhole	
Shallow Notched	
Wave	
Half Circle	
Deep Notched	

Variations of the above scallop cuts can be produced. Painted trim can also be added to customize the design.

#### **Quality Assurance**

GUARANTEES - are for normal sun and wind conditions.

FRAME - Five years for workmanship and rust and corrosion resistance.

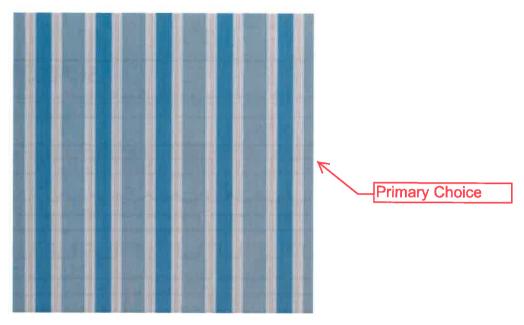
FABRIC - Manufacturer's mill warranties vary from three to eight years.

SEWING - Three year warranty on seams and thread.

More important than these stated warranties is the over SIXTY FIVE YEARS of customer service and satisfaction that Lawrence Fabric Structures has provided. We are very proud of our reputation as a leader in our industry, both in product quality and customer satisfaction.







### 46" Baycrest Sky 4992-0000

WIDTH: 46" / 116.84 cm

**REPEAT: 8.94"** 

CONTENT: 100% Sunbrella® Acrylic

SELVEDGE POSITION: Left / Right

RECOMMENDED USES: Fixed Awnings / Retractable Awnings / Shade Sails / Umbrellas

SWATCH SIZE SHOWN ~ 46" x 46"

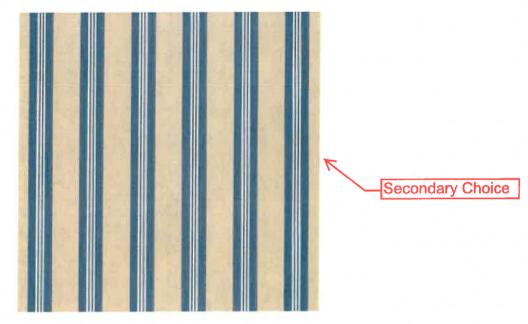
### CARE AND CLEANING:

Brush off loose dirt. Wash with a mild soap and lukewarm water solution. Rinse thoroughly. Allow to air dry. For more information visit

www.sunbrella.com/cleaning

WARRANTY: For warranty information visit www.sunbrella.com/warranty





**46" Sapphire Vintage Bar Stripe** 4948-0000

WIDTH: 46" / 116.84 cm REPEAT: 7.63" CONTENT: 100% Sunbrella® Acrylic

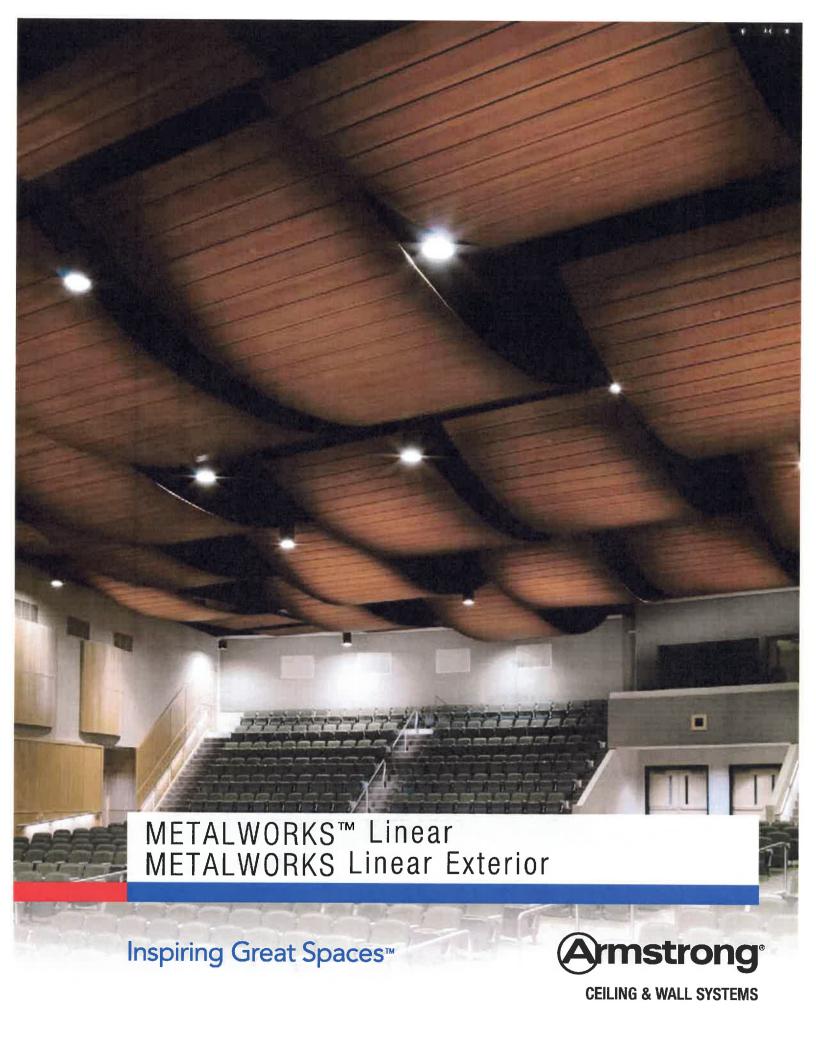
**SELVEDGE POSITION: Left / Right** 

RECOMMENDED USES: Fixed Awnings / Retractable Awnings / Shade Sails / Umbrellas

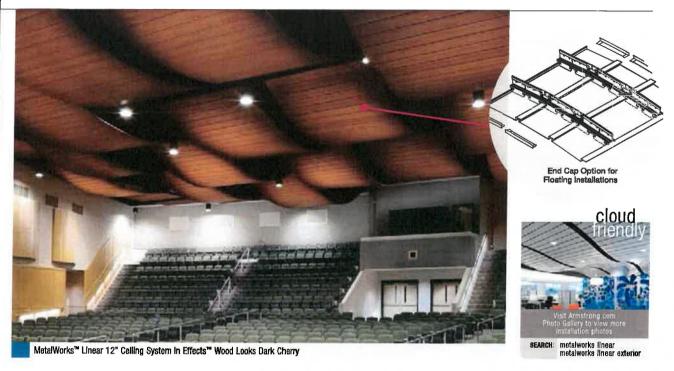
SWATCH SIZE SHOWN ~ 46" x 46"

CARE AND CLEANING:
Brush off loose dirt. Wash with a mild soap and lukewarm water solution. Rinse thoroughly. Allow to air dry. For more information visit www.sunbrella.com/cleaning

**WARRANTY:** For warranty information visit www.sunbrella.com/warranty



smooth texture



### **KEY SELECTION ATTRIBUTES**

- · Nominal 4", 6", 8", and 12" wide panels, including nominal 1" reveal
- · Acoustical options with microperforated panels
- · Available in three colors and six Effects™ Wood Looks finishes
- Install in the ceiling, on the wall, or create 90° angled or curved celling-to-wall transitions
- · Fast and easy installation

- · Durable Washable, Scrubbable, Impact-resistant, Soll-resistant
- Available for exterior applications, tested to meet wind uplift Classes 30, 60, and 90
- For custom color options, call TechLine at 1 877 ARMSTRONG
- For ceiling and wail applications that require unique solutions, contact the You Inspire Solutions Center at solutionscenter@armstrong.com

### **COLOR SELECTION**

Due to printing limitations, shade may vary from actual product.



Silver Grey









**PERFORATION OPTIONS** 



Exterior (SG2)

Gun Metal Grey Exterior (MY2)\*





Cherry (FXCH)











Effects Maple (EXMP2)

Maple (FXMP)

Effects Cherry Exterior (FXCH2)\*

Effects Dark (F)(DC2)\*

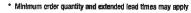
Dark Cherry (FXDC)

Effects Oak (FXOK2)\*

Effects Walnut Exterior

Effects Walnut Espresso Exterior (FXWE2)\*

(FXWE)





**Custom perforations** available

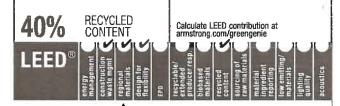


Custom colors available

# METALWORKS™ Linear METALWORKS Linear Exterior

smooth texture

**VISUAL SELECTION** 



### PERFORMANCE Dots represent high level of performance.

			Acoustics				Dur	able	
ltem Number◆	Description	Dimensions (inches) Nominal L x W x H	NRC	Fire Rating	Light Reflect (White only)		PRINCE !	<b>6</b> €	$\overline{}$
METALWORKS	Linear					Wash	Scrub	Impact	Soil
5490	4" Unperforated	96 x 4 x 5/8"	N/A	Class A	0.77	٠	•	•	
7160	6" Unperforated	96 x 6 x 5/8"	N/A	Class A	0.77	•	•	•	•
5491	8" Unperforated	96 x 8 x 5/8"	N/A	Class A	0.77	٠	•	•	•
5570†	12" Unperforated	96 x 12 x 5/8"	N/A	Class A	0.77	•	•	•	•
5492	4" Microperforated (with plain border and acoustical fleece)	96 x 4 x 5/8"	0.70 0.85*	Class A	0.61	•	•	•	•
7161	6" Microperforated (with piain border and acoustical fleece)	96 x 6 x 5/8"	0.70 0.85*	Class A	0.61	•	•	•	•
5493	8" Microperforated (with plain border and acoustical fleece)	96 x 8 x 5/8"	0.70 0.85*	Class A	0.61	•	•	•	•
5571	12" Microperforated (with plain border and acoustical fleece)	96 x 12 x 5/8"	0.70 0.85*	Class A	0.61	•	•	•	•

- When specifying or ordering, include the appropriate two-, four-, or five-letter color suffix (e.g., 5490 <u>WH</u>, 5492 <u>FXCH</u>, 5491 <u>FXDC2</u>). 12" panels are "S" Service items with minimum order quantities and extended lead times.
- NRC 0.85 with optional fiberglass Infili.

  NOTE: Silver Grey (SG), Gun Metal Grey (MY), and Effects<sup>w</sup> colors are available as "S" Service Items with minimum order quantities and extended lead times.

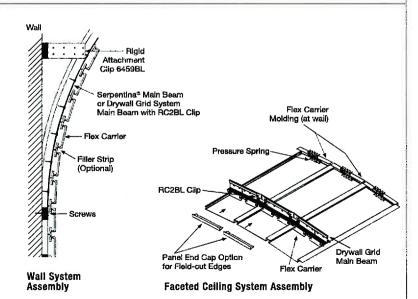
### SUSPENSION SYSTEMS

Item Number	Description	Dimensions (Inches) Nominal L x W x H	Pleces/ Carton	
5497	4", 8", 12" Standard Carrier	144 x 1-5/8 x 1-5/8"	10	
7164	6" Carrier	144 x 1-5/8 x 1-5/8"	10	
5498	4", 8", 12" Flex Carrier	144 x 1-5/8 x 1"	10	
7165	6" Flex Carrier	144 x 1-5/8 x 1"	10	
5499	4", 8", 12" Carrier Splice	4 x 1-1/2 x 5/8"	50	
7166	6" Carrier Splice	6 x 1-1/2 x 7/8"	50	
5580	Carrier Hanger	2-1/4 x 3 x 1"	20	
NOTE: Due to t	he non-standard suspension system of this product, ca	i TechLine at 1 877 ARMSTRONG to place an order.		

### **INSTALLATION DETAILS**



MetalWorks™ Linear 4" Ceiling and Wall Systems in White; Dallas Love Field, Dallas, TX







### **METALWORKS™** Linear **METALWORKS Linear Exterior**

smooth texture

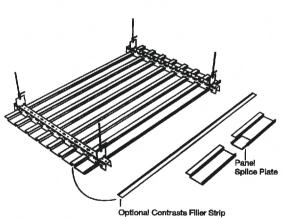
### **ACCESSORIES**

ltem Number	Description	Dimensions (inches) Nominal L x <b>W</b> x H	Pleces/ Carton
5494	Contrasts Filler Strip	96 x 1-1/4 x 1/16"	16
5495	4" Panel Splice	4 x 3-1/4 x 9/16"	50
7163	6" Panel Splice	4 x 8 x 1/2"	50
5496	8" Panel Splice	4 x 7-1/4 x 9/16"	50
(a) 7166	6" Carrier Splice	6 x 1-1/2 x 7/8"	50
5499	4", 8", 12" Carrier Splice	144 x 1-5/8 x 1"	50
5580	Carrier Hanger	2-1/4 x 3 x 1"	20
5576	Pressure Spring	2-1/2 x 1-3/16 x 7/8"	50
66 7162+↑	6" Panel End Cap	6 x 5/8 x 1"	50
5581++	4" Panel End Cap	3-1/4 x 5/8 x 1"	50
5582+	8" Panel End Cap	7-1/4 x 5/8 x 1"	50
5583++	12" Panel End Cap**	11-1/4 x 5/8 x 1"	50
5572+†	Standard Carrier Molding	120 x 1 x 1-7/8"	10
5574+t	4", 8", 12" Flex Carrier Molding	120 x 1 x 1"	10
<b>69</b> 7185+↑	6" Flex Carrier Molding	144 x 1-5/8 x 1"	10
6351	6" Speed Clip	1/4 x 1/2 x 1/8"	Bulk
5823	BioAcoustic™ Infili Panel (Black Matte)	24 x 24 x 5/8"	12
8200100	1" Fibergiass infill Bag (Black Gloss)	24 x 24 x 1"	12

When specifying or ordering, include the appropriate color suffix (e.g., 5581 FXCH).
 "S" Service Item with minimum order quantities and extended lead times.

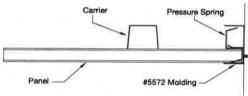
† "S" Service Item with minimum order quantities and extended lead units.
\*\* 12" Panel End Cap is for cut panels only, 12" linear panels come with an upturned end.

### **ACCESSORY DETAILS**

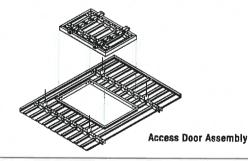


Ceiling System Assembly

attaches onto panel flange before installing panels progressively



Ceiling System Wall Attachment



### PHYSICAL DATA

### Material

Electrogalvanized Steel - thickness 0.028"

Surface Finish
Available in White, Sliver Grey, Gun Metal Grey, and
Effects™ Wood Looks powder-coated, post-production
finishes, Panels are finished on both sides for exterior
applications. Custom RAL colors also available. Refer
to CS-3957 for a sampling of RAL colors. Contact
TechLine at 1 877 ARMSTRONG for custom color requests.

### Edge Detail

Square with extended flange. To create Contrasts system, flange is covered with 1-1/4" black Filler Strip.

Fire Performance Factory Mutual Approvals Specification tested per ASTM E84 and CAN/ULC \$102. 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

Wind Uplift Performance
4", 6", and 8" panels tested for wind uplift Classes 30,
60, and 90. Specific installation recommendations to
meet these wind classes are available. For more information, contact TechLine at 1 877 ARMSTRONG.

Seismic Restraint
MetalWorks Linear has been engineered, tested, and
approved for application in all seismic areas when
installed per Armstrong installation instructions.

Warranty Details at armstrong.com/warranty

Weight; Square Feet/Carton
5490, 5492 – 1.61 lbs/SF; 16 pcs/ctn or 128 LF/ctn;
43 SF/ctn
5491, 5493 – 1.61 lbs/SF; 10 pcs/ctn or 80 LF/ctn;
53 SF/ctn
5570, 5571 – 1.61 lbs/SF; 6 pcs/ctn or 48 LF/ctn;
48 SF/ctn
7160, 7161 – 1.61 lbs/SF; 12 pcs/ctn or 96 LF/ctn;
48 SF/ctn
7160, 7161 – 1.61 lbs/SF; 12 pcs/ctn or 96 LF/ctn;
48 SF/ctn

48 SF/ctn

TechLine™ / 1 877 ARMSTRONG armstrong.com/metalworks

BPCS-3909-616

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### **GN1LED26NSADW**



Prepared	By:	Date:	
·			
Driver Info		LED info	
Туре:	Constant Current	vVatts:	26W
		O de Terre	4000K (Novemb)
120V:	0.25A	Color Temp:	4000K (Neutral)
	0.25A <b>0.16A</b>	Color Temp: Color Accuracy:	85 CRI
120V: 208V: 240V:		•	
208V:	0.16A	Color Accuracy:	85 CRI

Type:

13 & 25 Watt Dome Shade LED Gooseneck Luminaire designed to match the architecture of Main Street storefronts and building perimeters, LED Gooseneck Dome Shade with 24\* Goose Arm Style 1.

Color: White

Weight: 11.0 lbs

### **Technical Specifications**

### Listings

### **UL Listing:**

Suitable for wet locations. Suitable for mounting within 1.2m (4ft) of the ground.

### IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

### **LED Characteristics**

### Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

### LED:

Single multi-chip, 26W high-output, long-life LED.

### Correlated Color Temp. (Nominal CCT):

4000K

### Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

### Color Uniformity:

RAB's range of CCT (Correlated color temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2008.

### Construction

### Fixture:

The GN1LED26NSADW comes with the GOOSE1W Arm.

### Thermal Management:

Custom heat sink assembly in thermal contact with die-cast aluminum housing for superior heat sinking.

### Housing:

Precision die-cast aluminum housing, lens frame and mounting plate.

### Gaskets:

High Temperature Silicone

### Mounting:

Heavy-duty mounting arm with "O" ring seal and stainless steel screw.

### **Cold Weather Starting:**

The minimum starting temperature is -40°F/-40°C

### Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals. Offers significantly improved gloss retention and resistance to color change.

### **Green Technology:**

Mercury and UV free, and RoHS compliant. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

### Electrical Driver:

Constant Current, Class 2, 100-277V, 50/60 Hz, 0.48 A, THD≤20%, PF 97.9%.

### Surge Protection:

4kv

### Other

### Shades

15" Angled Dome Shade offered.

### Equivalency:

Project:

The GNLED26 is equivalent in delivered lumens 120W incandescent, 75W MH or 42W CFL.

### California Title 24:

Goosenecks complies with 2013 California Title 24 building and electrical codes as a commercial outdoor non-pole-mounted fixture < 30 Watts when used with a photosensor control. Select catalog number PCS900(120V) or PCS900/277 to order a photosensor.

### Patents:

The design of the Gooseneck is protected by patents pending in US, Canada, China and Taiwan...

### Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

### Country of Origin:

Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.

### **Buy American Act Compliant:**

This product is a COTS item manufactured in the United States, and is compliant with the Buy American Act.

### Recovery Act (ARRA) Compliant:

This product complies with the 52.225-21 "Required Use of American Iron, Steel, and Manufactured Goods-- Buy American Act-- Construction Materials (October 2010)

### Trade Agreements Act Compliant:

This product is a COTS item manufactured in the United States, and is compliant with the Trade Agreements Act.

# **GN1LED26NSADW**



### **Technical Specifications (continued)**

Other

### **GSA Schedule:**

Suitable in accordance with FAR Subpart 25.4

# 2200 [19,08] 2250 [209.53] 315 [8] (497]

### **Features**

Adjustable 45° swivel joint

Superior heat sink

Die-cast aluminum housing

5 year LED warranty

### **Ordering Matrix**

Family	Watts	Color Temp	Reflector	Shade	ShadeSize	Finish
GN1LED	26	N	S	AD		W
	13 = 13W 26 = 26W	Y = 3000K N = 4000K	= Flood R = Rectangular S = Spot	AD = Angled Dome	11 = 11" = 15°	B = Black W = White A = Bronze S = Silver G = Hunter Green YL = Yellow LB = Light Blue BL = Royal Blue BWN = Brown I = Ivory R = Red

### **Halo Commercial**

### DESCRIPTION

Recessed 6-inch LED lens downlight is available in various distributions, lumen and CRI/CCT options. Suitable for commercial construction and can be used for both new or renovation work. Insulation must be kept 3" from top and sides of housing. Use for general area lighting where high efficiency and visual comfort are required.

Catalog #	Туре
Project	
Comments	Date
repared by	

Recessed Canned Fixtures beneath Canopies

### SPECIFICATION FEATURES

### **MECHANICAL**

### Frame

Boat shaped galvanized steel frame with adjustable plaster lip accommodates ceilings up to ½ - 2" thick. May be used for new construction or remodeling installations. Provided with (2) remodel clips to secure frame when installed from below the ceiling.

### **Mounting Brackets**

Bar hanger receivers adjusts 2" vertically from above the ceiling or thru the aperture. Use with No Fuss™ bar hangers or with ½" EMT. Removable to facilitate installation from below the ceiling.

### No Fuss™ Bar Hangers

Captive preinstalled bar hanger locks to tee grid with a screwdriver or pliers. Centering mechanism allows consistent positioning of fixtures.

### OPTICAL LED Module

Proximity phosphors over chip on board LEDs provide a uniform source with high efficiency and no pixilation. Available in 80 or 90 CRI minimum, accuracy within 3 SDCM provides color uniformity. See ordering information for available CRI / CCT options. Passive thermal management achieves L70 at 50,000 hours in non IC applications. Integral diffuse lens provides visual shielding. Integral connector allows quick connection to housing flex.

### Reflector

One piece parabolic aluminum reflector provides cutoff for a visually comfortable optic. Attaches to LED module with (3) speed clamps minimizing light leaks to lens. Self-flanged standard with an optional white painted flange.

### **Trim Retention**

Reflectors are retained with two torsion springs holding the flange tightly to the finished ceiling surface.

# **ELECTRICAL**Junction Box

(6) ½" and (2) ¾" trade size pry outs positioned to allow straight conduit runs. Listed for (12) #12 AWG (six in, six out) 90°C conductors and feed thru branch wiring.

### Driver

Integral UNV 120 - 277V 50/60 Hz constant current driver provides noise free operation. For 347V input use Halo transformer H347 or H347200. Continuous, flickerfree dimming from 100% to 10% with leading or trailing edge phase cut at 120V or 0 -10V analog control.

### **Emergency Option**

Provides 90 minutes of standby lighting meeting most life safety codes for egress lighting. Available with both integral or remote charge indicator and test switch.

### Compliance

- cULus listed for wet location
- cCSAus listed for wet location
- IP66 ingress Protection Rated
- Insulation must be kept 3" from top and sides.
- Airtight per ASTM-E283.
- Optional City of Chicago environmental air (CCEA) marking for plenum applications.
- EMI/RFI emissions per FCC 47CFR Part 18 non-consumer limits.
- Contains no mercury or lead and RoHS compliant.
- Photometric testing in accordance with IES LM-79-08.
- Lumen maintenance projections in accordance with IES LM-80-08 and TM-21-11.
- Can be used to comply with California Title 24 Non-Residential Lighting Controls requirements as a LED Luminaire,
- ENERGY STAR® listed for commercial applications, reference database for current listings.



PD610 PD615 PD620 PD630

PDM6A

61V

1000, 1500, 2000 & 3000 Lumen Series

LED 6-Inch Aperture Lens Downlight

THD: ≤ 20%	]
PF: ≥ 0.90	٦
T Ambient -30 - +40°C	٦
Sound Rating ≤ 22dba	

Lumens	1000 Series		
Input Völtage	120V	277V	
Input Current	.103 A	.058 A	
Input Power	12.1 W	13.2 W	
Efficiency	88 LPW	88 LPW	
Inrush Current	.048 A	A 080.	

Lumens	1500 Series		
Input Voltage	120V	277V	
Input Current	.146 A	.1 A	
Input Power	17.1 W	17.9 W	
Efficiency	87 LPW	87 LPW	
Inrush Current	1.920 A	0.960 A	

Lumens	2000 Series		
input Voitage	120V 277V		
Input Current	.175 A	.536 A	
Input Power	20.78 W	21.06 W	
Efficiency	89 LPW	89 LPW	
Inrush Current	.064 A	.128 A	

Lumens	3000 Series		
Input Voltage	120V	277V	
Input Current	.299 A	.145 A	
Input Power	35.72 W	36.4 W	
Efficiency	82 LPW	82 LPW	
Inrush Current	.096 A	.928 A	



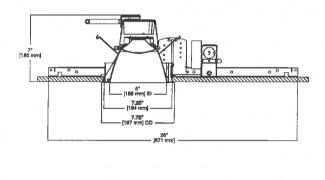
### **ORDERING INFORMATION**

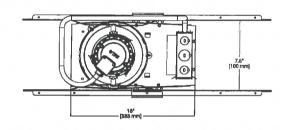
SAMPLE NUMBER: PD610ED010REM-PDM6A827-61VC
A complete luminaire consists of a housing, LED module and reflector, order separately.

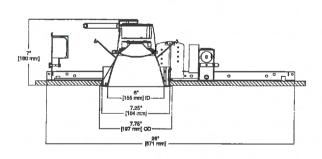
Rousing	Lumons	Driver.	Options	LED Module	CRI/(FGT
PD6 = 6" aperture LED downlight PD6CP = 6" aperture LED downlight, CCEA listed for City of Chicago plenum requirements	10 = 1,000 lumens (nominal) 15 = 1,500 lumens (nominal) 20 = 2,000 lumens (nominal)	ED010 = 120-277V 50/60Hz, 0-10V and LE/TE phase cut dimming	REM = Emergency operation with remote indicator and test switch IEM = Emergency operation with	PDM6A = Downlight LED module for PD6 housting, provides 1,000, 1,500, 2,000, or 3,000 lumens (nominal) depending	827 = 80 CRI, 2700K CCT 927 = 90 CRI, 2700K CCT 830 = 80 CRI, 3000K CCT 930 = 90 CRI, 3000K CCT 935 = 80 CRI, 3500K CCT 935 = 90 CRI, 3500K CCT 840 = 80 CRI, 4000K CCT
	30 = 3,000 lumens (nominal)	D010 = 120-277V 50/60Hz, 0-10V dimming (3,000 lumen only)	integral indicator and test switch, 60 Hz only (REM and IEM options not available with PDGCP housing)	on connected housing type	940 = 90 CRI, 4000K GCT

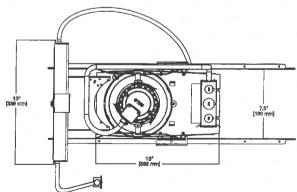
	Finish Option	Flange Option	Accessories
61V = 6° vertical parabolic reflector 61VEM = 6° vertical parabolic reflector for IEM	C = Specular clear G = Specular gold H = Semi-specular clear W = White (white flange) BB = Black baffle (white flange) WB = White baffle (white flange)	Blank = Polished flange standard with C, G & H reflector finishes Blank = White flange standard with W, BB, & WB WF = White flange option available with C, G, & H reflector finishes	HB128APK = L channel hanger bar, 26", 'No-Fuss', pair (replacement) RMB22 = 22" long wood joist mounting bars, pair H347 = Step down transformer for 347V input H347 = Step down transformer for 347V input, 75VA max H347200 = Step down transformer for 347V input, 200VA max

### **DIMENSIONS**











### **COMPLIANCE TABLE**

**Halo Commercial** 

### **1000 LUMEN**

	161						80 C	RI	الطعيطا							
Catalog #	PD610	ED010- PDM	6A827		PD610	ED010- PDM	16A830		PD610	ED010- PDM	6A835		PD6101	DO10- PDI	A5A840	
	Lumens	LPW	ES	124	Lumens	LPW	ES	T24	LUMENS	LPW	ES	Thi	Lumens	LPW	ES	T24
61VC	1032	77			1109	83			1177	88			1187	89		
61VCWF	1005	75			1080	81			1146	86			1156	86		
61VG	1003	75			1078	80			1144	85			1154	86		
61VGWF	966	72			1039	78			1102	82			1111	83		
61VH	924	69			993	74			1053	79			1062	79		
61VHWF	921	69			990	74			1051	78			1060	79		
61VW	960	72			1032	77			1095	82			1104	82		
61VBB	897	67			964	72			1023	76			1031	77		
61VWB	980	73		1000	1053	79			1118	83			1127	84		

		Sec. 1				90 0	:RI		41 "		-	h				
Catalog #	PD610I	DO10- PDM	6A927		PD610	ED010- PDM	6A930		PD610	ED010- PDN	6A935		PD610	ED010- PDI	16A940	
	Lumens	LPW	ES	T24	LUMENS	LPW	ES	134	LUMENS	LPW	ES	T24	LUMENS	LPW	ES	T24
61VC	795	59			853	64			917	68			1017	76		
61VCWF	775	58			831	62			894	67			990	74		
61VG	773	58			829	62			892	67			988	74		
61VGWF	745	56			799	60			859	64			952	71		
61VH	712	53			763	57			821	61			910	68		
61VHWF	710	53			761	57			819	61			908	68		
61VW	740	55			794	59			854	64			946	71		
61VBB	691	52			741	55			797	59			884	66		
61VWB	755	56			810	60			871	65			966	72		

### **1500 LUMEN**

						80 (	CRI									
Catalog #	PD6151	ED010- PDN	6A827		PD6151	D010- PDN	16A830		PD615	D010- PD#	16A835		PD6151	ED010- PDI	16A840	,
	LUMENS	LPW	ES	T24	LUMENS	LPW	ES	T24	LUMENS	LPW	ES	T24	Lumens	LPW	ES	T24
61VC	1417	77			1523	82			1616	87		+.	1630	88		
61VCWF	1380	75			1483	80			1574	85			1587	86		
61VG	1377	74			1480	80			1570	85			1584	86		
61VGWF	1327	72			1426	77			1513	82		Secretary and	1526	82		
61VH	1268	69			1363	74			1446	78			1458	79		
61VHWF	1265	68			1359	73			1442	78			1455	79		-1
61VW	1318	71			1417	77			1503	81			1516	82		
61VBB	1231	67			1323	72			1404	76			1416	77		
61VWB	1346	73		1	1446	78			1534	83			1548	84		

						90 (	CRI									
Catalog #	PD6151	ED010- PDA	6A927		PD615	ED010- PDN	16A930	)	PD615	ED010- PDN	6A935		PD615	EDO10- PDN	16A940	
	LUMENS	LPW	ES	T24	Lumens	LPW	ES	T24	Lumens	LPW	ES	T24	Lumens	LPW	ES	T24
61VC	1092	59			1171	63			1260	68			1396	75		
61VCWF	1064	57			1141	62			1227	66			1360	74		
61VG	1061	57			1138	62			1224	66			1357	73		
61VGWF	1022	55			1096	59			1179	64			1307	71		
61VH	977	53			1048	57			1127	61			1249	68		
61VHWF	975	53			1045	57			1124	61			1246	67		
61VW	1016	55			1090	59			1172	63			1299	70		
61VBB	949	51			1018	55			1095	59			1213	66		
61VWB	1037	56			1112	60			1196	65			1326	72		

ES = ENERGY STAR® Compliant

T24

T24 = Can be used to comply with California Title 24 Non-Residential



### **2000 LUMEN**

	0						80 C	RI				2 J				1
Catalog #	PD620	ED010- PDM	6A827		PD620	ED010- PDM	6A830	)	PD620	ED010- PDM	6A835	i	PD620	ED010- PDA	16A840	
	LUMENS	LPW	ES	T24	Lumens	LPW	ES	124	Lumens	LPW	ES	724	Lumens	LPW	ES	T24
61VC	1724	78			1853	84			1966	89			1983	90		
61VCWF	1679	76			1805	82		2// 22/1	1915	87			1931	88		
61VG	1675	76			1801	82			1910	87			1927	88		
61VGWF	1614	73			1735	79			1841	84			1856	84		
61 <b>V</b> H	1543	70			1658	75			1759	80		00004	1774	81		
61VHWF	1539	70			1654	75			1755	80			1770	80		
61VW	1604	73			1724	78			1829	83			1845	84		
61VBB	1498	68			1610	73			1708	78			1723	78		
61VWB	1637	74			1759	80			1867	85			1883	86		

Part I							90 C	RI								
Catalog #	PD620	ED010- PDM	6A927	2	PD620	ED010- PDM	6A930	)	PD620	ED010- PDM	6A935		PD620	ED010- PDN	6A940	
	LUMENS	LPW	ES	T24												
61VC	1328	60			1425	65			1532	70			1698	77		
61VCWF	1294	59			1388	63			1493	68			1654	75		
61VG	1291	59			1385	63			1489	68			1651	75		
61VGWF	1244	57			1334	61			1435	65			1590	72		
61VH	1189	54			1275	58			1371	62			1520	69		
61VHWF	1186	54		1	1272	58			1368	62			1516	69		
61VW	1236	56			1325	60			1426	65			1580	72		
61VBB	1154	52			1238	56			1332	61			1476	67		
61VWB	1262	57			1353	61			1455	66			1613	73		

### **3000 LUMEN**

		audh:		10 X	NI SUF	514718	80 C	RI					JULY JOH	7 7 7		
Catalog #	PD630	10010- PDM	3A827	17	PD630	)D010- PDM	6A830		PD630	D010- PDM	6A835		PD630	D010- PDN	6A840	
	Lumens	LPW	ES	T24	LURINS	LPW	ES	T24	LUMENS	LPW	ES	T2/1	Lumens	LPW	ES	124
61VC	2576	72			2768	78			2937	82		7,1	2963	83		
61VCWF	2509	70			2697	76			2861	80			2886	81		
61VG	2503	70			2691	75			2855	80			2879	81		
61VGWF	2412	68			2592	73			2750	77			2774	78		11
61VH	2305	65			2477	69			2629	74			2651	74		
81VHWF	2299	64			2471	69			2622	73			2645	74		
61VW	2397	67			2576	72			2733	77			2757	77		
61VBB	2238	63			2406	67			2553	72			2575	72		
61VWB	2446	69			2629	74			2790	78			2814	79		

						90 C	RI				50					
Catalog #	PD630	DO10- PDM	6A927		PD630	00010- PDM	6A930		PD636	D010- PDM	6A935		PD630	D010- PDN	6A940	
	LUMENS	LPW	ES	124	LIMENS	LPW	ES	T24	LUMENS	LPW	ES	T24	LUMENS	LPW	ES	124
61VC	1985	56			2129	60			2290	64			2538	71		0
61VCWF	1934	54			2074	58			2231	62			2472	69		
61VG	1929	54		4	2069	58			2226	62			2466	69		
61VGWF	1859	52			1993	56			2144	60			2376	67		
61VH	1776	50			1905	53			2049	57			2271	64		
61VHWF	1772	50			1900	53			2044	57			2265	63		
61VW	1847	52			1981	55			2131	60			2361	66		
61VBB	1725	48			1850	52			1990	56			2205	62		
61VWB	1885	53		,	2022	57			2175	61			2410	68		

ES = ENERGY STAR® Compliant

T24

T24 = Can be used to comply with California Title 24 Non-Residential



# **Halo Commercial**

### PHOTOMETRY - 1000 lumen / 80 CRI

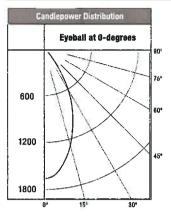
PD610ED010- PDM6A835-61VC

Spacing Criteria = 0.76

Lumens per Watt = 97.3 Lm/W

Test No. P137037

Test Model: PD610ED010- PDM6A835-61VC



Candela I	Candela Distribution									
Degrees Vertical	Candela									
0*	1665									
5	1614									
10	1469									
20	1057									
30	609									
40	166									
50	18									
60	3									
70	1									
80	0									
90	0									
	*CBCP									

Lum	inance										
(Average	Candela/M²)										
Degree	Luminance										
45	4791										
55	497										
65	221										
75	191										
85	0										

	Cone of Light Footcar	idles	
Distance to	initial Nadir	Bear	m (ft.)
illuminated Plane	Footcandles	L Langth	W
5.5	55.1	4	4
7	34	5.2	5.2
8	26	6	6
9	20.6	6.8	6.8
10	16.7	7.6	7.6
12	11.6	9	9

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot. Footcandle values are initial, apply appropriate light loss factors where necessary.

Zonal Lumen Summary		
Zone	Lumens	% Fixture
0-30	886	75.3
0-40	1113	94.6
0-60	1175	99.8
0-90	1177	100

### Scaling factor for the Battery back up:

- 1000 Lumen = 0.55
- 1500 Luman = 0.40
- 2000 Lumen = 0.33
- 3000 Luman = 0.22

### PHOTOMETRY - 1000 lumen / 90 CRI

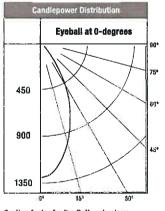
PD610ED010- PDM6A935-61VC

Spacing Criteria = 0.76

Lumens per Watt = 75.8 Lm/W

Test No. P137041

Test Model: PD610ED010- PDM6A935-61VC



Candela Distribution		
Degrees Vertical	Gandela	
0*	1298	
5	1258	
10	1146	
20	824	
30	475	
40	130	
50	14	
60	2	
70	1	
80	0	
90	0	

\*CBCP

(Average Candela/M²)		
		Degree Avg. 0* Luminance
45	3737	
55	392	
65	182	
75	75 148	
85	0	

Cone of Light Footcandles			
Distance to	Initial Nadir	Bean	1 (fL)
Illuminated Plane	Footcandles	L Langih	W
5.5°	52	4.4	4.4
7'	32.1	5.8	5.8
8'	24.6	6.6	6.6
9'	19.4	7.4	7.4
10'	15.7	8.2	8.2
12'	10.9	10	10

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot. Footcandle values are initial, apply appropriate light loss factors where necessary.

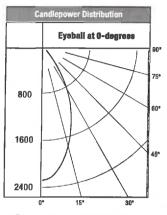
Zonal Lumen Summary		
Zone	Lumens	% Fixture
0-30	691	75.3
0-40	868	94.6
0-60	916	99.8
0-90	917	100

- $-1000 \, \mathrm{Lumen} = 0.55$
- 1500 Lumen = 0.40
- 2000 Lumen = 0.33
- 3000 Lumen = 0.22



### PHOTOMETRY - 1500 lumen / 80 CRI

PD615ED010- PDM6A835-61VC Spacing Criteria = 0.76 Lumens per Watt = 87.3 Lm/W Test No. P166938 Test Model: PD615ED010- PDM6A835-61VC



Candela Distribution		
Degrees Vertical	Candela	
0*	2287	
5	2216	
10	2018	
20	1452	
30	836	
40	228	
50	25	
60	4	
70	1	
80	0	
90	0	
	*CBCP	

Lum	Inance	Cone of Light Footcandles			
(Average	Candela/M²)	Distance to		Beam (ft.)	
Degree	Avg. 0° Luminance	Illuminated Plane	initial Nadir Footcandles	L Langth	W
45	6582	5.5	75.6	4	4
55	688	7	46.7	5.2	5.2
65	311	8	35.7	6	6
75	254	9	28.2	6.8	6.8
85	0	10	22.9	7.8	7.6
		12	15.9	9	9

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot. Footcandle values are initial, apply appropriate light loss factors where necessary.

Zonal Lumen Summary		
Zone	Lumens	% Fixture
0-30	1217	75.3
0-40	1529	94.6
0-60	1613	99.8
0-90	1616	100

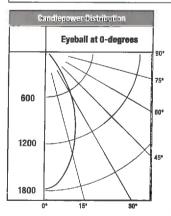
### Scaling factor for the Battery back up:

- 1000 Lumen = 0.55
- 1500 Lumen = 0.40
- 2000 Lumen = 0.33
- 3000 Lumen = 0.22

### PHOTOMETRY - 1500 lumen / 90 CRI

### PD615ED010- PDM6A935-61VC

Spacing Criteria = 0.76 Lumens per Watt = 68.1 Lm/W Test No. P166942 Test Model: PD615ED010- PDM6A935-61VC



data-			
Candela Distribution			
Candela			
1783			
1728			
1573			
1132			
652			
178			
20			
3			
1			
0			
0			

\*CBCP

Luminance			
(Average	(Average Candela/M²)		
Degree	Degree Avg. 0° Luminance		
45	5132		
55	55 535		
65	65 246		
75	75 191		
85	85 0		

	Cone of Light Footcandles			
Distance to	Initial Nadir Footcandles	Beam (ft.)		
Duminated Plane		L	W	
5.5	58.9	4	4	
7	36.4	5.2	5.2	
8	27.9	6	6	
9	22	6.8	6.8	
10	17.8	7.6	7.6	
12	12.4	9	9	

Beam diameter is to 50% of maximum footcandies, rounded to the nearest half-foot. Footcandle values are initial, apply appropriate light loss factors where necessary.

Zo	Zonal Lumen Summary		
Zone	Lumens	% Fixture	
0-30	948	75.3	
0-40	1192	94.6	
0-60	1257	99.8	
0-90	1260	100	

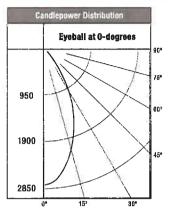
- $-1000 \, \text{Lumen} = 0.55$
- 1500 Lumen = 0.40
- 2000 Lumen = 0.33
- 3000 Lumen = 0.22



### PHOTOMETRY - 2000 lumen / 80 CRI

**Halo Commercial** 

PD620ED010- PDM6A835-61VC Spacing Criteria = 0.76 Lumens per Watt = 89.4 Lm/W Test No. P137021 Test Model: FD620ED010- PDM6A835-61VC



Candela Distribution		
Degrees Vertical	Candela	
0*	2782	
5	2696	
10	2454	
20	1766	
30	1017	
40	278	
50	31	
60	4	
70	2	
80	0	
90	0	
	*CBCP	

Luminance (Average Candela/M²)		
		Degree
45	8009	
55	832	
65	376	
75	318	
85	0	

Cone of Light Footcandles			
Distance to	initial Nadir	Bean	ı (ft.)
Illuminated Plane	Footcandles	L Langte	W
5.5	92	4	4
7	56.8	5.2	5.2
8	43.5	6	6
9	34.3	6.8	6.8
10	27.8	7.6	7.6
12	19.3	9	9

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot. Footcandie values are initial, apply appropriate light loss factors where necessary.

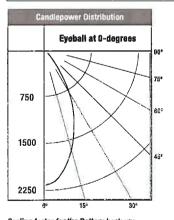
Zonal Lumen Summary		
Zone	Lumens	% Fixture
0-30	1480	75.3
0-40	1860	94.6
0-60	1962	99.8
0-90	1966	100

### Scaling factor for the Battery back up:

- 1000 Lumen = 0.55
- 1500 Lumen = 0.40
- 2000 Lumen = 0.33
- 3000 Lumen ≈ 0.22

### PHOTOMETRY - 2000 lumen / 90 CRI

PD620ED010- PDM6A935-61VC Spacing Criteria = 0.76 Lumens per Watt = 69.7 Lm/W Test No. P137025 Test Model: PD620ED010- PDM6A935-61VC



Candela Distribution		
Degrees Vertical	Candela	
G*	2168	
5	2102	
10	1913	
20	1377	
30	793	
40	217	
50	24	
60	3	
70	1	
80	0	
90	0	

\*CBCP

I Notesta	inance
(Average Candela/M²)	
Degree	Avg. 0° Luminance
45	6241
55	650
65	298
75	233
85	0
85	

Distance to	Initial Nadir	Bean	1 (fL)
Illuminated Plane	Footcandles	L Length	Wide
5.5	71.7	4	4
7	44.3	5.2	5.2
8	33.9	6	6
9	26.8	6.8	6.8
10	21.7	7.6	7.6
12	15.1	9	9

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot. Footcandle values are initial, apply appropriate light loss factors where necessary.

Zo	Zonal Lumen Summary		
Zone	Lumens	% Fixture	
0-30	1154	75.3	
0-40	1450	94.6	
0-60	1530	99.8	
0-90	1532	100	

- 1000 Lumen = 0.55
- 1500 Lumen = 0.40
- 2000 Lumen = 0.33
- 3000 Lumen = 0.22



### PHOTOMETRY - 3000 lumen / 80 CRI

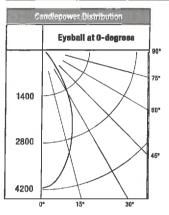
PD630ED010- PDM6A835-61VC

Spacing Criteria = 0.76

Lumens per Watt = 82.3 Lm/W

Test No. P137053

Test Model: PD630ED010- PDM6A835-61VC



Candela Distribution		
Degrees Vertical	Candela	
0*	4157	
5	4028	
10	3668	
20	2639	
30	1520	
40	415	
50	46	
60	6	
70	2	
80	0	
90	0	
	*CBCP	

Luminance (Average Candela/M²)		
		Degree
45	11970	
55	1242	
65	558	
75	466	
85	0	

Cone of Light Footcandles			
Distance to	initial Nadir Footcandles	Beam (ft.)	
Munimated Plane		L Langth	W
5.5	137.4	4	4
7	84.8	5.2	5.2
8	65	6	6
9	51.3	6.8	6.8
10	41.6	7.6	7.6
12	28.9	9	9

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot.

Footcandle values are initial, apply appropriate light loss factors where necessary.

Zonal Lumen Summary		
Zone	Lumens	% Fbdure
0-30	2212	75.3
0-40	2779	94.6
0-60	2932	99.8
0-90	2937	100

### Scaling factor for the Battery back up:

- 1000 Lumen = 0.55
- 1500 Lumen = 0.40
- 2000 Lumen = 0.33
- 3000 Lumen = 0.22

### PHOTOMETRY - 3000 lumen / 90 CRI

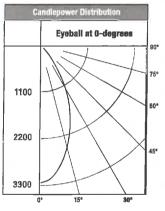
PD630ED010- PDM6A935-61VC

Spacing Criteria = 0.76

Liamens per Watt = 64.1 Lm/W

Test No. P137057

Test Model: PD630ED010- PDM6A935-61VC



Candela Distribution		
Degrees Vertical	Candela	
0*	3240	
5	3140	
10	2859	
20	2058	
30	1185	
40	324	
50	36	
60	5	
70	2	
80	0	
90	0	
	*CBCP	

Lum	inance	
(Average Candela/N²)		
Dograe Avg. 0° Luminance		
45	9327	
55 975		
65	441	
75 360		
85 0		

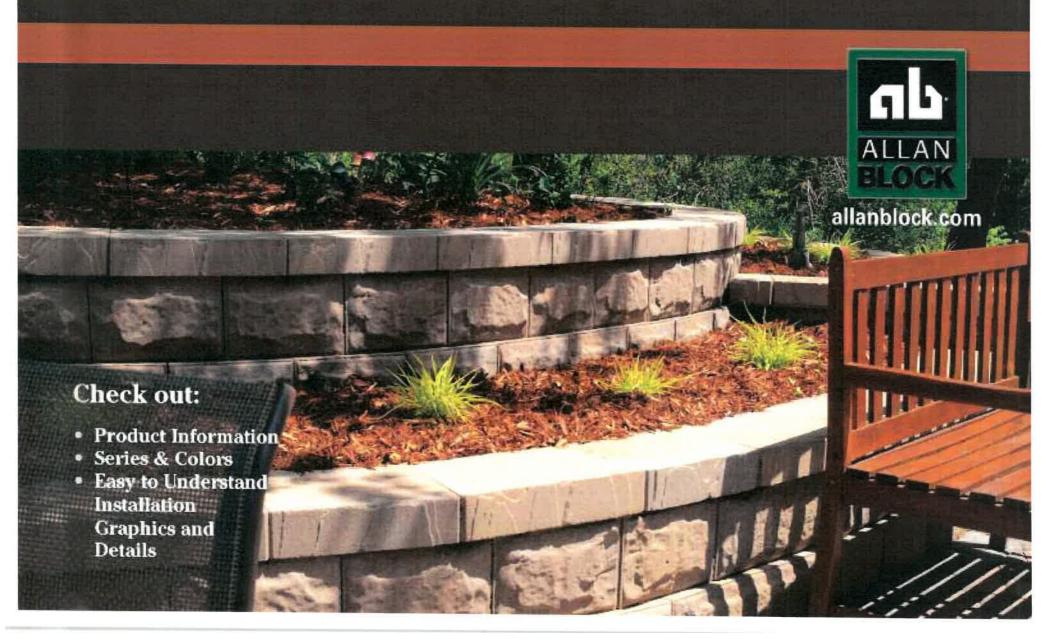
	Cone of Light Footcandles				
Distance to	Initial Nadir	Bear	n (ft.)		
(Burninated Plane	Footcandles	L Lingth	W		
5.5	107.1	4	4		
7	66.1	5.2	5.2		
8	50.6	6	6		
9	40	6.8	6.8		
10	32.4	7.6	7.6		
12	22.5	9	9		

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot. Footcandle values are initial, apply appropriate light loss factors where necessary.

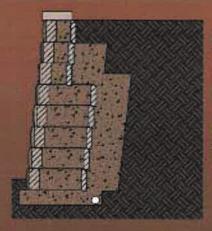
Zoi	Zonal Lumen Summary		
Zone	Lumons	% Fixture	
0-30	1724	75.3	
0-40	2166	94.6	
0-60	2286	99.8	
0-90	2290	100	

- 1000 Lumen = 0.55
- 1500 Lumen = 0.40 - 2000 Lumen = 0.33
- 2000 Lumen = 0.33 - 3000 Lumen = 0.22

# AB Fieldstone®

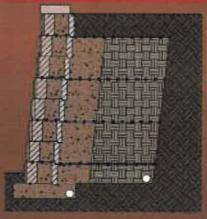


# AB Fieldstone is easy to install - Friendly



# **Gravity Walls**

Taller gravity walls can be achieved using the long anchoring units. This eliminates the need for geogrid reinforcement. Check maximum gravity wall heights in the table below.



# **Reinforced Walls**

AB Fieldstone can also be built using the short anchoring units with geogrid reinforcement. Check the maximum wall height chart and the soil reinforcement chart for proper placement.

### Maximum Wall Heights - AB Gravity Walls

Condition above retaining wall	Soil Type	Friction Angle	6° (Ech All fieldness Stort Aschoring Unit (SAU)	6° (Set) All Heldmans Long Archaring Unit (LAL)
Level	City	27	3 H. 7 in. i.1 m	5 R. 10 m. 1.8 m
	Sitty San 1	112	5.0 Ju 1.5 m	811.6 in. 2.6 m.
	Sand/Gravel	346	5 ft. 8 in. 1 t.7 m	<sup>9</sup> (it. 8 in- 3 0 au
Survicings Kill pall ] Coll (43 (2a)	Cley	47	i ft 8 in. 6.5 m	4.0 ft. 1.2 m
	Silty Sand		3 tt. 7 m. 1 t sr	7.0 ft 2.1 m
	Soud/Gravel	36	4 ft. 2 in. 1.3 m	8.0 ft. 2.4 m
Stope 3:1	Clay	27	2ft 8in. 0.8 m	4 ft. 4 in. 1.3 m
	Silly Sand	32	1 ft. (1 in. 1,2 pr	7 ft. 4 m. 2.3 m
	Soud/Gravel	36	5 ft 1 fm. 1.5 m	50.7m 2.6m

Table is based on Tay sot having as talared irretion angle of \$7. (No.) so better and a Sandy soltharting as related incomençated \$2. (See is better and a Sandy Grand anti-having as relevant front as any of \$7. (See is better at height based on spoused with length as the sandy as a second as the sandy as a second front account for administration for the sandy of the sandy account for administration for the sandy of the sandy as a second front account for administration of the proposed sand to prefer the sandy as a second front f

# Example

A 6 ft high wall (1.8 m) built in sandy soil with a level surface above the wall will require geogrid - four layers, 4 ft wide (1.2 m). With long anchoring units (LAU), it will require no additional reinforcement, but will require review by a local professional engineer.

### Soll Reinforcement Chart for Residential Wall Applications

CONDITION WALL		AB Fieldstone Collection				
WALL	HEIGHT**	CLAY	SOIL WILL (NO	SAND! No of Lores	SOIL Watta (W)	
Level	3ft (211m)	0	0	0	0	
14	4ft (12m)	2	218	0	0	
- P	50 (15m)	3	14	3	3 h	
****	GR (1 × m)	1000年100日	48	Notice record	4.8	
Sore harge?	2ft (0.5m)	71.8	0/(1	0	0	
100 and	3ft (0.9+6)	2	an	0	0	
15-	40 (1200)	2	3 ft	2	3 ft	
	5ft (L5m)	-	3#	3	3 ft	
-5	6ft (1.8 m)	40	4.0	4	4 ft	
Slope	3ft (0.9 m)	2	n.c	0	. 6	
NI .	4ft (L2m)	2	3 8	2	3 R	
	5ft (1.5m)	3	4 (1	3	3.0	
Minus Cal	6ft (Lsm)	100	4.0	576	4.0	

Table is bored on the self-terring as interest (inflore under al IT (thet) as before and a sunds with bridge as turns at friction under al 22 (but) as before feel interest consists the stringship of the well-by creating a fortierned more all will behind the blocks. The weight of the rendered will now combine with the blocks for a traveler attractive will. Take is for estimating respect (pass till records). For well-by the acromatic posterior at space of the acromatic posterior at a space of the complete area good for an additional 2 if (William). To achieve these longer gold lengths, the Alice Neck setatoring grid most be installed per provide also to be well (collect on from the load of the block to the load of the block of the device of the collection of t

# More from Allan Block - Retaining Walls

# **AB Europa Collection**



### **AB** Dover

Approx. 1 blk/ft<sup>2</sup> (11 blk/m<sup>2</sup>) 8 in. H x 10.5 in. D x 18 in. L (200 mm H x 265 mm D x 460 mm L) 80 lbs (36 kg)



### AB Palermo

Approx. 2 blk/ft<sup>2</sup> (22 blk/m<sup>2</sup>) 8 in. H x 9.5 in. D x 9 in. L (200 mm H x 240 mm D x 230 mm L) 35 lbs (16 kg)



### **AB Barcelona**

Approx. 2 blk/ft<sup>3</sup> (22 blk/m<sup>3</sup>) 4 in. H x 10.5 in. D x 18 in. L (100 mm H x 265 mm D x 460 mm L) 40 lbs (18 kg)



### **AB Bordeaux**

Approx. 4 blk/ft<sup>2</sup> (44 blk/m<sup>2</sup>) 4 in. H x 10.5 in. D x 9 in. L (100 mm H x 265 mm D x 230 mm L) 20 lbs (9 kg) The AB Europa Collection captures the hand-laid stone effect that brings distinction to any project. The blocks can be used separately or blended together for outstanding results. The unique texture creates a stunning look and gives old world charm to any landscape.





Specifications are approximate, contact local representative for availability, exact specifications, sizes and colors for all Allan Block products.





# **Commercial Installation Manual for**



Allan Block Retaining Walls

# A Complete Family of Wall Products

The Allan Block Collections give you a choice of styles to meet your site and design requirements. Use the basic gravity wall system for smaller wall projects. For taller wall projects use geogrid to reinforce the wall, or consider optional techniques using masonry, no-fines, rock bolts, soil nails, or earth anchors.



The AB® Collection has been a favorite of wall builders for years and offers the perfect blend of performance and style with maximum results.



The AB Europa® Collection captures the hand-laid stone effect that brings old world charm and distinction to any project in beautiful marbled colors.



The AB Fieldstone® Collection is a "Green/Eco-Friendly" retaining wall product that maintains the beautiful look and feel of natural stone. Installing and performing like our other Collections, AB Fieldstone truly is a friendly product.



The Allan Block Collections offer a variety of sizes, weights, setbacks, and finishes to meet differing aesthetic and performance needs. Refer to the chart below or to our website - allanblock.com to help make the right choice for your project.



allanblock.com

Table 1.1

						Idble I.
A 555	Style & Performance	Name	Setback	Coverage	Weight	Approximate Dimensions
	1000 M	AB Stones Best Single Block Choice	12°	1 sq ft. approx. 11 blk per m²	75 lbs 34 kg	8 in. H x 12 in. D x 18 in. L 200mm H x 300mm D x 460mm
	T E	AB Rocks	6°	1 sq ft. approx. 11 blk per m²	75 lbs 34 kg	8 in. H x 12 in. D x 18 in. L 200mm H x 300mm D x 460mm
	120000	AB Vertical	3°	1 sq ft. approx. 11 blk per m²	75 lbs 34 kg	8 in. H x 12 in. D x 18 in. L 200mm H x 300mm D x 460mm I
	A STATE OF THE PARTY OF	AB Classic	<b>6</b> °	1 sq ft. approx. 11 blk per m²	75 lbs 34 kg	8 in. H x 12 in. D x 18 in. L 200mm H x 300mm D x 460mm I
NO NO		AB Jumbo Jr	6°	0.5 sq ft. approx. 22 blk per m²	35 lbs 16 kg	8 in. H x 9.5 in. D x 9 in. L 200mm H x 240mm D x 230mm i
AB COLLECTION	Maria De	AB Lite Stone	6°	0.5 sq ft. approx. 22 blk per m²	35 lbs 16 kg	4 in. H x 12 in. D x 18 in. L 100mm H x 300mm D x 460mm L
AB COL	AB COLL	AB Junior Lite	6°	0.25 sq ff. approx. 44 blk per m²	18 lbs 8 kg	4 in. H x 12 in. D x 9 in. L 100mm H x 300mm D x 230mm
	Old World Antique	Name	Setback	Coverage	Weight	Approximate Dimensions
°₩	× I	AB Dover	6°	1 sq ft. approx. 12 blk per m²	80 lbs 36 kg	8 in. H x 10.5 in. D x 18 in. L 200mm H x 265mm D x 460mm L
EUROI ECTION		AB Palermo	6°	0.5 sq ft. approx. 22 blk per m²	35 lbs 16 kg	8 in. H x 9.5 in. D x 9 in. L 200mm H x 240mm D x 230mm L
	The second second	AB Barcelona	<b>6°</b>	0.5 sq ft. approx. 22 blk per m²	40 lbs 18 kg	4 in. H x 10.5 in. D x 18 in. L 100mm H x 265mm D x 460mm L
AB COLI		AB Bordeaux	6°	0.25 sq ff. approx. 44 blk per m²	20 lbs 9 kg	4 in. H x 10.5 in. D x 9 in. L 100mm H x 265mm D x 230mm L
P.	Green, Natural & Friendly	Name	Setback	Coverage	Weight	Approximate Dimensions
STONE	NO No	812 facing unit with SAU	6°	0.7 sq ft. approx. 16 blk per m²	60 lbs 30 kg	8 in. H x 13 in. D x 12 in. L 200mm H x 330mm D x 300mm L
SON	812 facing unit with LAU	60	0.7 sq ft. approx. 16 blk per m²	90 lbs 40 kg	8 in. H x 23 in. D x 12 in. L 200mm H x 585mm D x 300mm L	
	A STATE OF THE STA	824 facing unit with SAU	6°	1.3 sq ff. approx. 8 blk per m²	125 lbs 55 kg	8 in. H x 13 in. D x 24 in. L 200mm H x 330mm D x 600mm L
VB F		824 facing unit with LAU	6°	1.3 sqff. approx. 8 blk per m²	185 lbs 85 kg	8 in. H x 23 in. D x 24 in. L 200mm H x 585mm D x 600mm L
40	40	SAU - short anchoring unit LAU - long anchoring unit				

Actual dimensions, weights and setbacks will vary by manufacturer. Check with your local Allan Block manufacturer for exact specifications and color availability. Caps and corner blocks are also available for each of the collections.

### **Patterned Walls**

The design possibilities are endless. Use the blocks from the AB or AB Europa Collections individually or blend them together to create AB Ashlar or AB Abbey Blend patterned walls. The interlocking blocks easily fit together without any materials or tools.

AB Ashlar Blend™ from the AB Collection





# The Allan Block System - Engineered For Simplicity

Allan Block's built-in features make retaining walls easy to engineer and simple to build. These simple engineering features make the Allan Block Collections the most efficient and reliable products on the market.

### **Mortarless Construction**

Mortarless technology works. Building "flexible" structures with interlocking dry-stacked materials provides superior performance over rigid construction techniques. Add the benefits inherent in a mortarless system - site adaptability, installation by general laborers, lower cost - and you have what we call the Allan Block Advantage.



Mortarless construction has been used for centuries.

### **Built-In Engineering**

### Built-In Interlock

Every Allan Block is firmly locked in place by the patented lip and notch configuration. No pins, no mortar, no fancy connectors.

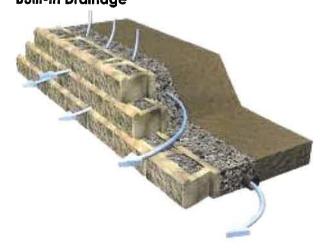
### **Built-In Setback**

The raised lip automatically establishes the proper setback. Choose from 12°, 6°, or 3° systems.

### **Built-In Drainage**

The hollow-core design combines with mortarless construction to allow water to drain freely from behind the wall. Incidental water moves easily through a vertical drain that is formed by the layer of wall rock placed behind the block and in the block cores. The dry-stack construction technique allows the incidental water to escape by flowing around the blocks and out the wall face. This built-in drainage helps to eliminate water pressure. Please note that this area is not to be used as a primary water management element.

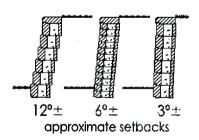
**Built-In Drainage** 



### **Built-In Interlock**



**Built-In Setback** 



# Reinforced Soil Walls

### Concept

When wall heights exceed those listed in the gravity wall chart on page 13, geogrid can be added to provide a stable wall condition. Layers of aeogrid inserted between the blocks and extending behind the wall interlock with the surrounding soil to create a cohesive soil mass. This mass uses its own weight and internal shear strength to resist both the sliding and the overturning pressures from the soil being retained. The wall rock in the Allan Block cores provide a positive connection between the layers of geogrid and the Allan Block wall, locking the two systems together. The reinforced soil mass becomes the structure and the Allan Block wall becomes the facing. The specific location and embedment length of the grid layers depends upon the site conditions, wall heights and Long-Term Allowable Design Strength of the grid being used. See the approved plans for exact geogrid locations or consult with a local engineer.



The Great Wall of China, dating back some 2,200 years, was built as a double sided retaining wall. The soil between the two walls was a mixture of clay and gravel reinforced with Tamarisk branches. Allan Block retaining walls employ "old technology with new materials."

### Geogrids

Geogrids are flexible, synthetic meshes which are manufactured specifically for slope stabilization and earth retention. These "grids" are available in a variety of materials, sizes and strengths. They can be made of high tensile strength plastics or woven polyester yarns and are typically packaged at the factory in rolls. The grids are rated by Long-Term Allowable Design Strength (LTADS) with values ranging from 500 to 4,000 pounds per linear foot (7.3 kN/m to 58.4 kN/m).

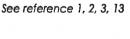
See reference 1

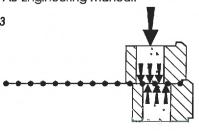




### Positive Interlock

Allan Block's gravel filled hollow core provides a multi-point interlock with the grid. As wall heights increase, our exclusive "Rock-Lock" connection, combined with the weight of the Allan Block units, provides the best block-to-grid interlock of any system on the market. See the tech sheets on connection testing or the Seismic Testing Executive Summary for testing results on the "Rock-Lock" connection. Connection strength testing has been done with our grid manufacturers for results see the AB Spec Book or AB Engineering Manual.

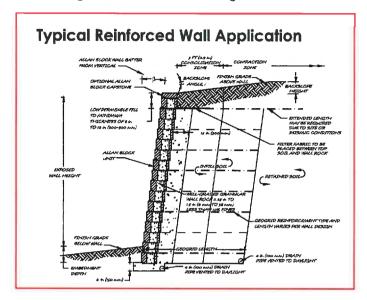




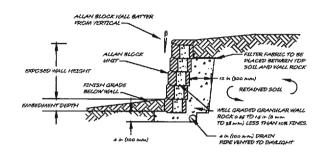


# **Design Details**

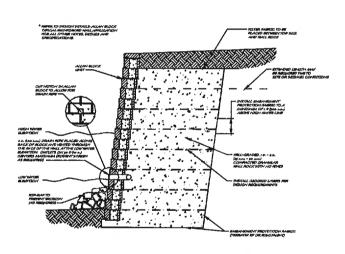
All drawings are for information only and not for construction. See the approved plans for exact details or contact the local engineer of record for written guidance. See all an block.com for additional details and information.



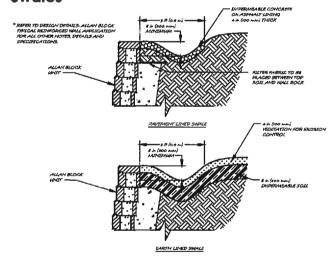
### **Typical Gravity Wall Application**



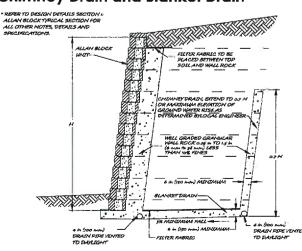
### **Typical Water Application**



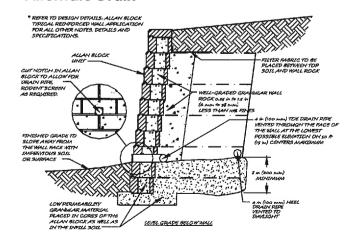
### **Swales**



### Chimney Drain and Blanket Drain

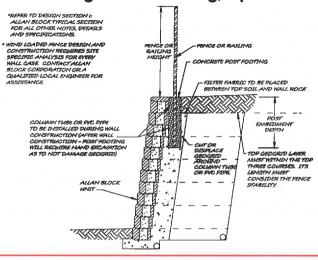


### Alternate Drain

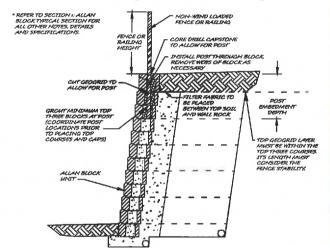




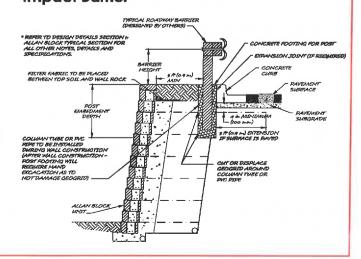
### Wind Bearing Fence or Railing, Option 1



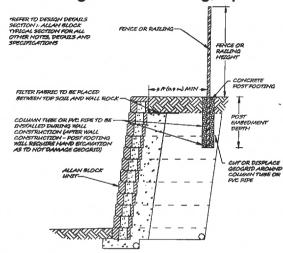
### Non-Wind Bearing Fence or Railing



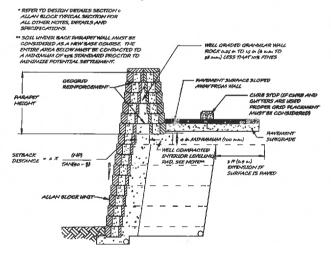
### **Impact Barrier**



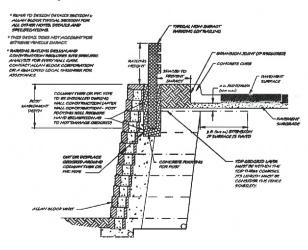
### Wind Bearing Fence or Railing, Option 2



### **Double Wall Parapet**



### Non Impact Rail



# PROMENADE™ PLANK PAVER

Clean, sleek lines are essential to any modern design. Choose the size, finish and color from Unilock's Promenade" Plank Paver series for long narrow paving 'planks' to create a dynamic linear aesthetic to complement any design.



### **CUSTOM FINISH OPTIONS**



BELPASSO\* **Enamel Finish** 



UMBRIANO® Mottled Finish



SERIES 3000° Exposed Aggregate Finish



IL CAMPO\* Brushed Finish



### CUSTOM COLOR OPTIONS\*

Ask your Unilock Representative about locally stocked colors.



### PRODUCT SPECIFICATIONS



8 x 24 x 4" (20 x 60 x 10cm)



6 x 24 x 6" (15 x 60 x 15cm)



(10 x 30 x 10cm)



3 x 12 x 4" (7 x 30 x 10cm)

Promenade\* can be manufactured in a variety of custom colors and textures. Minimum quantities will apply. Please contact your Unilock Representative for more details. Permeable version 3 x 12", Eco-Promenade™ is available by special order. See page 53.

# **CRL ARS Aluminum Railing System**

C.R. Laurence Company is the manufacturer of a premium Aluminum Railing System. By specializing in the design and manufacturing of this innovative system, we are uniquely suited to solve difficult installation issues and maintain high quality production. By controlling each step from original design to final shipping, we can provide the highest level of quality control and lead time reliability for projects anywhere in the world.

Product development is an ongoing process at CRL. Rest assured that the products we offer represent the current evolution of railing technology. In additional to our standard designs, we offer the ability to create custom railings that address project-specific criteria.

# **Glass Railing System**

Use CRL's Glass Railing System for projects that are view-oriented. Glass Railings give buildings a sophisticated appeal. Our various systems will accept any 1/4" to 1/2" (6 to 12 mm) clear or tinted tempered glass infill options. Glass Railings also serve as effective wind barriers, further enhancing the outdoor balcony environment.

# **Picket Railing System**

CRL's Picket Railing System is simple, attractive, and strong. Widely specified for commercial and residential applications, the Picket Railing System utilizes 3/4" (19 mm) square or round vertical pickets. Choose any one of our standard top rail options. Add our decorative cast or water jet/laser cut infill panels to create a unique architectural accent. For custom applications, consult CRL Technical Sales.

# **Cable Railing System**

CRL's Cable Railing System is perfect for projects that desire a more commercial or nautical feel. Using quality 316 alloy cable and stainless steel hardware, our Cable Railing System performs in the harshest of conditions. Typical applications utilize horizontal cables spaced 3-1/2" (89 mm) on center.

# **FWS and AWS Windscreen Systems**

CRL's FWS and AWS Windscreen Systems are very popular in hotel and condo applications. Our Windscreen Systems create an effective barrier while limiting the confining effect of a typical fence. Used in conjunction with a concrete slab or masonry wall, these innovative systems are highly adaptable, structurally sound, and attractive.







C.R. LAURENCE COMPANY

# **CRL ARS Aluminum Railing System**

CRL's high quality commercial or residential Aluminum Railing Systems are manufactured from extruded aluminum framing members utilizing infill options of tempered glass, aluminum pickets, stainless steel cable, cast or water jet/laser cut infills, that are engineered to meet applicable building code specifications.

Regardless of style or color, each one of our railing systems provides superior color retention, impact resistance, and weatherability in any environment.

# **Design Options**

- Exterior and Interior Hand Rails and Guard Rails
- Infil! Panel Ontions: Aluminum Pickets. Aluminum Pattern Panels. Clear or Coated Structural Glass, or Stainless Steel Cable
- Custom Gates
- ADA Compliant Grab Rails
- Attractive Low-Voltage, Post Mounted Lighting System for Our Railing Systems. Using a Safe, 12 Volt Power Source, These Lights Provide a Subtle Glow That is Sure to Enhance Any **Balcony Environment**

# **Component Features and Benefits**

- Innovative Design Details for Standard or Custom Applications
- Extruded Aluminum for Durability, Weather Resistance, and Low Maintenance
- Heavy Gauge Materials and Steel Embeds for Strength
- Uses 1/4" to 1/2" (6 to 12 mm) Tempered Glass for Safety and **Impact Resistance**

### **Color Selection**

- Tough, Powder-Coated or Optional Kynar Paint Colors for **Superior Color Retention and Weather Resistance**
- Special Coating for Resistance to Salt Water Corrosion

Our specially formulated coatings are designed to resist the corrosive effects of salt water, providing a permanent, worry-free addition to your building. You can choose from one of the seven standard colors plus unfinished chromate, or one of our 250 additional "Quick Turn" colors. If you still can't find just the right color, you can send us the desired color and we can match it for you.

# **Standard Colors**

In-House Factory Applied

Retaining Wall Picket Railing

- Baked on TGIC Polyester Powder Coat Paint System
- Excellent Weatherability and Durability
- Meets AAMA 2603-98 Specifications

# **Additional Color Options**

- A Variety of Textured and Performance Enhanced Powder Coat Paint Systems | Cherry Avenue
- Custom Color Matching
- Cable Railing • 50% and 70% Kynar Paint Systems to Meet Stringent AAMA 2604-98 and 2605-98 Commercial Specifications
- All Paint Systems Will Be Applied Over State-of-the-Art **Chromate Pre-Treatment**

We manufacture a comprehensive selection of railing systems that combine the durability of extruded aluminum with innovative design details. This assures long-term structural integrity and enhances project aesthetics, while consistently reducing the annual maintenance expense.



- 2-3/8" and 4" (60.3 and 101.6 mm) Square **Posts Available**
- Seven Standard Powder Paint Colors Available. **Plus Unfinished Chromate**
- Custom Colors Also Available









Colors shown are representative only, and may vary slightly from actual gloss, color, and texture. If color match is critical, please contact Technical Sales for additional information.

C.R. LAURENCE COMPANY



Silver - Metallio

# **CRL Aluminum Railing System Mounting Options**

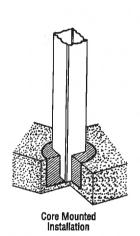
CRL's high quality commercial or residential Aluminum Railing Systems are manufactured from extruded aluminum framing members utilizing tempered glass, aluminum pickets, stainless steel cable, cast or water jet/laser cut infills, that are engineered to meet applicable building code specifications. Regardless of style or color. each one of our railing systems provides superior color retention. impact resistance, and weatherability in any environment.

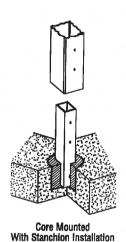
One benefit of the ARS System is that it attaches to lust about any substrate with our standard Surface Mount Base Plates. However, you do have additional mounting options, as illustrated below.

Our specially formulated coatings are designed to resist the corrosive effects of salt water, providing a permanent, worry-free addition to your building. We manufacture a comprehensive selection of railing systems that combine the durability of extruded aluminum with innovative design details. This assures long-term structural integrity and enhances project aesthetics, while consistently reducing the annual maintenance expense.

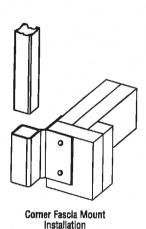
The CRL Aluminum Ralling System is designed to meet all Guard Rail Safety Codes, and with so many options, there is a railing system for every application.

# **Typical Mounting Options**

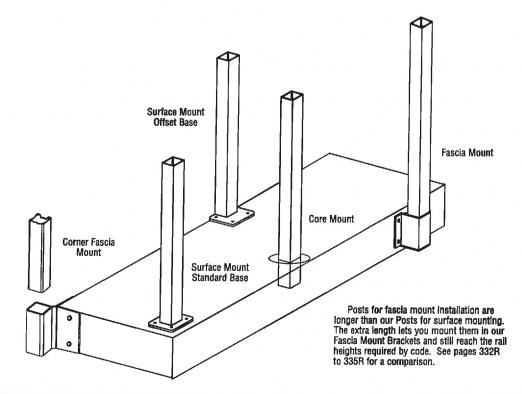




Fascia Mounted Installation



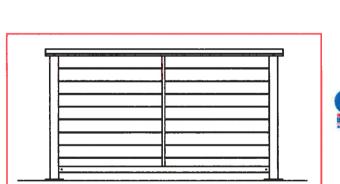
Surface Mounted Standard Base With Moisture Barrier Gasket Between Bracket and Substrate



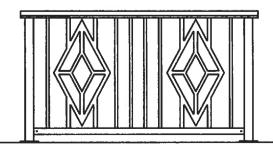


# **Infill Options**

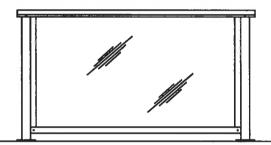
CRL offers the five Infill Options shown here. Utilizing our state-of-the-art manufacturing facility we can produce almost any desired design to meet your project specifications. All of the Infill Options shown are designed to work with all CRL Aluminum Railing Systems.



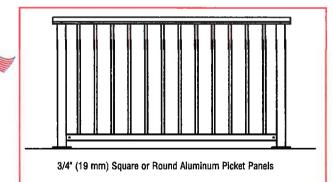


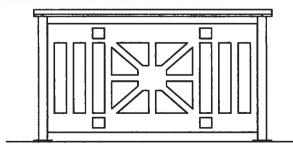


Cast Aluminum Panels



1/4" (6 mm) through 1/2" (12 mm) Tempered Glazing





Custom Water Jet/Laser Cut Paneis

**C.R. LAURENCE COMPAN** 



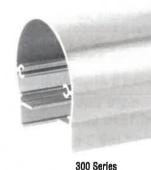
# CRL 200, 300, 350, and 400 Series **Railing Systems**

- Four Different Top Rail Profiles
- Interchangeable Component Parts
- Surface or Fascia Mount **Post Systems**
- Eight Standard Colors Available From Stock, With Custom Colors Also Available
- Most Application Possibilities
- Available With Custom Gates
- A.D.A. Compliant Guard Rails

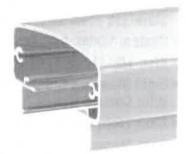
CRL's high quality, versatile commercial or residential 200, 300, 350, and 400 Series Aluminum Railing Systems are manufactured from extruded aluminum framing members all of which utilize tempered glass. aluminum pickets, cast infills, and stainless steel cable that is engineered to meet applicable building code specifications. Regardless of style or color, every 200, 300, 350, and 400 Series Railing System provides the convenience of having all interchangeable component parts, superior color retention, impact resistance, and weatherability in any environment.











350 Series

400 Series



ARS 200 Series Aluminum Railing System With Custom Textured Glass



ARS 300 Series Aluminum Railing System With Pickets



ARS 350 Series Aluminum Railing System With Glass



ARS 400 Series Aluminum Railing System With Glass

# **CRL 200 Series Railing System**

Our 200 Series Railing System uses a continuous flat top rail, which helps achieve a modern look. While most companies in the industry offer very typical top rails, the 200 Series maintains an extremely low profile while outperforming competitive systems for strength and durability. At 1-7/8" (47.6 mm) it has the lowest profile of all the top rails.

This system can be used with glass, cable, picket, cast, or custom water jet/laser cut infills. The pickets in this system come in the form of a Picket Panel (see page 366R), which costs a little more than the traditional single snap-in picket system, but will save you time and labor during installation.

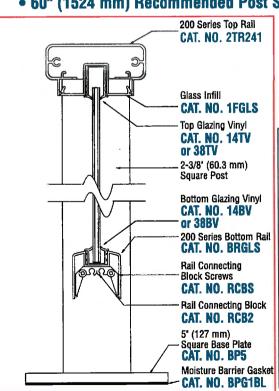
NOTE: As good as the 200 Series is, you cannot use it for a stair application where railing is required. The top cap is too wide in cross section to achieve the status of a hand rail. This being the case, you must use our 100 Series (see pages 328R to 338R) for the stair portion of the job.

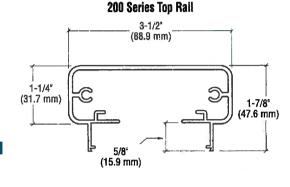
- 6005-T5 Aluminum Allov
- Standard Rail Heights are 36", 42", and 48" (914, 1066 and 1219 mm). Custom Rail Heights Also Available
- 2-3/8" (60.3 mm) Square Aluminum Post
- Infill Panel Options: 1/4" or 3/8" (6 or 10 mm) Glass, 3/4" (19 mm) Square or Round Profile Aluminum Picket Panels, Stainless Steel Cable, or Decorative Cast Panels
- Custom Water Jet/Laser Cut Infills Also Available
- Also 1/2" (12 mm) Glass When Used With Wet Glaze Method
- Eight Standard Colors Available From Stock. With Custom Colors Also Available

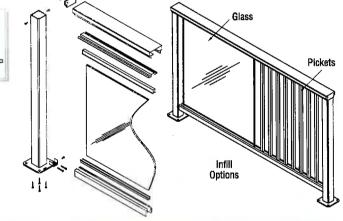
Deck (Top) Mount or Fascia Mount Applications Available

Core Mount Applications Also Available

- Can Be Fabricated With Custom Gates
- Exterior and Interior Applications
- A.D.A. Compliant Guard Rails
- 60" (1524 mm) Recommended Post Spacing









# **CRL Top Rails for 200, 300, 350, and 400 Series**

• 20'-1" (6.12 m) Stock Lengths You Cut to Your Requirements



Top Rails for the 200, 300, 350, and 400 Series Railing Systems are sold in 20'-1" (6.12 m) stock lengths that you can cut to fit your exact needs. Powder coated rails come in your choice of eight standard colors, or you can select from over 250 Quick Turn colors. Rails require Connecting Blocks to fasten to posts (see page 357R).

NOTE: Series 200, 300, 350, and 400 Rails do not meet stairway code requirements. For stairways you must use our 100 Series Rails (see pages 328R to 338R).

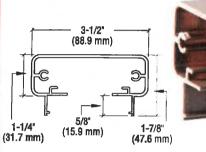
### STANDARD COLORS

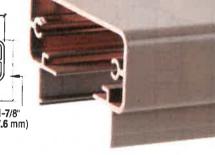
	M. Diphiling about		FR		18 Tor	OF HEAD	
Sky White	Oyster White	Agate Gray	Beige Gray	Black	Bronze	Silver	Untinished
Gloss	Glass	Gloss	Gloss	Matte	Matte	Metallic	Chromate

Colore shown are representative only, and may vary slightly from actual gloss, color, and texture. If color match is critical, please con Technical Sales for additional information.

Additional Color Options - CRL has over 250 quick turn custom color options with the ability to color match as well

# 200 Series Top Rail



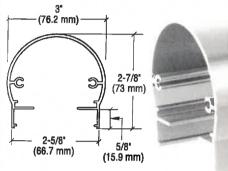


 Designed to Accommodate 3/4" (19 mm) Pickets or 1/4" to 1/2" (6 to 12 mm)\* **Tempered Glass** 

\* 1/2" (12 mm) Glass only if wet glazed

CAT. NO.	COLOR
2TR241W	Sky White
2TR2410W	Oyster White
2TR241AGY	Agate Gray
2TR241BGY	Beige Gray
2TR241BRZ	Matte Bronze
2TR241BL	Matte Black
2TR241S	Silver Metallic
2TR241CRM	Chromate
Minimum order: 1 each. Must s	hip common carrier.

# 300 Series Top Rail



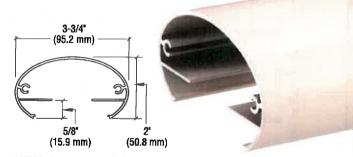
For Use With 3/4" (19 mm) Pickets or 1/4" to 1/2" (6 to 12 mm)\* **Tempered Glass** 

\* 1/2" (12 mm) Glass only if wet glazed

CAT. NO.	COLOR
3TR241W	Sky White
3TR2410W	Oyster White
3TR241AGY	Agate Gray
3TR241BGY	Belge Gray
3TR241BRZ	Matte Bronze
3TR241BL	Matte Black
3TR241S	Silver Metallic
3TR241CRM	Chromate

Minimum order: 1 each. Must ship common carrier.

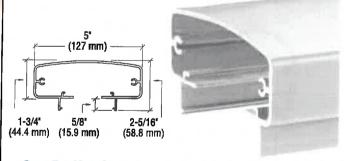
# 350 Series Top Rail



- Will Accept 3/4" (19 mm) Pickets or 1/4" to 1/2" (6 to 12 mm)\* **Tempered Glass**
- \* 1/2" (12 mm) Glass only if wet glazed
- CAT. NO. COLOR 35TR241W Sky White Oyster White 35TR2410W **35TR241AGY** Agate Gray Beige Gray 35TR241BGY 35TR241BRZ Matte Bronze Matte Black 35TR241BL 35TR241S Silver Metallic 35TR241CRM Chromate

Minimum order: 1 each. Must ship common carrier.

# **400 Series Top Rail**



- Can Be Used With 3/4" (19 mm) Pickets or 1/4" to 1/2" (6 to 12 mm)\* **Tempered Glass**
- \* 1/2" (12 mm) Glass only if wet glazed

CAT. NO.	COLOR
4TR241W	Sky White
4TR2410W	Oyster White
4TR241AGY	Agate Gray
4TR241BGY	Beige Gray
4TR241BRZ	Matte Bronze
4TR241BL	Matte Black
4TR241S	Silver Metallic
4TR241CRM	Chromate

Minimum order: 1 each. Must ship common carrier.

# CRL Top Rail Infills for 200, 300, 350, and 400 Series Rails



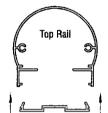
- Easily Snap Into the Underside of the Top Rail
- Seven Attractive Colors. Plus Unfinished **Chromate to Match Our Posts**



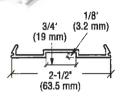
CRL Glass and Picket Top Rail Infills are sold in 201-1" (6.12 m) stock lengths that can be field cut to the required size. The Infill snaps into the underside of the Top Rail.

# **Top Rail Infill for Pickets**

 For Use With 3/4" (19 mm) Square or Round **Pickets** 



Also available pre-punched for pickets. Contact Railing Technical Sales for details. See page 366R for pickets.



CAT. NO.	COLOR
1FPKTW	Sky White
1FPKTOW	Oyster White
1FPKTAGY	Agate Gray
1FPKTBGY	Beige Gray
1FPKTBRZ	Matte Bronze
1FPKTBL	Matte Black
1FPKTS	Silver Metallic
1FPKTCRM	Chromate

Minimum order: 1 each. See page 346R for color chart.

# **CRL Glazing Vinyl**

 Rigid Glazing Vinyl is Designed to Snap in Before the Glass is Installed

 Two Sizes for Use With 1/4" or 3/8" (6 or 10 mm) Thick Tempered Glass



CRL 200, 300, 350, and 400 Series Top Rigid Vinvi is available in two sizes to hold 1/4" or 3/8" (6 or 10 mm) glass. When installing Rigid Vinyl, snap it into place before installing the glass. Stock lengths are 12' (3.66 m).

CAT. NO.	DESCRIPTION
14TV	Top Vinyl for 1/4" (6 mm) Thick Glass #
38TV	Top Vinyl for 3/8° (10 mm) Thick Glass #

Minimum order: 1 each. # Must ship common carrier.



CRL 200, 300, 350, and 400 Series Bottom Rigid Vinyl comes in two sizes to hold 1/4" or 3/8" (6 or 10 mm) glass. When installing Rigid Vinyl, snap it into place before you install the glass. Stock lengths are 12' (3.66 m).

CAT. NO.	DESCRIPTION
14BV	Bottom Vinyl for 1/4" (6 mm) Thick Glass #
38BV	Bottom Vinyl for 3/8" (10 mm) Thick Glass #

Minimum order: 1 each. # Must ship common carrier.

All shapes can be combined for quantity pricing. A Packing Charge will be added to orders of fewer than 5 combined lengths. Stock lengths longer than 108° (2.74 m) must ship common carrier, unless you specify we cut them for U.P.S. A Cutting Charge will apply.

C.R. LAURENCE COMPANY



## **CRL Surface Mount Post** Kits for 200, 300, 350, and 400 Series Rails

- 2-3/8" (60.3 mm) Square
- Use for 180 Degree. 90 Degree or End Posts



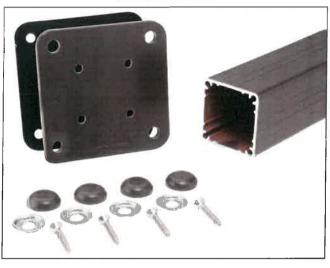
- Three Standard Post Heights
- Complete With Base Plate, Stainless Washers. Screws. and Bolt Cover Buttons
- Seven Standard Colors. Plus **Unfinished Chromate**

CRL 200, 300, 350, and 400 Series Surface Mount Post Kits come complete with Base Plate (BP5), Moisture Barrier Gasket (BPG1BL), Base Plate Screws (BPS112), Stainless Steel Washers (WSHR1), and Color Match Bolt Cover Buttons (BTN1). Standard Posts Kits are available in your choice of three heights and seven attractive colors, plus unfinished chromate. Custom heights and colors are also available.

CAT. NO.*	DESCRIPTION	POST HEIGHT
P36K	36" Post Kit	36' (914 mm)
P42K	42" Post Kit	42" (1066 mm)
P48K	48' Post Kit	48" (1219 mm)

Minimum order 1 each. "Specify powder coat color when ordering.

## Standard Kits Include:



#### STANDARD COLORS

				100		(re	1
Sky White	Oyster Will	Agate Gray	Beige Gray	Black	Bronze	Silver	Unfinished
Gloss		Gloss	Glosa	Matte	Matte	Metallic	Chromate

Colors shown are representative only, and may vary slightly from actual gloss, Technical Sales for additional information.

Additional Color Options - CRL has over 250 quick turn custom color options with the ability to

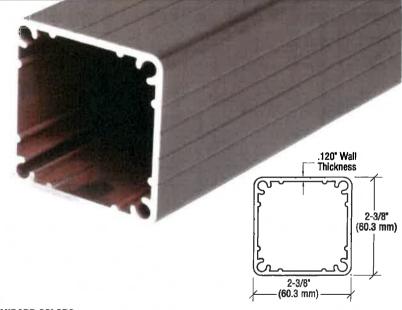
## **CRL Posts Only for** 200, 300, 350, and **400 Series Rails**

- 2-3/8" (60.3 mm) Square
- Use for 180 Degree. 90 Degree or End Posts
- Three Standard Post Heights
- Seven Standard Colors. Plus **Unfinished Chromate**
- 6005 Alloy Aluminum/T5 Temper

CRL 200, 300, 350, and 400 Series Aluminum Posts are available in your choice of three heights and seven attractive colors, plus unfinished chromate. You can also cut custom posts from our 20'-1" (6.12 m) stock length. Custom heights and colors are also available.

CAT. NO.*	DESCRIPTION	HEIGHT/LENGTH
P36	36" Post	36" (914 mm)
P42	42" Post	42" (1066 mm)
P48	48' Post	48' (1219 mm)
P241	20'-1" Stock Length	241" (6.12 m)#

Minimum order 1 each. \* Specify powder coat color when ordering. # Must ship common carrier.



## STANDARD COLORS



re only, and may vary slightly from actual gloss, color, and texture. If color match is critical, please contact

Additional Color Options - CRL has over 250 quick turn custom color options with the ability to color match as well

## CRL Picket Panels for 200, 300, 350, and 400 Series Rails

• 3/4" (19 mm) Square Pickets in Seven Standard Colors, Plus **Unfinished Chromate** 



- Nine Standard Picket Panel Sizes
- Custom Picket Panels Also Available

CRL Picket Panels are available in a variety of lengths and widths. Seven stock colors, plus unfinished chromate to choose from. Use CRL Picket Panels to save time and cost. All Panels come with Top Infill, Bottom Rail, and Pickets spaced 3-7/8" (98.4 mm) apart.

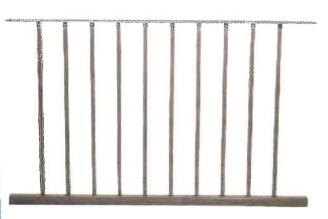
#### STANDARD COLORS

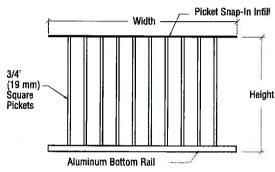
		HE I	FILE.	17 H	数官	4	
Sky White	Oyster White	Agate Gray	Beige Gray	Black	Bronze	Silver	Unfinished
Gloss	Gloss	Gloss	Gloss	Matte	Matte	Metallic	Chromate

e only, and may vary slightly from actual gloss, color, and texture. If color match is critical, please contact

	Information.

CAT. NO.*	FITS OPENING (W X H)	ACTUAL SIZE (W X H)	PICKETS.
P4836	48' x 36" (1219 x 914 mm)	53-5/8" x 33-1/8" (1362 x 841 mm)	10
P6036	60" x 36" (1524 x 914 mm)	65-5/8" x 33-1/8" (1667 x 841 mm)	13
P7236	72" x 36" (1828 x 914 mm)	77-5/8" x 33-1/8" (1972 x 841 mm)	15
P4842	48" x 42" (1219 x 1066 mm)	53-5/8" x 39-1/8" (1362 x 994 mm)	10
P6042	60" x 42" (1524 x 1066 mm)	65-5/8" x 39-1/8" (1667 x 994 mm)	13
P7242	72" x 42" (1828 x 1066 mm)	77-5/8" x 39-1/8" (1972 x 994 mm)	15
P4848	48" x 48" (1219 x 1219 mm)	53-5/8" x 45-1/8" (1362 x 1146 mm)	10
P6048	60" x 48" (1524 x 1219 mm)	65-5/8" x 45-1/8" (1667 x 1146 mm)	
P7248	72" x 48" (1828 x 1219 mm)	77-5/8" x 45-1/8" (1972 x 1146 mm)	





## CRL Pickets for 200, 300, 350, and 400 Series Rails

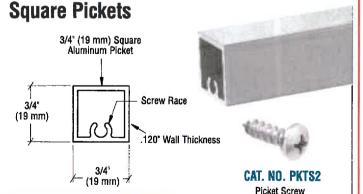
 20'-1" (6.12 m) Extrusions You Cut to Required Lengths



 Seven Standard Colors. Plus **Unfinished Chromate** 

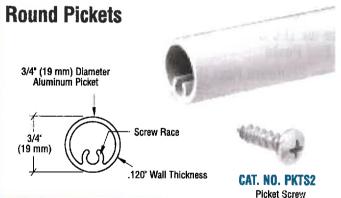
Easy to Install Design





CAT. NO.	COLOR
	UULUN
PKTS241W	Sky White
PKTS2410W	Oyster White
PKTS241AGY	Agate Gray
PKTS241BGY	Beige Gray
PKTS241BL	Matte Black
PKT\$241BRZ	Matte Bronze
PKTS241S	Silver Metallic
PKTS241CRM	Chromate

Use CRL 200, 300, 350, and 400 Series Square Picket Extrusions with Top Infills and Bottom Rails. The 3/4" (19 mm) Picket Extrusion attaches to Top Infills and Bottom Rails with a Cat. No. PKTS2 Stainless Steel Phillips Pan Head Picket Screw.



CAT. NO.	COLOR
PKTR241W	Sky White
PKTR2410W	Oyster White
PKTR241AGY	Agate Gray
PKTR241BGY	Beige Gray
PKTR241BL	Matte Black
PKTR241BRZ	Matte Bronze
PKTR241S	Silver Metallic
PKTR241CRM	Chromate

Infills and Bottom Rails with a Cat. No. PKTS2 Stainless Steel Phillips Pan Head Picket Screw.

Use CRL 200, 300, 350,

and 400 Series Round Picket

Extrusions with Top Infills and

Bottom Rails. The 3/4" (19 mm)

Picket Extrusion attaches to Top

Minimum order: 1 each.

See above for color chart. Must ship common carries

Minimum order: 1 each.

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## CRL Surface Mount Cable End Post Kits for 200, Standard Kits Include:

300, 350, and 400 Series Rails

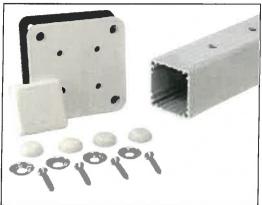




• End Post Kits Prepped for 1/8" (3.2 mm) Cable **Tensioning Receiver Ends or Push-Lock Ends** 

- 2-3/8" (60.3 mm) Square
- Two Standard Post Heights
- Complete With Base Plate, Moisture Barrier Gasket, Stainless Washers, Screws and Bolt Cover Buttons
- Seven Standard Colors Plus Unfinished Chromate
- Custom Sizes and Hole Locations Also Available

CRL Surface Mount Cable End Post Kits come complete with Base Plate (BP5), Moisture Barrier Gasket (BPG1BL), Stainless Steel Washers (WSHR1), and Color Match Bolt Cover Buttons (BTN1). Standard Post Kits are available in your choice of two heights and seven attractive colors, plus unfinished chromate. Custom heights and colors are also available.



NOTE: Cable Grommets sold separately (see page 373R)

		- 3	F- 11/2				18.3
Sky White	Dyster White	Agate Gray	Beige Gray	Black	Bronze	Silver	Unfinished
	Gloss	Gloss	Gloss	Matte	Matte	Metallic	Chromate

Colors shown are representative only, and may vary slightly from actual gloss, color, and texture. If color match is critical, please contact

CAT. NO.*	DESCRIPTION	CABLE HOLES
P36TK	36" (914 mm) Tall Cable Receiver Post Kit Prepped for Tensioning Receiver End	11
P36PK	36" (914 mm) Tall Cable Receiver Post Kit Prepped for Pull Lock End	11
P42TK	42" (1066 mm) Tall Cable Receiver Post Kit Prepped for Tensioning Receiver End	13
P42PK	42" (1066 mm) Tall Cable Receiver Post Kit Prepped for Pull Lock End	13

3" (76.2 mm) Center-to-Center Cable Spacing for Tensioning Receivers and Pull Lock Ends

**CRL Surface Mount Cable Center Post Kits for 200,** 

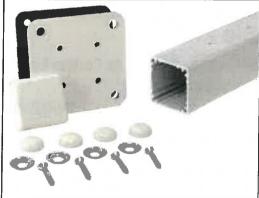
STANDARD COLORS

300, 350, and 400 Series Rails Standard Kits Include:



- 2-3/8" (60.3 mm) Square
- Two Standard Post Heights
- Complete With Base Plate. Moisture Barrier Gasket, Stainless Washers, Screws, and Bolt **Cover Buttons**
- Seven Standard Colors Plus Unfinished Chromate
- Custom Sizes and Hole Locations Also Available

CRL Surface Mount Cable Center Post Kits come complete with Base Plate (BP5), Moisture Barrier Gasket (BPG1BL), Stainless Steel Washers (WSHR1), and Color Match Bolt Cover Buttons (BTN1). Standard Post Kits are available in your choice of two heights and seven attractive colors, plus unfinished chromate. Custom heights and colors are also available.



NOTE: Cable Grommets sold separately (see page 373R) STANDARD COLORS

Colors shown are representative only, and may vary slightly from actual gloss, color, and texture. If color match is critical, please contact Technical Sales for additional information.

ESCRIPTION	CABLE HOLES
6" (914 mm) Tall Cable Center Post Kit	11
	13
	6" (914 mm) Tall Cable Center Post Kit 2" (1066 mm) Tall Cable Center Post Kit

3" (76.2 mm) Center-to-Center Cable Spacing with 3/16" (4.7 mm) Dia. Holes for 1/8" (3.2 mm) Cable



C.R. LAURENCE COMPANY

criaurence.com

## **CRL ARS Stainless Steel Cable Infills**

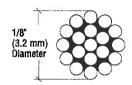
 Stainless Cable Infills are the Perfect Choice for Stairways and **Decks When View is Important** 





## **CRL 1/8" Stainless Steel Cable**

- For Use With All CRL **Aluminum Railing Systems**
- 1 x 19 Type 316 Stainless **Steel Construction Cable**
- 1/8" (3.2 mm) Diameter
- Uncoated and Low Maintenance



CRL 1/8" Diameter 1 x 19 Construction Stainless Steel Cable is designed with 19 separate wires twisted into a single strand.

See page 576R for Cable installation Tools

CRL Stainless Steel Cable is an infill option for any of our railing systems. Recommended spacing between cables is 3" (76.2 mm) center-to-center. The 1 x 19 construction Cable is engineered to hold static loads without stretching, and is relatively stiff. Order Cable in rolls, pre-cut kits with hardware, or we can custom cut it to your required length (see below).

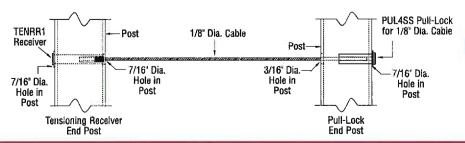
#### 1/8" (3.2 MM) STAINLESS STEEL CABLE

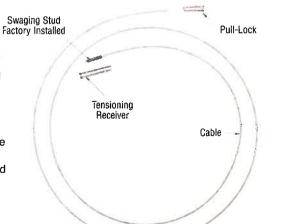
CAT. NO.	ROLL LENGTH
CBL18	250' (76.2 m)
Misimum orden: 1 roll.	

## **CRL 1/8" Pre-Cut Stainless Steel Cable Kits**

- Four Pre-Cut Lengths, As Well As Custom Lengths Available
- Factory Installed Swaging Stud
- No Special Equipment Required for Installation

CRL Pre-Cut Stainless Steel Cable Kits are offered in four standard lengths to make the install go easy. Included with each kit; one pre-cut 1/8" (3.2 mm) diameter 1 x 19 Type 316 Stainless Steel Cable, one Cat. No. SWGST1 Swaging Stud factory installed on Cable, one Cat. No. TENRR1 Tensioning Receiver, and one Cat. No. PUL4SS Pull-Lock. Recommended maximum spacing between cables is 3" (76.2 mm) center-to-center. The 1 x 19 construction Cable is engineered to hold static loads without stretching, and is relatively stiff. The maximum cable run is 50' (15.2 m) and post spacing is not to exceed 42" (1.06 m) on center.





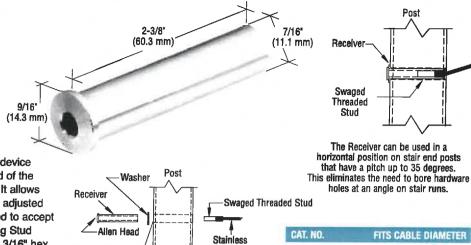
1/8" (3.2 MM) STAINLESS STEEL CABLE KITS

CAT. NO.	LENGTH
CBL188K	8' (2.4 m)
CBL1818K	18' (5.5 m)
CBL1836K	36' (10.9 m)
CBL1851K	51' (15.5 m)
CBL18KC	*Custom Length
Minimum order: 1 each. * Must spec	cify custom length at time of order.

## **CRL Tensioning Receiver**

- Allows 1/8" (3.2 mm) Cable to Be Adjusted Between Spans
- Mounts to Aluminum, Wood or Stainless Steel Posts
- Type 316 Stainless Steel

The CRL Tension Receiver is a tensioning device hidden inside the end post, with only the head of the Receiver exposed on the outside of the post. It allows the 1/8" (3.2 mm) Stainless Steel Cable to be adjusted between spans. The inside is female-threaded to accept the male-threaded Cat. No. SWGST1 Swaging Stud Fitting that is attached to the cable. Requires 3/16" hex wrench to fasten.



Steel Cable

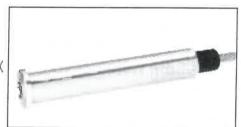
## **CRL Swaging Stud Fitting**

- Secures Our 1 x 19 Type 316 1/8" (3.2 mm) Stainless Steel Cable
- Designed for Aluminum, Wood or Stainless Steel Post Applications



Counterbored

Hole on Post Only



1/8" (3.2 mm)

**TENRR1** 

Minimum order: 1 each

Swaged on the end of the Stainless Steel Cable, this part is used with the Cat. No. TENRR1 Tensioning Receiver. When installed, it is completely hidden inside the Fitting so you will never see any unattractive swaging marks. The threaded surface is coated with a baked-on, molybdenum based dry film lubricant to prevent the threads from galling when tensioned and in extreme environments. Only for use with 1/8" (3.2 mm) diameter Cable.

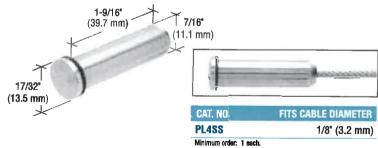
Threads into Cat. No. TENRR1 Tensioning Receiver

CAT. NO.	FITS CABLE DIAMETER
SWGST1	1/8" (3.2 mm)
Minimum order: 1 each.	

## **CRL Push-Lock Fitting**

• For Use With Our 1 x 19 Type 316 1/8" (3.2 mm) Stainless Steel Cable

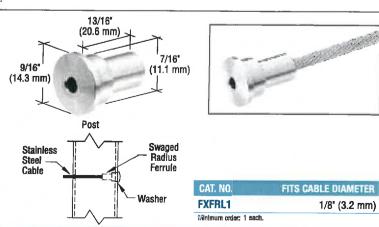
The CRL Push-Lock Fitting is designed to be used on 1/8" (3.2 mm) Cable. When used with an end post 1-1/2" (38.1 mm) or more in thickness, the Push-Lock Fitting with a rounded head is hidden inside the end post, with only the head exposed on the outside of the post. A plastic washer is included and acts as a scratch resistant barrier between the Push-Lock Fitting and post.



## **CRL Ferrule Fitting**

- For Use on the Fixed, Non-Tensioning End of Our 1 x 19 Type 316 1/8" (3.2 mm) Stainless Steel Cable
- Mounts to Aluminum, Wood or Stainless Steel Posts

When installed, the Ferrule Fitting is hidden inside the end post, with only the head exposed on the outside of the post. After it's installed, it looks the same as the Tensioning Receiver. Only for use with 1/8" (3.2 mm) diameter Cable. This Fitting must be installed using a Swager Tool (see page 376R).





## **CRL Pull-Lock Cable Fittings**

- No Special Field Swaging Equipment Required
- Pull-Lock Fittings Make Installing Cable Easy
- For Use With CRL's 200, 300, 350, and 400 Series Aluminum Rails
- Can Also Be Used With Metal and Wood Products
- 316 Grade Stainless Steel

CRL now offers a cable system that can be installed by hand. No special tools or swaging equipment required. Just tension the cables and cut the excess cable off the back side of the fitting. Using a 4" Right Angle Grinder or Cutting Wheel. Press on the Stainless Steel Cap to cover the cable's end and you are done.

CAT. NO.	FITS CABLE DIAMETER
PUL4SS	1/8" (3.2 mm)

Minimum order: 1 each.









CAT. NO. PLCAP Replacement Cap for PUL4SS Pull Lock



## **CRL Cable Release Tool**







Innovative tool that allows the release of cable from Push Lock and Pull Lock type fittings before cables are tensioned.

CAT. NO.	FITS CABLE DIAMETER
PLKEY	1/8" (3.2 mm)
Minimum order: 1 each.	

# CRL Grommet Installation Tool Kit





If Cable Grommets are required, CRL's Grommet Installation Tool Kit is needed for proper alignment and installation. Simply place grommet over hole, and tap lightly with a hammer.

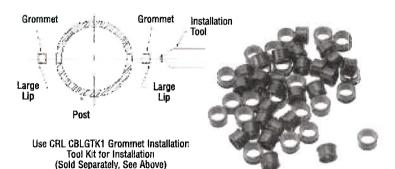
CAT. NO.	FITS CABLE GROMMETS
CBLGTK1	CBLG4/CBLG5
Minimum order: 1 each.	

## **CRL Cable Grommets**



- Grommets Help Prevent Rust in Exterior Applications
- For Use With 1/8" (3.2 mm) Diameter Cable
- Designed for Square, Round, or Rectangular Posts With .120" Wall Thickness
- Made From Black UV Resistant Delrin

Cable Grommets provide a barrier between the cable and the powder coated post surface to help prevent rusting in exterior applications. The Grommets are installed when the cable is pulled through the drilled hole locations in the posts. For stairway or ramp conditions Cable Grommets are manufactured to support a pitch of up to 37 degrees.



CAT. NO.	DESCRIPTION	FITS CABLE DIAMETER
CBLG4	Grommets for Level Rails	1/8" (3.2 mm)
CBLG5	Grommets for Stairway Rails	1/8" (3.2 mm)

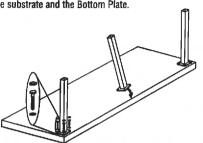
Minimum order: 100 each.

ANY CAL

## **Basic Installation Instructions**

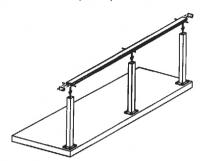
## 1. Post Installation

Install End and Corner Posts first, then continue with Intermediate Posts. Be sure to place Stainless Steel Washers under the Bolts so that the Bolt Cover Buttons can be attached. Ensure that Posts are plumb and level. NOTE: When installing Post on top of concrete, brick, masonry, or stucco, always make sure to install the Moisture Barrier Gasket between the substrate and the Bottom Plate.



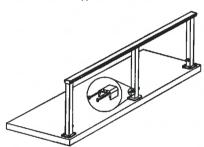
## 2. Cap Rail Installation

Measure and cut the Cap Rail to length. Attach the Cap Rail to the Posts using Self Tapping Screws. Install the End Caps with provided screws.



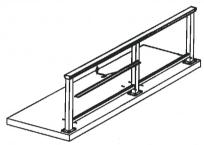
## 3. Rail Connecting Blocks

Install the Rail Connecting Blocks onto the Posts using the Self Tapping Screws provided. These Blocks are used to support the Bottom Rail.



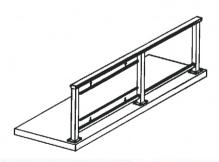
## 4. Top Rail Infill and Bottom Rail

Cut Top Rail Infill and Bottom Rail to length. Snap fit the Top Rail Infill into the Top Cap Rail. Mount the Bottom Rail onto the Blocks and secure with Tek Screws.



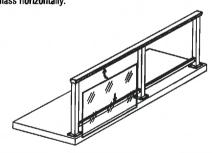
## 5. Vinyl Installation (Glass Panels Only)

Snap fit Top Vinyl into Top Cap Rail insert. Snap fit Bottom Vinyl into Bottom Rail.



## 6. Glass Installation (Glass Panels Only)

Push Glass up into the Vinyl. Align Glass with Bottom Vinyl and push down into Vinyl. Align Glass horizontally.



## 7. Picket Installation

Follow above steps 1, 2, and 3 only. Screw Pickets to the Top Cap Infill and the Bottom Rail. Snap fit top into Top Rail and install Bottom Rail over Blocks. Secure Bottom Rail to Blocks with Tek Screws.



## 8. Cable Installation

Drill holes in Posts a maximum of 3" (76.2 mm) on center. Insert Cables through holes. Install Tensioning Device on end of Cable and tighten. Distance between Posts should not exceed 36" (914 mm).



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### BACK TO GUARDRAIL PRODUCT OVERVIEW

## **CONSTRUCTION-GUARDRAIL PRODUCTS**

#### Semi-Rigid Barrier System

Weathering Steel (Corten) Guardrall Powder Coated / Colored Guardrall Aesthetic Timber Barrier / Wood Guardrali

Steel Backed Timber Guardrall Median Barrier Steel Guardrall Thrie-Beam Steel Guardrall Box Beam Steel Guardrall W-Beam Steel Guardrall Bridge Rall

#### Flexible Barrier Systems

Weak Post W-Beam Guardrell High Tension Cable Guardrall Systems Low Tension Cable Guardrall

#### Guardrail End Treaments and Impact Attenuators

Recycled Guardrall End Cap
Roll-over End Section
Terminal End Sections (Boxing Glove)
Trail End Guardrall Sections
Guardrall Bridge Attachment
Impact Attenuators
Guardrall End Treatments
Buil Nose End Treatment

## Work Zone Barriers

Temporary Impact Attenuators

## Fencing and Railing

Pedestrian Hand Rail

### **Guardrail Accessories**

Guardrali Accessories

### Aesthetic Timber Barrier / Wood Guardrail



Aesthetic Timber Barriers / Wood Guardrail are frequently used on private property or parking lots where aesthetic concerns are considered a high priority. There are numerous wood guardrail options, including a variety of guardrail "panel" measurements and post styles. Wood guardrail is commonly installed on brown (poly-coated or Corten) guardrail posts to achieve an aesthetically pleasing look, or can be mounted on wood posts. Please view our gallery and explore our site for some Wood Guardrail examples or consult one of our specialists to attain your desired option.

## WELCOME

About Elderlee, Inc. Corporate Structure Company History Likks

## CONSTRUCTION

Construction
Design Build
Guardrali Installation
Guardrali Products
Commercial Guardrali
Impact Attenuators
Highway Sign Installation
Frequently Asked Queations
Videos

## STEEL FABRICATION

Steel Fabrication Guardrail Products Bridge Rail

### GALVANIZING

Gelvenizing Why Galvanize? The Process Durability Sustainability

### SIGNAGE

Sign Manufacturing Trafile Signs

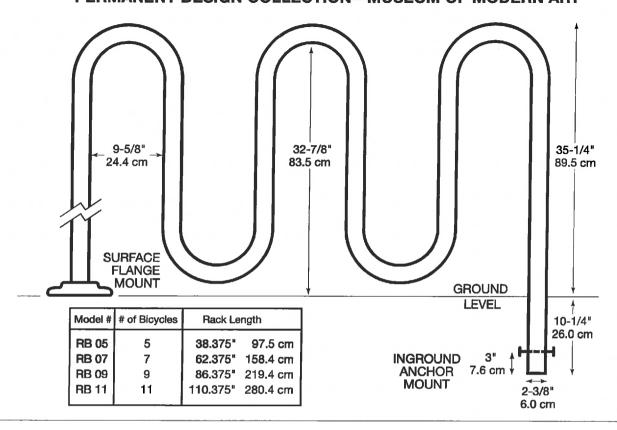
### **EMPLOYMENT**

Employment Safety at Elderlee Application Employee Log In

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# The Original Ribbon\* Rack—IDSA National Design Award Winner PERMANENT DESIGN COLLECTION—MUSEUM OF MODERN ART



## **Specifications**

All standard units made from ASTM A53/A500 SCHD 40 steel pipe (2.375" OD X .154 wall), hydraulically bent with a mandril, hot-dipped galvanized after fabrication.

The RIBBON® RACK is available in ASTM A312 SCHEDULE 40 TP 304 stainless steel, satin #4 finish—optional and extra.

#### **Installation Methods**

Inground Anchor Mount—standard
Surface Flange Mount—optional and extra

## **General Information**

RIBBON and the Brandir International Inc. logo are trademarks of Brandir International Inc., used exclusively by AAA RIBBON RACK CO. Delivery time: Six weeks or sooner from receipt of order.

## **Important Considerations**

Colors: (Painting/Coating)—Painting or coating the rack will result in a maintenance problem, as no coating will withstand the abuse of the bicycles. Powder coating cannot be maintenanced; an enamel finish will chip.

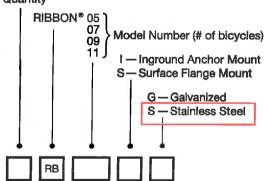
AAA RIBBON RACK CO. has the best solution where color is essential. Please contact us to find out how to achieve an appropriate color with a minimum of maintenance.

**Materials:** Steel tubing or aluminum are not suitable materials for a bicycle rack. Pre-galvanized material will flake and crack during manufacture. AAA RIBBON RACK CO. uses heavy-duty steel pipe, hot-dipped galvanized after fabrication to provide security and durability.

**Manufacture:** Hydraulic bending with a mandril, as used by AAA RIBBON RACK CO., insures smooth and aesthetic curves on the Ribbon\*Rack. Press bending leaves an indentation; other methods flatten outer curves and crimp inner curves.

## Specifying / Estimating / Ordering

Please use the following notations: Quantity



A A A RIBBON BIKE RACK CO.

Division of:

BRANDIR INTERNATIONAL, INC. 521 Fifth Avenue, 17th Floor New York NY 10175-1799 USA

Phone: 800-849-3488

Email: info@ribbonrack.com
Web: ribbonrack.com



## **D-Series Size 1** LED Area Luminaire

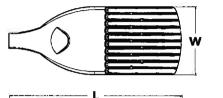






## Specifications

EPA:	1.2 ft <sup>2</sup> (0.11 m <sup>2</sup> )
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

### DSX1LED

Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting
DSX1 LED	Forward optics 30C 30 LEDs (one engine) 40C 40 LEDs (two engines) 60C 60 LEDs (two engines) Rotated optics <sup>3</sup> 60C 60 LEDs (two engines)	530 530 mA 700 700 mA 1000 1000 mA (1 A)	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted <sup>2</sup>	T1S Type I Short TFTM Forward Unrow T2S Type II Short Medium T2M Type II Medium T5VS Type V Very Short T3S Type III Short T5S Type V Short T3M Type III Medium T5M Type V Medium T4M Type IV Medium T5W Type V Wide	MVOLT <sup>3</sup> 120 <sup>3</sup> 208 <sup>3</sup> 240 <sup>3</sup> 277 <sup>3</sup> 347 <sup>4</sup> 480 <sup>4</sup>	Shipped included  SPA Square pole mounting  RPA Round pole mounting  WBA Wall bracket  SPUMBA Square pole universal mounting adaptor <sup>3</sup> RPUMBA Round pole universal mounting adaptor <sup>5</sup> Shipped separately  KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) <sup>6</sup>

Contro	options			Other	options	Finish (requ	ired)
Shipp PER PERS PER7 DMG DCR DS PIR PIRH	ed installed  NEMA twist-lock receptade only (no controls) <sup>7</sup> Five-wire receptade only (no controls) <sup>73</sup> Seven-wire receptade only (no controls) <sup>73</sup> 0-10V dimming driver (no controls) <sup>9</sup> Dimmable and controllable via ROAM® (no controls) <sup>19</sup> Dual switching <sup>11,12</sup> Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc <sup>13</sup> Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc <sup>13</sup>	PIR1FC3V PIRH1FC3V BL30 BL50 PNMTDD3 PNMTSD3 PNMT6D3 PNMT6D3 PNMT7D3	Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc <sup>13</sup> Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc <sup>13</sup> Bi-level switched dirmming, 30% <sup>12,14</sup> Bi-level switched dirmming, 50% <sup>12,14</sup> Part night, dim till dawn <sup>15</sup> Part night, dim 5 hrs <sup>15</sup> Part night, dim 6 hrs <sup>15</sup> Part night, dim 7 hrs <sup>15</sup>	Shipp HS WTB SF DF L90 R90	House-side shield <sup>16</sup> Utility terminal block <sup>17</sup> Single fuse (120, 277, 347V) <sup>18</sup> Double fuse (208, 240, 480V) <sup>18</sup> Left rotated optics <sup>19</sup> Right rotated optics <sup>19</sup>	DDBXD DBLXD DNAXD DWHXD DWHXD DDBTXD DBLBXD DNATXD	Dark bronze Black Ratural aluminum White Textured dark bronze Textured black Textured natural aluminum Textured white

#### **Controls & Shields**

OLL127F 1.5 JU DLL34/F1.5 CUL JU Accessories DLL480F 1.5 CUL JU SCU DSX1HS 30CU DSX1HS 40CU

Photocell - SSL twist-lock (120-277V) 29 Photocell - SSL twist-lock (347V) 2 Photocell - SSL twist-lock (480V) 22

Shorting cap 20 House-side shield for 30 LED unit

DSX1HS 60C U PUMBA DOBXO U\* U DXBOD 8AMX

House-side shield for 40 LED unit House-side shield for 60 LED unit Square and round pole universal mounting bracket (specify finish) Mast arm mounting bracket adaptor (specify finish) <sup>6</sup>

For more control options, visit DTL and ROAM online.

- TES

  Rotated optics available with 60C only.

  AMBPC only available with 530mA or 700mA.

  MYOLI driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120V, 208V, 240V or 277V options only when ordering with fusing SF, DF options). Not available with single board, S30mA product (30C S30 or 60C S30 DS). Not available with BL30, BL50 or PNMT options.

  Available as a separate combination accessory: PUMBA (finish) U; 1.5 G vibration load rating per ANCI C136.31.

  Must be ordered as a separate conserver see Accessorie information.
- Must be ordered as a separate accessory, see Accessories information. For use

- Must be ordered as a separate accessory, see Accessories information. For use with 2-3/8" mast arm (not included).

  Photocal ordered and stipped as a separate line item from Acuty Brands Controls. See accessories. Not available with DS option.

  If ROAM® node required, it must be ordered and shipped as a separate line item from Acuty Brands Controls. Not available with DCR.
  DMG option for 347V or 480V requires 1000mA.

  Specifies a ROAM® enabled luminaire with 0-10V dimming capability, PER option required. Additional hardware and services required for ROAM® displayment; must be purchased separately. Call 1-800-442-6/145 or email: sales@roamsenvices. net. N/A with DS, PERS, PER7, BL30, BL50 or PNMT options.
- 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. Requires an additional switched circuit. PIR and PIRH FC3V specify the SensorSwitch SBGR-10-ODP control; PIRH and PIRH1FC3V specify the SensorSwitch SBGR-6-ODP control; see Motion Sensor Guide for details. Dimming driver standard. Not available with PER5 or PER7. Ambient sensor disabled when ordered with DCR. Separate on/off required.

- Separate on/off required.

  Dimming driver standard. MVOLT only. Not available with 347V, 480V, DCR, DS, PERS, PERT or PNIMT options.

  Dimming driver standard. MVOLT only. Not available with 347V, 480V, DCR, DS, PERS, PERT, 8130 or BLSO.

  Also available as a separate accessory; see Accessories information.

  WTB not available with DS.

  Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.

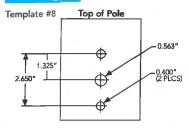
  Available with 60 LEDs (60C option) only.

  Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Aculty Brands Controls.



## Drilling

of march



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

DN19AS	Single unit	DM29AS	2 at 80° *
DM28AS	2 at 180°	DM39AS	3 at 90° °
DISABAS	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.

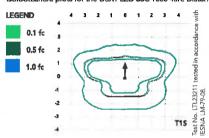
## **Tenon Mounting Slipfitter\*\***

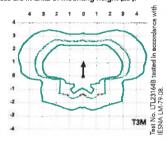
Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2-3/8"	AST20-190	AST20-280	AST20-290	AST20-320	AST20-390	AST20-490
2-7/8"	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4"	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

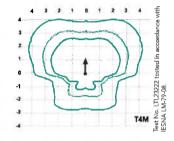
## Photometric Diagrams

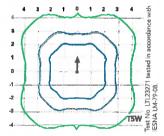
To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Area Size 1 homepage.

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









## 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							
32°F	1.02						
50°F	1.01						
68°F	1.00						
77°F	1.00						
86°F	1.00						
104°F	0.99						
	32°F 50°F 68°F 77°F 86°F						

## **Electrical Load**

					Curre	nt (A)		
Number of LEDs	Drive Current (mA)	System Watts	120	208	240	277	347	480
	530	52	0.52	0.30	0.26	0.23	-	_
30	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
	530	68	0.67	0.39	0.34	0.29	0.23	0.17
40	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
	530	99	0.97	0.56	0.48	0.42	0.34	0.24
60	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
		DSX1 LED	60C 1000	
Lumen Maintenance	1.0	0.98	0.96	0.91
Factor		DSX1 LED	60C 700	
	1.0	0.99	0.99	0.99



## **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. Contact factory for performance data on any configurations not shown here.

TORK	Drive	System	Dist.			30K	-				40K	and the		100		50K		-	-		KBPC		
LEDs	: Current (mA)	Watts	Туре	Lumens	(3000	U	G	LPW		(4000 B	K, 70		LPW	1		K, 70 (		LDIM		r Phosp		_	
	(IIIIA)		T1S	7,554	1	0	1	111	Lumens 8,112	2	U	2	119	8,163	B 2	0	2	LPW 120	4,561	B	0	1	LPW
			T25	7,789	2	0	2	115	8,364	2	0	2	123	8,416	2	0	2	124	4,777	1	0	1	67 70
			T2M	7,610	1	0	2	112	8,172	2	0	2	120	8,223	2	0	2	121	4,622	i	0	2	68
			T3S	7,601	1	0	2	112	8,162	2	0	2	120	8,213	2	0	2	121	4,724	1	0	1	69
			T3M	7,670	1	0	2	113	8,236	2	0	2	121	8,288	2	0	2	122	4,701	1	0	2	69
	700 mA	68W	T4M	7,774	1	0	2	114	8,348	2	0	2	123	8,400	2	0	2	124	4,709	1	0	2	69
			TFTM	7,658	1	0	2	113	8,223	1	0	2	121	8,275	1	0	2	122	4,638	1	0	2	68
			T5VS T5S	8,090	2	0	0	119	8,687	3	0	1	128	8,742	3	0	1	129	4,922	2	0	0	72
			TSM	8,150 8,164	3	0	1	120 120	8,751 8,767	3	0	2	129 129	8,806 8,821	3	0	2	130 130	4,863	2	0	0	72
30C			T5W	8,044	3	0	1	118	8,638	3	0	2	127	8,692	3	0	2	128	4,924 4,787	3	0	1	72 70
(30 LEDs)			T1S	10,331	2	0	2	98	11,094	2	0	2	106	11,163	2	0	2	106	1,00	-	•	•	-/-
			T25	10,652	2	0	2	101	11,438	2	0	2	109	11,510	2	0	2	110	1				
			T2M	10,408	2	0	2	99	11,176	2	0	3	106	11,246	2	0	3	107					
			T3S	10,395	2	0	2	99	11,163	2	0	2	106	11,233	2	0	2	107					
	1000 4	107144	T3M	10,490	2	0	2	100	11,264	2	0	2	107	11,335	2	0	2	108					
	1000 mA	105 W	T4M TFTM	10,632	2	0	2	101	11,417	2	0	2	109	11,488	2	0	2	109					
			T5VS	10,473 11,064	3	0	1	100	11,247 11,881	3	0	3	107 113	11,317 11,955	3	0	1	108					
			TSS	11,145	3	0	1	106	11,968	3	0	1	114	12,043	3	0	1	114 115					
			T5M	11,165	3	0	2	106	11,989	4	0	2	114	12,064	4	0	2	115					
			T5W	11,001	3	0	2	105	11,813	4	0	2	113	11,887	4	0	2	113					
			T15	9,984	2	0	2	112	10,721	2	0	2	120	10,788	2	0	2	103	6,014	1	0	1	68
			T2S	10,294	2	0	2	116	11,054	2	0	2	124	11,123	2	0	2	106	6,299	2	0	2	71
			T2M	10,059	2	0	2	113	10,801	2	0	3	121	10,869	2	0	3	104	6,094	2	0	2	68
			T3S	10,046	2	0	2	113	10,788	2	0	2	121	10,855	2	0	2	103	6,229	1	0	2	70
	700 mA	89 W	T3M T4M	10,137 10,275	2	0	2	114 115	10,886 11,033	2	0	2	122	10,954	2	0	2	104	6,198	2	0	2	70
1	7001117	0711	TFTM	10,122	2	0	2	114	10,869	2	0	2	124 122	11,102 10,937	2	0	2	106 104	6,209 6,115	1	0	2	70 69
i			TSVS	10,693	3	0	1	120	11,482	3	0	1	129	11,554	3	0	1	110	6,490	2	0	0	73
			T5S	10,771	3	0	1	121	11,566	3	0	1	130	11,639	3	0	1	111	6,411	2	0	0	72
			T5M	10,790	3	0	2	121	11,587	4	0	2	130	11,659	4	0	2	111	6,492	3	0	1	73
40C			T5W	10,632	3	0	2	119	11,417	4	0	2	128	11,488	4	Ð	2	109	6,311	3	0	2	71
(40 LEDs)			TIS	13,655	2	0	2	99	14,663	3	0	3	106	14,754	3	0	3	107					
			T2S	14,079	2	0	2	102	15,118	3	0	3	110	15,212	3	0	3	110					
			T2M T3S	13,756 13,739	2	0	3	100	14,772	2	0	3	107	14,864	3	0	3	108					
1			T3M	13,864	2	0	2	100	14,754 14,888	3	0	2	107 108	14,846 14,981	3	0	3	108 109					
	1000 mA	138 W	T4M	14,052	2	0	2	102	15,090	3	0	3	109	15,184	3	0	3	110					
			TFTM	13,842	2	0	3	100	14,864	2	0	3	108	14,957	2	0	3	108					
			T5V5	14,623	3	0	1	106	15,703	4	0	1	114	15,801	4	0	1	115					
			T5S	14,731	3	0	1	107	15,818	3	0	1	115	15,917	3	0	1	115					
			T5M	14,757	4	0	2	107	15,846	4	0	2	115	15,945	4	0	2	116					
			TSW	14,540	4	0	2	105	15,614	4	0	_2	113	15,711	4	0	2	114			_		
			T15 T25	14,694	2	0	2	106	15,779	3	0	3	114	15,877	3	0	3	115	8,952	2	0	2	68
			T2M	15,150 14,803	2	0	3	110 107	16,269 15,896	3	0	3	118 115	16,370 15,995	3	0	3	119 116	9,377 9,072	2	0	2	72 69
			T3S	14,785	2	0	2	107	15,877	3	0	3	115	15,976	3	0	3	116	9,072	2	0	2	71
			T3M	14,919	2	0	2	108	16,021	3	0	3	116	16,121	3	0	3	117	9,227	2	0	2	70
	700 mA	131 W	T4M	15,122	2	0	2	110	16,238	3	0	3	118	16,340	3	0	3	118	9,243	2	0	2	71
			TFTM	14,896	2	0	3	108	15,996	2	0	3	116	16,096	2	0	3	117	9,103	2	0	2	69
			TSVS	15,736	3	0	1	114	16,898	4	0	1_	122	17,004	4	C	1	123	9,661	3	0	1	74
			TSS	15,852	3	0	1	115	17,022	4	0	1	123	17,129	4	0	1	124	9,544	3	0	1	73
KOT.			T5M Tesu	15,880	4	0	2	115	17,052	4	0	2	124	17,159	4	0	2	124	9,665	3	0	2	74
60C (60 LEDs)			T1S	15,647 20,095	3	0	3	113 96	16,802 21,579	3	0	3	122 103	16,907 21,714	3	0	3	123 104	9,395	4	0	2	72
(00 2103)			T2S	20,720	3	0	3	99	22,249	3	0	3	106	22,388	3	0	3	107					
			T2M	20,245	3	0	3	97	21,740	3	0	3	104	21,876	3	0	3	105					
			T3S	20,220	3	0	3	97	21,713	3	0	3	104	21,849	3	0	3	105					
:			T3M	20,404	3	0	3	98	21,910	3	0	4	105	22,047	3	0	4	105					
	1000 mA	209 W	T4M	20,681	3	0	3	99	22,207	3	0	4	106	22,346	3	0	4	107					
			TFTM	20,372	3	0	3	97	21,876	3	0	4	105	22,013	3	0	4	105					
			TSVS	21,521	4	0	1	103	23,110	4	0	1	111	23,254	4	0	1	111					
			TSS TSM	21,679	4	0	2	104 104	23,280	5	0	1 2	111	23,425	4	0	1	112					
			T5W	21,717 21,399	4	0	3	102	23,321 22,979	5	0	3	112 110	23,466 23,122	5	0	3	112 111					
			1217	£11333	т .			192	EE,313			J	110	221رى		9		111					



#### **FEATURES & SPECIFICATIONS**

#### INTENDED USE

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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?) for optimized pole wind loading.

#### FINISH

Exterior parts are protected by a zino-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 (70 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 receptade 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

5-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms\_and\_conditions.aspx

**Note:** Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.





## **D-Series Size 2** LED Wall Luminaire







## d"series

## **Specifications**

		na	

Width: 18-1/2" Weight: 21 lbs (9.5 kg)

Depth: 10" (25.4 cm)

Height: 7-5/8" (19.4 cm)

## Back Box (BBW)

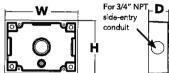
Width: 5-1/2" BBW 1 lbs (0.5 kg)

Depth: 1-1/2" (3.8 cm)

Height: 4" (10.2 cm)







Catalog Number

Notes

Type

## Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 76% in energy savings over comparable 400W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

## **Ordering Information**

## EXAMPLE: DSXW2 LED 30C 700 40K T3M MVOLT DDBTXD

#### DSXW2 LED

Series	LEDs	Drive Current	Color temperature	Distribution	Voltage	Mounting	Control Options	Other Options	Finish (required)
DSXW2 LED	20C 20 LED: (two engines 30C 30 LED: (three engines	700 700 mA 1000 1000 mA	30K 3000 K 40K 4600 K 50K 5000 K AMBPC Amber phosphor converted	T2S Type II Short T2M Type II Medium T3S Type III Short T3M Type III Medium T4M Type IV Medium TFTM Forward Throw Medium ASYDF Asymmetric diffuse	MVOLT <sup>1</sup> 120 <sup>1</sup> 208 <sup>1</sup> 240 <sup>1</sup> 277 <sup>1</sup> 347 <sup>2</sup> 480 <sup>2</sup>	Shipped included (blank) Surface mounting bracket  Shipped separately 3  BBW Surface- mounted back box (for conduit entry)	Shipped installed PE Photoelectric cell, button type 4 PER NEMA twist-lock receptacle only (no controls) DMG 0-10V dimming driver (no controls) DCR Dimmable and controllable via ROAM® (no controls) 5 PIRH 180° motion/ambient light sensor, 15-30' mtg ht 6	Shipped installed SF Single fuse (120, 277, 347V)? DF Double fuse (208, 240, 480V)? HS House-side shield 3 SPD Separate surge protection 8  Shipped separately 3 BSW Bird-deterrent spikes WG Wire guard VG Vandal guard	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone

#### NOTES

- MVOI.T 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).
- 2 Available with 30 LED/700mA options only (DSXW2 LED 30C 700). DMG option not available.
- 3 Also available as a separate accessory; see Accessories Information.
- 4 Photocontrol (PE) requires 120, 208, 240 or 277 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
- 5 Specifies a ROAM® enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347V, 480V or PIRH. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1-80U-442-6745 or email: sales@roamservices.net.
- 6 Specifies the Sensor Switch SBGR-6-ODP control; see Motion Sensor Guide for details. Includes ambient light sensor. Not available with "PE" option (button type photocall) or DCR. Dimming driver standard.
- 7 Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 460 voltage option.
- 8 See the electrical section on page 2 for more details.
- Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.

## Accessories

Ordered and shipped separately

DLL127F 1.5 JU Photocell - SSL twist-lock (120-277V) 9 DLL347F 1.5 CULJU Photocell - SSL twist-lock (347V) 9 DI 1480E 1.5 CIL III Photocell - SSL twist-lock (480V) scu Shorting cap DSXWHS U House-side shield (one per light engine) DSXWBSW U Bird-deterrent spikes DSXW2WG U Wire quard accessory DSXW2VG U Vandal guard accessory DSXW2BBW DOBXO U Back box accessory (specify finish)



## **Performance Data**

## **Lumen Output**

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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. Contact factory for performance data on any configurations not shown here.

777	Drive	System	Dist.			30K			1112		40K	-				50K	CON																
LEDs	Current	Watts	Туре		*****	K, 70 (				-	K, 70				-	K, 70	a minimum																
	(mA)	***************************************	Туре	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW	Lumens	В	U	G	LPW															
			T25	3,649	1	0	1	101	3,876	1	0	1	108	3,429	1	0	1	95															
			T2M	3,478	1	0	1	97	3,694	1	0	1	103	3,267	1	0	1	91															
			T3S	3,609	1	0	1	100	3,833	1	0	1	106	3,390	1	0	1	94															
	530	36W	T3M	3,572	1	0	1	99	3,794	1	0	1	105	3,356	1	0	_1_	93															
1			T4M	3,500	1	0	2	97	3,717	1	0	2	103	3,288	1	0	1	91															
			TFTM	3,638	1	0	1	101	3,864	1	0	1	107	3,418	1	0	1	95															
			ASYDF	3,252	1	0	_2	90	3,454	1	0	2	96	3,056	1	0	2	85															
			T2S	4,502	1	0	1	96	4,776	1	0	1	102	4,794	1	0	1	102															
			T2M	4,290	1	0	1	91	4,552	1	0	1	97	4,569	1	0	1	97															
20C			T3S	4,452	1	0	1	95	4,723	1	0	2	100	4,741	1	0	2	101															
	700	47 W	T3M	4,407	1	0	2	94	4,675	1	0	2	99	4,693	1	0	2	100															
(20 LEDs)			T4M	4,318	1	0	2	92	4,581	1	0	2	97	4,598	1	0	2	98															
(EVILLUS)			TFTM	4,488	1	0	2	95	4,761	1	0	2	101	4,779	1	0	2	102															
			ASYDF	4,012	1	0	2	85	4,257	1	0	2	91	4,273	1	0	2	91															
			T2S	5,963	2	0	2	81	6,327	1	0	1	84	6,351	1	0	1_	85															
			TZM	5,683	2	0	2	. 77	6,029	1	0	2	80	6,052	1	0	2	81															
			T3S	5,896	1	0	2	80	6,256	1	0	2	83	6,280	1	0	2	84															
	1000	74W	T3M	5,837	2	0	3	79	6,193	1	0	2	83	6,216	1	0	2	83															
			T4M	5,719	1	0	2	77	6,067	1	0	2	81	6,090	1	0	2	81															
	i																	TFTM	5,944	1	0	2	80	6,307	1	0	2	84	6,330	1	0	2	84
			ASYDF	5,314	1	0	2	72	5,638	2	0	2	75	5,660	2	0	2	75															
			T25	4,333	1	0	1	80	5,280	1	0	1	98	5,769	1	0	1	107															
-		j	T2M	4,216	1	0	1	78	5,137	1	0	2	95	5,613	1	0	2	104															
	F30	54W	T3S	4,279	1	0	1	79	5,214	1	0	1	97	5,696	1	0	1	105															
	530	34 W	T3M	4,349	1	0	2	81	5,298	1	0	2	98	5,789	1	0	2	107															
			T4M	4,291	1	0	1	79	5,228	1	0	2	97	5,712	1	0	2	106															
			TFTM	4,287	1	0	1	79	5,223	1	0	2	97	5,707	1	0	2	106															
			TZS	5,346	1	0	1	75	6,513	1	0	1	92	7,118	2	0_	2	100															
30C			T2M	5,201	1	0	2	73	6,337	2	0	2	89	6,925	2	0	2	98															
	700	74 147	T3S	5,279	1	0	1	74	6,431	1	0	2	91	7,028	1	0	2	99															
j	700	71W	T3M	5,365	1	0	2	76	6,536	1	0	2	92	7,143	2	0	3	101															
(30 LEDs)			T4M	5,293	1	0	2	75	6,449	1	0	2	91	7,047	. 1	0	2	99															
i			TFTM	5,289	1	0	2	74	6,444	1	0	2	91	7,042	1	0	2	99															
			T2S	7,137	2	0	2	65	8,697	2	0	2	80	9,501	2	0	2	87															
		Ì	T2M	6,944	2	0	2	64	8,462	2	0	2	78	9,244	2	0	2	85															
		40011/	T3S	7,047	1	0	2	65	8,588	1	0	2	79	9,381	2	0	2	86															
	1000	109 W	T3M	7,162	2	0	3	66	8,728	2	0	3	80	9,534	2	0	3	87															
		Ì	T4M	7,066	1	0	2	65	8,611	1	0	2	79	9,407	2	0	2	86															
		1	TETM	7,060	1	0	2	65	8,604	2	0	2	79	9,399	2	0	2	86															

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



## 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).

Aml	oient	Lumen Multiplier
0°C	32°F	1.02
70°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	0.98

## **Projected LED Lumen Maintenance**

Data references the extrapolated performance projections for the DSXW2 LED 30C 1000 platform in a 25°C amblent, based on 10,000 hours of LED testing (tested per IESNA IM-80-08 and projected per IESNA TM-21-11).

To calculate  $\sqcup F$ , use the lumen maintenance factor that corresponds to the desired number of operating hours bolow. 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

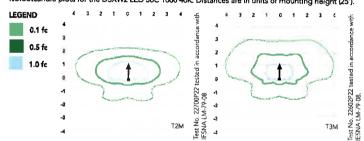
#### **Electrical Load**

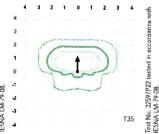
					Curre	nt (A)		
LEDs	Drive Current (mA)	System Watts	120V	208V	240V	277V	347V	480V
	350	25 W	0.23	0.13	0.12	0.10	areach is	-
20C	530	36 W	0.33	0.19	0.17	0.14	4	-
200	700	47 W	0.44	0,25	0.22	0.19	- "	-
	1000	73 W	0.68	0.39	0.34	0.29	-	~
	350	36 W	0.33	0.19	0.17	0.14	-	<b>3</b> E
30C	530	54 W	0.50	0.29	0.25	0.22	80	*
30C	700	71 W	0.66	0.38	0.33	0.28	0.23	0.16
	1000	109 W	1.01	0.58	0.50	0.44	200	12.1

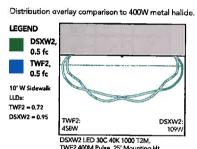
## **Photometric Diagrams**

To see complete photometric reports or download lies files for this product, visit Lithonia Lighting's D-Series Wall Size 2 homepage.

Isofootcandle plots for the DSXW2 LED 30C 1000 40K. Distances are in units of mounting height (25).







## **FEATURES & SPECIFICATIONS**

#### INTENDED USE

The energy savings, iong life and easy-to-install design of the D-Series Wall Size 2 make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

#### CONSTRUCTION

Two-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. The LED driver is mounted to the door to thermally isolate it from the light engines for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65).

## 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 textured and non-textured finishes.

#### OPTIC

Precision-molded proprietary acrylic lenses provide multiple photometric distributions tailored specifically to building mounted applications. Light engines are available in 3000 K (80 min. CRI), 4000 K (70 min. CRI) or 5000 K (70 CRI) configurations.

#### ELECTRICAL

Light engine(s) consist of 10 high-efficacy LEDs mounted to a metal-core circuit board to maximize heat dissipation and promote long life (L87/100,000 hrs at 25°C). Class 1 electronic drivers have a power factor >90%, THD <20%, and a minimum 2.5KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

#### INSTALLATION

Included universal mounting bracket attaches securely to any 4" round or square outlet box for quick and easy installation. Luminaire has a slotted gasket wireway and attaches to the mounting bracket via corrosion-resistant screws.

#### LISTINGS

CSA certified to U.S. and Canadian standards. Rated for -40°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. Full warranty terms located at www.acuitybrands.com/ CustomerResources/Terms\_and\_conditions.aspx.

**Note:** Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



# Machine Moulded

The rich sexture, color and appeal of Cushwa machine moulded brick enhances the appearance of any building, and creates a classic look that will stand the test of time. Moulded bricks have characteristics that give both residential and commercial exteriors a unique warmth and depth. Cushwa's modern manufacturing processes make machine moulded brick a lasting value for any project.



#10 Rose Red



#30 Rose Full Range



#40 Santa Fe



#60 Cameo Rose



#82 Pastel Rose



#103 Georgian



#104 Victorian



#115 Shenandoah



#150 Antietam Blend



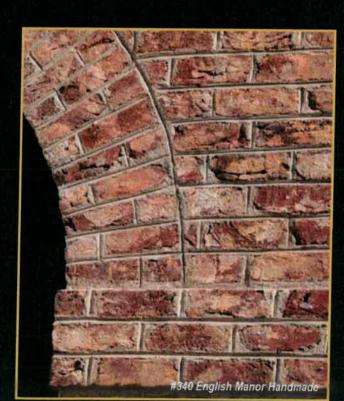
#151 Somerset



#154 Montgomery



#170 Camden Blend



#237 Cambridge



#238 Lexington



#250 Terra Blend



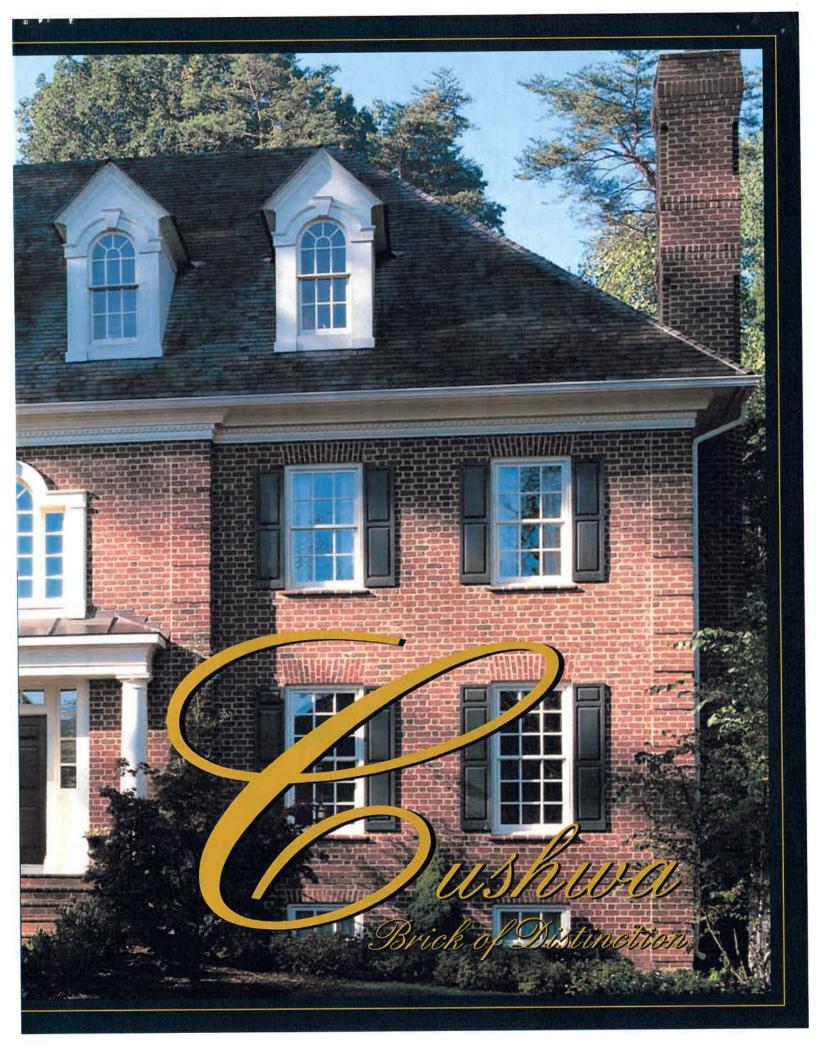
#312 Provincial



#450 Hunt Valley



#500 Tiber Island



# PRODUCT OVERVIEW

## 12 STANDARD COLORS

Colors available in all textures -



BRINDLE



**CREME BUFF\*** 



SAVANNAH!



**BUCKSKIN\*** 



CRYSTAL WHITE\*



SLATE!





FLAX



SMOKE GRAY



COMMONWEALTH



RIESLING\*



Blended Color // \*\*Monotone Color

## ASHLAR SERIES



BRINDLE





SANDSTONE



STONE CREEK

## PRAIRIE® STONE

Available in chiseled and smooth





GRIS



BAMBOO



STONE



CRAB ORCHARD



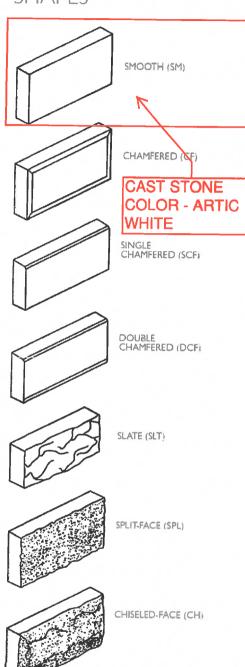
SUNSET

## CUSTOM CAPABILITIES

Reading Rock specializes in creating custom colors and is experienced in matching our RockCast architectural stone products to complement existing materials on site. Our manufacturing capabilities provide customers with unlimited color solutions that are sure to meet any design requirement.



## **SHAPES**







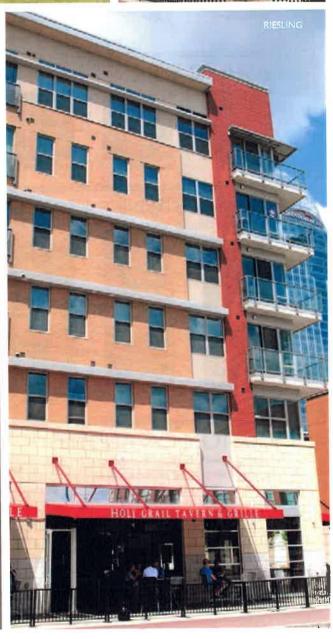




# STONE SOLUTIONS

MANUFACTURED BY READING ROCK, INC.





# PROMENADE™ PLANK PAVER

Clean, sleek lines are essential to any modern design. Choose the size, finish and color from Unilock's Promenade™ Plank Paver series for long narrow paving 'planks' to create a dynamic linear aesthetic to complement any design,







BELPASSO® **Enamel Finish** 



UMBRIANO® Mottled Finish



SERIES 3000° Exposed Aggregate Finish



IL CAMPO® Brushed Finish



Ask your Unilock Representative about locally stocked colors.



## PRODUCT SPECIFICATIONS

**CUSTOM COLOR OPTIONS\*** 



8 x 24 x 4" (20 x 60 x 10cm)



6 x 24 x 6" (15 x 60 x 15cm)



(10 x 40 x 10cm)

4 x 12 x 4" (10 x 30 x 10cm)



3 x 12 x 4" (7 x 30 x 10cm)

Promenade" can be manufactured in a variety of custom colors and textures. Minimum quantities will apply, Please contact your Unilock Representative for more details. Permeable version 3 x 12″, Eco-Promenade™ is available by special order. See page 53.

## A Complete Family of Wall Products

The Allan Block Collections give you a choice of styles to meet your site and design requirements. Use the basic gravity wall system for smaller wall projects. For taller wall projects use geogrid to reinforce the wall, or consider optional techniques using masonry, no-fines, rock bolts, soil nails, or earth anchors.



The AB® Collection has been a favorite of wall builders for years and offers the perfect blend of performance and style with maximum results.



The **AB Europa® Collection** captures the hand-laid stone effect that brings old world charm and distinction to any project in beautiful marbled colors.



The AB Fieldstone® Collection is a "Green/Eco-Friendly" retaining wall product that maintains the beautiful look and feel of natural stone. Installing and performing like our other Collections, AB Fieldstone truly is a friendly product.



# McNICHOLS® DESIGNER METALS





















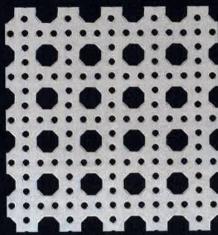
# McNICHOLS® Designer Perforated Metal: Sustainable



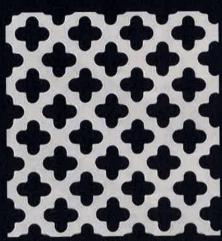
McNICHOLS® Designer Perforated Metal infill panels in an Octagon Cane pattern give this kitchen a vintage touch.



**Grecian** Designer Perforated Metal infill panel adds elegance to this linen closet.



Octagon Cane 36% Open Area



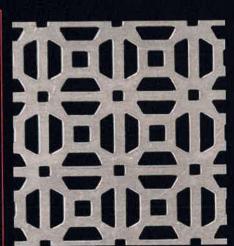
Full Cloverleaf - 1/2" Staggered Clovers 51% Open Area



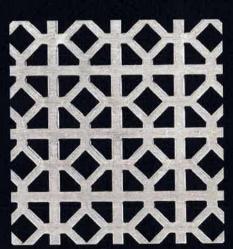
Linco 19% Open Area



Grecian 35% Open Area



Mosaic 3310 40% Open Area



Windsor 45% Open Area





46" Sapphire Vintage Bar Stripe 4948-0000

WIDTH: 46" / 116.84 cm

**REPEAT: 7.63"** 

CONTENT: 100% Sunbrella® Acrylic

SELVEDGE POSITION: Left / Right

## **RECOMMENDED USES:**

Fixed Awnings / Retractable Awnings / Shade Sails / Umbrellas

## SWATCH SIZE SHOWN ~ 48" x 46"

## **CARE AND CLEANING:**

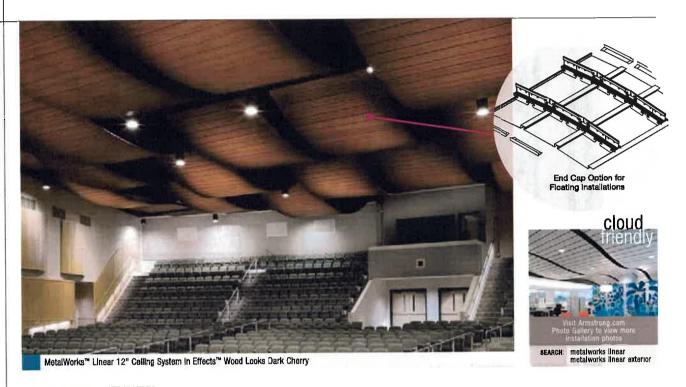
Brush off loose dirt. Wash with a mild soap and lukewarm water solution. Rinse thoroughly. Allow to air dry. For more information visit

www.sunbrella.com/cleaning

WARRANTY: For warranty information visit www.sunbrella.com/warranty

## METALWORKS™ Linear **METALWORKS Linear Exterior**

smooth texture



## **KEY SELECTION ATTRIBUTES**

- Nominal 4", 6", 8", and 12" wide panels, including nominal 1" reveal
- · Acoustical options with microperforated panels
- Available in three colors and six Effects™ Wood Looks finishes
- Install in the ceiling, on the wall, or create 90° angled or curved celling-to-wall transitions
- · Fast and easy installation

- · Durable Washable, Scrubbable, Impact-resistant, Soil-resistant
- · Available for exterior applications, tested to meet wind uplift Classes 30, 60, and 90
- For custom color options, call TechLine at 1 877 ARMSTRONG
- For celling and wall applications that require unique solutions, contact the You Inspire™ Solutions Center at solutionscenter@armstrong.com

## **COLOR SELECTION**

Due to printing limitations, shade may vary from actual product.



Silver Grey



Gun Metal Grey (MY)







PERFORATION OPTIONS



Silver Grev Exterior (SG2)

(SG)



Dark Cherry (FXDC)



















Effects Maple (FXMP2)\*

**Effects** 

Mapie (FXMP)

**Effects Cherry** Exterior (FXCH2)\*

Effects Dark Cherry Exterior (FXDC2)\*

Effects Oak Exterior (FXOK2)\*

Effects Walnut (FXWN2)\*

Effects alnut Espresso Exterior (FXWE2)\*



Custom perforations available



Custom colors available

<sup>\*</sup> Minimum order quantity and extended lead times may apply



**Fabric Awnings** 

Standing Seam/ Metal Clad

Tension Structures

Custom Lettering and Graphics

Commercial and Industrial Coverings

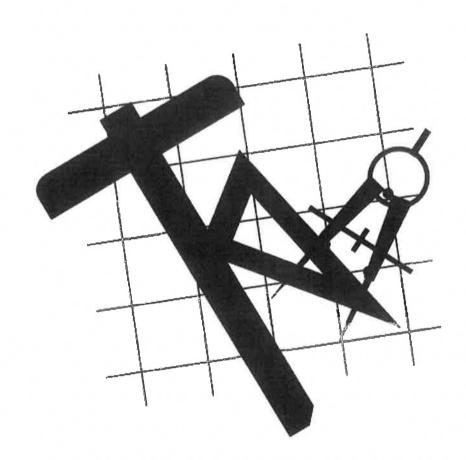
Exhibit Components

Tension Structures

Banners

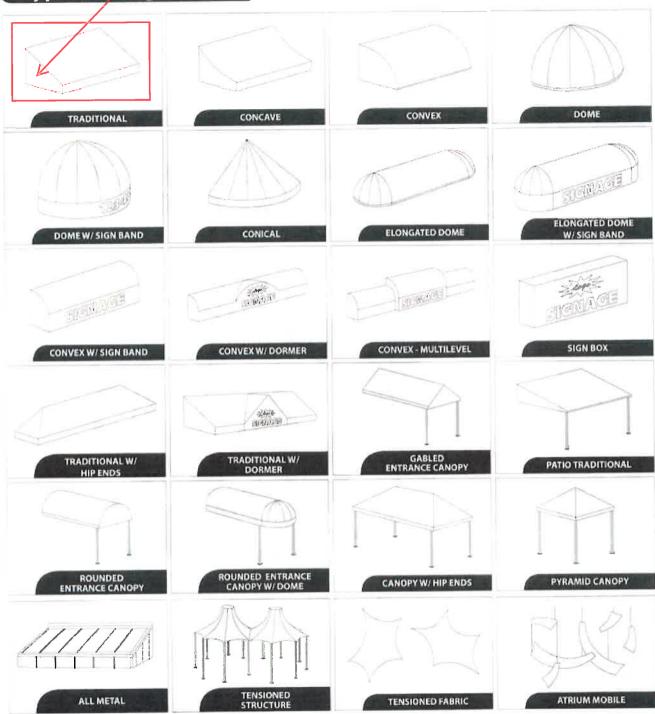
Automated Cutting & Patterning

# Typical Fabric Structure Specifications Guide



Lawrence Fabric Structures 3509 Tree Court Industrial Blvd. St. Louis, MO 63122 (636) 861-0100 (636) 861-0150 Fax (800) 527-3840 sales@lawrencefabric.com

## Typical Designs



## Graphics

We use a variety of graphic techniques to achieve the desired look. Today's fabric structures can be enhanced with anything from simple lettering to custom printed patterns or digital printed photographs. Following is a list of common techniques available today:

- Stencil Painted
- Applied Vinyl Decals
- •Sunbrella Graphic
- System®
- •R/F Welded
- •Ink Jet Printed
- Eradicated
- Screen Printed
- Dye Sublimation
- Digital Printing

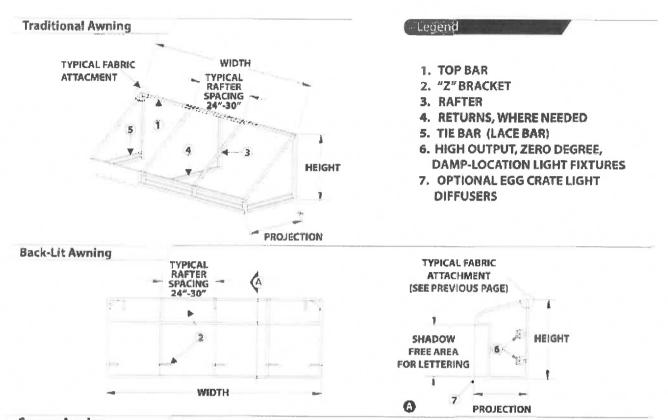


AWRENCE

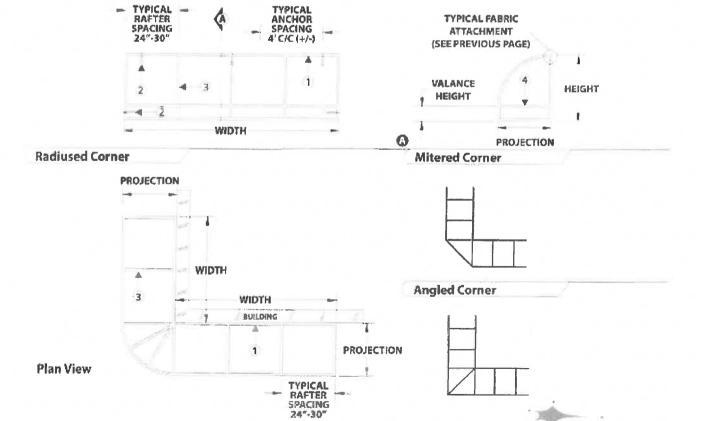
Fabric Structures Inc.

## **Frames**

## **TYPICAL SPECIFICATIONS**







## **Stock Metal Goods**

Most frames are made with 1"& 2" aluminum tubing. Other tubing types are available as size and load limits require.

A. 1"x 1"x .075 wall

B. 1"x 2"x .100 wall

C. Tim" x 3"x .125wall

D. 11/2"x 11/2"x .125 wall

E. 1 % "x 1 % "x .125 wall

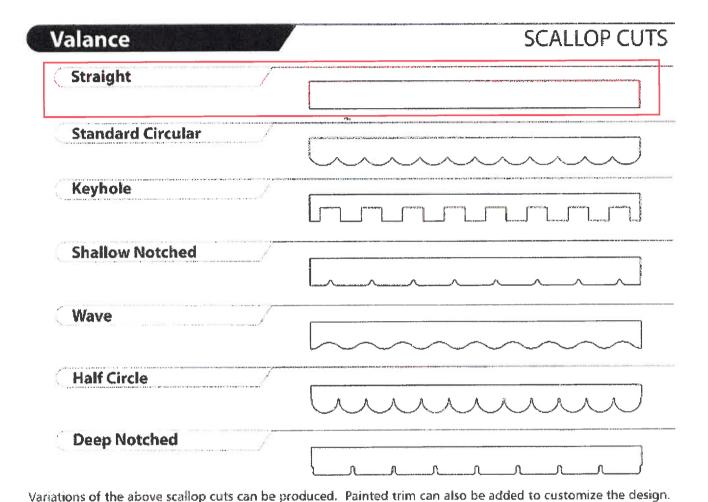
f. 2" x 2" x .093 wall

G. 21/2"x 21/2"x .188 wall

G. 1/2"round x .088 wall

H. 2 1/2° round SCH. 40 STEEL

I, 2"x3"x. \$25 wall STEEL



## **Quality Assurance**

GUARANTEES - are for normal sun and wind conditions.

FRAME - Five years for workmanship and rust and corrosion resistance.

FABRIC - Manufacturer's mill warranties vary from three to eight years.

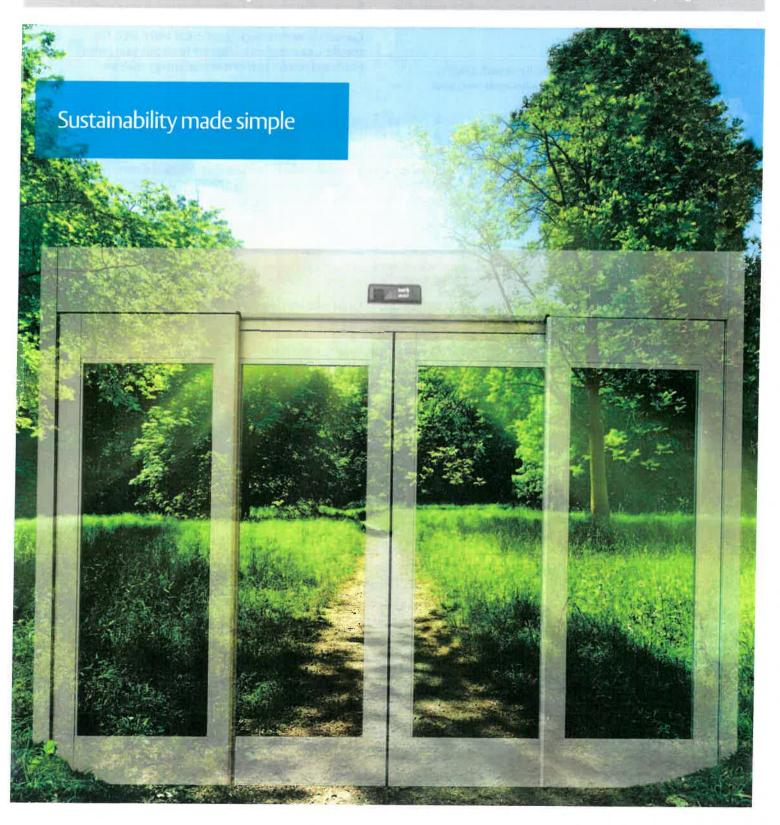
SEWING - Three year warranty on seams and thread.

More important than these stated warranties is the over SiXTY FIVE YEARS of customer service and satisfaction that Lawrence Fabric Structures has provided. We are very proud of our reputation as a leader in our industry, both in product quality and customer satisfaction.



(636) 861-0100 • (800) 527-3840 • Fax (636) 861-0150

# Sliding Door ASSA ABLOY Besam SL500 EcoDoor™



# Automatic Sliding Door Solutions For Sustainable Buildings



Entrance automation is the first step to managing excessive energy usage. ASSA ABLOY Entrance Systems intelligent products provide a range of options to help minimize energy loss, improve indoor air quality, increase daylight, control air circulation, and optimize the overall energy performance of any building

The Besam SL500 EcoDoor is available with a variety of configurations and features to help you meet your

sustainability goals. Whether air infiltration reduction, energy consumption savings, improved customer comfort or compliance with energy codes such as ASHRAE 90.1. there's a Besam SL500 EcoDoor configuration to suit your needs.

Consult the architectural SpecDesk at 1-877-SPEC-123, specdesk.na.aaes@assaabloy.com to discuss your project needs and receive your customized energy analysis.



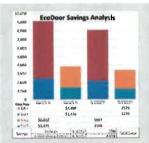
## **Meeting Your Sustainability Requirements**

Proper feature selection can make a tremendous difference in the sustainability performance of your Besam automatic sliding door. The Besam SL500 EcoDoor automatic sliding door can be equipped with a variety of features to radically reduce air infiltration in your facility and reduce energy costs.



## **U-factor Package**

The Besam SL500 EcoDoor U-factor package is equipped with EcoDoor seals and U-factor rated glass; independently tested to ASHRAE 90.1 to provide you with the most energy efficient sliding door available. Your ASSA ABLOY Entrance Systems representative will help you specify a package to comply with local ASHRAE 90.1 requirements. Request a customized energy analysis to see the demonstrable savings you can achieve with EcoDoor Seals and U-factor glass.



## **Customized Energy Calculations**

Consult your local representative for your customized energy savings analysis and see the savings you can achieve with a Besam EcoDoor package. Whether your goal is to lower energy costs, reduce CO2 emissions or improve indoor comfort by reducing drafts and air infiltration, the Besam SL500 EcoDoor can help you achieve your sustainability requirements.

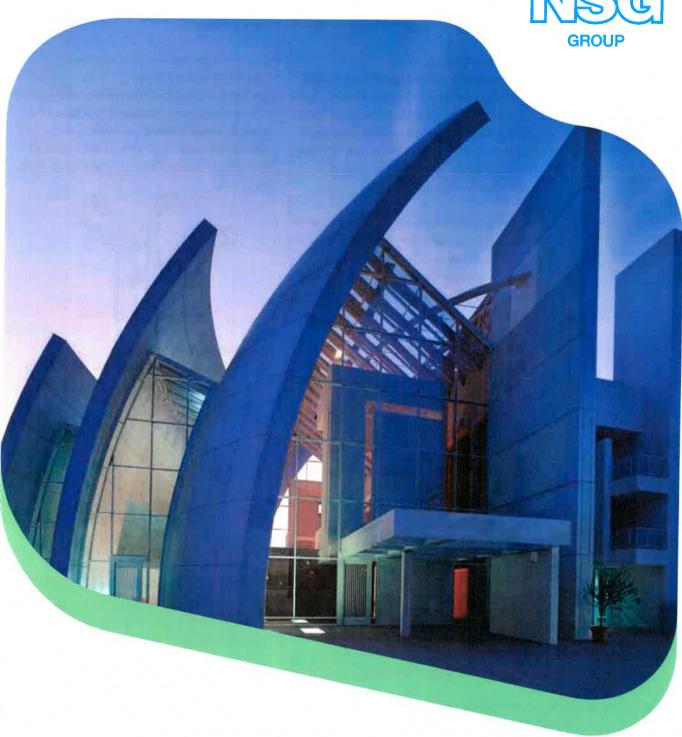


## **EcoDoor Seals & EcoMode**

Significantly reduce air infiltration and energy costs with Besam EcoDoor seals. The unobtrusive seals are mounted on all door leafs and available on your new equipment or to retrofit onto your existing Besam doors. Request your customized energy analysis to see the demonstrable savings you can achieve with Besam EcoDoor Seals.

Utilize the Besam EcoMode EcoMode to reduce the sliding door opening, allowing less infiltration of air to control heating and cooling costs. With Besam's auto-width intelligence, your opening width will adjust automatically when traffic increases and reduce to partial opening when traffic subsides.









# Low-e 4<sup>th</sup> Surface Commercial Technology with Pilkington **Energy Advantage™** Low-e.

Lower U-factor • Improved Clarity • Greater Energy Savings.

## For additional information visit

- ATS 193 Low-e 4th Surface Technology: Guidelines for use
- ATS 137-4 Improvements in the Appearance of Installed Pilkington Energy Advantage<sup>TA</sup>

www.pilkington.us/technicalbulletins:

- ATS 138 How Low-e Glass Works
- ATS 138-D Window Energy Efficiency with Multiple Low-e Coatings

#### Here's how it works.

Pilkington **Energy Advantage™** Low-e coatings applied to the #2 and #4 surfaces of an insulating unit reduce the center of glass U-factor by about 20%, compared to an IGU with a pyrolytic low-e and an uncoated clear lite. This proven technology improves thermal performance in a new or reglazed commercial building.

Durability is critical for coatings applied to the 4th surface of an insulating unit. Pyrolytic coatings are extremely durable and difficult to damage. Pilkington pyrolytic coating technology has been used on exposed surfaces successfully for over 20 years globally.

With superior clarity, unrivaled by any other pyrolytic glass, Pilkington **Energy Advantage™** has been used for more than 10 years in North America as a 4th Surface Low-e product.

### **Features and Benefits**

- Durability of a pyrolytic
- Low U-factor and reduced solar heat gain
- Superior thermal control
- Improved clarity
- High light transmittance
- Energy savings
- Easy to clean surface with standard techniques
- Superior aesthetics for any building
- Can help projects achieve LEED® credit
- No additional SKUs

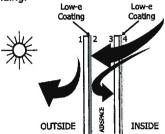
# Enhanced thermal performance without investing in triple-pane windows.

- Fewer low-e products to inventory, with installation on #2 and #4 surfaces
- No additional raw materials required
- No additional capital investments necessary
- Easily integrated into current fabrication process
- Lighter construction
- Less reflection than with triple glazing
- Durability of a pyrolytic
- No edge deletion required for an IGU
- Easily handled, tempered, cut, bent, laminated, insulated and heat-strengthened
- Virtually unlimited shelf-life

## How is glazing performance improved?

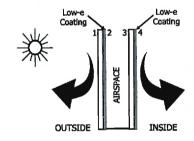
#### **Cold Weather Conditions**

The coating on the #2 surface reduces room heat (or far IR energy) loss by reflecting it back toward the space. By adding a second low-e coating to the #4 surface the thermal insulation is further improved. More infrared heat (room heat) is reflected back into the building.



#### **Warm Weather Conditions**

The low-e coating on the #4 surface reflects more solar heat than one lite of low-e glass, reducing cooling loads.





#### **Pyrolytic Power**

Pilkington **Energy Advantage™** Low-e is coated using a pyrolytic process, which allows for the coating to be chemically-bonded to the glass at a molecular level. This process produces a coating which is extremely durable and will not scratch or degrade over time. The coating has been used globally for over 20 year with proven success.

## Permacoat™ Powder Coatings

Solvent-Free Finishes That Add High Performance, Durability And More "Green" To Your World





## Today's Technology for Tomorrow's Environment

## Independently Certified to Meet AAMA 2604

As communities throughout the world recognize the need to preserve natural resources, governments have imposed stricter safety controls and increased pressure to reduce emissions such as paint solvents into the atmosphere. Building owners and architects have responded to these environmental concerns while also requiring higher performance, superior durability and more color choices for their projects.

Kawneer now offers a solution – Permacoat™ Powder Coatings – for new or remodel projects requiring a solvent-free finish that:

- Meets the exacting requirements of AAMA 2604
- Demonstrates outstanding gloss and color retention
- Complies with most environmental regulations
- Provides optimal corrosion resistance
- Exhibits durability, excellent mechanical properties and abrasion resistance
- Competes with solvent-based paints in all respects
- Offers standard and custom finish colors
- Offers higher gloss levels contact your Kawneer Sales Representative for information
- Offers additional custom shades subject to technical approval

#### Performance Table

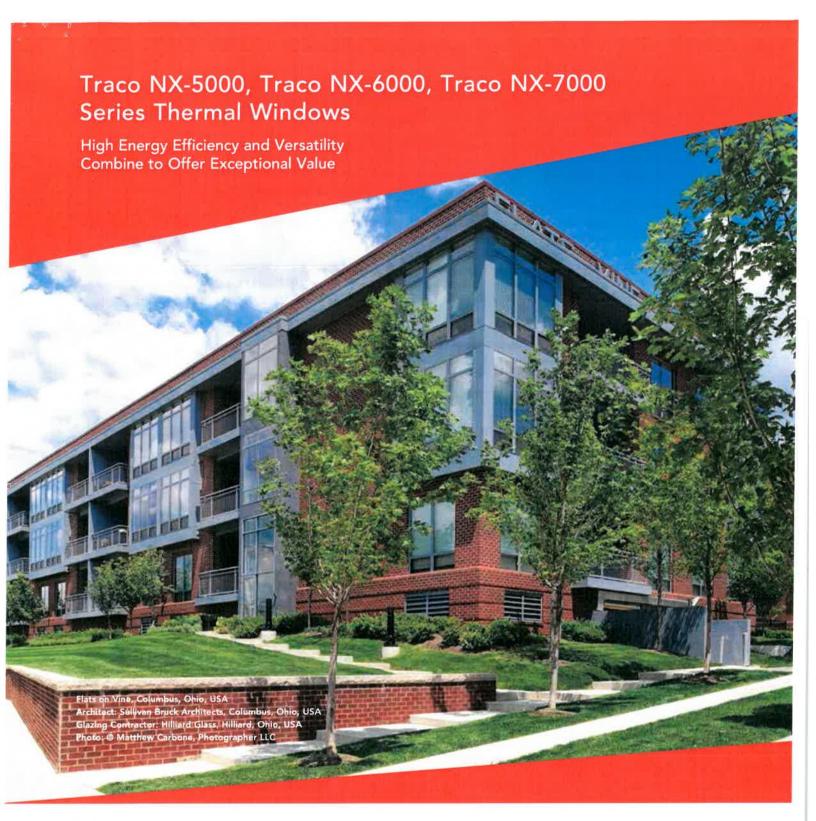
Mechanical Performance	AAMA 2604 Reference	Permac	oat Performance
Dry Film Hardness	Section 7.3	Pass	Н
Dry Film Adhesion	Section 7.4.1.1	Pass	No film disbondment
Impact Resistance	Section 7.5	Pass	No film disbondment
Abrasion Resistance	Section 7.6	Pass	>20 liters per mil
Chemical Resistance	AAMA 2604 Reference	Permac	coat~ Performance
Muriatic Acid Resistance	Section 7.7.1	Pass	No visual change or blistering
Mortar Resistance	Section 7.7.2	Pass	No visual change or loss of adhesion
Nitric Acid Resistance	Section 7.7.3	Pass	Color change ≤5∆E (Hunter)
Detergent Resistance	Section 7.7.4	Pass	No film removal or blistering
Corrosion Tests	AAMA 2604 Reference	Permac	coat" Performance
Wet Adhesion	Section 7.4.1.2	Pass	No film removal or blistering
Boiling Water Adhesion	Section 7.4.1.3	Pass	No film removal or blistering
Humidity Resistance	Section 7.8.1	Pass	No blisters > "few No.8 (ASTM D 714)
Salt Spray Resistance	Section 7.8.2	Pass	<1.6 mm creep from scribe
Weathering 5 Years Florida	AAMA 2604 Reference	Permac	coat™ Performance
Color Retention	Section 7.9.1.2	Pass	Color change ≤5∆E (Hunter)
Chalking Resistance	Section 7.9.1.3	Pass	No more than No.8 rating (ASTM D 4214)
Gloss Retention	Section 7.9.1.4	Pass	≥ 30% gloss retention
Erosion Resistance	Section 7.9.1.5	Pass	< 10% Film loss

**Note:** These color samples are as close as possible to actual colors offered within the limitations of printing techniques. Final color specification shall be as per approved color samples.



Kawneer Company, Inc. Technology Park / Atlanta 555 Guthridge Court Norcross, GA 30092 kawneer.com 770 . 449 . 5555





As building budgets grow increasingly tight, architects, owners and facility managers look for solutions that will lower operating costs while offering aesthetic appeal and energy efficiency. The Traco NX-5000, Traco NX-6000 and Traco NX-7000 Series Thermal Windows are a revolutionary product series for the commercial market segment designed to deliver the thermal performance and versatility required by today's demanding market.

Available in a range of configurations, the 3-1/4" deep series offers increased design flexibility and enhanced daylighting. With exceptional value and outstanding air and water performance, the Traco NX-5000, Traco NX-6000 and Traco NX-7000 Series Thermal Windows are the perfect fit for new or retrofit construction in the commercial, institutional and multi-family segments.



#### Performance

The Traco NX-5000, Traco NX-6000 and Traco NX-7000 Series Thermal Windows combine the longevity and structural integrity of aluminum with exceptional U-values. By incorporating the high-performance energy spacer and high-performance thermal barrier system, these windows offer outstanding energy efficiency and increased comfort for occupants.

Thermal efficiency also makes the windows ideal for buildings seeking to earn LEED®\* (Leadership in Energy and Environmental Design) certification with the U.S. Green Building Council. Made from aluminum, these high-performing windows offer unlimited finish options, installation flexibility and sustainable benefits such as recyclability. Furthermore, the window will never rot, warp or buckle due to moisture and weather exposure.

The series includes various hung and sliding configurations and has been tested in accordance with AAMA/WDMA/CSA 101/I.S.2 and A-440-08 designations.

MODEL	FUNCTION	AAMA/WDMA/ CSA 101/I.S.2 A-440-08 DESIGNATION	WATER RESISTANCE	UNIFORM LOAD STRUCTURAL	U-FACTOR (PER NFRC 100)
TRACO NX-5000	DOUBLE HUNG TILT	CW-PG50-H	10 PSF	50 PSF	0.38
TRACO NX-5400	SINGLE HUNG TILT	CW-PG50-HS	10 PSF	45 PSF	0.37
TRACO NX-6000	DOUBLE SLIDE	CW-PG50-HS	10 PSF	50 PSF	0.39
TRACO NX-6400	SINGLE SLIDE	CW-PG50-HS	10 PSF	45 PSF	0.36
TRACO NX-7400	FIXED	CW-PG50-FW	10 PSF	50 PSF	0.32

#### Fabrication and Installation

A range of installation options are available for the windows, including snap-in nailing fin, trim and clip, preset panning, wraparound panning, receptor, sub sills and more.

#### Aesthetics and Versatility

The 3-1/4" deep commercial window's configuration options offer increased design flexibility for a range of applications. A dual color option provides the flexibility to vary interior and exterior finishes.

All configurations come with muntins and grid options. Extruded aluminum screens (either half or full) are available on the full range of windows

The window series can fit the aesthetics of almost any project with reliability, affordability and thermal performance.



Overmont House, Philadelphia, Pennsylvania, USA Glazing Contractor: Graboyes Commercial Window Company, Philadelphia, Pennsylvania, USA







# Traco TR-6800 Horizontal Sliding **Architectural Thermal Window** Clean Lines Meet Robust Thermal Performance Residences on the Avenue (Square 54) I 2200 Pennsylvania Avenue, Washington, D.C. Architect: Hickok Cole Architects, Washington, D.C. & Pelli Clarke Pelli Architects, New Window Installer: Engineered Construction Products, Ltd., Frederick, Maryland

Choose a window that is at home virtually anywhere. The simple, clean design of Traco TR-6800 Horizontal Sliding Architectural Thermal Windows blend seamlessly with a variety of architectural styles. The clean sightlines are as appealing in apartment buildings as they are in classrooms or municipal buildings. An excellent option for mixed-use construction, these windows let the true personality of any project shine through.

The sturdy, weather-resistant aluminum construction, combined with insulating glass, provides robust thermal performance. With optional internal or exterior muntins, the contemporary good looks of this window can be easily transformed to a more traditional appearance. Easy to operate and easy to maintain, Traco TR-6800 Horizontal Sliding Architectural Thermal Windows continue to perform long after installation, adding comfort and beauty to any project.



#### Performance

Traco TR-6800 Horizontal Sliding Architectural Thermal Windows are manufactured with long-lasting finishes and durable hardware to stand up to the effects of daily operation and seasonal weather extremes. Designed to meet current building codes and high quality standards, Traco TR-6800 windows have been tested in accordance with AAMA/WDMA/CSA 101/I.S.2 and A-440-08 designations. Adding to the performance features of this window is a weep system that ensures water drains to the exterior. Sturdy aluminum construction ensures that Traco TR-6800 windows will not rot, warp or buckle when exposed to weather or moisture.

Model	Traco TR-6800			
Function	Single Horizontal Sliding			
Frame Depth	3-1/4"			
AAMA/WDMA/CSA 101/I.S.2/A-440-08 DESIGNATION	AW-PG50-HS			
Water Resistance (psf)	10			
U-Factor (per NFRC 100)	0.45			

#### Operation and Maintenance

The simple beauty of Traco TR-6800 Horizontal Sliding Architectural Thermal Windows are carried through to their easy operation. Full-height pull handles allow comfortable, accurate sash operation from the window sill. Precision engineering allows the rolling sash to move freely, yet the window seals tightly when closed. Adjustable wheels ensure proper sash alignment for a window that always moves smoothly. For safety and security, black zinc automatic locks are standard.

After removing the anti-takeout stop, the sashs lift out virtually without effort, providing for easy maintenance and cleaning from the interior. If it is desired or necessary to change hardware, it may be replaced with standard tools.

#### Aesthetics and Versatility

With several configurations available, these versatile windows feature a 3-1/4" frame depth for an aesthetically pleasing narrower interior to exterior transition. Options for single-glazed or double-glazed windows, along with exterior or internal muntins, expand design possibilities for this architectural-grade window.

Traco TR-6800 Horizontal Sliding Architectural Thermal Windows offer several standard features, including:

- Sash: X = operating; O = fixed;
   primary = interior; secondary = exterior
- 1" insulating glass
- Adjustable wheels
- Black zinc automatic lock; XO or OX (specify choice)

For enhanced design flexibility, additional options are available for Traco TR-6800 windows, including:

- OXO (specify slide direction); XOX
- Full protection, half insect or full insect exterior screens
- Exterior or internal muntins
- Single glazing, to a maximum of 1/4"
- Dual glazing (split sash), to a maximum of 1/4"



Residences on the Avenue (Square 54)
2200 Pennsylvania Avenue, Washington, D.C.
Architect: Hickok Cole Architects, Washington, D.C. & Pelli Clarke Pelli
Architects, New York, New York
Window Installer: Engineered Construction Products, Ltd., Frederick, Maryland
Photography: © Marilyn Ott-Close / Progress Photo



kawneer.com kawneergreen.com 770 . 449 . 5555





EC 97911-43

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LAWS AND BUILDING AND SAFETY CODES GOVERNING THE DESIGN AND USE OF GLAZED ENTRANCE, WINDOW, AND CURTAIN WALL PRODUCTS VARY WIDELY, KAWNEER DOES NOT CONTROL THE SELECTION OF PRODUCT CONFIGURATIONS, OPERATING HARDWARE, OR GLAZING MATERIALS, AND ASSUMES NO RESPONSIBILITY THEREFOR.

Metric (SI) conversion figures are included throughout these details for reference. Numbers in parentheses ( ) are millimeters unless otherwise noted.

The following metric (SI) units are found in these details:

m - meter

cm - centimeter

mm - millimeter

s - second

Pa - pascal

MPa - megapascal

Kawneer reserves the right to change configurations without prior notice when deemed necessary for product improvement.



EC 97911-43

**FEATURES** 

#### **Features**

- Trifab® VG 451/451T is 4-1/2" deep with a 2" sightline
- Front, Center, Back or Multi-Plane glass applications
- Flush glazed from either the inside or outside
- Screw Spline, Shear Block, Stick or Type-B fabrication
- SSG / Weatherseal option
- Isolock® lanced and debridged thermal break option with Trifab® VG 451T
- Infill options up to 1-1/8" thickness
- Permanodic® anodized finishes in 7 choices
- Painted finishes in standard and custom choices

#### **Optional Features**

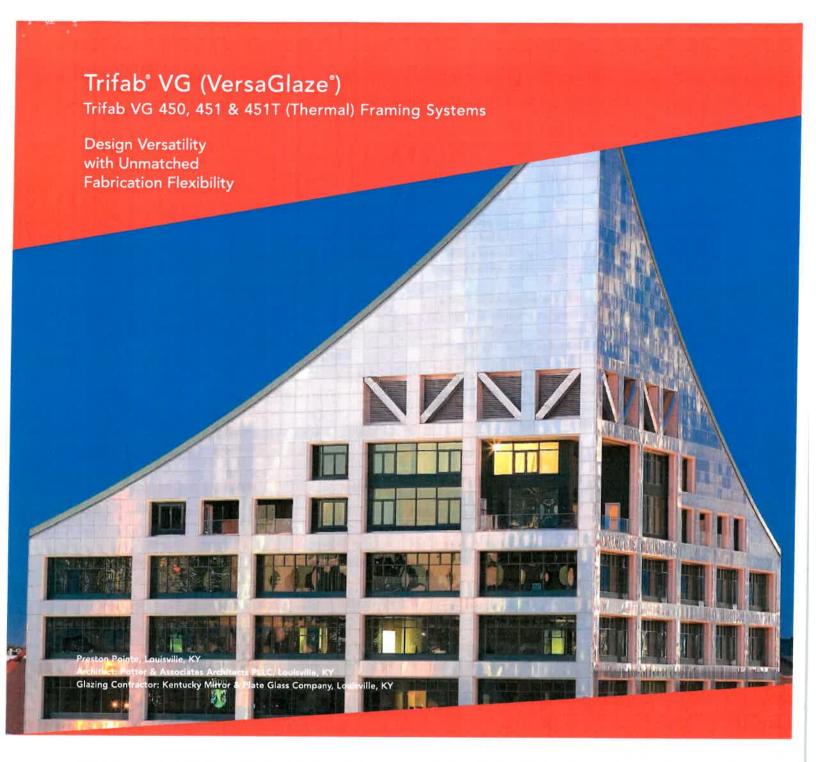
- High performance interlocking flashing
- Acoustical rating per AAMA 1801 and ASTM E 1425
- Project specific U-factors (See Thermal Charts)

#### **Product Applications**

- Storefront, Ribbon Window or Punched Openings
- Single-span
- Integrated entrance framing allowing Kawneer standard entrances or other specialty entrances to be incorporated
- Kawneer Sealair® windows or GLASSvent® are easily incorporated

For specific product applications, Consult your Kawneer representative.





Trifab° VG (VersaGlaze) is built on the proven and successful Trifab platform – with all the versatility its name implies. Trifab set the standard and Trifab° VG improves upon it. There are enough fabrication, design and performance choices to please the most discerning building owner, architect and installer. Plus the confidence a tried and true framing system instills. Select from four glazing applications, four fabrication methods and multiple infill choices. Consider thermal options and performance, SSG and Weatherseal alternatives and your project takes an almost custom shape whether your architecture is traditional or modern and the building is new or retrofitted.

#### **Aesthetics**

Trifab® 450 has 1-3/4" sight lines and both Trifab® 451 and Trifab® 451T have 2" sight lines, while all three have a 4-1/2" frame depth. Designers can not only choose front, center or back glass planes, they can now add the versatility of multi-plane glass applications, thus allowing a greater range of design possibilities for specific project requirements and architectural styles. Structural Silicone Glazing (SSG) and Weatherseal options further expand the designer's choices.



Trifab® VG can be used on almost any project due to virtually seamless incorporation of Kawneer entrances, Sealair® windows or GLASSvent™ for visually frameless ventilators. These framing systems can also be packaged with Kawneer curtain walls and overhead glazing, thereby providing owner, architect and installer with proven, tested and quality products from a single source supplier.

#### **Economy**

Trifab® VG offers four fabrication choices to suit your project:

- Screw Spline for economical continuous runs utilizing two piece vertical members. Provides the option to pre-assemble units with controlled shop labor costs and smaller field crews for handling and installation.
- Shear Block for punched openings or continuous runs using tubular moldings. Provides the option to pre-assemble multi-lite units using shear block clips under controlled shop labor conditions. Clips provide tight joints for transporting large units.
   Less field time is necessary to fill large openings.
- Stick for fast, easy field fabrication. Field measurements and material cuts can be done when metal is on the job.
- Type B for multi-lite punched openings. Provide option for pre-assembled units for installation into single openings and controlled shop labor costs. Head and sill running through provide fewer joints and require less time to fill large openings.



Brighton Landing, Cambridge, MA Architects: ADD Inc., Cambridge, MA Glazing Contractors: Ipswich Bay Glass Company,Inc., Rowley, MA

Trifab® VG 450, 451 and 451T can be flush glazed from either the inside or outside. The Weatherseal option provides an alternative to the structural silicone glazed mullions. vertical ABS/ASA rigid polymer extrusion allows complete inside glazing and creates a flush glass appearance on building exterior, without the added labor of scaffolding or swing stages. Optional patented HP Flashing™ and HP Interlock

clip are engineered to eliminate the perimeter sill fasteners and their associated blind seals and are compatible with all glass planes.

#### Performance

Kawneer's IsoLock" Thermal Break option is available on Trifab® VG 451T. This process creates a composite section and prevents dry shrinkage.

U-factor, CRF values and STC ratings for Trifab® VG vary depending upon the glass plane application. Project specific U-factors can now be determined for each individual project. (See Kawneer Architectural Manual or Website for additional information)

#### Performance Test Standards

Air Performance	ASTM E 283
Water	AAMA 501 and ASTM E 331
Structural	ASTM E 330
Thermal	AAMA 1503
Thermal Break	AAMA 505 and AAMA TIR-A8
Acoustical	AAMA 1801 and ASTM E 1425





#### **Finishes**

Permadonic Anodized finishes are available in Class I and Class II in seven different colors.

Painted Finishes, including fluoropolymer that meet or exceed AAMA 2605, are offered in many standard choices and an unlimited number of specially-designed colors.

Solvent-free powder coatings add the "green" element with high performance, durability and scratch resistance that meet the standards of AAMA 2604.

Kawneer Company, Inc. Technology Park / Atlanta 555 Guthridge Court Norcross, GA 30092 kawneer.com 770 . 449 . 5555





HardiePlank<sup>®</sup> Lap Siding

Siding

HardiePanel® Vertical Siding

HardieShingle® Siding



View all HardiePlank Lap Siding Products

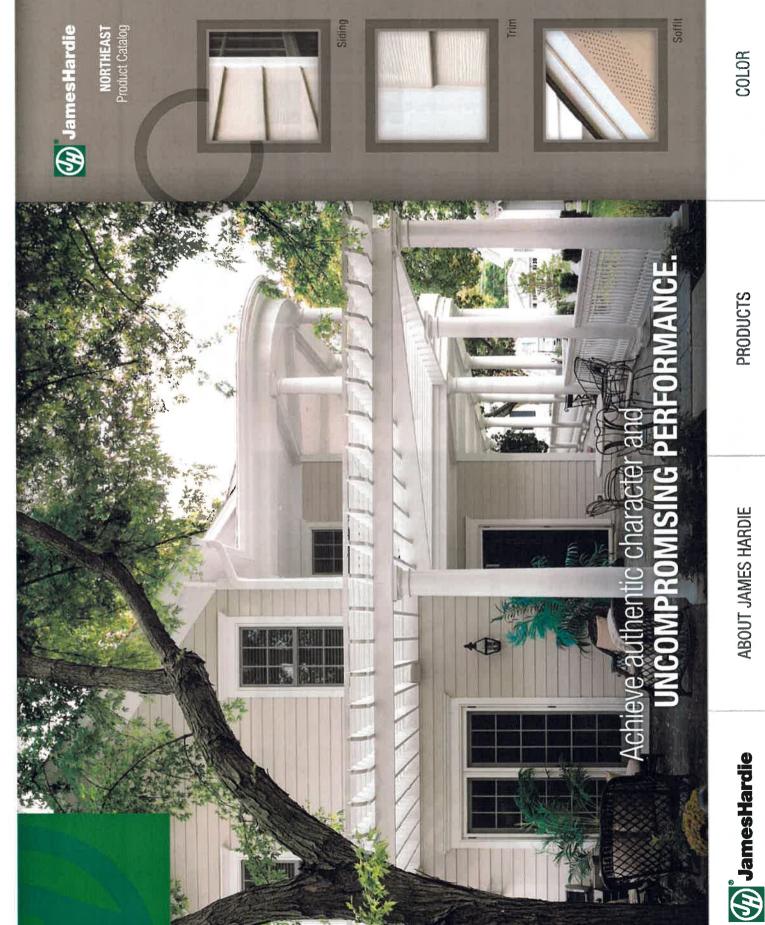
\*thrutted Smooth not available primed in Pittsburgh. Priladelphia and New Engiand



ABOUT JAMES HARDIE

**PRODUCTS** 

)( OR



# PFS PREMIUM FIBERED STUCCO

888.702.9915

Concentrate Premium Fibered Stucco

AMERICA'S EIFS AND STUCCO COMPANY!

TOTAL WALL Premium Fibered Stucco Concentrate is a dry mix containing Portland cement, chopped strand fiberglass reinforcement, micro-fibers for added strength and crack resistance, graded aggregates, and specialty modifiers designed to enhance workability and cure.

TOTAL WALL Premium Fibered Stucco Concentrate requires sand to be added in addition to water.

TOTAL WALL Premium Fibered Stucco Concentrate:

- Can be used as standard stucco or as one-coat, hi-lift stucco.
- Is available in 50# bags in standard gray or in a white finish grade without the larger fibers.
- May be top-coated with TOTAL WALL Premium Fibered Stucco White Finish (Tintable), T-Wall Lastic Elastomeric Coating, or any TOTAL WALL Synthetic Textured Finish Coat.



# Features.

- Standard, One-Coat or Hi-Lift
- High Impact Resistance
- Extremely High Impact Resistance
- O Fireproof and Mildew Resistant
- O Pre-Sanded, Just Add Water

# Coverage

**Estimated Coverage Per 50 LB Baq Of Mix:** 

55-65 square feet at 1/4"

35-40 square feet at 3/8"

25-30 square feet at 1/2"

20-25 square feet at 5/8"

18-20 square feet at 3/4"

15-18 square feet at 7/8"



product data

Description

Mixing Instructions

Add up to 120 punds of clean silica sand per 50 pound bag of Total Wall Premium Fibered Stucco Concentrate. Add approximately 2-3/4 gallons of clean water per batch (50-pound bag of TOTAL WALL Premium Fibered Stucco and 10 punds of sand). Use lowspeed mixing. After initial mixing, allow the mix to stand for 2-5 minutes then remix, adding a small amount of water to adjust workability if necessary. Mix pot-life will vary depending on temperature and batch size. An average pot-life of 40 minutes can be anticipated. TOTAL WALL Premium Fibered Stucco may be re-tempered one time if mix becomes too stiff. Final consistency should be a creamy light and easily trowelable mixture.

**Options** 

- 1. TOTAL WALL Liquid acrylic Additive may be used to replace up to 20% of the mix water during job site mixing. TOTAL WALL Liquid acrylic Additive will improve the physical strength characteristics of the product and reduce the incidence of cracking.
- 2. TOTAL WALL Tinted-Liquid Acrylic Additive may be added to TOTAL WALL Premium Fibered Stucco White Finish to achieve a limited range of pastel colors at the job site.
- 3. TOTAL WALL Synthetic Finishes or T-Wall Lastic may be used for an attractive and durable finish coating. TOTAL WALL Synthetic Finishes and T-Wall Lastic are available in several textures and unlimited colors.

**Application** 

TOTAL WALL Premium Fibered Stucco may be applied directly to sound raw masonry without the use of netting or lath or other reinforcement. If desired or specified, a T-Wall Bonding Agent may be applied to the substrate prior to application. If application is over painted masonry, mechanically fastened lath reinforcement plus joint and trim accessories are required. For wood or gypsum-based sheathing, a moisture barrier is required as the first layer over the

sheathing followed by mechanically fastened lath reinforcement with joint and trim accessories. All lathing must be galvanized and self-furring. Trim accessories must be galvanized, solid zinc or custom PVC components. Apply TOTAL WALL Premium Fibered Stucco using a trowel in one or more passes or lifts to achieve the prescribed thickness. When useful, employ tools such as a darby or slicker to assist in leveling the coating. If TOTAL WALL Liquid Acrylic Additive or Acrylic Tint has been added to the mix, do not moist cure the coating as the acrylic assists in the proper cure process. Coating thickness may range from a minimum of 1/4" and a maximum of 1 1/2". TOTAL WALL Premium Fibered Stucco Finish Coat may be applied once the combination brown and scratch coat base is firm and dry. TOTAL WALL Synthetic Finish may be applied within 18 hours. It is advisable to allow the TOTAL WALL Premium Fibered Stucco to cure at least 48 hours before applying T-Wall Lastic Coating.

Handling and Storage

Do not apply to frozen or saturated surfaces. Do not apply if precipitation is forecast within 8 hours of application. Do not apply if the temperature cannot be maintained

above 40F for 24 hours. Shelf life in unopened bags is 12-18 months when stored in dry conditions. Store under cover.

#### Maintenance

If damage occurs to an installed system, please contact Total Wall for information on repair.

#### **Precautions**

This product is a Portland cement based material. Do not ingest. Avoid contact with skin and eyes. In case of contact with product or mix, flush with water. For contact with eyes, get immediate medical attention in addition to flushing. Wear safety glasses and protective clothing. Keep out of reach of children and pets.eyes, get immediate medical attention in addition to flushing. Wear safety glasses and protective clothing.

#### Limitations

Apply in accordance with standard lath and plastering practices. Do not apply to frozen walls or in temperatures below freezing. Use only clean potable mix water. When possible, schedule work to avoid application in direct sun. Moist curing of product is acceptable unless TOTAL WALL Liquid acrylic Additive has been added.



# Technical Data.

Meets ASTM C595 specifications for Blended Hydraulic Cement

**Chemistry** - Portland cement meets standard ASTM C150

**Aggregates** - meet standards ASTM C33, ASTM C144 and ASTM C778 **Hydration Control** - balanced lime blend meets standard ASTM C207

Modifiers - specialty hydrating agents and wetting agents

Reinforcement - natural mineral fibers plus chopped strand fiberglass

**Appearance**: Dry, gray powder

pH (wet): Approx. 10.5

Density (wet): 1.6-1.8 grams/cc

**Chemistry:** Portland cement

888.702.9915 Phone 888.702.9916 Fax

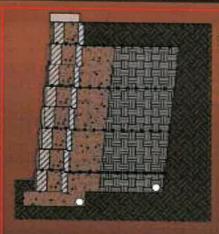
www.totalwall.com

# AB Fieldstone is easy to install - Friendly



## **Gravity Walls**

Taller gravity walls can be achieved using the long anchoring units. This eliminates the need for geogrid reinforcement. Check maximum gravity wall heights in the table below.



## Reinforced Walls

AB Fieldstone can also be built using the short anchoring units with geogrid reinforcement. Check the maximum wall height chart and the soil reinforcement chart for proper placement.

## Maximum Wall Heights - AB Gravity Walls

				The second second
Condition above retaining wall	Soil Type	Friction Angle	6° (Ref) All Heldrine Shart Anchoring Unit (SAU)	6° (Seb All Phidmons Ling Archaring Undr (LAL)
Level	City	27	3 ft. 7 in. 1.1 m	5 lt. 10 in. I.8 m
	Sitty Sand	12	5.0 ft 1.5 m	811.6 in. 2.6 m
	Sand/Gravel	<b>J</b> 6	5 ft 8 in. 1,7 m	0 ft 8 in 3 0 m ] ◀
Surcteage* 100 pal 3 (42 Qu)	Clay	र्धी	1.R. 8 in 0.5 m	4.0 ft. 1.2 m
	Silty Sand	12	3 to 7 to	7.07t 2.1 m
	Soud Gravel	36	4 ft 2 in 13 m	5.0 ft. 2.4 m
Slope III	Clay	27:	2 ft. 8 in. 6.8 m	40.4 m 1.3 m
	Sitty Sand		4 it 4 in. 4 2 m	7 tt. 4 in. 2.3 m
	Sand/Gravel	36	5 N I in 1.5 m	5 ft. 7 in. 2.6 m

Takes in bosed on Chry soli having an informal inclinerange of 2.7 (Bud) or better auth of Sundy soli having an informal include register of 3.7 (Bud) as better and a Sundy source such having an informal inclinerangle of 3.7 (Bud) as better all heighted in organization of the signs and in some three signs and in the signs are the second better all heighted about observed and at most far observed bottling. Observed with a local continuous for advanced by the sign as electric way. Bred protests are construction proposes must be performed for a bottl registered Protestional Engineer using the actual conditions of the proposed site. "The Succession Sunday colleges above accurate a solic number which as conserved, supplied or powers bening a matable exposition probation or the proposed site."

### Example

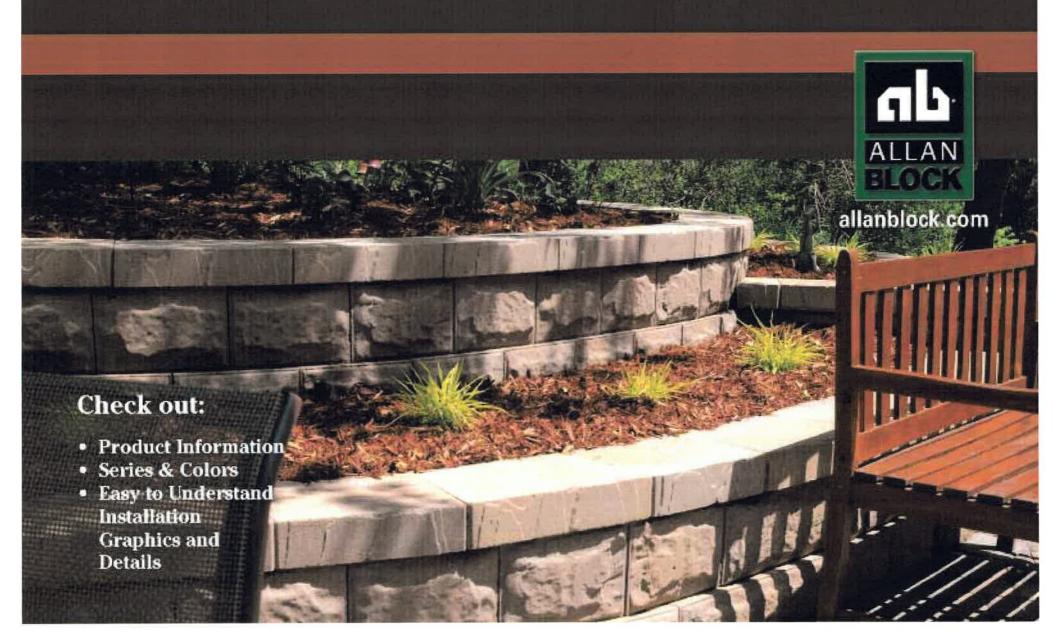
A 6 ft high wall (1.8 m) built in sandy soil with a level surface above the wall will require geogrid four layers, 4 ft wide (1.2 m). With long anchoring units (LAU), it will require no additional reinforcement, but will require review by a local professional engineer.

## Soil Reinforcement Chart for Residential Wall Applications

CONDITION	WALL								
WALL	HEIGHT**	CLAY		SANDY SOIL					
	and the last of th	Becoffagers	Wirth (N)	No of Leaves	Wasta (W)				
Level	3ft (011m)	0	0	0	0				
	1ft (12m)	2	311	0	0				
	50 (15m)	3	14	3	3 11				
	6th (1.4 m)	1000 1000			4 If				
Sure sarge"	2ft (n.s.m)		3 (1	Ô	0				
10075	3ft (0.4±6	2	3 /0	0	0				
	40 (120)	2	3 h	2	3 11				
-	5ft (L5 m)	3	3.60	3	3 ft				
-5	6R (L8 m)	4	40	4	4.0				
Slape	3ft (0.9 m)	2	3.6	0	0				
k1	4ft (LFm)	2	30	2	3 ft				
2	5ft (1.7 m)		418	3	3.0				
	6ft (LSm)	7	111	4	4.0				

Table is based on the self-pring as internal friction usage of 27 Glob or better and exacts wall having an internal friction usage of 27 Glob or better. Soften becomes transcent the consists of the wall by creating a reinforced scot and soft behind the blocks. The weight of the reinforced soft successful to the locks for a brown of near wall. Table is for exilating present quantities only. To weight in the auxiliary browning contents around the last (top) toys of ground. It is spiral to lengthe who grid by an odd friend 12 ft (370 mm). To achieve these former grid lengths, the Alien Facili stationing cold early be installed per sends also to be well footled our from the boat of the block of the colors and the block of the block of the colors and some a cold suntable cosh is conserved. An pixel to percent backing a subside copporating subpade. "I wall neighbor are for reference on his

# AB Fieldstone®





# More from Allan Block - Retaining Walls

## **AB Europa Collection**



#### **AB** Dover

Approx. 1 blk/ft<sup>2</sup> (11 blk/m<sup>2</sup>) 8 in. H x 10.5 in. D x 18 in. L (200 mm H x 265 mm D x 460 mm L) 80 lbs (36 kg)



#### AB Palermo

Approx. 2 blk/ft<sup>2</sup> (22 blk/m<sup>2</sup>) 8 in. H x 9.5 in. D x 9 in. L (200 mm H x 240 mm D x 230 mm L) 35 lbs (16 kg)



### AB Barcelona

Approx. 2 blk/ft<sup>1</sup> (22 blk/m<sup>2</sup>) 4 in. H x 10.5 in. D x 18 in. L (100 mm H x 265 mm D x 460 mm L) 40 lbs (18 kg)



#### AB Bordeaux

Approx. 4 blk/ft² (44 blk/m²) 4 in. H x 10.5 in. D x 9 in. L (100 mm H x 265 mm D x 230 mm L) 20 lbs (9 kg) The AR Europa Collection captures the hand-laid stone effect that brings distinction to any project. The blocks can be used separately or blended together for outstanding results. The unique texture creates a stunning look and gives old world charm to any landscape.



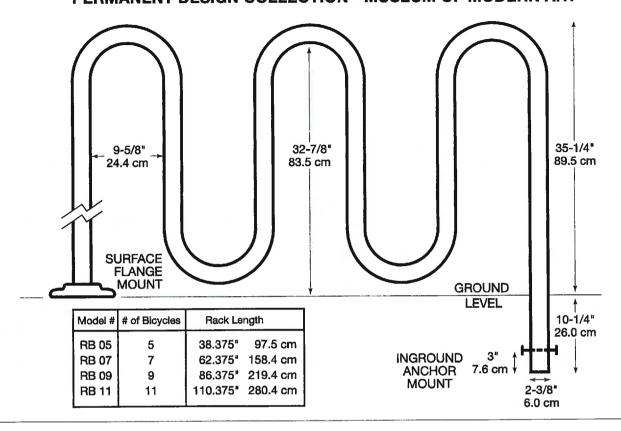


Specifications are approximate, contact local representative for availability, exact specifications, sizes and colors for all Allan Block products.



5' HIGH ARBORETUM FENCE TO BE THIS STYLE, STAINED DARK WALNUT

## The Original Ribbon® Rack—IDSA National Design Award Winner PERMANENT DESIGN COLLECTION—MUSEUM OF MODERN ART



#### **Specifications**

All standard units made from ASTM A53/A500 SCHD 40 steel pipe (2.375" OD X .154 wall), hydraulically bent with a mandril, hot-dipped galvanized after fabrication.

The RIBBON® RACK is available in ASTM A312 SCHEDULE 40 TP 304 stainless steel, satin #4 finish-optional and extra.

#### **Installation Methods**

Inground Anchor Mount-standard Surface Flange Mount-optional and extra

#### **General Information**

RIBBON and the Brandir International Inc. logo are trademarks of Brandir International Inc., used exclusively by AAA RIBBON RACK CO. Delivery time: Six weeks or sooner from receipt of order.

#### Important Considerations

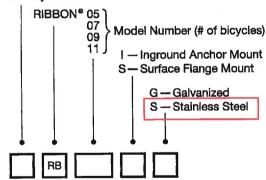
Colors: (Painting/Coating)-Painting or coating the rack will result in a maintenance problem, as no coating will withstand the abuse of the bicycles. Powder coating cannot be maintenanced; an enamel finish will chip. AAA RIBBON RACK CO. has the best solution where color is essential. Please contact us to find out how to achieve an appropriate color with a minimum of maintenance.

Materials: Steel tubing or aluminum are not suitable materials for a bicycle rack. Pre-galvanized material will flake and crack during manufacture. AAA RIBBON RACK CO. uses heavy-duty steel pipe, hot-dipped galvanized after fabrication to provide security and durability.

Manufacture: Hydraulic bending with a mandril, as used by AAA RIBBON RACK CO., insures smooth and aesthetic curves on the Ribbon\*Rack. Press bending leaves an indentation; other methods flatten outer curves and crimp inner curves.

#### Specifying / Estimating / Ordering

Please use the following notations: Quantity



A A A RIBBON BIKE RACK CO. Division of:

BRANDIR INTERNATIONAL, INC. 521 Fifth Avenue, 17th Floor New York NY 10175-1799 USA

Phone: 800-849-3488

Email: info@ribbonrack.com Web: ribbonrack.com

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# **D-Series Size 1**

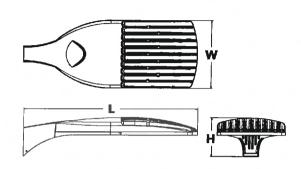
LED Area Luminaire







#### **Specifications** EPA: 33" Length: (83.8 cm) 13" Width: (33.0 cm) 7-1/2" Height: (19.0 cm) Weight 27 lbs (max):



Catalog Number			
Notes		-	 
Туре			

#### Introduction

The modern styling of the D-Series is striking vet 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**

#### **DSX1LED**

Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting .
DSX1 LED	Forward optics 30C 30 LEDs (one engine) 40C 40 LEDs (two engines) 60C 60 LEDs (two engines) Rotated optics <sup>1</sup> 60C 60 LEDs (two engines)	530 530 mA 700 700 mA 1000 mA (1 A)	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted <sup>2</sup>	T1S Type I Short TFTM Forward Throw T2S Type II Short Medium T2M Type II Medium T5VS Type V Very Short T3S Type III Short T5S Type V Short T3M Type III Medium T5M Type V Medium T4M Type IV Medium T5W Type V Wide	MVOLT <sup>3</sup> 120 <sup>3</sup> 208 <sup>3</sup> 240 <sup>3</sup> 277 <sup>3</sup> 347 <sup>4</sup> 480 <sup>4</sup>	Shipped included  SPA Square pole mounting  RPA Round pole mounting  WBA Wall bracket  SPUMBA Square pole universal mounting adaptor <sup>5</sup> RPUMBA Round pole universal mounting adaptor <sup>5</sup> Shipped separately  KMA8 DDBXD U  Mast arm mounting bracket adaptor  (specify finish) <sup>6</sup>

Control options			Other	options	Finish (req	orred)
Shipped Installed  PER NEMA twist-lock receptacle only (no controls) <sup>7</sup> PER5 Five-wire receptacle only (no controls) <sup>7,8</sup> PER7 Seven-wire receptacle only (no controls) <sup>7,8</sup> DMG 0-10V dimming driver (no controls) <sup>9</sup> DCR Dimmable and controllable via ROAM® (no controls) <sup>10</sup> DS Dual switching <sup>11,12</sup> PIR Motion/amblent sensor, 8-15'mounting height, ambient sensor enabled at 5fc <sup>13</sup> Motion/amblent sensor, 15-30'mounting height, ambient sensor enabled at 5fc <sup>13</sup>	PIR1FC3V  PIRH1FC3V  BL30  BL50  PNMTDD3  PNMT5D3  PNMT6D3  PNMT6D3  PNMT7D3	Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc <sup>13</sup> Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc <sup>13</sup> Bi-level switched dimming, 30% <sup>12,14</sup> Bi-level switched dimming, 50% <sup>12,14</sup> Part night, dim till dawn <sup>15</sup> Part night, dim 5 hrs <sup>15</sup> Part night, dim 6 hrs <sup>15</sup> Part night, dim 7 hrs <sup>15</sup>	Ship HS WTB SF DF L90 R90	House-side shield 16 House-side shield 16 Utility terminal block 17 Single fuse (120, 277, 347V) 18 Double fuse (208, 240, 480V) 18 Left rotated optics 19 Right rotated optics 19	DDBXD DBLXD DNAXD DWHXD DDBTXD DBLBXD DNATXD DWHGXD	Dark bronze Black Natural aluminum White Textured dark bronze Textured black Textured black aluminum Textured white

#### Controls & Shields

DLL127F 1,5 JU and shipped separately. DLL347F 1.5 CUL JU **Accessories** DLL480F 1.5 CUL JU SCU DSX1HS 30C U DSX1HS 40C U DSX1HS 60C U

Photocell - SSL twist-lock (120-277V) 20 Photocell - SSL twist-lock (347V) \*\* Photocell - SSL twist-lock (480V) 20 Shorting cap 20

House-side shield for 30 LED unit House-side shield for 40 LED unit House-side shield for 60 LED unit Square and round pole universal mounting bracket (specify finish)

PUMBA DDBXD U\* KMAR DORYD U

For more control options, visit DTL and ROAM online.

TES

ROtated optics available with 60C only.

AMBPC only available with 530mA or 700mA.

AWOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify

120V, 208V, 240V or 277V options only when ordering with fusing (SF, DF option

Not available with 81:30, 81:50 or PNMT options.

Available with 81:30, 81:50 or PNMT options.

available with BL30, BL50 or PNMT options.

Available as a separate combination accessory: PUMBA (finish) U; 1.5 G vibration load rating per ANCI C136.31.

Must be ordered as a separate accessory; see Accessories Information. For use with 2-30° mest arm (not included).

Photocall ordered and shipped as a separate line Item from Acuity Brands Controls. See accessories. Not available with D5 option.

If ROAM69 node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Not available with DCR.

DMG option for 347V or 480V requires 1000mA.

Specifies a ROAM69 enabled luminaire with 0-10V dimming capability. PER option required. Additional hardware and services required for ROAM69 deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamsenvices.net. N/A with DS, PER5, PER7, BL30, BL50 or PNMT options.

Requires 40C or 60C. Provides 50/50 kmInaire operation via two independent drivers on two separate circuits. N/A with PER, DCR, WTB, PIR or PIRH. Requires an additional switched circuit. PIR and PIRTIFC3V specify the SensorSwitch SBGR-10-ODP control; PIRH and PIRHIFC3V specify the SensorSwitch SBGR-6-ODP control; see Motion Sensor Guide for details. Dimming driver standard. Not available with PERS or PER7. Ambient sensor disabled when ordered with DCR.

with PERS of PERY, Ambient sensor disabled when ordered with DCR. Separate on/off required. Dimming driver standard. MVOLT only. Not available with 347V, 480V, DCR, DS, PERS, PERY or PNMT options. Dimming driver standard. MVOLT only. Not available with 347V, 480V, DCR, DS, PERS, PERY, BL30 or BL50.

Also available as a separate accessory; see Accessories information.
WTB not available with DS.
Single fuse (SP) requires 120V, 277V or 347V. Double fuse (DF) requires 208V,
240V or 480V.

240V or 480V.
Available with 60 LEDs (60C option) only.
Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Acuity Brands Controls.





## **D-Series Size 2** I FD Wall Luminaire





Back Box (BBW)



#### d"series

#### **Specifications**

Luminaire

Width:

Depth:

Height:

18-1/2" (47.0 cm)

10"

(25.4 cm)

7-5/8"

(19.4 cm)

Weight:

21 lbs (9.5 kg)

5-1/2" (14.0 cm)

1-1/2" (3.8 cm)

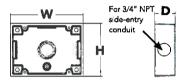
Depth: Height:

Width:

4" (10.2 cm)







**BBW** 

Weiaht:

## Catalog Number

Notes

Type

1 lbs

(0.5 kg)

#### Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting. energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 76% in energy savings over comparable 400W metal halide luminaires. the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

#### **Ordering Information**

#### **EXAMPLE: DSXW2 LED 30C 700 40K T3M MVOLT DDBTXD**

#### DSXW2 LED

Series	ń	LEDs		Drive C	urrent	Color tem	perature	Distribut	ion	Voltage	Mountin	19	Contro	l Options	Other	Options	Finish (requ	sired)
DSXW	ZLED	20C	20 LEDs (two engines) 30 LEDs (three engines)	350 530 700 1000	350 mA 530 mA 700 mA 1000 mA (1 A)	30K 40K 50K AMBPC	3000 K 4000 K 5000 K Amber phosphor converted	T2S T2M T3S T3M T4M TFTM ASYDF	Type II Short Type II Medium Type III Short Type III Medium Type IV Medium Forward Throw Medium Asym- metric diffuse	MYOLT 1 120 1 208 1 240 1 277 : 347 2 480 3	Shippe (blank) Shippe separa BBW	mounting bracket	Shipp PE PER DMG DCR	ed Installed Photoelectric cell, button type 4  NEMA twist-lock re- ceptacle only (no controls) 0-10V dim- ming driver (no controls) Dimmable and control- lable via ROAM® (no controls) 3  180° motion/ ambient light sensor, 15–30' mtg ht 6	SF DF HS SPD	Single fuse (120, 277, 347V)? Double fuse (208, 240, 480V)? House-side shield 3 Separate surge protection 8 Bird-deterrent spikes Wire guard Vandal guard	DDBXD  DBLXD  DWHXD  DSSXD  DDBTXD  DBLBXD  DNATXD  DWHGXD	Dark bronze Black Natural aluminum White Sandstone Textured dark bronze Textured black Textured aluminum Textured white Textured white Textured sandstone

#### NOTES

- 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 options).
- Available with 30 LED/700mA options only (DSXW2 LED 30C 700), DMG option not available.
- Also available as a separate accessory; see Accessories Information.
- Photocontrol (PE) requires 120, 208, 240 or 277 voltage option. Not available with motion/ambient light sensors (PIR
- Specifies a ROAM® enabled luminaire with 0-10V dimming capability; PER option required. Not available with 347V, 480V or PIRH. Additional hardware and services required for ROAM® deployment; must be purchased separately. Call 1-800-442-6745 or email: sales@roamservices.net.
- Specifies the Sensor Switch SBGR-6-ODP control; see Motion Sensor Guide for details. Includes ambient light sensor. Not available with "PE" option (button type photocell) or DCR. Dimming driver standard. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- See the electrical section on page 2 for more details.
- Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.

#### Accessories

Ordered and shipped separately

DLL127F 1.5 JU Photocell - SSL twist-lock (120-277V) \* DLL347F 1.5 CULJU Photocell - SSL twist-lock (347V) \* DITARCE 1.5 CUL IU Photocell - SSI, twist-lock (480V) 5 scu Shorting cap 5 DSXWHS U House-side shield (one per light engine) DSXWBSW U Blrd-deterrent spikes DSXW2W6 U Wire quard accessory DSXW2VG U Vandal guard accessory DSXW28BW Back box accessory

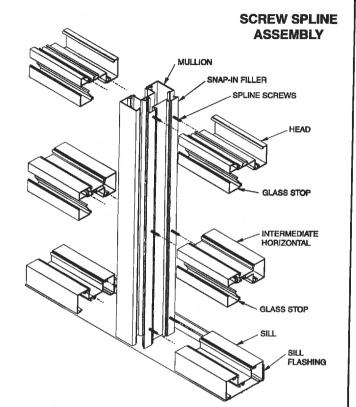


PICTORIAL VIEW (CENTER)

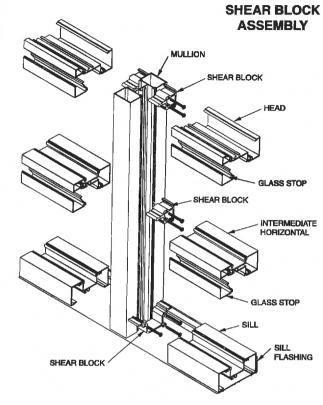
**DETAILS** 

The split vertical in the Screw Spline system allows a frame to be installed from unitized assemblies. Screws are driven through the back of the verticals into splines extruded in the horizontal framing members.

The Individual units are then snapped together to form a complete frame.



The Shear Block system of fabrication allows a frame to be preassembled as a single unit. Horizontals are attached to the verticals with shear blocks.



STICK **ASSEMBLY** MULLION HEAD RECEPTOR HEAD INSERT GLASS STOP SHEAR BLOCK INTERMEDIATE HORIZONTAL GLASS STOP SILL INSERT SILL RECEPTOR

The Stick system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.

If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified windload (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 14)

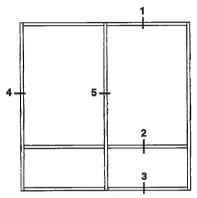
Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

is and building and safety codes governing the design and use of glazed rance, window, and curtain wall products vary widely, Kawneer chos not control selection of product configurations, operating hardware, or glazing materials, assumes no responsibility therefor.

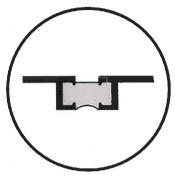
BASIC FRAMING DETAILS (CENTER - Outside Glazed)

EC 97911-43





**ELEVATION IS NUMBER KEYED TO DETAILS** 



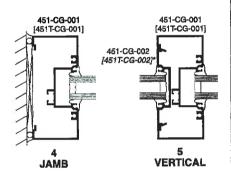
**NUMBERS IN BRACKETS ARE** THERMALLY BROKEN MEMBERS

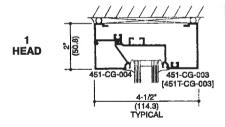
and Thermal Flashing.

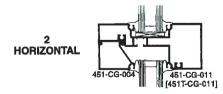
\*Note: See Misc. Details for Thermal Pocket Filler

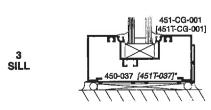
#### **SCREW SPLINE** CAD Details (TF451) = TF\_VG\_451-SS-Center--CAD.zip

(TF451T) = TF\_VG\_451T-SS-Center--CAD.zip





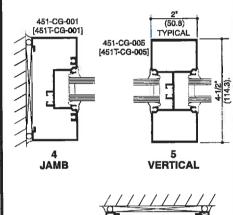


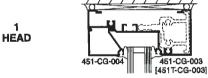


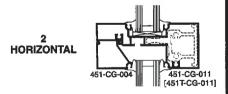
\*See Page 14 for Thermal Flashing and Optional High Performance Flashing

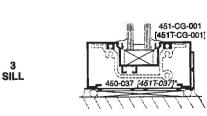
#### SHEAR BLOCK

CAD Details (TF451) = TF\_VG\_451-SB-Center-CAD.zlp (TF451T) = TF\_VG\_451T-SB-Center--CAD.zip





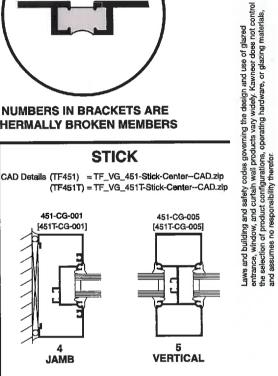


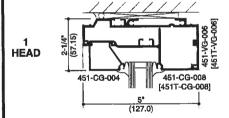


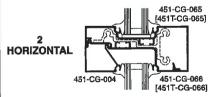
\*See Page 14 for Thermal Flashing and Optional High Performance Flashing

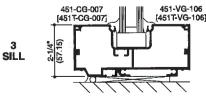
#### **STICK**

CAD Details (TF451) = TF\_VG\_451-Stick-Center-CAD.zip (TF451T) = TF\_VG\_451T-Stick-Center--CAD.zip









[451T-VG-106]

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KAWNEER

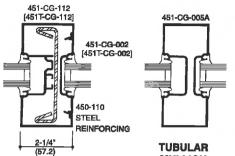
MISCELLANEOUS FRAMING (CENTER)

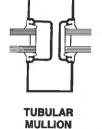
EC 97911-43

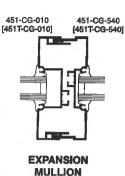
451-CG-540 [451T-CG-540]

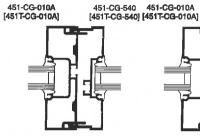
#### SCALE 3" = 1'-0"

CAD Details - SCREW SPLINE (TF451) = TF\_VG\_451-SS-Center-CAD.zip (TF451T) = TF\_VG\_451T-SS-Center--CAD.zip CAD Details - SHEAR BLOCK (TF451) = TF\_VG\_451-SB-Center-CAD.zip (TF451T) = TF\_VG\_451T-SB-Center--CAD.zip CAD Details - STICK (TF451) = TF\_VG\_451-Stick-Center-CAD.zip (TF451T) = TF\_VG\_451T-Stick-Center--CAD.zlp









400-110 STEEL REINFORCING TUBULAR

**EXPANSION MULLION** 

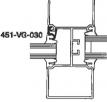
**TUBULAR EXPANSION MULLION** WITH OPTIONAL STEEL

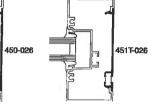


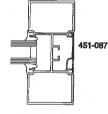
SPLIT MULLION

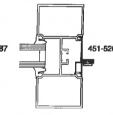
W/ STEEL

451-VG-029









1/4" INFILL **SNAP-IN ADAPTOR** 

5/8" INFILL **SNAP-IN ADAPTOR** 

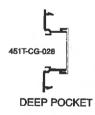
**SNAP-IN FLAT FILLER** 

**THERMAL FLAT FILLER** 

SNAP-IN **FLAT POCKET FILLER** 

SNAP-IN **DOOR STOP** 





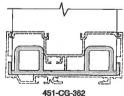




THERMAL FLASHING

**HIGH PERFORMANCE FLASHING** 



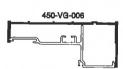




#### NOTE:

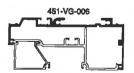
If the end reaction of the mullion (mullion spacing (ft.) times height (ft) times specified windload (psf), divided by two) is more than 500 LBS., the optional mullion anchor must be used. Consult Application Engineering.

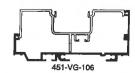
Mullion Anchor not used with Lightwieght Receptor.





**OPTIONAL LIGHTWEIGHT CAN RECEPTORS** 





**OPTIONAL UNEQUAL LEG CAN RECEPTORS** 

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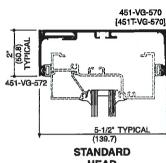
EC 97911-43

MISCELLANEOUS FRAMING (CENTER)

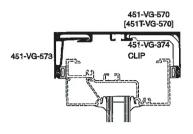
**DETAILS** 

#### **SCALE 3" = 1'-0"**

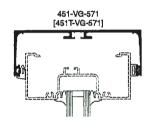
CAD Details - SCREW SPLINE (TF451) = TF\_VG\_451-SS-Center--CAD.zip (TF451T) = TF\_VG\_451T-SS-Center--CAD.zip CAD Details - SHEAR BLOCK (TF451) = TF\_VG\_451-SB-Center--CAD.zip (TF451T) = TF\_VG\_451T-SB-Center--CAD.zip CAD Details - STICK (TF451) = TF\_VG\_451-Stick-Center-CAD.zip (TF451T) = TF\_VG\_451T-Stick-Center--CAD.zip



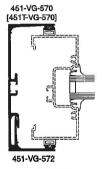




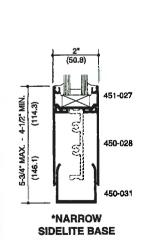
HEAVY WEIGHT
HEAD
COMPENSATING RECEPTOR

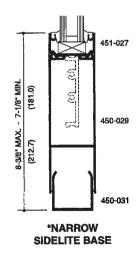


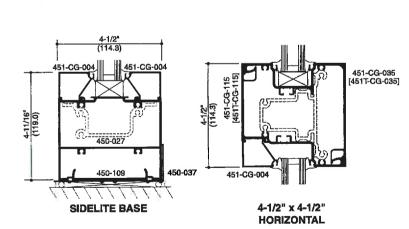
ONE PIECE HEAD COMPENSATING RECEPTOR



JAMB
COMPENSATING RECEPTOR







#### SIDELITE BASES ARE NON-THERMAL APPLICATIONS

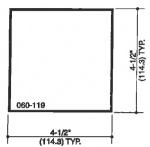
\*NARROW SIDELITE BASES REQUIRE THE USE OF NON-THERMAL 2-PIECE VERTICALS ONLY.

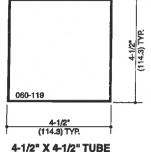
NOTE: SIDELITE BASES SHOWN ARE FOR USE WITH SCREW SPLINE AND SHEAR BLOCK SYSTEMS ONLY.



#### SCALE 3" = 1'-0"

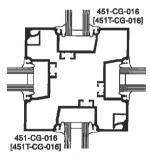
CAD Details - SCREW SPLINE (TF451) = TF\_VG\_451-SS-Center-CAD.zip (TF451T) = TF\_VG\_451T-SS-Center--CAD.zip



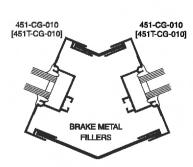


451-CG-015 [451T-CG-015] 451-CG-035 [451T-CG-035]

**TWO POCKET** 90° CORNER



**FOUR POCKET** 90° CORNER

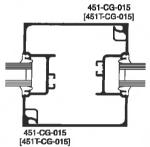


**VARIABLE DEGREE BRAKE METAL CORNER** 

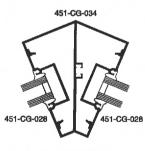
CAD Details - SHEAR BLOCK (TF451) = TF\_VG\_451-SB-Center--CAD.zip (TF451T) = TF\_VG\_451T-SB-Center-CAD.zip



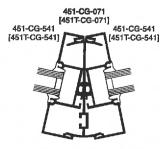
**TWO PIECE NO POCKET CORNER** 



**TWO POCKET** CORNER POST



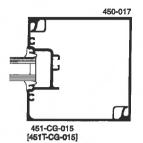
135° CORNER (NON-THERMAL)



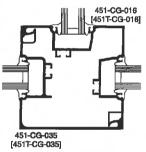
155° TO 180° PIVOT MULLION (OUTSIDE CORNER)

CAD Details - STICK

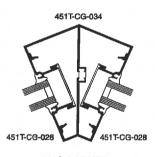
(TF451) = TF\_VG\_451-Stick-Center--CAD.zip (TF451T) = TF\_VG\_451T-Stick-Center--CAD.zip



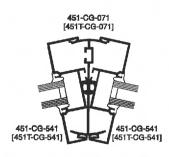
ONE POCKET **CORNER** 



**THREE POCKET** 90° CORNER



135° CORNER (THERMAL)



155° TO 180° PIVOT MULLION (INSIDE CORNER)

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**ENTRANCE FRAMING (CENTER)** 

EC 97911-43

#### **SCALE 3" = 1'-0"**

CAD Details - ENTRANCE

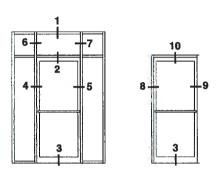
(TF451) = TF\_VG\_451\_Ent-Center-CAD.zip (TF451T) = TF\_VG\_451T\_Ent-Center--CAD.zip

## TRIFAB® VG 451 FRAMING INCORPORATING KAWNEER® "190" DOORS.

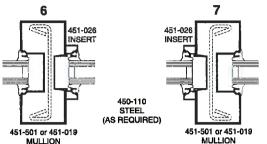
DOOR FRAMING NON-THERMAL ONLY

NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM.

SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

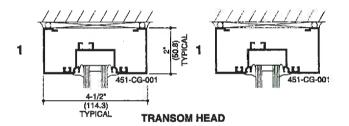


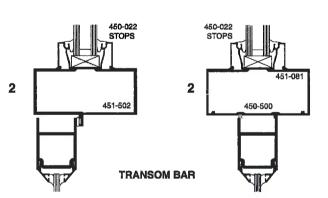
**ELEVATIONS ARE NUMBER KEYED TO DETAILS** 

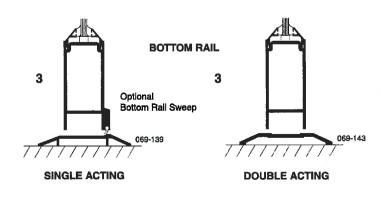


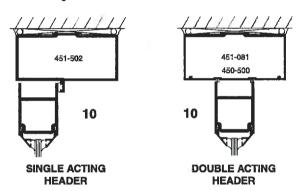
#### TRANSOM JAMBS

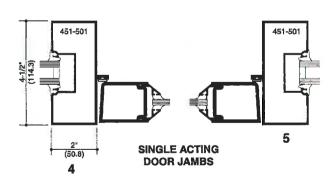
Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert with or without steel reinforcing.

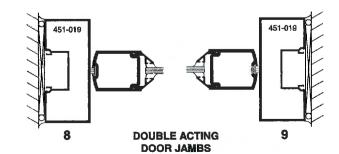












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# SUPERPAINT® Exterior Latex Flat

A80-1100 Series

As of 06/30/2015, Compiles with:										
OTC	Yes	LEED® 09 CI	N/A							
SCAQMD	Yes	LEED® 09 NC	N/A							
CARB	Yes	LEED® 09 CS	N/A							
CARB SCM 2007	Yes	LEED® H	N/A							
MPI		NGBS	N/A							

#### **CHARACTERISTICS**

SuperPaint Exterior Latex Flat, with Improved resistance to early dirt pick up, provides outstanding performance on properly prepared aluminum and vinyl siding, wood, hardboard, masonry, cement, brick, block, stucco, and metal down to a surface and air temperature of 35°F.

VinylSafe™ Color Technology allows the use of many darker colors on vinyl siding that cannot be made in most other coatings.

Color: Most colors
To optimize hide and color development, always us

To optimize hide and color development, always use the recommended P-Shade primer

Coverage: 350 - 400 sq ft/gal @ 4 mils wet; 1.4 mils dry

Drying Time, @ 50% RH:

@ 35-45°F @ 45°F+
Touch: 2 hour 2 hours
Recoat: 24-48 hours 4 hours
Drying and recoat times are temperature, humidity,

and film thickness dependent
Flash Point:
N/A
Finish:
0-5 units @ 85°
Tinting with CCE:

Base oz/gal Strenath Extra White 0-5 100% Deep Base 4-12 100% Ultradeep Base 4-12 100% Light Yellow 4-12 100% Vehicle Type: Acrylic

Extra White A80W01151 VOC (less exempt solvents):

<50 g/L; <0.42 lb/gal As per 40 CFR 59.408 and SOR/2009-264, s.12

 Volume Solids:
 36 ± 2%

 Weight Solids:
 53 ± 2%

 Weight per Gallon:
 11.38 lb

 WVP Perms (US)
 30.1

 grains/(hr ft² in Hg)

Mildew Resistant

This coating contains agents which inhibit the growth of mildew on the surface of this coating film.

#### **SPECIFICATIONS**

SuperPaint Exterior Latex Flat can be selfpriming when used directly over existing coatings, or bare drywall, plaster and masonry (with a cured pH of less than 8). The first coat acts like a coat of primer and the second coat provides the final appearance and performance. Please note that some specific surfaces require specialized treatment.

Aluminum & Aluminum Siding<sup>1</sup>, Galvanized Steel<sup>1</sup>, Vinyl Siding

2 cts. SuperPaint Exterior Latex

Concrete Block, CMU, Split Face Block
1 ct. Loxon Block Surfacer

2 cts. SuperPaint Exterior Latex
Brick

1 ct. Loxon Conditioner<sup>2</sup>

2 cts. SuperPaint Exterior Latex
Cement Composition Siding/Panels

1 ct. Loxon Concrete & Masonry Primer<sup>2</sup> or Loxon Conditioner<sup>2</sup>

2 cts. SuperPaint Exterior Latex

Stucco, Cement, Concrete

1 ct. Loxon Concrete & Masonry Primer<sup>2</sup>
 2 cts. SuperPaint Exterior Latex

Plywood

1 ct. Exterior Latex Wood Primer2 cts. SuperPaint Exterior Latex

Wood (Cedar, Redwood)<sup>3</sup>

1 ct. Exterior Oil-Based Wood Primer<sup>2</sup>

2 cts. SuperPaint Exterior Latex

On large expanses of metal siding, the air, surface, and material temperatures must be 50°F or higher.
Not for use at temperatures under 50°F. See specific primer label for that product's application conditions.

<sup>3</sup> Knots and some woods, such as redwood and cedar, contain a high amount of tennin, a colored wood extract. For best results on these woods, use a coat of Exterior Oil-Based Wood Primer.

Other primers may be appropriate. Standard latex primers cannot be used below 50°F. See specific primer label for that product's application conditions.

When repainting involves a drastic color change, a coat of primer will improve the hiding performance of the topcoat color.

#### **SURFACE PREPARATION**

WARNINGI 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.

Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Scrape and sand peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc. with the appropriate primer/sealer.

**Aluminum and Galvanized Steel** 

Wash to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, wire brush, or other abrading method.

**Cement Composition Siding/Panels** 

Remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. If the surface is new, test it for pH, if the pH is higher than 8, prime with Loxon Concrete & Masonry Primer.



## SUPERPAINT®

Exterior Latex Flat A80-1100 Series

#### SURFACE PREPARATION

#### Masonry, Concrete, Cement, Block

All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot walt 30 days, allow the surface to cure 7 days and prime the surface with Loxon Concrete & Masonry Primer. Cracks, voids, and other holes should be repaired with an elastomeric patch or sealant.

#### Stee

Rust and mill scale must be removed using sandpaper, wire brush, or other abrading method. Bare steel must be primed the same day as cleaned.

#### Stucco

Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 7 days and prime with Loxon Concrete & Masonry Primer. Repair cracks, voids, and other holes with an elastomeric patch or sealant.

#### Vinyl

Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Wood, Plywood, Composition Board Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

#### Caulking

Gaps between windows, doors, trim, and other through-wall openings can be filled with the appropriate caulk after priming the surface.

#### SURFACE PREPARATION

#### Mildew

Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, 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.

#### **APPLICATION**

When the air temperature is at 35°F, substrates may be colder; prior to painting, check to be sure the air, surface, and material temperature are above 35°F and at least 5°F above the dew point. Avoid using if rain or snow is expected within 2-3 hours.

Do not apply at air or surface temperatures below 35°F or when air or surface temperatures may drop below 35°F within 48 hours.

No reduction necessary.

#### Brush

Use a nylon/polyester brush. Roller

Use a 3/8" - 3/4" nap synthetic cover. **Spray—Airless** 

#### **CLEANUP INFORMATION**

Clean spills, spatters, hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with a compliant cleanup solvent to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using solvents.

#### **CAUTIONS**

For exterior use only.
Protect from freezing.
Non-photochemically reactive.
Not for use on floors.

CAUTION contains CRYSTALLINE SILICA and ZINC. Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH approved). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.

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The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative or visit www.paintdocs.com to obtain the most current version of the PDS and/or an SDS.



## SW 7046 Anonymous



#### **Color Details**

Color Family: Neutrals RGB Value: R-129 | G-122 | B-110 Hexadecimal Value: #817A6E LRV: 20

Due to individual computer monitor limitations, colors seen here may not accurately reflect the selected color. To confirm your color choices, visit your neighborhood Sherwin-Williams store and refer to our in-store color cards.

#### STORE NEAR YOU

491 FACTORY ST Watertown, NY 13601-2765 (315) 788-3130

#### **FAVORITE STORE**

491 FACTORY ST Watertown, NY 13601-2765 (315) 788-3130

NOTES:

We can also be reached by phone at: 1-800-4-SHERWIN (1-800-474-3794)



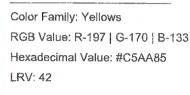


#### SW 6122 Camelback









**Color Details** 







Due to individual computer monitor limitations, colors seen here may not accurately reflect the selected color. To confirm your color choices, visit your neighborhood Sherwin-Williams store and refer to our in-store color cards.

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#### **FAVORITE STORE**

491 FACTORY ST Watertown, NY 13601-2765 (315) 788-3130 NOTES:

We can also be reached by phone at: 1-800-4-SHERWIN (1-800-474-3794)

Valid on retail sales of retail products only. Minimum purchase of 50 dollars in a single transaction, before sales tax and after all discounts have been applied. Savings is applied to qualifying items purchased on a prorated basisary refunds will be given in the prorated amount, which will reduce your savings. May be combined with a percent-off coupon or sale event. Multiple dollars-off coupons will not be honored. Must surrender coupon at time of redemption. Cash value: 1/100 of 1¢. Offer excludes previous purchases and purchases of gift cards. Other exclusions may apply, see store for details. Void if transferred, purchased, sold, altered, duplicated, or where prohibited by law. Valid at Sherwin-Williams and Sherwin-Williams operated retail paint stores only. We reserve the right to accept, refuse, or limit the use of any coupon. Offer valid through 12/31/15. C2015 The Sherwin-Williams Company.

## CRL Top Rails for 200, 300, 350, and 400 Series

• 20'-1" (6.12 m) Stock Lengths You Cut to Your Requirements



Top Rails for the 200, 300, 350, and 400 Series Railing Systems are sold in 20'-1" (6.12 m) stock lengths that you can cut to fit your exact needs. Powder coated rails come in your choice of eight standard colors, or you can select from over 250 Quick Turn colors. Rails require Connecting Blocks to fasten to posts (see page 357R).

NOTE: Series 200. 300, 350, and 400 Rails do not meet stairway code requirements. For stairways you must use our 100 Series Rails (see pages 328R to 338R).

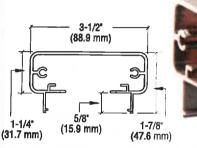
#### STANDARD COLORS

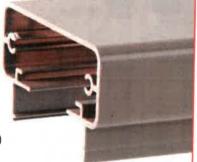
				BO S		metal i	1110
Sky While	Dyster White	Agate Gray	Beige Gray	Black	Bronze	Silver	Unfinished
	Gloss	Gloss	Gloss	Matte	Matte	Metallic	Chromate

Colors shown are representative only, and may vary slightly from actual gloss, color, and facture. If color match is critical, pi Technical Sales for additional information.

Additional Color Options - CRL has over 250 quick turn custom color options with the ability to color match as well.

## 200 Series Top Rail

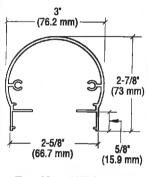




- Designed to Accommodate 3/4" (19 mm) Pickets or 1/4" to 1/2" (6 to 12 mm)\* **Tempered Glass**
- \* 1/2" (12 mm) Glass only if wet glazed

CAT. NO.	COLOR
2TR241W	Sky White
2TR2410W	Oyster White
2TR241AGY	Agate Gray
2TR241BGY	Beige Gray
2TR241BRZ	Matte Bronze
2TR241BL	Matte Black
2TR241S	Silver Metallic
2TR241CRM	Chromate
Minimum order: 1 each. Must sh	tp common carrier.

## 300 Series Top Rail





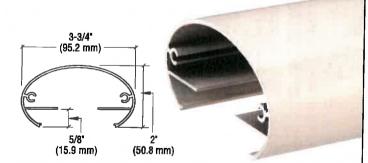
\* 1/2" (12 mm) Glass only if wet glazed

	-	ė
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CAT. NO. COLOR 3TR241W Sky White 3TR2410W **Oyster White** 3TR241AGY Agate Grav **3TR241BGY** Beige Gray 3TR241BRZ Matte Bronze **3TR241BL** Matte Black 3TR241S Silver Metallic 3TR241CRM Chromate

Minimum order: 1 each. Must ship common carrier.

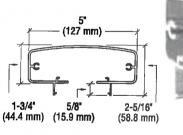
## 350 Series Top Rail



- Will Accept 3/4" (19 mm) Pickets or 1/4" to 1/2" (6 to 12 mm)\* **Tempered Glass**
- \* 1/2" (12 mm) Glass only if wet glazed

CAT. NO.	COLOR
35TR241W	Sky White
35TR2410W	Oyster White
35TR241AGY	Agate Gray
35TR241BGY	Beige Gray
35TR241BRZ	Matte Bronze
35TR241BL	Matte Black
35TR2418	Silver Metallic
35TR241CRM	Chromate

**400 Series Top Rail** 



- Can Be Used With 3/4" (19 mm) Pickets or 1/4" to 1/2" (6 to 12 mm)\* Tempered Glass
- 1/2" (12 mm) Glass only if wet glazed

,	
CAT. NO.	COLOR
4TR241W	Sky White
4TR2410W 4TR241AGY	Oyster White Agate Grav
4TR241BGY	Beige Gray
4TR241BRZ	Matte Bronze
4TR241BL	Matte Black
4TR241S	Silver Metallic

Minimum order: 1 each. Must ship common carrier.

4TR241CRM

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Minimum order: 1 each. Must ship common carrier

Chromate

## **CRL Surface Mount Post** Kits for 200, 300, 350, and 400 Series Rails

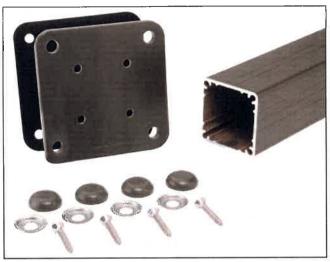
- 2-3/8" (60.3 mm) Square
- Use for 180 Degree, 90 Degree or End Posts
- Three Standard Post Heights
- Complete With Base Plate, Stainless Washers, Screws, and Bolt Cover Buttons
- Seven Standard Colors, Plus **Unfinished Chromate**

CRL 200, 300, 350, and 400 Series Surface Mount Post Kits come complete with Base Plate (BP5), Moisture Barrier Gasket (BPG1BL), Base Plate Screws (BPS112), Stainless Steel Washers (WSHR1), and Color Match Bolt Cover Buttons (BTN1). Standard Posts Kits are available in your choice of three heights and seven attractive colors, plus unfinished chromate. Custom heights and colors are also available.

CAT. NO.*	DESCRIPTION	POST HEIGHT
P36K	36" Post Kit	36" (914 mm)
P42K	42" Post Kit	42" (1066 mm)
P48K	48" Post Kit	48" (1219 mm)

Minimum order 1 each. "Specify powder coat color when ordering.

#### Standard Kits Include:



#### STANDARD COLORS

			100		JE.	1	A STATE
Sky White	Oyster White	Agate Gray	Beige Gray	Black	Bronze	Silver	Unfinished
Gloss	Gloss	Gloss	Gloss	Matte	Matte	Metallig	Chromate

ative only, and may vary slightly from actual gloss, color, and texture. If color match is critical.

Additional Color Options - CRL has over 250 quick turn custom color options with the ability to color match as well

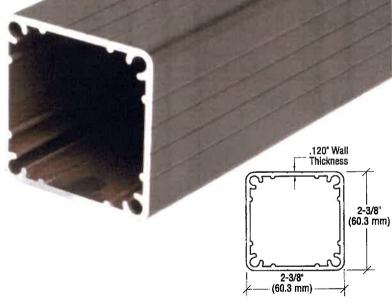
## **CRL Posts Only for** 200, 300, 350, and **400 Series Rails**

- 2-3/8" (60.3 mm) Square
- Use for 180 Degree, 90 Degree or End Posts
- Three Standard Post Heights
- Seven Standard Colors, Plus **Unfinished Chromate**
- 6005 Alloy Aluminum/T5 Temper

CRL 200, 300, 350, and 400 Series Aluminum Posts are available in your choice of three heights and seven attractive colors, plus unfinished chromate. You can also cut custom posts from our 20'-1" (6.12 m) stock length. Custom heights and colors are also available.

CAT. NO.*	DESCRIPTION	HEIGHT/LENGTH
P36	36" Post	36" (914 mm)
P42	42" Post	42' (1066 mm)
P48	48" Post	48" (1219 mm)
P241	20'-1" Stock Length	241" (6.12 m)#

Minimum order 1 each. \* Specify powder coat color when ordering. # Must ship common carrier.



#### STANDARD COLORS



wn are representative only, and may vary elightly from actual gloss, color, and texture. If color match is critical, please contact sales for additional information.

Additional Color Options - CRL has over 250 quick turn custom color options with the ability to color match as well.



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## CRL Picket Panels for 200, 300, 350, and 400 Series Rails

• 3/4" (19 mm) Square Pickets in Seven Standard Colors, Plus **Unfinished Chromate** 



- Nine Standard Picket Panel Sizes
- Custom Picket Panels Also Available

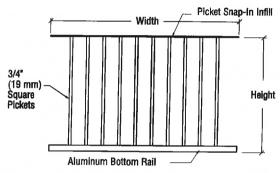
CRL Picket Panels are available in a variety of lengths and widths. Seven stock colors, plus unfinished chromate to choose from. Use CRL Picket Panels to save time and cost. All Panels come with Top Infill, Bottom Rail, and Pickets spaced 3-7/8" (98.4 mm) apart. STANDARD COLORS

Colors shown are representative only, and may vary sightly from actual gloss, color, and texture. If color match is critical, please contact Technical Sales for additional information.

CAT. NO.*	FITS OPENING (W X H)	ACTUAL SIZE (W X H)	<b>PICKETS</b>
P4836	48" x 36" (1219 x 914 mm)	53-5/8" x 33-1/8" (1362 x 841 mm)	10
P6036	60" x 36" (1524 x 914 mm)	65-5/8" x 33-1/8" (1667 x 841 mm)	13
P7236	72" x 36" (1828 x 914 mm)	77-5/8" x 33-1/8" (1972 x 841 mm)	15
P4842	48" x 42" (1219 x 1066 mm)	53-5/8" x 39-1/8" (1362 x 994 mm)	10
P6042	60" x 42" (1524 x 1066 mm)	65-5/8" x 39-1/8" (1667 x 994 mm)	13
P7242	72" x 42" (1828 x 1066 mm)	77-5/8" x 39-1/8" (1972 x 994 mm)	15
P4848	48" x 48" (1219 x 1219 mm)	53-5/8" x 45-1/8" (1362 x 1146 mm)	10
P6048	60" x 48" (1524 x 1219 mm)	65-5/8" x 45-1/8" (1667 x 1146 mm)	13
P7248	72" x 48" (1828 x 1219 mm)	77-5/8" x 45-1/8" (1972 x 1146 mm)	15

Minimum order: 1 each, \* Specify powder coat color when ordering. Must ship common carrier.





## CRL Pickets for 200, 300, 350, and 400 Series Rails

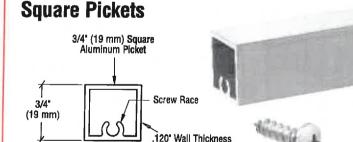
• 20'-1" (6.12 m) Extrusions You Cut to Required Lengths



 Seven Standard Colors. Plus **Unfinished Chromate** 

Easy to Install Design





- (19 mm) → CAT. NO. COLOR PKTS241W Sky White **PKTS2410W** Oyster White PKTS241AGY **Agate Gray** PKTS241BGY Beige Gray PKTS241BL Matte Black PKTS241BRZ Matte Bronze

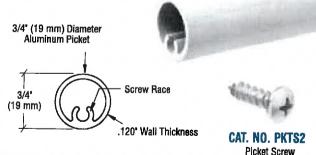
3/4"

Minimum order: 1 each. See above for color chart. Must ship common carrier

#### CAT. NO. PKTS2 Picket Screw

Use CRL 200, 300, 350, and 400 Series Square Picket Extrusions with Top Infills and Bottom Rails. The 3/4" (19 mm) Picket Extrusion attaches to Top Infills and Bottom Rails with a Cat. No. PKTS2 Stainless Steel Phillips Pan Head Picket Screw.

**Round Pickets** 



CAT. NO.	COLOR
PKTR241W	Sky White
PKTR2410W	Oyster White
PKTR241AGY	Agate Gray
PKTR241BGY	Beige Gray
PKTR241BL	Matte Black
PKTR241BRZ	Matte Bronze
PKTR241S	Silver Metallic
PKTR241CRM	Chromate
Minimum order: 1 each. See above for color chart. Mu	st ship common carrier.

Use CRL 200, 300, 350, and 400 Series Round Picket Extrusions with Top Infills and Bottom Rails. The 3/4" (19 mm) Picket Extrusion attaches to Top Infills and Bottom Rails with a Cat. No. PKTS2 Stainless Steel Phillips Pan Head Picket Screw.



PKTS241S

PKTS241CRM

Silver Metallic

Chromate

CRL Surface Mount Cable End Post Kits for 200, 300, 350, and 400 Series Rails

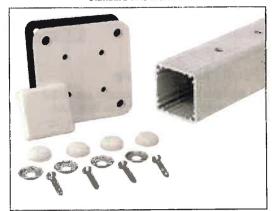
Standard Kits Include:





- 2-3/8" (60.3 mm) Square
- Two Standard Post Heights
- Complete With Base Plate, Moisture Barrier Gasket, Stainless Washers, Screws and Bolt **Cover Buttons**
- Seven Standard Colors Plus Unfinished Chromate
- Custom Sizes and Hole Locations Also Available

CRL Surface Mount Cable End Post Kits come complete with Base Plate (BP5), Moisture Barrier Gasket (BPG1BL), Stainless Steel Washers (WSHR1), and Color Match Bolt Cover Buttons (BTN1). Standard Post Kits are available in your choice of two heights and seven attractive colors, plus unfinished chromate. Custom heights and colors are also available.



NOTE: Cable Grommets sold separately (see page 373R)

		4-		ET V	DEDE	· Inner de · Palain	HIE
Sky White	Oyster White	Agate Gray	Beige Gray	Black	Branze	Silver	Unfinished
Glass	Gloss	Gloss	Gloss	Matte	Matte	Metallic	Chromate

on are representative only, and may vary slightly from actual gloss, color, and texture. If color match is critical, please contact

CAT. NO.*	DESCRIPTION	CABLE HOLES
P36TK	36' (914 mm) Tall Cable Receiver Post Kit Prepped for Tensioning Receiver End	11
P36PK	36" (914 mm) Tall Cable Receiver Post Kit Prepped for Pull Lock End	11
P42TK	42' (1066 mm) Tall Cable Receiver Post Kit Prepped for Tensioning Receiver End	13
P42PK	42" (1066 mm) Tall Cable Receiver Post Kit Prepped for Pull Lock End	13

3" (76.2 mm) Center-to-Center Cable Spacing for Tensioning Receivers and Pull Lock Ends

Minimum order: 1 each. \* Specify powder coat color when ordering. Posts can be trimmed in the field to compensate for uneven surfaces.

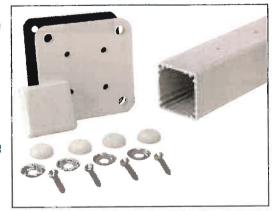
## CRL Surface Mount Cable Center Post Kits for 200, Standard Kits Include:

STANDARD COLORS

300, 350, and 400 Series Rails

- Center Post Kits Prepped for 1/8" (3.2 mm) Cable
- 2-3/8" (60.3 mm) Square
- Two Standard Post Heights
- Complete With Base Plate, Moisture Barrier Gasket, Stainless Washers, Screws, and Bolt **Cover Buttons**
- Seven Standard Colors Plus Unfinished Chromate
- Custom Sizes and Hole Locations Also Available

CRL Surface Mount Cable Center Post Kits come complete with Base Plate (BP5), Moisture Barrier Gasket (BPG1BL), Stainless Steel Washers (WSHR1), and Color Match Boit Cover Buttons (BTN1). Standard Post Kits are available in your choice of two heights and seven attractive colors, plus unfinished chromate. Custom heights and colors are also available.



NOTE: Cable Grommets sold separately (see page 373R) STANDARD COLORS

	STATE OF THE PARTY				0.17		
Sky White	Oyster White	Agate Gray Gloss	Beige Gray Gloss	Black Matte	Bronze Matte	Säver Metallic	Umfinished Chromate

Colors shown are representative only, and may vary slightly from actual gloss, color, and texture. If color match is critical, please con

HOLES	C.	DESCRIPTION	CAT. NO.*
11		36" (914 mm) Tall Cable Center Post Kit	P36CK
13		42" (1066 mm) Tall Gable Center Post Kit	P42CK
5	pensate for (	42" (1066 mm) Tall Cable Center Post Kit city powder coat color when ordering. Posts can be trimmed in the field to comp	P42CK Minimum order: 1 each.

3" (76.2 mm) Center-to-Center Cable Spacing with 3/16" (4.7 mm) Dia. Holes for 1/8" (3.2 mm) Cable

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## **CRL ARS Stainless Steel Cable Infills**

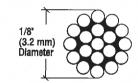
 Stainless Cable Infills are the Perfect Choice for Stairways and Decks When View is Important





## CRL 1/8" Stainless Steel Cable

- For Use With All CRL Aluminum Railing Systems
- 1 x 19 Type 316 Stainless Steel Construction Cable
- 1/8" (3.2 mm) Diameter
- Uncoated and Low Maintenance



CRL 1/8" Diameter 1 x 19 Construction Stainless Steel Cable is designed with 19 separate wires twisted into a single strand.

See page 576R for Cable Installation Tools



## CRL 1/8" Pre-Cut Stainless Steel Cable Kits

• Four Pre-Cut Lengths, As Well As Custom Lengths Available

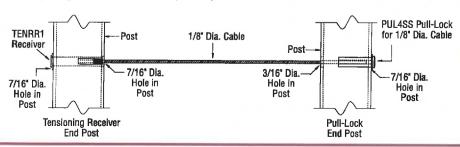
CRL Stainless Steel Cable is an infill option for any of our railing systems. Recommended spacing between cables is 3" (76.2 mm) center-to-center. The 1 x 19 construction Cable is

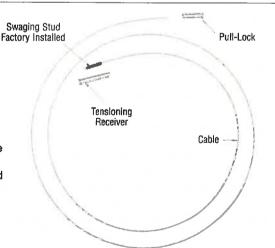
engineered to hold static loads without stretching, and is relatively stiff. Order Cable in rolls,

pre-cut kits with hardware, or we can custom cut it to your required length (see below).

- Factory Installed Swaging Stud
- No Special Equipment Required for Installation

CRL Pre-Cut Stainless Steel Cable Kits are offered in four standard lengths to make the install go easy. Included with each kit; one pre-cut 1/8" (3.2 mm) diameter 1 x 19 Type 316 Stainless Steel Cable, one Cat. No. SWGST1 Swaging Stud factory installed on Cable, one Cat. No. TENRR1 Tensioning Receiver, and one Cat. No. PUL4SS Pull-Lock. Recommended maximum spacing between cables is 3" (76.2 mm) center-to-center. The 1 x 19 construction Cable is engineered to hold static loads without stretching, and is relatively stiff. The maximum cable run is 50' (15.2 m) and post spacing is not to exceed 42" (1.06 m) on center.





#### 1/8" (3.2 MM) STAINLESS STEEL CABLE KITS

CAT. NO.	LENGTH
CBL188K	8' (2.4 m)
CBL1818K	18' (5.5 m)
CBL1836K	36' (10.9 m)
CBL1851K	51' (15.5 m)
CBL18KC	*Custom Length
Minimum order: 1 each	* Must enacify custom langth at time of anter

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**C.R. LAURENCE COMPANY** 



1-800-344-5917

Since 1946

**ABOUT** 

CONSTRUCTION

STEEL FABRICATION

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#### RACK TO GUARDRAIL PRODUCT OVERVIEW

#### **CONSTRUCTION-GUARDRAIL PRODUCTS**

#### Semi-Rigid Barrier System

Weathering Steel (Corten) Guardrall Powder Coated / Colored Guardrall Aesthetic Timber Barrier / Wood Guardrall

Steel Backed Timber Guardrali Median Barrier Steel Guardrali Thrie-Beam Steel Guardrali Box Beam Steel Guardrali W-Beam Steel Guardrali Bridge Rali

#### Flexible Barrier Systems

Weak Post W-Beam Guardrall
High Tension Cable Guardrall Systems
Low Tension Cable Guardrall

#### Guardrail End Treaments and Impact Attenuators

Recycled Guardrall End Cap
Roll-over End Section
Terminal End Sections (Boxing Glove)
Trall End Guardrall Sections
Guardrall Bridge Attachment
Impact Attenuators
Guardrall End Treatments
Bull Ness End Treatment

#### Work Zone Barriers

Temporary Impact Attenuators

#### Fencing and Railing

Pedestrian Hand Rail

#### Guardrall Accessories

Guardrali Accessories

#### **Aesthetic Timber Barrier / Wood Guardrail**



Aesthetic Timber Barriers / Wood Guardrall are frequently used on private property or parking lots where aesthetic concerns are considered a high priority. There are numerous wood guardrall options, including a variety of guardrall "panel" measurements and post styles. Wood guardrall scommonly installed on brown (poly-coated or Corten) guardrall posts to achieve an aesthetically pleasing look, or can be mounted on wood posts. Please view our gallery and explore our site for some Wood Guardrall examples or consult one of our specialists to attain your desired option.

# TO BE STAINED DARK WALNUT

#### WELCOME

About Elderlee, inc. Corporate Structure Company History Links

#### CONSTRUCTION

Construction
Design Build
Guardrail Installation
Guardrail Products
Commercial Guardrail
Impact Attenuators
Highway Sign Installation
Frequently Asked Questions
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#### STEEL FABRICATION

Steel Fabrication Guardrall Producta Bridge Rail

#### GALVANIZING

Galvanizing Why Galvanize? The Process Durability Sustainability

#### SIGNAGE

Sign Manufacturing Traffic Signs

#### EMPLOYMENT

Employment Safety at Elderlee Application Employee Log In

1-800-344-5917

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## CRL 200, 300, 350, and 400 Series **Railing Systems**

- Four Different Top Rail Profiles
- Interchangeable Component Parts
- Surface or Fascia Mount **Post Systems**
- Eight Standard Colors Available From Stock, With Custom Colors Also Available
- Most Application Possibilities
- Available With Custom Gates
- A.D.A. Compliant Guard Rails

CRL's high quality, versatile commercial or residential 200, 300, 350, and 400 Series Aluminum Railing Systems are manufactured from extruded aluminum framing members all of which utilize tempered glass. aluminum pickets, cast infills, and stainless steel cable that is engineered to meet applicable building code specifications. Regardless of style or color, every 200. 300, 350, and 400 Series Railing System provides the convenience of having all interchangeable component parts, superior color retention, impact resistance, and weatherability in any environment.



ARS 200 Series Aluminum Railing System With Custom Textured Glass

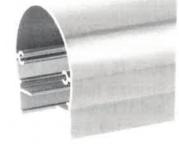


ARS 350 Series Aluminum Railing System With Glass



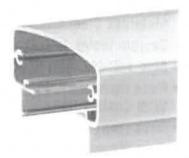






300 Series





350 Series

400 Series



ARS 300 Series Aluminum Railing System With Pickets



ARS 400 Series Aluminum Railing System With Glass

## **CRL 200 Series Railing System**

Our 200 Series Railing System uses a continuous flat top rail, which helps achieve a modern look. While most companies in the industry offer very typical top rails, the 200 Series maintains an extremely low profile while outperforming competitive systems for strength and durability. At 1-7/8" (47.6 mm) it has the lowest profile of all the top rails.

This system can be used with glass, cable, picket, cast, or custom water jet/laser cut infills. The pickets in this system come in the form of a Picket Panel (see page 366R), which costs a little more than the traditional single snap-in picket system, but will save you time and labor during installation.

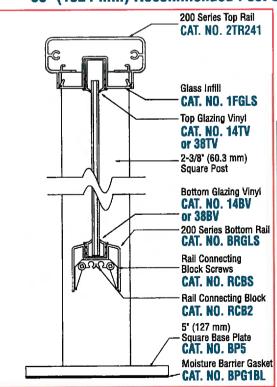
NOTE: As good as the 200 Series is, you cannot use it for a stair application where railing is required. The top cap is too wide in cross section to achieve the status of a hand rail. This being the case, you must use our 100 Series (see pages 328R to 338R) for the stair portion of the job.

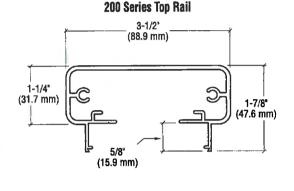
- 6005-T5 Aluminum Allov
- Standard Rail Heights are 36", 42", and 48" (914, 1066) and 1219 mm). Custom Rail Heights Also Available
- 2-3/8" (60.3 mm) Square Aluminum Post
- Infill Panel Options: 1/4" or 3/8" (6 or 10 mm) Glass, 3/4" (19 mm) Square or Round Profile Aluminum Picket Panels. Stainless Steel Cable, or Decorative Cast Panels
- Custom Water Jet/Laser Cut Infills Also Available
- Also 1/2" (12 mm) Glass When Used With Wet Glaze Method
- Eight Standard Colors Available From Stock. With Custom Colors Also Available

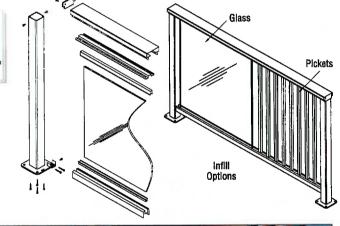
Deck (Top) Mount or Fascia Mount Applications Available



- Can Be Fabricated With Custom Gates
- Exterior and Interior Applications
- A.D.A. Compliant Guard Rails
- 60" (1524 mm) Recommended Post Spacing









## **CRL ARS Aluminum Railing System**

CRL's high quality commercial or residential Aluminum Railing Systems are manufactured from extruded aluminum framing members utilizing infill options of tempered glass, aluminum pickets, stainless steel cable, cast or water jet/laser cut infills, that are engineered to meet applicable building code specifications.

Regardless of style or color, each one of our railing systems provides superior color retention, impact resistance, and weatherability in any environment.

## **Design Options**

- Exterior and Interior Hand Rails and Guard Rails
- Infill Panel Options: Aluminum Pickets. Aluminum Pattern Panels. Clear or Coated Structural Glass, or Stainless Steel Cable
- Custom Gates
- ADA Compliant Grab Rails
- Attractive Low-Voltage, Post Mounted Lighting System for Our Railing Systems. Using a Safe, 12 Volt Power Source, These Lights Provide a Subtle Glow That is Sure to Enhance Any **Balcony Environment**

## **Component Features and Benefits**

- Innovative Design Details for Standard or Custom Applications
- Extruded Aluminum for Durability, Weather Resistance, and Low Maintenance
- Heavy Gauge Materials and Steel Embeds for Strength
- Uses 1/4" to 1/2" (6 to 12 mm) Tempered Glass for Safety and Impact Resistance

## **Color Selection**

- Tough, Powder-Coated or Optional Kynar Paint Colors for Superior Color Retention and Weather Resistance
- Special Coating for Resistance to Salt Water Corrosion

Our specially formulated coatings are designed to resist the corrosive effects of salt water, providing a permanent, worry-free addition to your building. You can choose from one of the seven standard colors plus unfinished chromate, or one of our 250 additional "Quick Turn" colors. If you still can't find just the right color, you can send us the desired color and we can match it for you.

## **Standard Colors**

- In-House Factory Applied
- Baked on TGIC Polyester Powder Coat Paint System
- Excellent Weatherability and Durability
- Meets AAMA 2603-98 Specifications

## Additional Color Options

- A Variety of Textured and Performance Enhanced Powder Coat Paint Systems | Cherry Avenue
- **Custom Color Matching**
- Cable Railing 50% and 70% Kynar Paint Systems to Meet Stringent

Retaining Wall

Picket Railing

 All Paint Systems Will Be Applied Over State-of-the-Art **Chromate Pre-Treatment** 

AAMA 2604-98 and 2605-98 Commercial Specifications

that combine the durability of extruded aluminum with innovative design details. This assures long-term structural integrity and enhances project aesthetics, while consistently reducing the annual maintenance expense.

We manufacture a comprehensive selection of railing systems



- 2-3/8" and 4" (60.3 and 101.6 mm) Square Posts Available
- Seven Standard Powder Paint Colors Available. **Plus Unfinished Chromate**
- Custom Colors Also Available













Standard Colors Colors shown are representative only and may vary slightly from actual gloss, color, and texture. If color match is critical, please contact Technical Sales for additional information.

criaurence.com

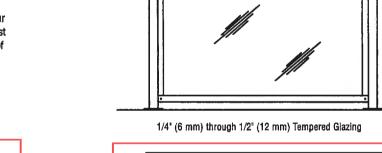
C.R. LAURENCE COMPAN'

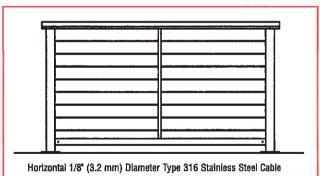




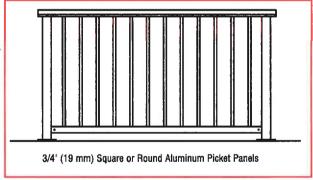
# **Infill Options**

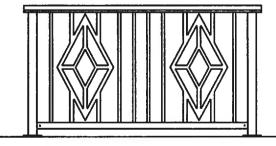
CRL offers the five Infill Options shown here. Utilizing our state-of-the-art manufacturing facility we can produce almost any desired design to meet your project specifications. All of the Infill Options shown are designed to work with all CRL Aluminum Railing Systems.



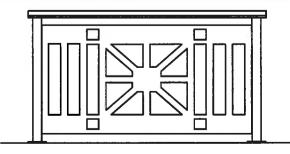












Custom Water Jet/Laser Cut Panels

#### GN1LED26NSADW



Project:

Type:

Prepared By:

Date:

**Driver Info** 

**LED** Info Watts:

Type: Constant Current 120V; 0.25A 208V: 0.16A 2401/-277V:

Color Temp: Color Accuracy: L70 Lifespan:

26W 4000K (Neutral)

85 CRI 0.14A 100,000 0.12A I IImene: 1 461 Input Watts: 29W Efficacy: **51 LPW** Efficiency: 90%

13 & 26 Watt Dome Shade LED Gooseneck Luminaire designed to match the architecture of Main Street storefronts and building perimeters. LED Gooseneck Dome Shade with 24" Goose Arm Style 1.

Color: White

Weight: 11.0 lbs

#### **Technical Specifications**

Listings

#### **UL Listina:**

Suitable for wet locations. Suitable for mounting within 1.2m (4ft) of the ground.

#### IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

#### **LED Characteristics**

#### Lifespan:

100.000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

#### LED:

Single multi-chip, 26W high-output, long-life LED.

#### Correlated Color Temp. (Nominal CCT): 4000K

#### **Color Stability:**

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

#### Color Uniformity:

RAB's range of CCT (Correlated color temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2008.

#### Construction

#### Fixture:

The GN1LED26NSADW comes with the GOOSE1W Arm.

#### Thermal Management:

Custom heat sink assembly in thermal contact with die-cast aluminum housing for superior heat sinking.

#### Housing:

Precision die-cast aluminum housing, lens frame and mounting plate.

#### Gaskets:

High Temperature Silicone

#### Mounting:

Heavy-duty mounting arm with "O" ring seal and stainless steel screw

#### **Cold Weather Starting:**

The minimum starting temperature is -40°F/-40°C

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals. Offers significantly improved gloss retention and resistance to color change.

#### **Green Technology:**

Mercury and UV free, and RoHS compliant. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

#### **Electrical**

#### Driver:

Constant Current, Class 2, 100-277V, 50/60 Hz, 0.48 A, THD≤20%, PF 97.9%.

#### **Surge Protection:**

4kv

Other

#### Shades:

15" Angled Dome Shade offered.

#### Equivalency:

The GNLED26 is equivalent in delivered lumens 120W incandescent, 75W MH or 42W CFL.

#### California Title 24:

Goosenecks complies with 2013 California Title 24 building and electrical codes as a commercial outdoor non-pole-mounted fixture < 30 Watts when used with a photosensor control. Select catalog number PCS900(120V) or PCS900/277 to order a photosensor.

#### Patents:

The design of the Gooseneck is protected by patents pending in US, Canada, China and Taiwan.

#### Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

#### Country of Origin:

Designed by RAB in New Jersey and assembled in the USA by RAB's IBEW Local 3 workers.

#### **Buy American Act Compliant:**

This product is a COTS item manufactured in the United States, and is compliant with the Buy American

#### Recovery Act (ARRA) Compliant:

This product complies with the 52,225-21 "Required Use of American Iron, Steel, and Manufactured Goods-- Buy American Act-- Construction Materials (October 2010)

#### **Trade Agreements Act Compliant:**

This product is a COTS item manufactured in the United States, and is compliant with the Trade Agreements Act.

## **GN1LED26NSADW**

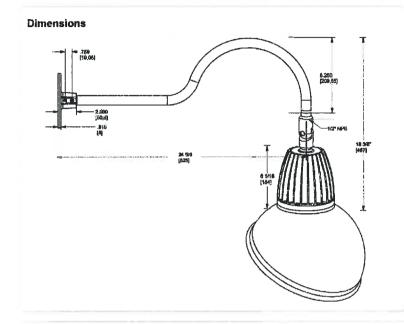


#### **Technical Specifications (continued)**

Other

#### GSA Schedule:

Suitable in accordance with FAR Subpart 25.4



#### **Features**

Adjustable 45° swivel joint

Superior heat sink

Die-cast aluminum housing

5 year LED warranty

#### **Ordering Matrix**

Family	Watts	Color Temp	Reflector	Shade	ShadeSize	Finish
GN1LED	26	N	S	AD		W
	<b>13</b> = 13W	<b>Y</b> = 3000K	≃ Flood	AD = Angled Dome	11 = 119	B = Black
	<b>26</b> = 26W	N = 4000K	R = Rectangular		= 15"	W = White
			S = Spot			A = Bronze
						S = Silver
						<b>G</b> = Hunter Green
						YL = Yellow
						L8 = Light Blue
						BL = Royal Blue
						BWN = Brown
						I = lvory
						R = Red

### Halo Commercial

#### DESCRIPTION

Recessed 6-inch LED lens downlight is available in various distributions, lumen and CRI/CCT options. Suitable for commercial construction and can be used for both new or renovation work. insulation must be kept 3" from top and sides of housing. Use for general area lighting where high efficiency and visual comfort are required.

Catalog #	Туре
Project	
Comments	Date
Prepared by r	

Recessed Canned Fixtures beneath Canopies

#### SPECIFICATION FEATURES

#### MECHANICAL Frame

Boat shaped galvanized steel frame with adjustable plaster lip accommodates ceilings up to 1/2 - 2" thick. May be used for new construction or remodeling installations. Provided with (2) remodel clips to secure frame when installed from below the ceiling.

#### **Mounting Brackets**

Bar hanger receivers adjusts 2" vertically from above the ceiling or thru the aperture. Use with No Fuss™ bar hangers or with 1/2" EMT. Removable to facilitate installation from below the ceiling.

No Fuss™ Bar Hangers Captive preinstalled bar hanger

locks to tee grid with a screwdriver conductors and feed thru branch or pliers. Centering mechanism allows consistent positioning of fixtures.

#### **OPTICAL LED Module**

Proximity phosphors over chip on board LEDs provide a uniform source with high efficiency and no pixilation. Available in 80 or 90 CRI minimum, accuracy within 3 SDCM provides color uniformity. See ordering information for available CRI / CCT options. Passive thermal management achieves L70 at 50,000 hours in non IC applications. Integral diffuse lens provides visual shielding. Integral connector allows quick connection to housing flex.

#### Reflector

One piece parabolic aluminum reflector provides cutoff for a visually comfortable optic. Attaches to LED module with (3) speed clamps minimizing light leaks to lens. Self-flanged standard with an optional white painted flange.

#### Trim Retention

Reflectors are retained with two torsion springs holding the flange tightly to the finished ceiling surface.

#### **ELECTRICAL Junction Box**

(6) 1/2" and (2) 3/4" trade size pry outs positioned to allow straight conduit runs. Listed for (12) #12 AWG (six in, six out) 90°C wiring.

#### Driver

integral UNV 120 - 277V 50/60 Hz constant current driver provides noise free operation. For 347V input use Halo transformer H347 or H347200. Continuous, flickerfree dimming from 100% to 10% with leading or trailing edge phase cut at 120V or 0 -10V analog control.

**Emergency Option** Provides 90 minutes of standby lighting meeting most life safety codes for egress lighting. Available with both integral or remote charge indicator and test switch.

#### Compliance

- cULus listed for wet location
- cCSAus listed for wet location
- IP66 Ingress Protection Rated
- Insulation must be kept 3" from top and sides.
- Airtight per ASTM-E283.
- Optional City of Chicago environmental air (CCEA) marking for plenum applications.
- EMI/RFI emissions per FCC 47CFR Part 18 non-consumer limits.
- Contains no mercury or lead and RoHS compliant.
- Photometric testing in accordance with IES LM-79-08.
- Lumen maintenance projections in accordance with IES LM-80-08 and TM-21-11.
- Can be used to comply with California Title 24 Non-Residential Lighting Controls requirements as a LED Luminaire.
- ENERGY STAR® listed for commercial applications. reference database for current listings.



**PD610** PD615 **PD620** PD630

PDM6A

61V

1000, 1500, 2000 & 3000 **Lumen Series** 

**LED** 6-Inch Aperture **Lens Downlight** 

THD: ≤ 20%
PF: ≥ 0.90
T Amblent -30 - +40°C
Sound Rating ≤ 22dba

Lumens	1000 Series				
Input Voltage	120V 277V				
Input Current	.103 A .058 A				
Input Power	12.1 W 13.2 V				
Efficiency	88 LPW	88 LPW			
Inrush Current	.048 A .080 A				

Lumens	1500 Series				
Input Voltage	120V 277V				
Input Current	.146 A	.1 A			
Input Power	17.1 W 17.9 W				
Efficiency	87 LPW	87 LPW			
Inrush Current	1.920 A	0.960 A			

Lumens	2000 Series					
Input Voltage	120V 277V					
Input Current	.175 A	.536 A				
Input Power	20.78 W	21.06 W				
Efficiency	89 LPW	89 LPW				
Inrush Current	.064 A	.128 A				

	2000	Cardan			
Lumens	3000 Series				
Input Voltage	120V	277V			
Input Current	.299 A	.145 A			
Input Power	35.72 W	36.4 W			
Efficiency	82 LPW	82 LPW			
Inrush Current	.096 A	.928 A			



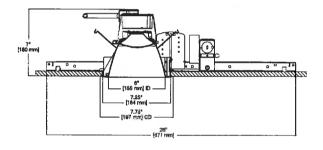
#### ORDERING INFORMATION

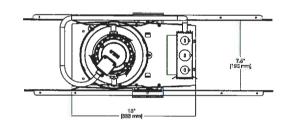
SAMPLE NUMBER: PD610ED010REM-PDM6A827-61VC
A complete luminaire consists of a housing, LED module and reflector, order separately.

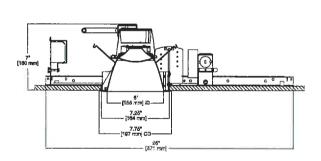
Housing	Lumens	Driver	Options	LED Module	CRI/CCT
PD6 = 6' aperture LED downlight PD6CP = 6' aperture LED downlight, CCEA lister for City of Chicago plenum requirements	10 = 1,000 lumens (nominal) 16 = 1,500 lumens (nominal) 20 = 2,000 lumens (nominal)	ED010 = 120-277V 50/60Hz, 0-10V and LE/TE phase cut dimming	REM = Emergency operation with remote indicator and test switch IEM = Emergency operation with	PDM6A = Downlight LED module for PD6 housing, provides 1,000, 1,500, 2,000, or 3,000 lumens (nominal)	827 = 80 CRI, 2700K CCT 927 = 90 CRI, 2700K CCT 830 = 80 CRI, 3000K CCT 930 = 90 CRI, 3000K CCT 835 = 80 CRI, 3500K CCT 935 = 90 CRI, 3500K CCT
	30 = 3,000 lumens (nominal)	<b>D010</b> = 120-277V 50/60Hz, 0-10V dimming (3,000 lumen only)	integral indicator and test switch, 60 Hz only (REM and IEM options not available with PD6CP housing)	depending on connected housing type	840 = 80 CRI, 4000K CCT 940 = 90 CRI, 4000K CCT

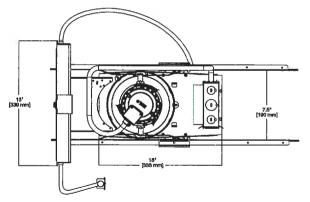
Reflector	Finish Option	Flange Option	Accessories
61V = 6" vertical parabolic reflector 61VEM = 6" vertical parabolic reflector for IEM	C = Specular clear G = Specular gold H = Semi-specular clear W = White (white flange) BB = Black baffle (white flange) WB = White baffle (white flange)	Blank = Polished flange standard with C, G & H reflector finishes Blank = White flange standard with W, BB, & WB WF = White flange option available with C, G, & H reflector finishes	HB128APK = L channel hanger bar, 26",  'No-Fuss', pair (replacement)  RMB22 = 22" long wood joist mounting bars, pair  H347 = Step down transformer for 347V input H347 = Step down transformer for 347V Input, 75VA max  H347200 = Step down transformer for 347V Input, 200VA max

#### **DIMENSIONS**











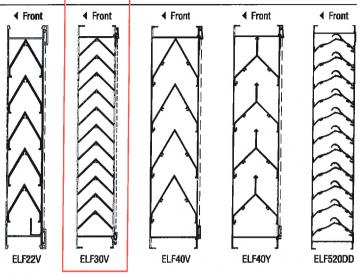
# **Extruded Alumninum** Louvers

**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			UNIT
Louver Model	Material (Nem.)	Blade Style	Blade Angle	Blade Centers (Nem.)	Frame Materiel (Nom.)	France Depth	litri Screen	Free Area (Hem.)	Sg. Ft. Free Area	Max. Roc. Air Flow Thru Free Area FPM	Air Flew 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





RUSKIN finishes enhance product appearance to blend with other colors selected. These same finishes provide extended weathering resistance similar to adjacent building surfaces. RUSKIN provides most finishes available to architects and engineers. The standard finishes described herein represent those finishes usually selected, specified, or required for most applications.

## FINISHES AND COLOR GUIDE

## FLUROPON® AND BAKED ENAMEL - STANDARD COLORS

Louver Color to Match
Window/Storefront Frame

The 15 colors below are available in Fluropon (70% PVDF) or Baked Enamel (50% PVDF) finishes only.



## PEARLEDIZE 70 AND PEARLEDIZE 50 STANDARD COLORS

The 9 colors below are available in Pearledize 70, Pearledize 50, Clear or Color Anodize finishes only, and may be more expensive than the Fluropon and Baked Enamel colors shown above. Italicized color names and codes are available in Anodized Finish.



The colors shown herein are only a sample of thousands of colors available.

Please contact RUSKIN for information regarding custom color matching.

Disclaimer: This color card is for reference only and is not meant to be used for color matching or final color approval. Shades may vary due to the color and resolution of the computer screen or print-out. Ruskin is not responsible for color matches made with this online color chart.

3900 Dr. Greaves Rd. Kansas City, Missouri 64030



Phone (816) 761-7476 FAX (816) 765-8955 c-mail: ruskin@ruskin.com