

## **Part B 9.0: Specifications**

### **9.3: Particular Material Specifications**

#### **9.3: 1-8 Architectural Materials**

# 1.0 Windows & Storefronts

## Series 8400TL Architectural Windows

An Opening to the  
World that Redefines  
Window Versatility



Converse Hall, James Madison University, Harrisonburg, VA  
Architect: Moseley Harris & McClintock, Harrisonburg, VA  
Glazing Contractor: Glass & Metals Inc., Harrisonburg, VA

Today, energy concerns are critical and the 8400TL series provides the flexible balance between energy efficiency, aesthetics and performance. As LEED certifications gain popularity, consider the 8400TL as the window of choice to achieve potential points in the Indoor Environmental Quality category. Whether your project is new construction, building renovation, or adaptive reuse of a historic gem, the Kawneer 8400TL series fits the opening.

Here is a thermal window you can have your way, be it fixed, offset fixed, single hung, double hung, or horizontal sliding. You may choose a frame option with or without true, applied or between-the-glass muntins as well as optional insect screens. All are available with tested and proven tough finishes and heavy duty hardware.

## Aesthetics

Gone are the days of compromise. The Kawneer Series 8400TL window returns design versatility to the architect, whether it's for new or remodel construction, while still efficiently satisfying the needs of building owners. A variety of exterior pannings and interior trims are available. And with a four-inch frame depth, the window takes on a whole new dimension. The 8400TL series window easily accommodates a glass infill thickness of 1/4", 9/16" impact, or 1". In fixed windows, an infill thickness of up to 1-1/2" is available.

To maintain historic authenticity, sash profiles on the 8400TL windows are available in a beveled face that replicates exterior putty glazing, making them ideal for remodel or new construction. The hardware used in the operation of the 8400TL series meets the challenge of any task required. For its appearance and durability, high quality cast white bronze sweep locks are standard. Optional access control locks and automatic sash locks are also available.



## Performance

Performance is not an option in the 8400TL series, it's the standard.

Kawneer thermal breaks deliver. So, we made them standard in every frame and sash of the 8400TL series. Using a combination of the Kawneer IsoLock® Pour and Debridge process, each break or separation is mechanically attached by lancing or preconditioning the thermal pockets. The 8400TL series has superior reduction of thermal transmittance and increased condensation resistance. The IsoLock® thermal break virtually eliminates shrinkage and prevents loss of adhesion. To uphold expected performance levels, the standard recommendation on 8400TL windows is factory glazed, although there is the option to order them open.

To ensure a strong, weather-tight joint, the sashes are assembled with stainless steel screws in coped and butt type construction. The top and bottom sash stiles run through with interlocking meeting rails which are double weather-stripped. For easy opening, continuous sash lifts are standard along with block and tackle balances for simple operation. The 8400TL series is ideal for extra heavy duty applications when added strength and security are critical.

## Class & Grades

Fixed	F-HC100 / F-AW100
Single Hung	H-HC70 / H-AW70
Double Hung	H-HC70 / H-AW70
Horizontal Slider	HS-HC70 / HS-AW70

Other options of the 8400TL series include:

- Auto sill lock (cast white bronze)
- Anti-lockout keepers (cast white bronze)
- Sash pole assembly (aluminum and die-cast)
- Sash pole hanger (cast white bronze)
- Pole sockets (cast white bronze)
- Vandal resistant glazing

## For the Finishing Touch

Architectural Class I anodized aluminum finishes are available in clear and Permanodic® color choices.

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.

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**SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS**

This suggested guide specification has been developed using the current edition of the Construction Specifications Institute (CSI) "Manual of Practice", including the recommendations for the CSI 3 Part Section Format and the CSI Page Format. Additionally, the development concept and organizational arrangement of the American Institute of Architects (AIA) MASTERSPEC Program has been recognized in the preparation of this guide specification. Neither CSI, AIA, USGBC nor ILFI endorse specific manufacturers and products. The preparation of the guide specification assumes the use of standard contract documents and forms, including the "Conditions of the Contract", published by the AIA.

**PART 1 - GENERAL****1.1 Related Documents**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 Summary**

- A. Section Includes: Kawneer Architectural Aluminum Storefront Systems, including perimeter trims, stools, accessories, shims and anchors, and perimeter sealing of storefront units.

1. Types of Kawneer Aluminum Storefront Systems include.

**FSC**

- a. IR 500 Framing – 2-1/2" x 5" (63.5 mm x 127 mm) nominal dimension; Non-Thermal; Center Plane for 9/16" (14.3 mm) Impact Resistant Glazing, Screw Spline Fabrication.
- b. IR 501 Framing – 2-1/2" x 5" (63.5 mm x 127 mm) nominal dimension; Non-Thermal; Center Plane for 1-5/16" (33.4 mm) Impact Resistant Glazing, Screw Spline Fabrication.
- c. IR 501 Framing – 2-1/2" x 5" (63.5 mm x 127 mm) nominal dimension; Non-Thermal; Center Plane for 1-5/16" (33.4 mm) Blast Mitigation Glazing, Screw Spline Fabrication.

*EDITOR NOTE: BELOW RELATED SECTIONS ARE SPECIFIED ELSEWHERE HOWEVER KAWNEER RECOMMENDS SINGLE SOURCE RESPONSIBILITY FOR ALL OF THESE SECTIONS AS INDICATED IN PART 1.6 QUALITY ASSURANCE.*

- B. Related Sections.

1. 072700 "Air Barriers".
2. 079200 "Joint Sealants".
3. 083213 "Sliding Aluminum-Framed Glass Doors".
4. 084113 "Aluminum-Framed Entrances and Storefronts".
5. 084329 "Sliding Storefronts".
6. 084413 "Glazed Aluminum Curtain Walls".
7. 084433 "Sloped Glazing Assemblies".
8. 085113 "Aluminum Windows".
9. 086300 "Metal-Framed Skylights".
10. 088000 "Glazing".
11. 107113 "Exterior Sun Control Devices".
12. 122600 "Interior Daylighting Devices".

**1.3 Definitions**

- A. Definitions: For fenestration industry standard terminology and definitions refer to American Architectural Manufacturers Association (AAMA) – AAMA Glossary (AAMA AG).

**1.4 Performance Requirements**

- A. Storefront System Performance Requirements.

*EDITOR NOTE: AIR AND WATER PERFORMANCE RESULTS ARE BASED UPON ASTM AND AAMA STANDARDS FOR STOREFRONT FRAMING SYSTEMS. CONSULT YOUR LOCAL KAWNEER REPRESENTATIVE CONCERNING SPECIFIC PROJECT PERFORMANCE REQUIREMENTS.*

*EDITOR NOTE: PROVIDE WIND LOAD DESIGN PRESSURES IN PSF AND INCLUDE APPLICABLE BUILDING CODE AND YEAR EDITION.*

1. Wind loads: Provide storefront system; include anchorage, capable of withstanding wind load design pressures of (\_\_\_\_) lbs./sq. ft. inward and



4. Uniform Load: A static air design load of 65 psf (3112 Pa) shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection in excess of L/180 of the span of any framing member. At a structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.4% of their clear spans shall occur.

**EDITOR NOTE: CHOOSE IMPACT RESISTANCE PERFORMANCE IF REQUIRED TO MEET PROJECT REQUIREMENTS.**

5. Windborne-Debris-Impact Resistance Performance: Shall be tested in accordance with ASTM E 1886, information in ASTM E 1996 and TAS 201/203.

## FSC

- a. Large-Missile Impact: For aluminum-framed systems located within 30 feet (9.1 m) of grade.
- b. Small-Missile Impact: For aluminum-framed systems located above 30 feet (9.1 m) of grade.

**EDITOR NOTE: CHOOSE BLAST MITIGATION PERFORMANCE IF REQUIRED TO MEET PROJECT REQUIREMENTS.**

6. Blast Mitigation Performance: Shall be tested or proven through analysis to meet ASTM F1642, GSA-TS01, and UFC 04-010.01 performance criteria.

To meet UFC 04-010.01, B-3.1 Standard 10 for Windows and Skylights, the following options are available:

- a. Section B-3.1.1 Dynamic analysis.
- b. Section B-3.1.2 Testing.
- c. Section B-3.1.3 ASTM F2248 Design Approach.

- B. Environmental Product Declaration (EPD): Shall have a Type III Product-Specific EPD created from a Product Category Rule.

**EDITOR NOTE: MATERIAL INGREDIENT REPORTING IF REQUIRED TO MEET PROJECT REQUIREMENTS AND ON ANY GREEN BUILDING CERTIFICATIONS SUCH AS LEED OR LBC.**

**EDITOR NOTE: MATERIAL INGREDIENT REPORTING ONLY FOR ANODIZED PRODUCTS.**

- C. Material Ingredient Reporting: Shall have a complete list of chemical ingredients to at least 100ppm (0.01%) that covers 100% of the product, acceptable documentation includes:
  1. Manufacturer's inventory with Chemical Abstract Service Registration Number (CASRN or CAS#).
    - a. Kawneer's Material Transparency Summary (MTS).

## 1.5 Submittals

**EDITOR NOTE: ADD RECYCLED CONTENT SECTION IF REQUIRED TO MEET PROJECT REQUIREMENTS AND/OR GREEN BUILDING CERTIFICATIONS SUCH AS LEED, LIVING BUILDING CHALLENGE (LBC), ETC. ARE REQUIRED.**

**\* IF RECYCLED CONTENT REQUIREMENTS ARE NOT SPECIFIED - PRIME (ZERO RECYCLED CONTENT) ALUMINUM COULD BE SUPPLIED.**

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, hardware, finishes, and installation instructions for each type of aluminum-frame storefront system indicated.
  1. Recycled Content:
    - a. Provide documentation that aluminum has a minimum of 50% mixed pre- and post-consumer recycled content with a sample document illustrating project specific information that will be provided after product shipment.
    - b. Once product has shipped, provide project specific recycled content information, including:
      - 1) Indicate recycled content; indicate percentage of pre- and post-consumer recycled content per unit of product.
      - 2) Indicate relative dollar value of recycled content product to total dollar value of product included in project.
      - 3) Indicate location recovery of recycled content.
      - 4) Indicate location of manufacturing facility.
  2. Environmental Product Declaration (EPD).
    - a. Include a Type III Product-Specific EPD created from a Product Category Rule.

**EDITOR NOTE: MATERIAL INGREDIENT REPORTING ONLY FOR ANODIZED PRODUCTS.**

3. Material Ingredient Reporting:
  - a. Include documentation for material reporting that has a complete list of chemical ingredients to at least 100ppm (0.01%) that covers 100% of the product.
- B. Shop Drawings: Include plans, elevations, sections, details, hardware, and attachments to other work, operational clearances and installation details.
- C. Samples for Initial Selection: For units with factory-applied color finishes including samples of hardware and accessories involving color selection.
- D. Samples for Verification: For aluminum-framed storefront system and components required.

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.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.  
Kawneer Company, Inc., 2010

- F. Fabrication Sample: Of each vertical-to-horizontal intersection of aluminum-framed systems, made from 12" (304.8 mm) lengths of full-size components and showing details of the following.
  - 1. Joinery.
  - 2. Anchorage.
  - 3. Expansion provisions.
  - 4. Glazing.
  - 5. Flashing and drainage.
- G. Other Action Submittals.
  - 1. Entrance Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

## 1.6 Quality Assurance

- A. Installer Qualifications: An installer which has had successful experience with installation of the same or similar units required for the project and other projects of similar size and scope.
- B. Manufacturer Qualifications: A manufacturer capable of providing aluminum-framed storefront system that meet or exceed performance requirements indicated and of documenting this performance by inclusion of test reports, and calculations.
- C. Source Limitations: Obtain aluminum-framed storefront system through one source from a single manufacturer.
- D. Product Options: Drawings indicate size, profiles, and dimensional requirements of aluminum-framed storefront system and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements". Do not modify size and dimensional requirements.
  - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Build mockup for type(s) of storefront elevation(s) indicated, in location(s) shown on Drawings.
- F. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination".
- G. Structural-Sealant Glazing: Comply with ASTM C 1401, "Guide for Structural Sealant Glazing" for design and installation of structural-sealant-glazed systems.
- H. Structural-Sealant Joints: Design reviewed and approved by structural-sealant manufacturer.

## 1.7 Project Conditions

- A. Field Measurements: Verify actual dimensions of aluminum-framed storefront openings by field measurements before fabrication and indicate field measurements on Shop Drawings.

## 1.8 Warranty

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty.
  - 1. Warranty Period: Two (2) years from Date of Substantial Completion of the project provided however that the Limited Warranty shall begin in no event later than six months from date of shipment by manufacturer.

## PART 2 - PRODUCTS

### 2.1 Manufacturers

*EDITOR NOTE: CHOOSE IR 500 OR IR 501 FRAMING*

- A. Basis-of-Design Product.

- |     |                                                     |
|-----|-----------------------------------------------------|
| FSC | 1. Kawneer Company Inc..                            |
|     | 2. IR 500 Framing (Non-Thermal).                    |
|     | 3. IR 501 Framing (Non-Thermal).                    |
|     | 4. IR 501 Framing (Non-Thermal) - Blast Mitigation. |

- C. Substitutions: Refer to Substitutions Section for procedures and submission requirements.
  - 1. Pre-Contract (Bidding Period) Substitutions: Submit written requests ten (10) days prior to bid date.
  - 2. Post-Contract (Construction Period) Substitutions: Submit written request in order to avoid storefront installation and construction delays.
  - 3. Product Literature and Drawings: Submit product literature and drawings modified to suit specific project requirements and job conditions.
  - 4. Certificates: Submit certificate(s) certifying substitute manufacturer (1) attesting to adherence to specification requirements for storefront system performance criteria, and (2) has been engaged in the design, manufacture and fabrication of aluminum storefront for a period of not less than ten (10) years. (Company Name)
  - 5. Test Reports: Submit test reports verifying compliance with each test requirement required by the project.
  - 6. Samples: Provide samples of typical product sections and finish samples in manufacturer's standard sizes.
- D. Substitution Acceptance: Acceptance will be in written form, either as an addendum or modification, and documented by a formal change order signed by the Owner and Contractor.

## 2.2 Materials

- A. Aluminum Extrusions: Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" (1.8 mm) wall thickness at any location for the main frame and complying with ASTM B 221: 6063-T6 alloy and temper.

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**\* IF RECYCLED CONTENT REQUIREMENTS ARE NOT SPECIFIED - PRIME (ZERO RECYCLED CONTENT) ALUMINUM COULD BE SUPPLIED.**

- 1. Recycled Content: Shall have a minimum of 50% mixed pre- and post-consumer recycled content.
  - a. Indicate recycled content; indicate percentage of pre-consumer and post-consumer recycled content per unit of product.
  - b. Indicate relative dollar value of recycled content product to total dollar value of product included in project.
  - c. Indicate location recovery of recycled content.
  - d. Indicate location of manufacturing facility.
- B. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum members, trim hardware, anchors, and other components.
- C. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.
- D. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.
- E. Sealant: For sealants required within fabricated storefront system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
- F. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.

**EDITOR NOTE: RED LIST FREE ONLY FOR ANODIZED PRODUCTS.**

- G. Red List Free: All parts and materials comply with the Living Building Challenge/DECLARE Red List and the Cradle-to-Cradle (C2C) Banned List.
  - 1. PVC free.
  - 2. Neoprene free.

OR

- H. Red List Free: Product does not contain PVC or Neoprene.

## 2.3 Storefront Framing System

- A. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.
- B. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials. Where exposed shall be stainless steel.
- C. Perimeter Anchors: When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.
- D. Packing, Shipping, Handling and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels

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.

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Kawneer Company, Inc., 2010

## 2.4 Glazing Systems

- A. Glazing: As specified in Division 08 Section "Glazing".
- B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, extruded EPDM rubber.
- C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.
- D. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.
- E. Glazing Sealants: For structural-sealant-glazed systems, as recommended by manufacturer for joint type, and as follows:
  - 1. Structural Sealant: ASTM C 1184, single-component neutral-curing silicone formulation that is compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant and approved by a structural-sealant manufacturer for use in aluminum-framed systems indicated.
    - a. Color: Black.
  - 2. Weatherseal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; single-component neutral-curing formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and aluminum-framed-system manufacturers for this use.
    - a. Color: Matching structural sealant.

## 2.5 Entrance Door Systems

- A. Entrance Doors: As specified in Division 084113 Section "Aluminum-Framed Entrances and Storefronts".
- B. Entrance Door Hardware: As specified in Division 084113 Section "Door Hardware".

## 2.6 Accessory Materials

- A. InLighten™ Light Shelf: aluminum light shelf system consisting of anchor channels, support beams, fascia trims and Aluminum Composite Material (ACM) panels that is anchored directly to the intermediate horizontal members.
  - 1. Light Shelf: Interior mounted shelf to reflect daylight deeper into interior space.
  - 2. Light Shelf System to consist of.
    - a. Aluminum Composite Material (ACM) panel, 4mm thick.
    - b. Translucent polycarbonate panel, 4mm/16mm thick.
    - c. ACM finish on upper and lower surface shall be selected from Kawneer standard finishes.
    - d. Extruded aluminum outriggers and fascia.
    - e. Extruded aluminum anchor designed to secure to compatible verticals of framing system. Anchor shall be designed to engage shelf so as to allow the shelf to rotate down and hang on its own safely for cleaning.
    - f. Extruded aluminum shear blocks designed to hinge on the anchors to allow rotating individual shelves for cleaning.
    - g. Panel /Shelf projection shall not exceed 30" (762mm).
    - h. Mullion spacing of framing system shall not exceed 6' (1.83 m) on center.
    - i. Panel /Shelf deflection shall not exceed L/120 of horizontal span length.
  - 3. Framing System to Support Light Shelf shall be. (select appropriate framing system)
    - a. Curtain Wall framing system.
    - b. Storefront framing system.
  - 4. Submittals.
    - a. Manufacturer's Installation Instructions.
    - b. Samples for Verification.
      - 1) Factory applied finish as selected by architect.
      - 2) Functioning Light Shelf sample demonstrating operation.
    - c. Shop Drawing including.
      - 1) Plans, elevations, sections, fabrication and installation details.
      - 2) Validation from manufacture of single-source for light shelf and framing system and compatibility between the system.
- B. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 07 Section "Joint Sealants".
- C. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30 mil (0.762 mm) thickness per coat.

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**2.7 Fabrication**

- A. Framing Members, General: Fabricate components that, when assembled, have the following characteristics.
  - 1. Profiles that are sharp, straight, and free of defects or deformations.
  - 2. Accurately fit joints; make joints flush, hairline and weatherproof.
  - 3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
  - 4. Physical and thermal isolation of glazing from framing members.
  - 5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
  - 6. Provisions for field replacement of glazing.
  - 7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- B. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
- C. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.
- D. Storefront Framing: Fabricate components for assembly using manufacturer's standard installation instructions.
- E. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

**2.8 Aluminum Finishes**

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Factory Finishing.
  - 1. Kawneer Permanodic™ AA-M10C21A44 / AA-M45C22A44, AAMA 611, Architectural Class I Color Anodic Coating (Color \_\_\_\_\_).
  - 2. Kawneer Permanodic™ AA-M10C21A41 / AA-M45C22A41, AAMA 611, Architectural Class I Clear Anodic Coating (Color #14 Clear) (Optional).
  - 3. Kawneer Permanodic™ AA-M10C21A31, AAMA 611, Architectural Class II Clear Anodic Coating (Color #17 Clear) (Standard).
  - 4. Kawneer Permafluor™ (70% PVDF), AAMA 2605, Fluoropolymer Coating (Color \_\_\_\_\_).
  - 5. Kawneer Permadize™ (50% PVDF), AAMA 2604, Fluoropolymer Coating (Color \_\_\_\_\_).
  - 6. Kawneer Permacoat™ AAMA 2604, Powder Coating (Color \_\_\_\_\_). **Colour to be Selected by Architect**
  - 7. Other: Manufacturer \_\_\_\_\_ Type \_\_\_\_\_ Color \_\_\_\_\_.

**FSC****PART 3 - EXECUTION****3.1 Examination**

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather tight aluminum-framed storefront installation.
  - 1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
  - 2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches (76 mm) of opening.
  - 3. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
  - 4. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 Installation**

- A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing aluminum-framed storefront system, accessories, and other components.
- B. Install aluminum-framed storefront system level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- C. Set sill members in bed of sealant or with gaskets, as indicated, for weather tight construction.
- D. Install aluminum-framed storefront system and components to drain condensation, water penetrating joints, and moisture migrating within aluminum-framed storefront system to the exterior.
- E. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

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### 3.3 Field Quality Control

- A. Field Tests: Architect shall select storefront units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured. Conduct tests for air infiltration and water penetration with manufacturer's representative present. Tests not meeting specified performance requirements and units having deficiencies shall be corrected as part of the contract amount.
  - 1. Testing: Testing shall be performed by a qualified independent testing agency. Refer to Testing Section for payment of testing and testing requirements. Testing Standard per AAMA 503, including reference to ASTM E 783 for Air Infiltration Test and ASTM E 1105 Water Infiltration Test.
    - a. Air Infiltration Tests: Conduct tests in accordance with ASTM E 783. Allowable air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft<sup>2</sup>, whichever is greater.
    - b. Water Infiltration Tests: Conduct tests in accordance with ASTM E 1105. No uncontrolled water leakage is permitted when tested at a static test pressure of two-thirds the specified water penetration pressure but not less than 6.2 psf (300 Pa).
- B. Manufacturer's Field Services: Upon Owner's written request, provide periodic site visit by manufacturer's field service representative.

### 3.4 Adjusting, Cleaning, and Protection

- A. Clean aluminum surfaces immediately after installing aluminum-framed storefronts. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- B. Clean glass immediately after installation. Comply with glass manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

### DISCLAIMER STATEMENT

This guide specification is intended to be used by a qualified construction specifier. The guide specification is not intended to be verbatim as project specification without appropriate modifications for the specific use intended. The guide specification must be used and coordinated with the procedures of each design firm, and the particular requirements of a specific construction project.

### END OF SECTION 084113

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.

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# IR 500/501/501T/501UT Framing Systems and 350/500 IR Entrances

Single-Source  
Hurricane Resistant  
Solutions and More



Cancer Center of Sacred Heart Hospital, Pensacola, Florida  
Architect: Caldwell Associates Architects, Pensacola, Florida  
Customer: Merritt Glass Co, Inc., Pensacola, Florida  
Photo: © CJ Berg Photographics

Kawneer provides a single-source solution to the growing need for hurricane resistant products in the east and Gulf Coast states from New York through Texas. IR 500/501 Series Framing Systems and 350/500 IR Entrances are large missile impact resistant, fully tested and easy to fabricate and install. In addition, IR 501T and IR 501UT framing provides improved thermal performance to increase energy efficiency by employing IsoLock™ thermal breaks.

Our hurricane resistant framing systems are designed and engineered for single-span storefronts, low- to mid-rise ribbon window and punched opening applications.

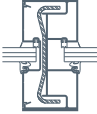
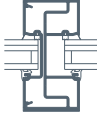
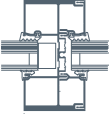
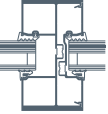
## Testing

IR 500/501 Framing Systems are tested to high velocity hurricane zone requirements of the international building code and Florida building code, which meet ASTM E 1886 and TAS 201 and TAS 203 for impact and cycle pressure differentials. Additionally, all of our systems have been tested to ASTM E 331, ASTM E 283 and ASTM E 330 for air, water and structural performance.

For thermal and acoustical performance, IR 501T/IR 501UT have been tested to AAMA 1503, AAMA 1801 and ASTM E 1425.

## Fabrication

All the IR 500/501/501T/501UT Framing Systems offer a flush glazed look with either interior structural silicone seal (wet glazed) or optional EPDM gasket (dry glazed) for large missile applications. Screw spline fabrication provides the option to pre-assemble units with controlled shop labor costs and smaller field crews. The framing systems are center glazed from the exterior side and are designed to accept 350/500 IR Entrances.

	IR 500	IR 501	IR 501T/IR 501UT	IR 501T/IR 501UT
Typical Detail			 3-Piece Mullion	 2-Piece Mullion
Sightline	2-1/2" (63.5 mm)	2-1/2" (63.5 mm)	2-3/4" (69.85 mm)	2-3/4" (69.85 mm)
System Depth	5" (127 mm)	5" (127 mm)	5" (127 mm)	5" (127 mm)
Infill Options	9/16", 5/8" (Impact), 1/4" (Non-Impact)	1-5/16" (Impact), 1" (Non-Impact)	1-5/16" (Impact)	1-5/16" (Impact)
Thermal	No	No	IsoLock™ Thermal Breaks	IsoLock™ Thermal Breaks
Hurricane Resistant Tested	Large Missile	Small Missile Large Missile	Small Missile Large Missile	Small Missile Large Missile



Tarpon Springs Public Safety Building, Tarpon Springs, Florida  
Architect: Gee & Jenson, Engineers, Architects, Planners, Inc.,  
West Palm Beach, Florida  
Glazing Contractor: Ashe Glass & Mirror, Temple Terrace, Florida  
Photo © Gordon Schenck, Jr.



L-R: IR 500, IR 501UT and IR 501 Framing

## 350/500 IR Entrances

Entrances are 1-3/4" (44.45 mm) deep and provide the extra strength for applications where more stringent code requirements call for windborne debris protection.



## Testing

350/500 IR Entrances are tested to the High Velocity Hurricane Zone requirements of the International Building Code and Florida Building Code. Meeting ASTM E 1886, and TAS 201 and TAS 203 for impact and cycle pressure differentials.

## Features

350 IR Entrances feature standard 3-1/2" (88.9 mm) vertical stiles, 3-1/2" (88.9 mm) top rails and 6-1/2" (165.1 mm) bottom rails. 500 IR Entrances feature standard 5" (127 mm) vertical stiles, 5" (127 mm) top rails and 6-1/2" (165.1 mm) bottom rails. Bottom rail options are 7-1/2" (190.5 mm) and 10" (254 mm) for aesthetics or applications where higher bottom rails are required to meet local building codes. 350/500 IR Entrances are single acting and available in singles or pairs to suit any project. The entrances feature the proven Dual Moment welded corner construction with 16 welds per door and Kawneer's Limited Lifetime Warranty.

Standard hinging hardware includes top, bottom and intermediate offset pivots, 1-1/2" pair of butt hinges or continuous geared hinges. Standard MS 1850 three-point locks are available as well as concealed vertical rod exit device hardware options.



Entrances accommodate 1/4", 7/16" and 9/16" impact resistant glazing infills using square glass stops with an interior silicone seal. Additional glazing options include 3M VHB Structural Glazing Tape and dry/dry glazing gaskets. Pairs include an adjustable astragal, utilizing pile weathering with a polymeric fin at the meeting stiles, and all doors include an EPDM blade gasket at the threshold. Polymeric bulb weather stripping is used in the door frames.

Standard door jambs, transom bars and headers from the IR 500/501/501T/501UT Framing Systems are designed for use with 350/500 IR Entrances. Optional door frames include Trifab™ VersaGlaze™ 450 center glazed, Trifab™ VersaGlaze™ 451 center glazed, and 1600 Wall System™ sub-frames.

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AN ARCONIC COMPANY

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Trifab™, VersaGlaze™, IsoLock™ and 1600 Wall System™ are trademarks of Kawneer Company, Inc.





## FSC-Bldg

# IR 500/501/501T/501UT Framing Systems and 350/500 IR Entrances

Single-Source  
Hurricane Resistant  
Solutions and More



Cancer Center of Sacred Heart Hospital, Pensacola, Florida  
Architect: Caldwell Associates Architects, Pensacola, Florida  
Customer: Merritt Glass Co, Inc., Pensacola, Florida  
Photo: © CJ Berg Photographics

Kawneer provides a single-source solution to the growing need for hurricane resistant products in the east and Gulf Coast states from New York through Texas. IR 500/501 Series Framing Systems and 350/500 IR Entrances are large missile impact resistant, fully tested and easy to fabricate and install. In addition, IR 501T and IR 501UT framing provides improved thermal performance to increase energy efficiency by employing IsoLock™ thermal breaks.

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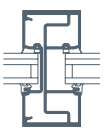
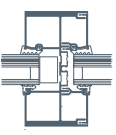
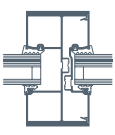
### Testing

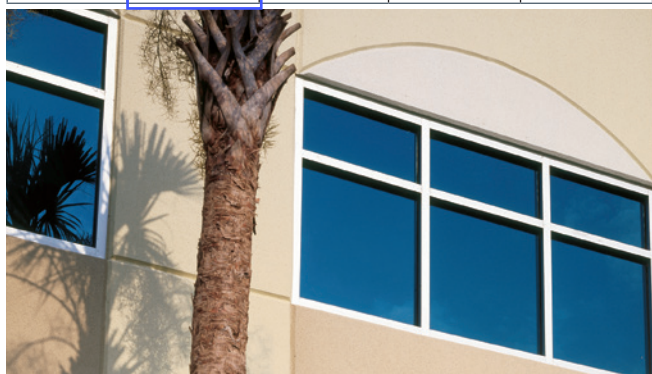
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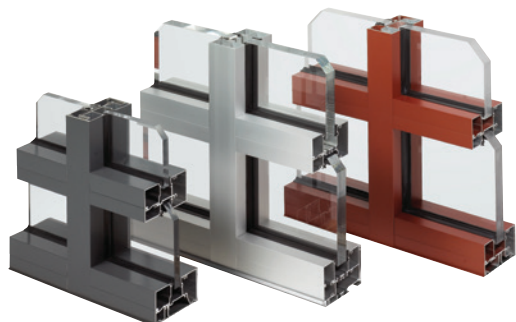
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	IR 500	IR 501	IR 501T/IR 501UT	IR 501T/IR 501UT
Typical Detail				
Sightline	2-1/2" (63.5 mm)	2-1/2" (63.5 mm)	2-3/4" (69.85 mm)	2-3/4" (69.85 mm)
System Depth	5" (127 mm)	5" (127 mm)	5" (127 mm)	5" (127 mm)
Infill Options	9/16", 5/8" (Impact), 1/4" (Non-Impact)	1-5/16" (Impact), 1" (Non-Impact)	1-5/16" (Impact)	1-5/16" (Impact)
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Tarpon Springs Public Safety Building, Tarpon Springs, Florida  
 Architect: Gee & Jenson, Engineers, Architects, Planners, Inc.,  
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 Photo © Gordon Schenck, Jr.



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# GLASSvent™ UT (Ultra Thermal) Windows

Best-in-Class Thermal Performance  
in a Visually Concealed Vent



Never before has something so seamless offered so much thermal performance. GLASSvent™ UT (Ultra Thermal) Windows are visually frameless concealed vents designed to provide a ventilation option for curtain wall with high thermal performance. The extraordinary thermal performance of GLASSvent™ UT (Ultra Thermal) Windows exceeds the thermal standards of many high-performing framing systems. Engineered for seamless integration with the 1600UT System™1 Curtain Wall, GLASSvent™ UT (Ultra Thermal) Windows can also be inserted into other Kawneer captured curtain walls and front set framing systems.

In addition to meeting code requirements, GLASSvent™ UT (Ultra Thermal) Windows are the ideal solution for architects and designers who want to provide fresh-air ventilation without sacrificing thermal performance in curtain wall or storefront applications. As with all Kawneer windows, this ultra thermal vent is made from material that will never rot, warp or buckle due to moisture and weather exposure.

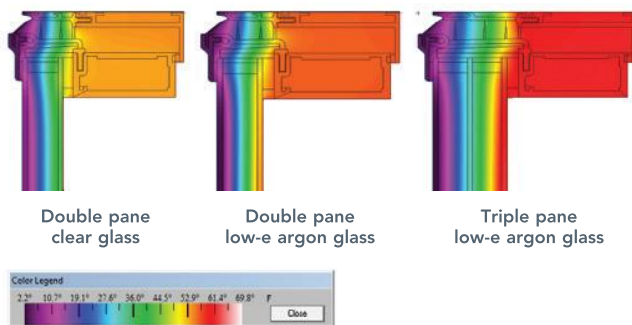


## Performance

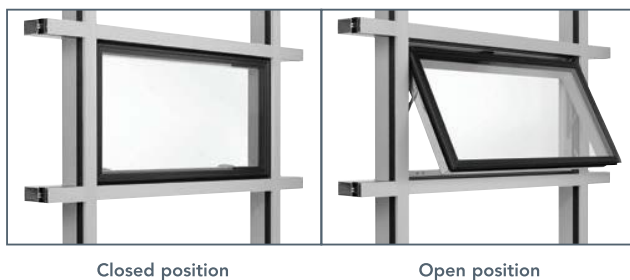
This high-performance vent is available for integration with curtain wall and framing systems to create a complete, advanced, thermally superior solution for commercial construction. GLASSvent™ UT (Ultra Thermal) Windows are engineered to meet or exceed the minimum requirements for the architectural window performance class, including life-cycle testing – the highest level attainable.

GLASSvent™ UT (Ultra Thermal) Windows have been rigorously tested to both AAMA and CSA standards for air, water, structural, thermal and condensation performance. Both 1" (25.4 mm) and 1-3/4" (44.5 mm) insulating glass options are available for superior sound and enhanced thermal benefits.

Thermal simulations show temperature variations from exterior/cold side to interior/warm side of GLASSvent™ UT (Ultra Thermal) Windows.



Exterior view of GLASSvent™ UT (Ultra Thermal) Window in curtain wall



## Performance Test Standards

Air Infiltration	ASTM E283
Water	ASTM E331, E547
Structural – Uniform Wind Load	ASTM E330
Thermal Cycling	AAMA 501.5
Thermal Transmittance – U-Factor	AAMA 1503, 507; NFRC 100
Condensation Resistance (CRF, I, CR)	AAMA 1503; CSA A440.2; NFRC 500
Overall Solar Heat Gain Coefficient (SHGC, VT)	AAMA 507; NFRC 200
Sound Transmission (STC, OITC)	ASTM E90, E1425; AAMA 1801

## Fabrication and Installation

GLASSvent™ UT (Ultra Thermal) Windows are available with the option to buy the window factory glazed by Kawneer or open for glazing by the window installer.

The flexibility of GLASSvent™ UT (Ultra Thermal) Windows gives architects an ultra thermal option that combines high-performance vents with high-performance curtain walls and storefront systems, including the 1600UT System™ 1 Curtain Wall.

## Aesthetics and Design Options

The innovative, patent-pending design of GLASSvent™ UT (Ultra Thermal) Windows provides a sleek ventilation alternative for Kawneer curtain walls and storefront framing systems. Vents are available as project-out or outswing casement windows without the exterior aluminum profile sightlines experienced with typical operating vents. More than a streamlined appearance, GLASSvent™ UT (Ultra Thermal) Windows also deliver a convenient means for architects to ventilate with fresh air, which has been shown to improve indoor air quality, as well as improve occupant comfort, well-being and productivity.

Attractive stainless steel four-bar hinges provide positive control for trouble-free operation. Durable cast white bronze locking hardware delivers strength and security, and integral frame-mounted insect screens ensure building occupant comfort.

Interior view of GLASSvent™ UT (Ultra Thermal) Window in curtain wall



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Carson Push Button Lever - Storeroom

439CNL 15

★★★★★

[Write a review](#)

[Ask a question](#)

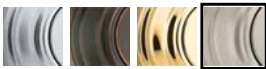


Function:

Keyed Entry

Finish:

Satin Nickel



Features

- For use on exterior doors where keyed entry and security is needed
- Featuring SmartKey Security™, which protects against advanced break-in techniques and allows you to re-key your lock yourself in seconds.
- SmartKey Security™ re-key technology is compatible with Kwikset (KW1) keyway
- Comes with 2 keys Latch has round corner faceplate

- Meets ADA/ANSI A117.1 requirements, ensuring accessibility to all disabled persons
- ANSI/BHMA grade 3 certified
- Locking mechanism functions by pressing the push button on the interior of the lock
- Easily installs in minutes with just a screwdriver
- Lifetime Mechanical, 5 Year Finish

Similar Products



# Carson Push Button Lever - Pull Only

488CNL 15

★★★★★ [Write a review](#) [Ask a question](#)

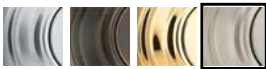


For use on interior doors where a push/pull function is required

Meets ADA/ANSI A117.1 requirements, ensuring accessibility to all disabled persons

**Function:**  
Pull Only

**Finish:** Satin Nickel



## Features

Fully reversible lever, can be installed on both right handed and left handed doors

Easily installs in minutes with just a screwdriver

Lifetime Mechanical, 5 Year Finish

## Similar Products



4 Finishes



4 Finishes

# Carson Push Button Lever - Bed/Bath

408CNL 15

★★★★★ 5.0 (1) [Write a review](#) [Ask a question](#)



**Function:**  
Bed and Bath

**Finish:** Satin Nickel



## Features

- For use on interior doors where a privacy locking function is required, such as a bedroom or bathroom
- Latch is 20 minute fire rated with round corner face
- Meets ADA/ANSI A117.1 requirements, ensuring accessibility to all disabled persons
- ANSI/BHMA grade 3 certified
- Latch has adjustable backset 2-3/8" to 2-3/4" to fit all standard door preparations

- Locking mechanism functions by pressing the push button on the interior of the lock
- Meets or exceeds Underwriter Laboratories (UL) testing requirements specified for each product grade or rating
- Fully reversible lever, can be installed on both right handed and left handed doors
- Easily installs in minutes with just a screwdriver
- Lifetime Mechanical, 5 Year Finish

## Similar Products



# Carson Push Button Lever - Keyed - with Pin & Tumbler

438CNL 15

★★★★★ [Write a review](#) [Ask a question](#)



**Function:**  
Keyed Entry

**Finish:** Satin Nickel



## Features

- For use on exterior doors where keyed entry and security is needed
- Comes with 2 keys
- Latch is 20 minute fire rated with round corner face
- Meets ADA/ANSI A117.1 requirements, ensuring accessibility to all disabled persons
- ANSI/BHMA grade 3 certified
- Latch has adjustable backset 2-3/8" to 2-3/4" to fit all standard door preparations

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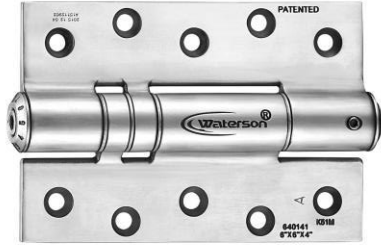
## Similar Products





# Waterson® 3 in 1 Self-closing Hinge

## For Metal / Fire-rated Door



K51M-640



K51M-645



K51M-650



K51M-655



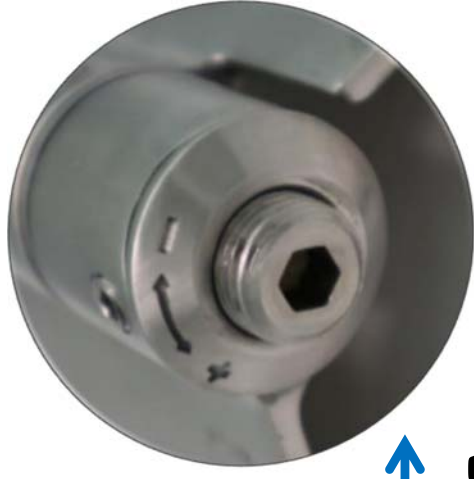
K51M-660

# Stainless Steel hinge - For Wood/Metal/Fire-Rated Doors

Full Name	Door Thickness	Mortise Width (min)	Mortise Depth (min)	Gap of the hinged side (non-mortise)
6" x 4" Auto Door-Closer Hinge	40-45 mm	33.5mm	4.06 mm	10 mm
6" x 4.5" Auto Door-Closer Hinge	45-50 mm	38.5mm		
6" x 5" Auto Door-Closer Hinge	50-55 mm	43.5mm		
6" x 5.5" Auto Door-Closer Hinge	55-60 mm	48.5mm		
6" x 6" Auto Door-Closer Hinge	60-65 mm	53.5mm		



**H** (Hydraulic Buffer)



**A1.A**<sub>(Mechanical Buffer)</sub>  
**B** (Hold-Open)

Top



Bottom



g Power)



g Power)

Plain Steel hinge Types - For Wood/Metal/Fire-Rated Doors

Top	Function	Bottom	Function	Mechanism
<b>S</b>	Spring power (provide closing power)	<b>S</b>	Spring power (provide closing power)	Spring power + Spring power
<b>S</b>	Spring power (provide closing power)	<b>A1</b>	Control closing speed in 0°-20°	Spring power + Mechanical buffer
<b>S</b>	Spring power (provide closing power)	<b>A</b>	Control closing speed in 20°-90°	Spring power + Mechanical buffer
<b>S</b>	Spring power (provide closing power)	<b>B</b>	Hold-open in 90°+/-5°	Spring power + Hold-open
<b>H</b>	Hydraulic Buffer	<b>S</b>	Spring power (provide closing power)	Hydraulic Buffer + Spring power
<b>H</b>	Hydraulic Buffer	<b>A</b>	Control closing speed in 20°-90°	Hydraulic Buffer + Mechanical buffer





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*Outside of USA: 01 630 529 7111***5 Days**[Home](#)[About Us](#)[Case Studies](#)[Dealers](#)[JOBS](#)

## 3.0 Shutters

# WORLD'S **smallest** SHUTTER BOX

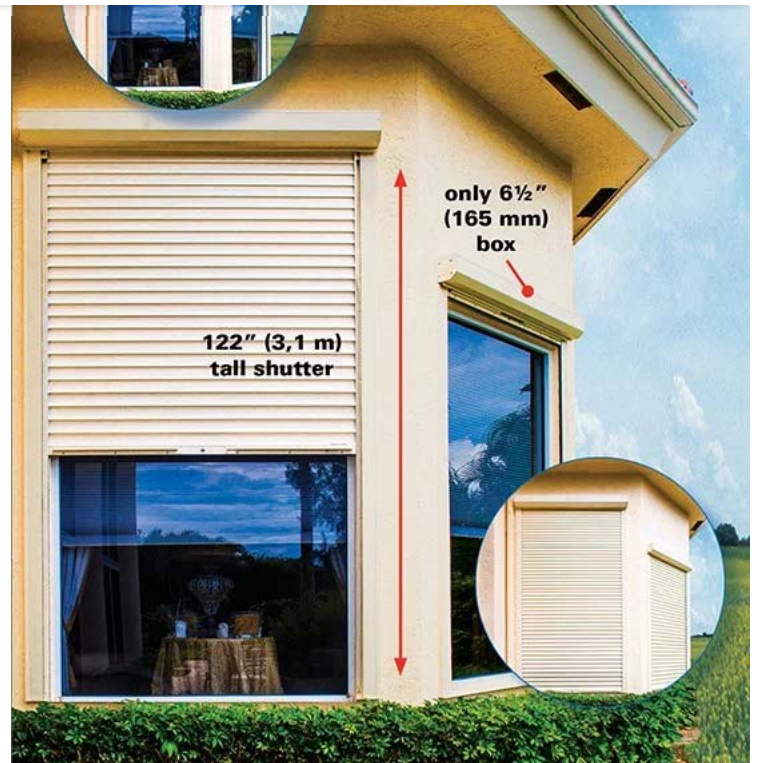
### ***Strong and Compact***

Traditional roll shutters require a large 10" – 12" (250 mm – 300 mm) housing, ruining the style and look of your home. Now, with the Qompact shutter system, an 84" (2,1 m) tall opening will require only a compact 6" (150 mm) housing. That is 40 – 50% smaller, creating a much more appealing installation.

### ***Smooth and Quiet***

The Qompact® shutter system is available in manual and automatic operation. Using the patented nested design, the Qompact shutter system rolls smoothly and quietly 6/6 nylon bushings allow the shutter to glide smoothly through the security guides.





## Strong

Qompact combines premium design with unparalleled strength. The single-walled, extruded slats withstand sledge hammer impacts and hurricane impact tests.

In head-to-head tests, Qompact outperformed its foam-filled competitors every time.

## End Retention

End retention screws (shown below) keep the curtain captive in the rails. Qompact curtains can't be pried out with crowbars or pushed out of the rails due to high winds.

Note: Qompact can also be made without end retention where smaller siderails are sufficient.



00:20

03:25

*Qompact's end retention prohibits the curtain from being pushed out of the rails. Without end retention, the 40mm foamfilled curtain was easily compromised.*

*Qompact's end retention prohibits the curtain from being pushed out of the rails. Without end retention, the 40mm foamfilled curtain was easily compromised.*

## Hinge Strength

The improved slat design is 27 times stronger than a perforated 40mm slip hinge, making a Qompact shutter impenetrable by comparison.

00:13



## Hurricane Tested

## Residential Shutters

Home owners will love the quiet operation, elegant design, and security of the Qompact.

In addition to provacy and sun shading, Qompact uniquely provides security and hurricane protection.





Shutter Height	Qompact Box Size	Other Shutters Box Size
69" (1753 mm)	5.5" (140 mm)	8" (200 mm)
84" (2188 mm)	6" (150 mm)	10" (250 mm)
122" (3099 mm)	6.5" (165 mm)	12" (300 mm)
149" (3785 mm)	7" (180 mm)	12" (300 mm)
184" (4674 mm)	8" (205 mm)	14" (350 mm)

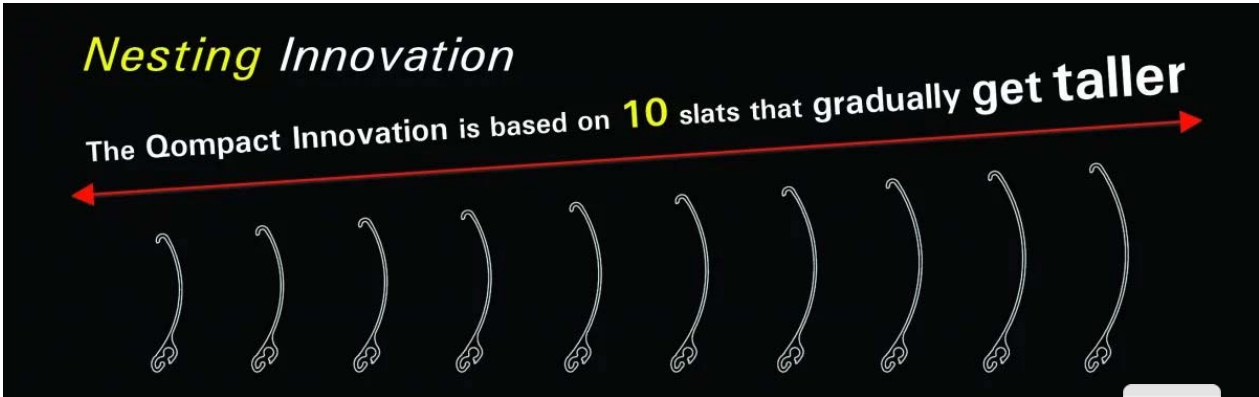


**Elegant Design and Engineered Excellence**

What makes the Qompact shutter system unique is the 10 different slat sizes that have been ingeniously engineered to allow the slats to nest tightly with each other. The nesting allows for virtually zero space between the slats, creating a compact roll and the smallest box housing required. Each slat grouping has a specific radius designed to accommodate the ever increasing roll diameter. This proprietary design means that each slat rolls together – perfectly.

**Commercial Shutters**

Qompact can be built both wider and taller than foam-filled shutters, making it the perfect choice for commercial applications. These shutters are widely used in the United States for their loss prevention and design benefits. Commercial shutters can be perforated for night time merchandising.



# The World's Smallest Shutter Box



## ***Sustainable***

### **The World's Most Sustainable Residential Roller Shutter**

- Qompact curtain is 100% Recyclable
- Qompact shutter is 99% Recyclable
- Qompact has No Foam Filling
- Qompact is 99% Aluminum
- Qompact is 60% Recycled
- Qompact has No Waste







# WORLD'S **smallest** SHUTTER

## **QOMPACT** BOX Shutter Controls

### *Qompact's Torsion Spring Assist Control Systems*

Qompact has a non-slip hinge, which allows for the use of a torsion spring inside the tube opposite the control mechanism.

### **Manual & Motorized Shutter Controls**

Our trained specialists walk you through the step-by-step selection process for designing the correct rolling shutter for your home.



position.

#### **Manual Strap**

A manual pull strap can be used on larger shutter sizes since the weight of the shutter is neutralized. The spring provides a counterbalance resulting in the shutter locking in the down



crank.

up to 6,5 sq meters

#### **Manual Gear**

The spring assist neutralizes the weight and enables gear operation for larger shutters and requires less effort to rotate the hand



#### **Manual Push-Up / Pull-Down**

Where most shutters require motors, the Qompact spring-operated shutter allows for push up/pull down operation. This saves on both

enable security, but allow for escape during fire or power failures. Spring operation is available up to 13 sq meters without motors or gears.



## Solar Powered Operation

Enjoy energy savings from a roller shutter that does not add to your energy cost. Because of its spring-loaded tube, Qcompact requires less power for operation. This makes it possible to operate Qcompact with a solar-powered battery.



## Motorized with Line Voltage (220v)

The torsion spring allows for smaller motors and extends motor life. It also acts as a safety feature that prohibits a failed motor to allow a shutter curtain to free-fall.  
up to 19 sq meters w/tube motors  
up to 30 sq meters w/external motors



## Hz/RTS Remote Control

Available in single and multi-channel applications  
No need to aim the control at the motorized window covering, the radio signal travels through the walls similar to a garage door opener. Provides the ability to control motorized window coverings individually and/or by group with one control. offers a range of 65 ft. for easy operation

## EZ Drive Low Voltage Motor (14.4v)

One smart drive controller operates multiple shutters  
Rechargeable battery power – no worries about power failure





## Box Housing Size is Reduced 30% to 50%



Note: Size chart at left is for shutters up to 12' (4M) wide. Shutters between 12' and 20' will have a small amount of tube deflection requiring a larger housing. Consult QMI engineering for exact size requirements for shutters exceeding 12' in width.

## Technical Aspects

**Slat type: Engineered roll-up with slat groupings increasing in size and radius to enable slats to nest around the drive tube to minimize housing size.**

- Aluminum Single Wall Slats: Extruded aluminum, 6063-T5 alloy. Solid slats with non-slip hinge.
- End Retention: both ends of each slat to contain #10 x 3" truss head torx 410 stainless steel Dacromet-coated screws with shoulder bushings permanently engaged into a channel within the side rail to prevent the curtain from being pried or pushed out of a non-retained side rail.
- Qcompact slats are not available in vision/perforated patterns. See AL7 security shutter for vision slat systems.

**Bottom Slat: Extruded aluminum, 6063-T6 alloy, 0.050 inch wall thickness.**

- See Level 7 Locks.
- Motorized shutters do not require a lock since the motor maintains the shutter curtain in the down position. A separate locking base slat is not required.
- Gear operated shutters do not require a separate locking base slat. Provide non-latching base slat.
- EZ drive operated shutters do not require a separate locking base slat. Provide non-latching base slat.

**Motor options: see Level 7 Motors and Overrides and HZ and remotes.**

**End Caps: Die-cast Aluminum (square) (45 degree) (round) profile. Color to match slats.**

**Box Cover (hood): Roll formed aluminum; .036 inch thickness, 3105-H14 alloy. Two-piece assembly-profile to match end caps. Color to match slats.**



- Motorized Rails: 3-5/8"x 1-1/8" retained only rail for motorized) or
- Manual Rails: 4-1/4" x 1-1/8" retained and stop rail for manual crank or manual push up/pull down.

**Drive Tube: Aluminum, 6063-T6 alloy – 70mm round with interior splines.**

Features

Advantages

Coil Size Benefits

The coil size is significantly smaller than traditional rolling shutter curtain slats due to its unique roll characteristics.

A reduced coil and box housing size gives customers more flexibility for soffit mounts. Smaller boxes offer less distraction from the home’s architecture.

Strength

The single wall extruded slats are very strong and have been subjected to sledge hammer impacts and hurricane impact tests. These products are hurricane-tested, and even with Qcompact’s small coil requirement, provides the utmost hurricane and security protection. Slat hinge exceeds 2600 lbs (1179 kg) pull apart strength-excellent for security

Competes with a steel shutter’s strength, but with the aesthetics of a smaller coil and the beauty of aluminum. Up to 10 times stronger than a perforated slip hinge found in most double wall slat systems.

End Retention

The unique roll characteristics provide the ability to install end retention screws to make the curtain captive in the rails. However, the curtain doesn’t require the end retention, and can utilize standard width rails in applications when the added security of the end retention feature is not required. Retained rails-every curtain slat has nearly 3,000 lbs (1361 kg) pull out strength due to two end retention screws.

Shutter curtains can’t be pried out with crowbars or pushed out of the rails due to high winds. Qcompact owners are very well protected from burglars and hurricane strength winds.



motors can be used when an assist spring is included. Torque motors can be used to operate very large shutters because the spring does the lifting.

When other shutters need motors, the Qompact’s easy manual push up, pull down operation can be used for shutters up to 150 sq. ft.. Or for very large shutters, save on the cost of larger motors and extend the life of those smaller motors with the aide of a torsion spring opposite the motor for many years of worry-free operation.

<b>Maximum Size</b>	Up to 180 sq ft. (32 square meters) in total size. Up to 200+ inches (5M) high. Up to 20 ft (6M) wide.
---------------------	--------------------------------------------------------------------------------------------------------

Larger maximum sizes gives you more flexibility. Protect a large opening with one shutter where other systems require two shutters and additional vertical supports obstructing your views.

<b>Corrosion Resistant</b>	Due to Dacromet-coated stainless steel end retention screws with Delrin® bushings.
----------------------------	------------------------------------------------------------------------------------

No worries about rust stains with Qompact shutters. Even seacoast applications are safe to weather the outdoors for many years.

<b>Operations</b>	Gear, low voltage, and motor drives with spring assists. Spring assist manual operation for up to 150 sq. ft. (16 square meters).
-------------------	-----------------------------------------------------------------------------------------------------------------------------------

Manual operation up to 160 sq. ft. (16 square meters) saves money over other shutter companies who must motorize and pay for electrical hookup. Spring-assisted gear drives make for smooth and easy operation. Our EZ drive system, a low voltage battery power, gives you more flexibility plus a simple motorized installation.





[Find by Product](#)[cts](#)[Photo Gallery](#)[Service Center](#)[Downloads](#)[Videos](#)[Motors & Automation](#)

maximum durability and to reduce warranty service. Our Qompact customers will experience carefree operation for many years. Keeping the rails cleared of debris and operating them often will extend their life and provide maximum protection.

#### OPTIONS

[Colors & Box Housings](#)  
[Control Options](#)  
[Installation & Mounting\(Download\)](#)

#### ACCESSORIES

[Locks & Styles](#)  
[Motors & Overrides](#)  
[HZ & Remotes](#)

#### SPECS

[3 Part CSI Specification](#)  
[Hurricane Approval Documents](#)

#### NEWS

[Global Innovation Prize](#)

#### FULL CATALOG



#### SERVICE

[Parts and Accessories](#)

[Customer Care](#)

[Warranty](#)

[Service Center](#)

#### TESTIMONIALS

"QMI's products have proven to be solid, non penetrating, and completely successful."

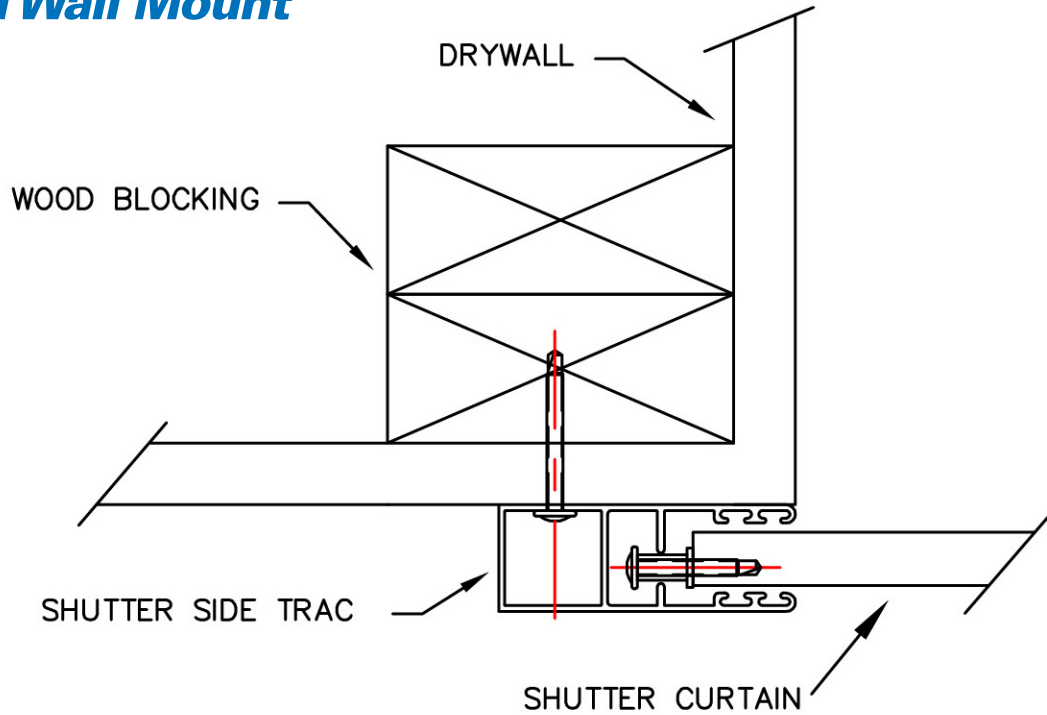
**-Retail Project Manager**

\*10 business day lead time on most products with std colors. Consult QMI sales for project specific lead times. Freight time is additional and typically 2-5 days.

[DEALERS](#)

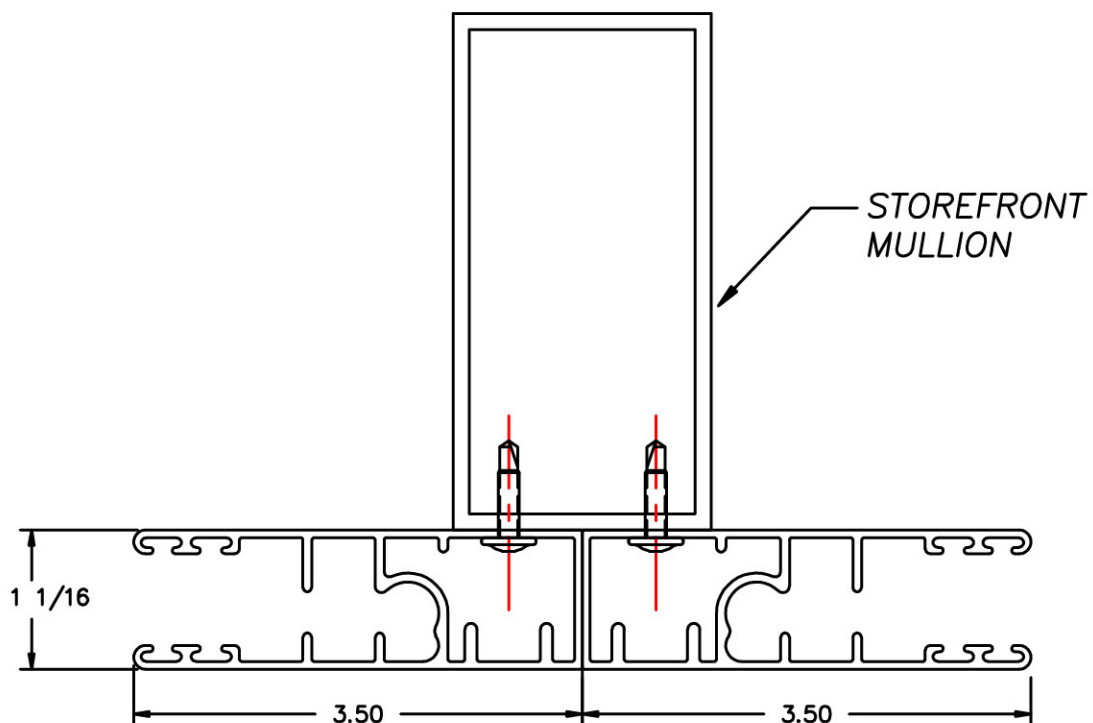
# Mounting Details

## Standard Wall Mount



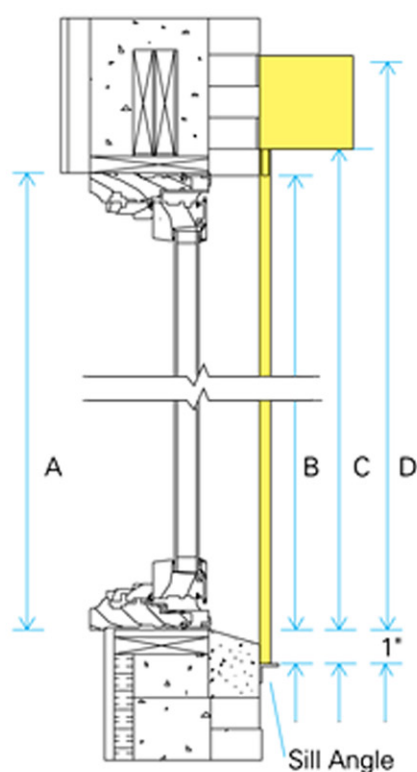
SHUTTER MOUNTING DETAIL  
THROUGH DRYWALL INTO WOOD

## Storefront Mullion Mount

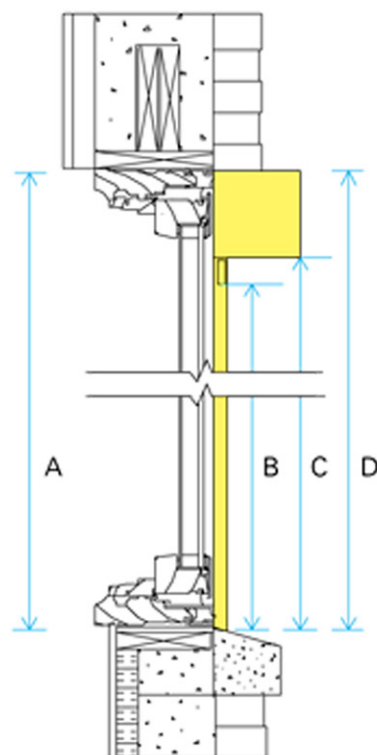


## Various Shutter Mounting Techniques

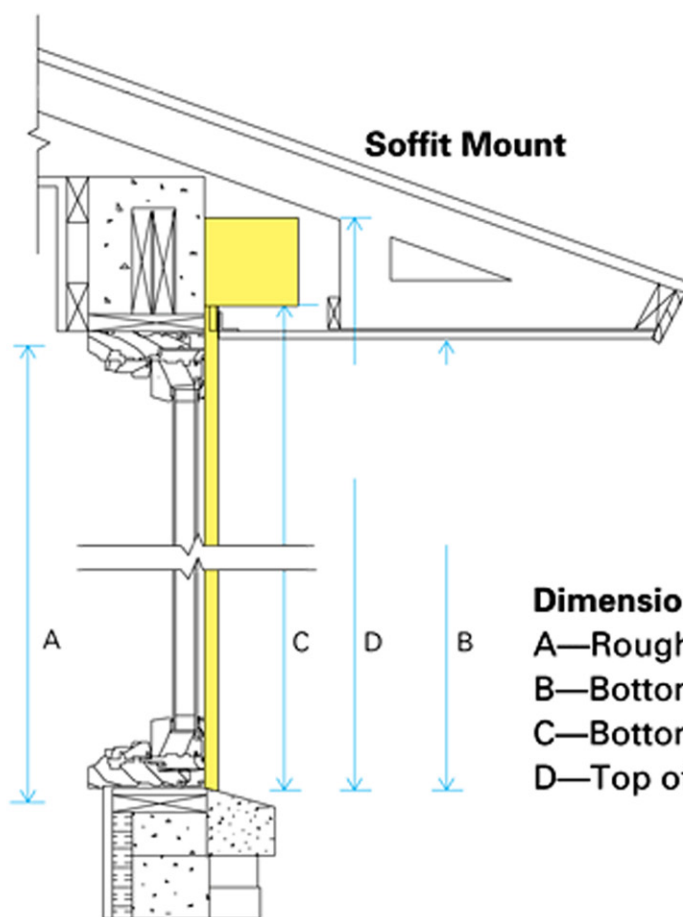
## Surface Mount



## Recess Mount



## Soffit Mount



### Dimension Codes

### A—Rough Opening

**B—Bottom of the Base Slat**

**C—Bottom of the Box**

### D—Top of the Box

## 4.0 Railings

# FIN<sup>TM</sup>

## RAILING SYSTEM

Mix it up! Warm woods and a stainless steel structure makes it a favorite with everyone. The attention to detail and slim design works well with transitional and modern design statements. Add a variety of infill panel options of glass types, perforated metal, and wire mesh; to create a unique statement. This is a popular interior option for hospital lobbies, residences and offices.

PRODUCT: FIN<sup>TM</sup> | INFILL: TEMPERED GLASS

SHAWNEE MISSION BIRTH CENTER  
MERRIAM, KS





# FIN™ RAILING SYSTEM SPECIFICATIONS

	MATERIAL	FINISH	SIZE / SPACING
POSTS	Composite Stainless Steel (304 or 316) & Wood (Red Oak, Cherry or Maple*)	#6 Satin	2.5" flat bar @ 5' max o.c.
		ECM †	
		Powder Coat ††	
		Unstained Wood	
INFILL	Glass	Clear, Tinted or Frit	Min 3/8" Laminated Glass (PVB or SGP) <sup>1</sup>
	Perforated Metal	#6 Satin or ECM †	1" wide frame
	Wire Mesh		1" wide frame
	Picket		0.5" Ø pickets
	Multiline	#6 Satin	0.5" Ø multiline
TOP RAIL / HAND RAIL	Stainless Steel	#6 Satin	1.5" Ø or 2" Ø
		ECM †	
	Stainless Steel w/ LED	#6 Satin 3000K**	1.5" Ø
		#6 Satin 4000K**	
	Red Oak, Cherry or Maple*	Unstained	2" Ø
	Red Oak, Cherry or Maple* with LED	Unstained 3000K**	
Unstained 4000K**			
<sup>1</sup> IBC 2015 and newer require glass in railings to be laminated. VIVA suggests SGP for exterior applications. Glass thickness may vary based on wind loads, elevation AFF, railing height, etc.		† See page 115 for ECM colored SS Options †† See page 113 for color options * Other species available upon request ** Available in high or medium intensity with clear or frosted lens.	

## MOUNT TYPE

		
Top	Fascia	Core

PRODUCT: FIN™ | INFILL: TEMPERED GLASS

SHAWNEE MISSION BIRTH CENTER  
MERRIAM, KS





## FIN™ RAILING SYSTEM

### INFILL: TEMPERED GLASS

Clear Laminated (PVB or SGP)

Bent

Tinted

Ceramic Frit

Patterned

Colored Interlayer

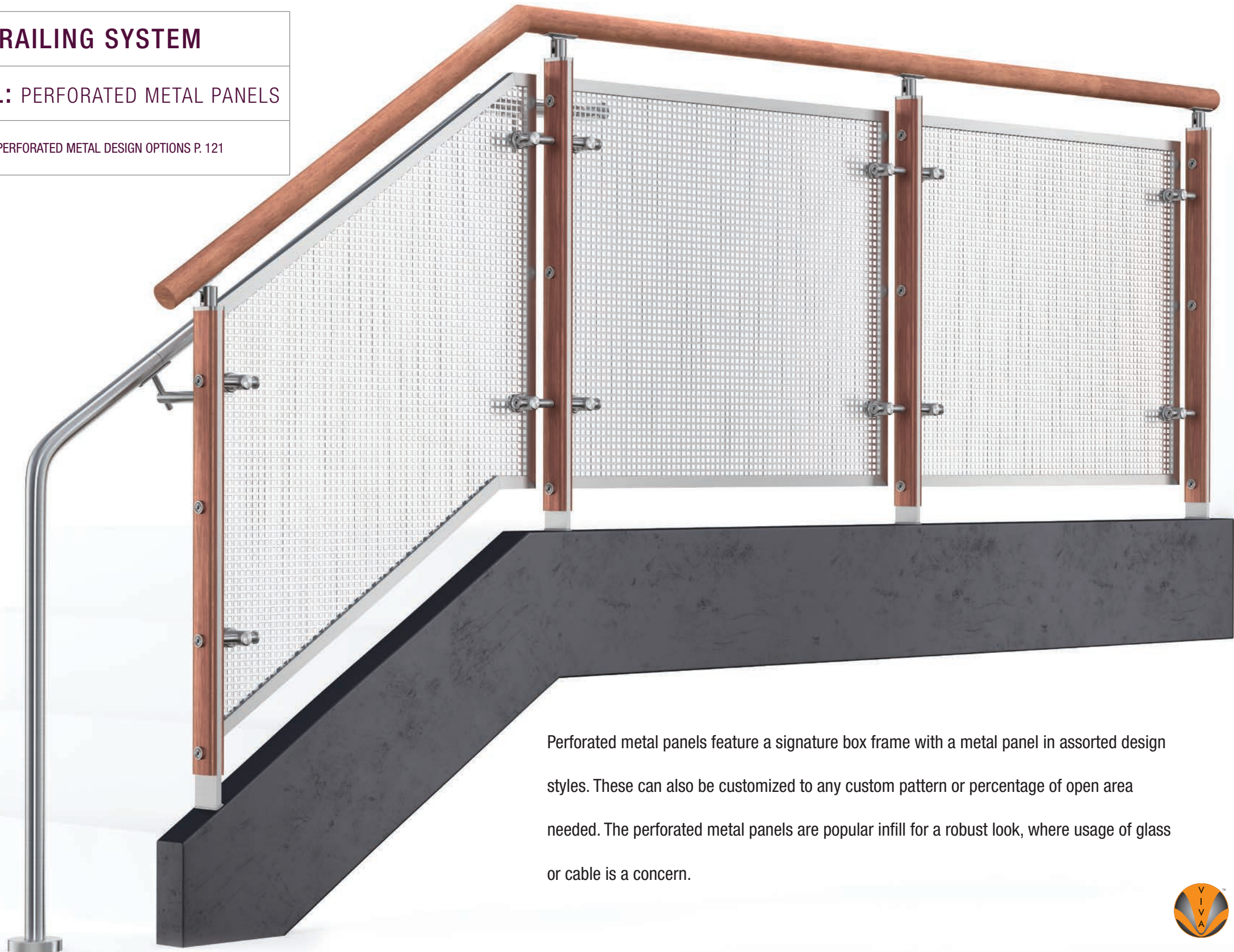
Tempered glass infills ranging from a minimum of 3/8" thk. Options include laminated safety glass. Colored, patterned and frosted glass are additional options based on design intent and need. The possibilities are endless.



## FIN™ RAILING SYSTEM

### INFILL: PERFORATED METAL PANELS

ADDITIONAL PERFORATED METAL DESIGN OPTIONS P. 121



Perforated metal panels feature a signature box frame with a metal panel in assorted design styles. These can also be customized to any custom pattern or percentage of open area needed. The perforated metal panels are popular infill for a robust look, where usage of glass or cable is a concern.





## FIN™ RAILING SYSTEM

### INFILL: WIRE MESH PANELS

ADDITIONAL WIRE MESH DESIGN OPTIONS P. 119

The wire mesh infill features an organic, interwoven fabric as an infill. Mesh infills are timeless and easy to maintain. The signature box frame completes the system for a clean, sharp look.

Available in a wide range of standard designs, with always a option of custom design and materials.







Labor & Delivery

PRODUCT: FIN™ | INFILL: TEMPERED GLASS

SHAWNEE MISSION BIRTH CENTER  
MERRIAM, KS

The Shawnee Mission Birth Center is home to over 5,000 mothers that chose to deliver their newborns here. This brand new facility upgrade by United Excel Corporation and Hoefer Wysocki Architects chose VIVA and the FIN™ system on the interior guardrail of this beautiful facility. The warm wood details coincide perfectly with the natural details within the architecture.

#### Project Details:

**Location:** Merriam, KS

**General Contractor:** United Excel Corporation

**Architect:** Hoefer Wysocki Architects

**Finish:** #6 Satin Stainless Steel, Teak Wood

**Infill:** Monolithic Tempered Glass



VIVA CUBE RAILING SYSTEM

RAILING OPTIONS

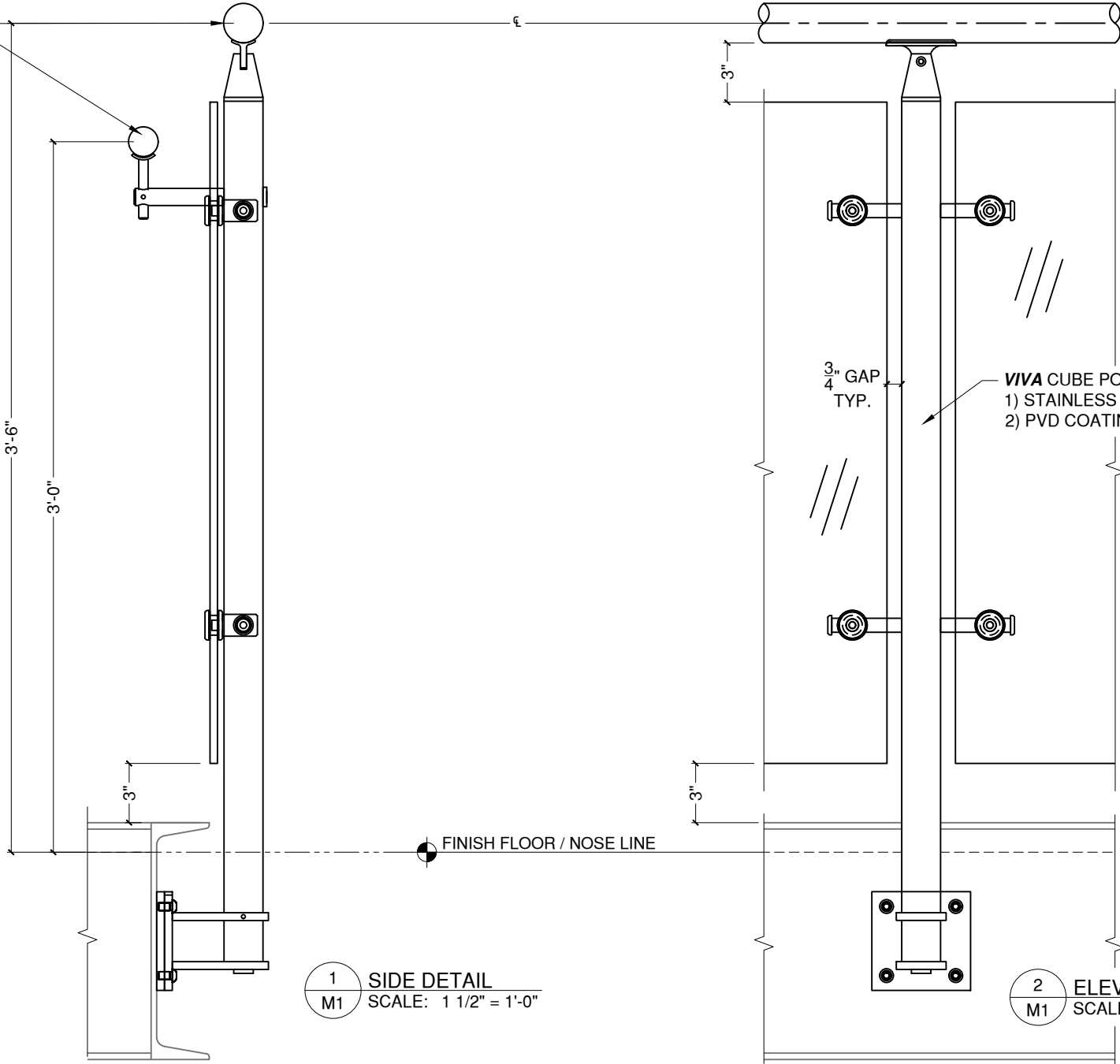
- 1) Ø 2" or Ø 1½" SS\*
- 2) Ø 2" WOOD
  - CHERRY
  - RED OAK
  - WHITE OAK
  - MAPLE
- 3) Ø 1½" LED iRAIL  
REF - M16

INFILL OPTIONS

GLASS	M10
WIRE MESH	M11
PERFORATED METAL	M12
CABLE	M13
VERTICAL PICKET	M14
HORIZONTAL MULTI-LINE	M15

MOUNTING OPTIONS

FASCIA MOUNT   CONCRETE	M17-M18
FASCIA MOUNT   STEEL	M19-M20
TOP MOUNT   CONCRETE	M21-M22
TOP MOUNT   STEEL	M23-M24



1 SIDE DETAIL  
M1 SCALE: 1 1/2" = 1'-0"

2 ELEVATION DETAIL  
M1 SCALE: 1 1/2" = 1'-0"

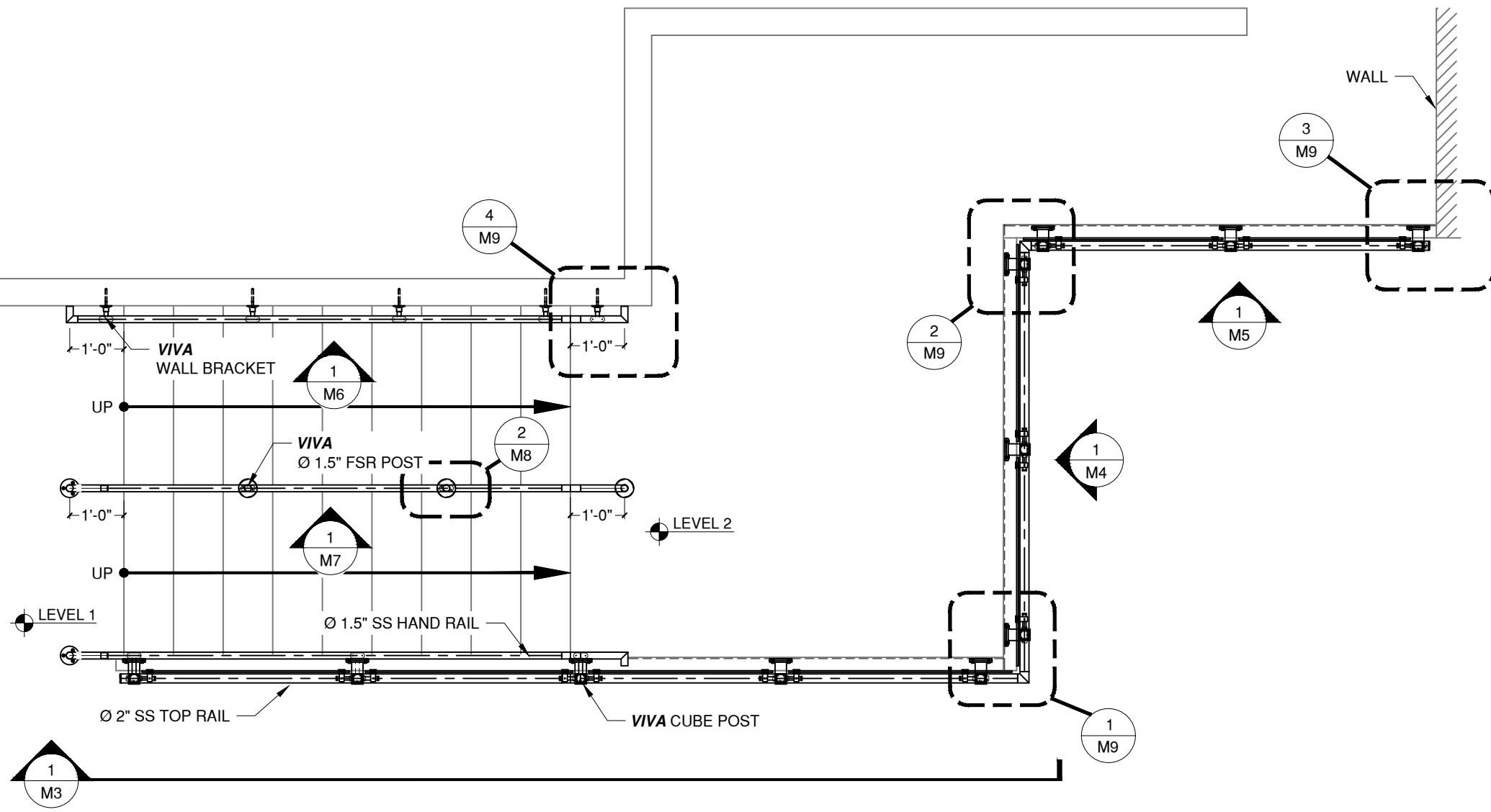


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1454 HALSEY WAY  
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P: 972-353-8482  
F: 972-353-0013  
e: info@vivarailings.com  
www.vivarailings.com

DESCRIPTION:  
VIVA CUBE SYSTEM  
PRODUCT DATA

DRAWN BY  
JCM  
SHEET NUMBER  
M1 OF M24





1  
 M2

PLAN - STAIR 1  
 SCALE: 3/8" = 1'-0"

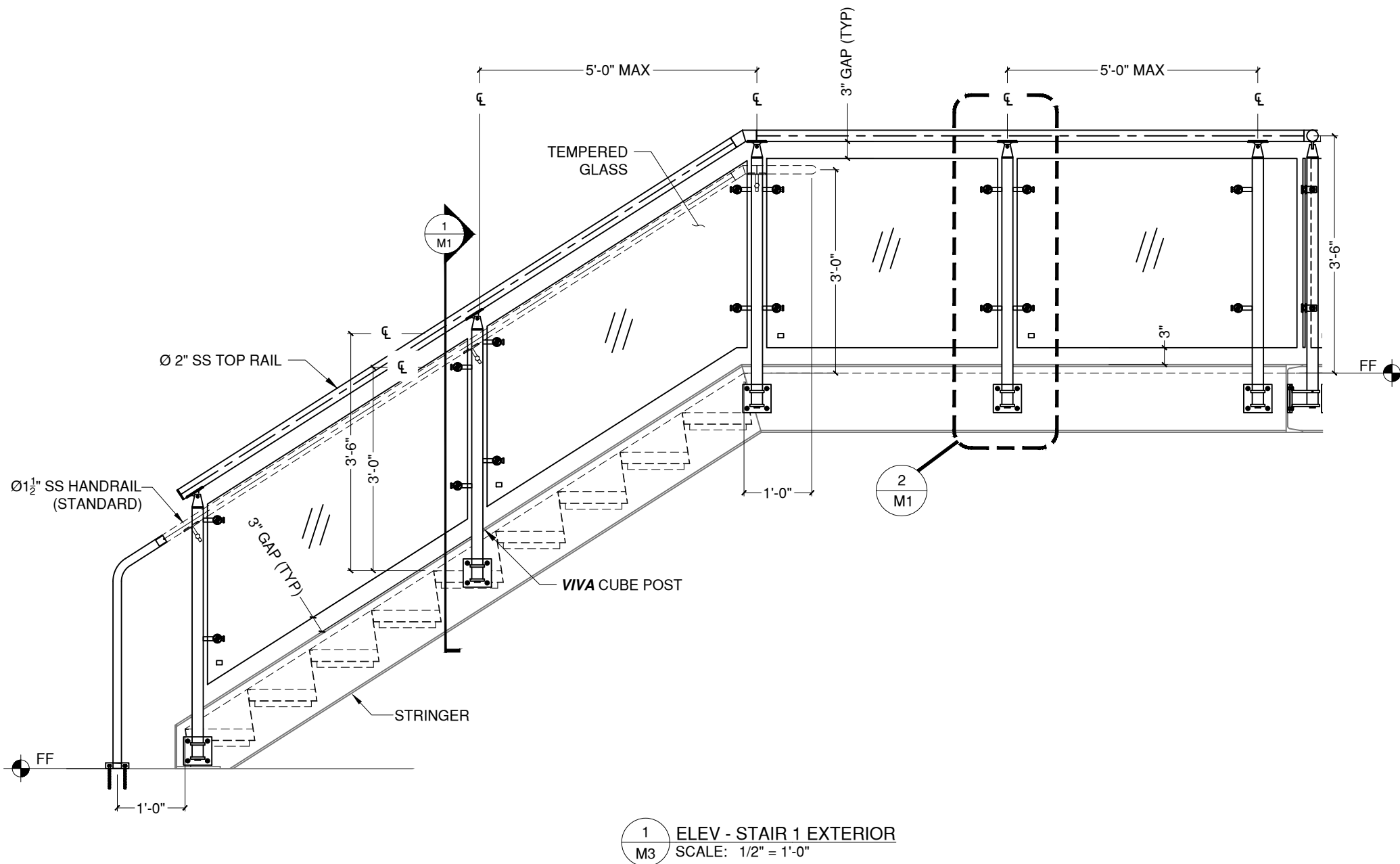


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**M2 OF M24**

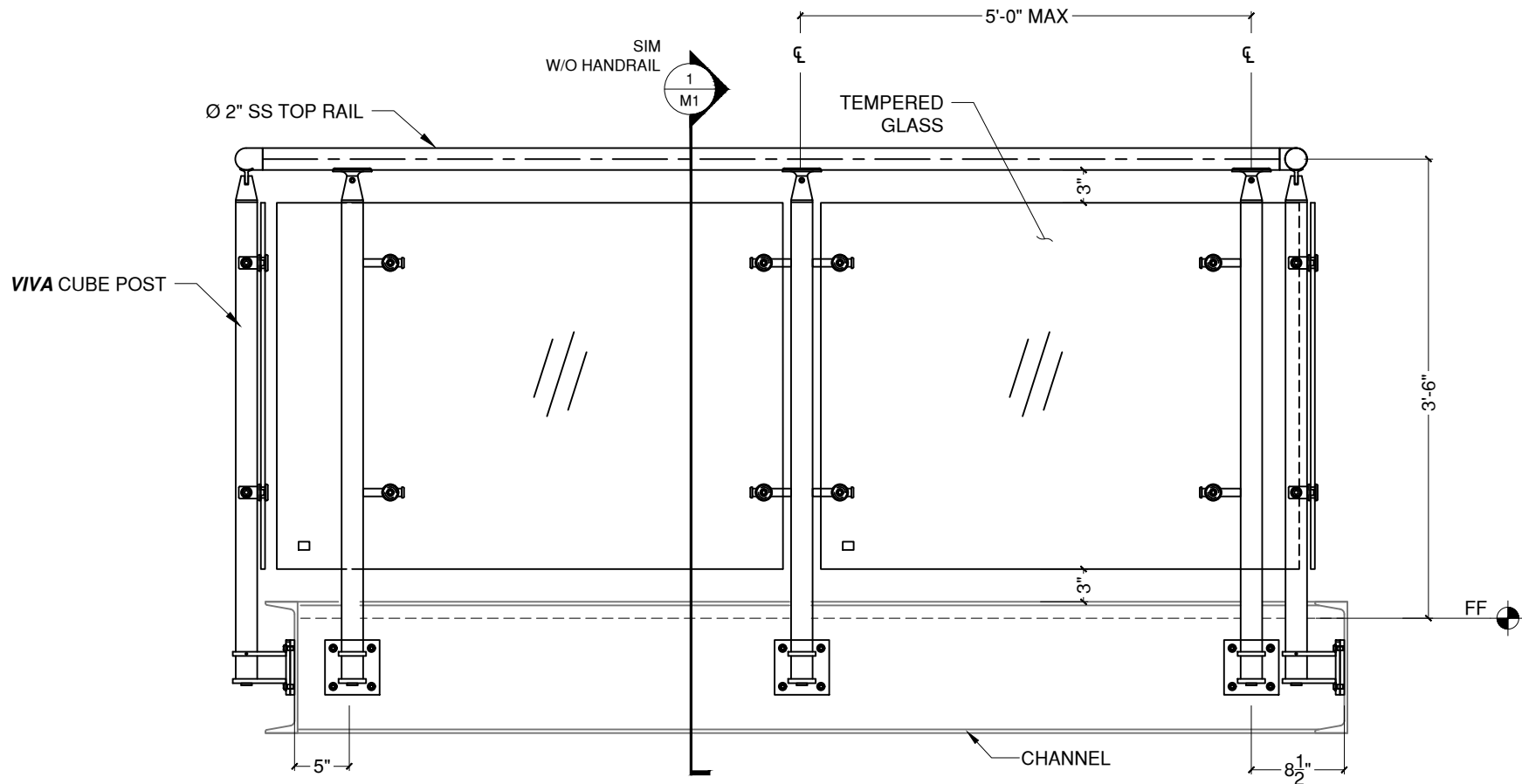


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**M3 OF M24**



1  
M4

ELEV - WALKWAY 1  
SCALE: 3/4" = 1'-0"



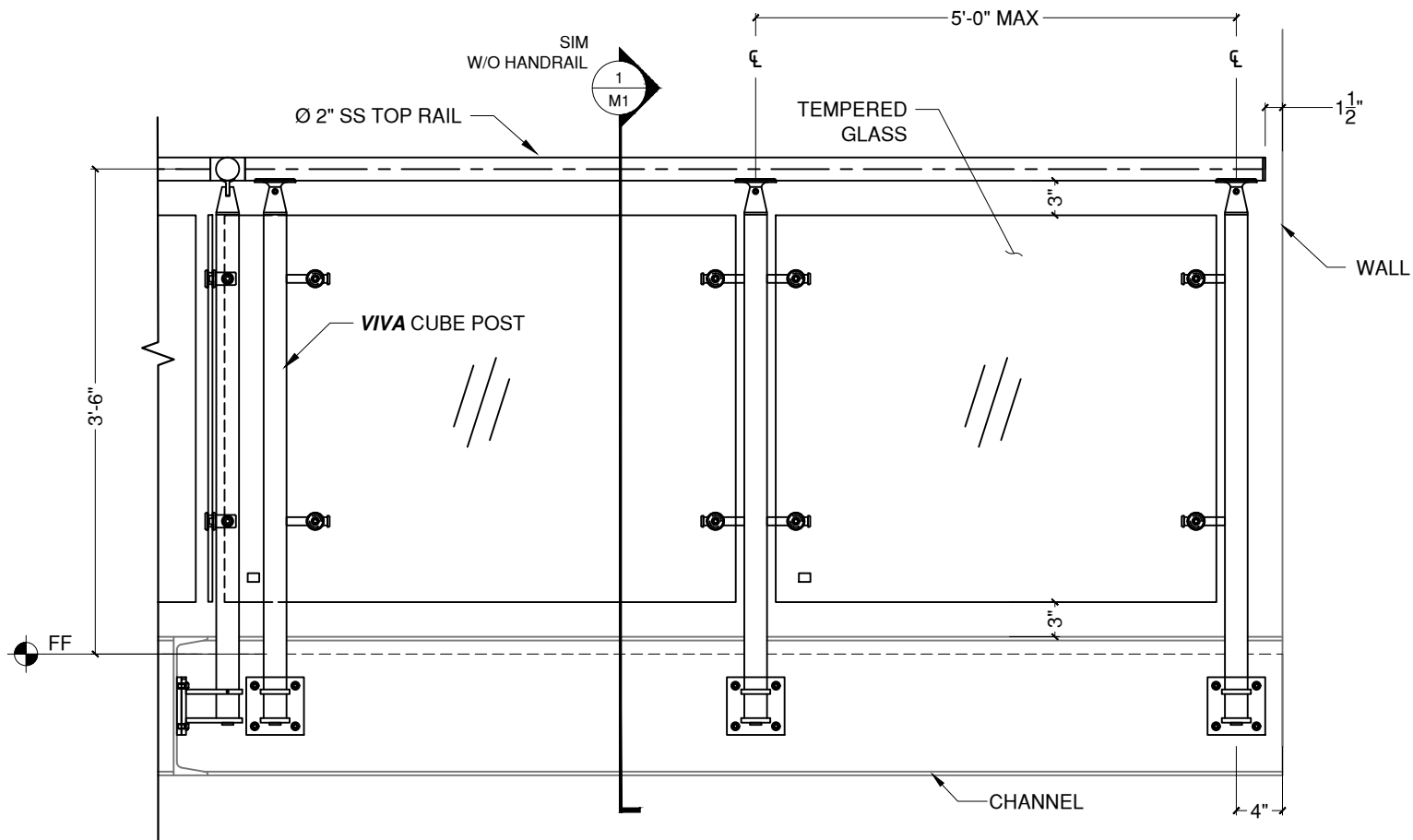
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**M4 OF M24**



1  
M5 ELEV - WALKWAY 2  
SCALE: 3/4" = 1'-0"



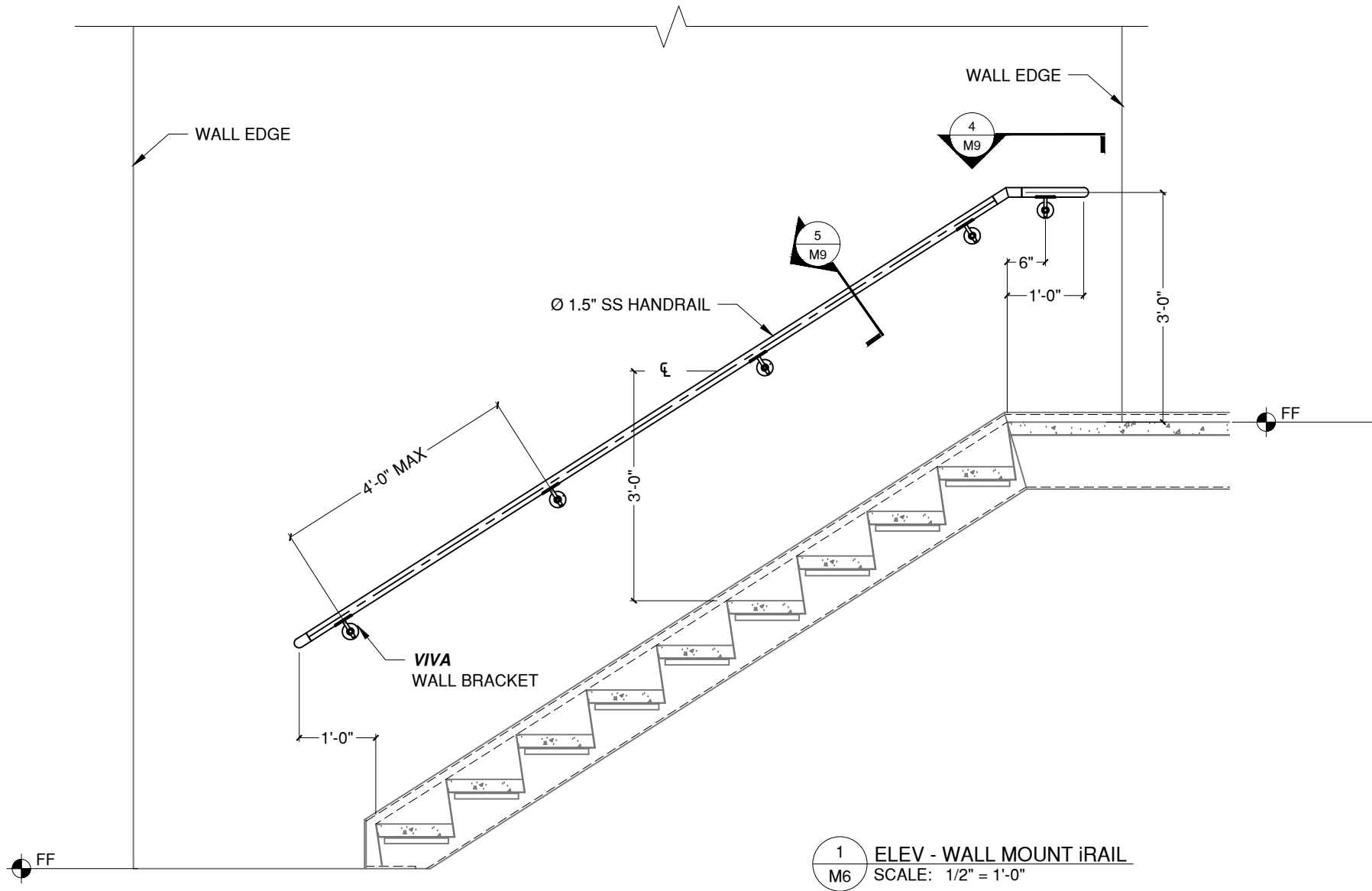
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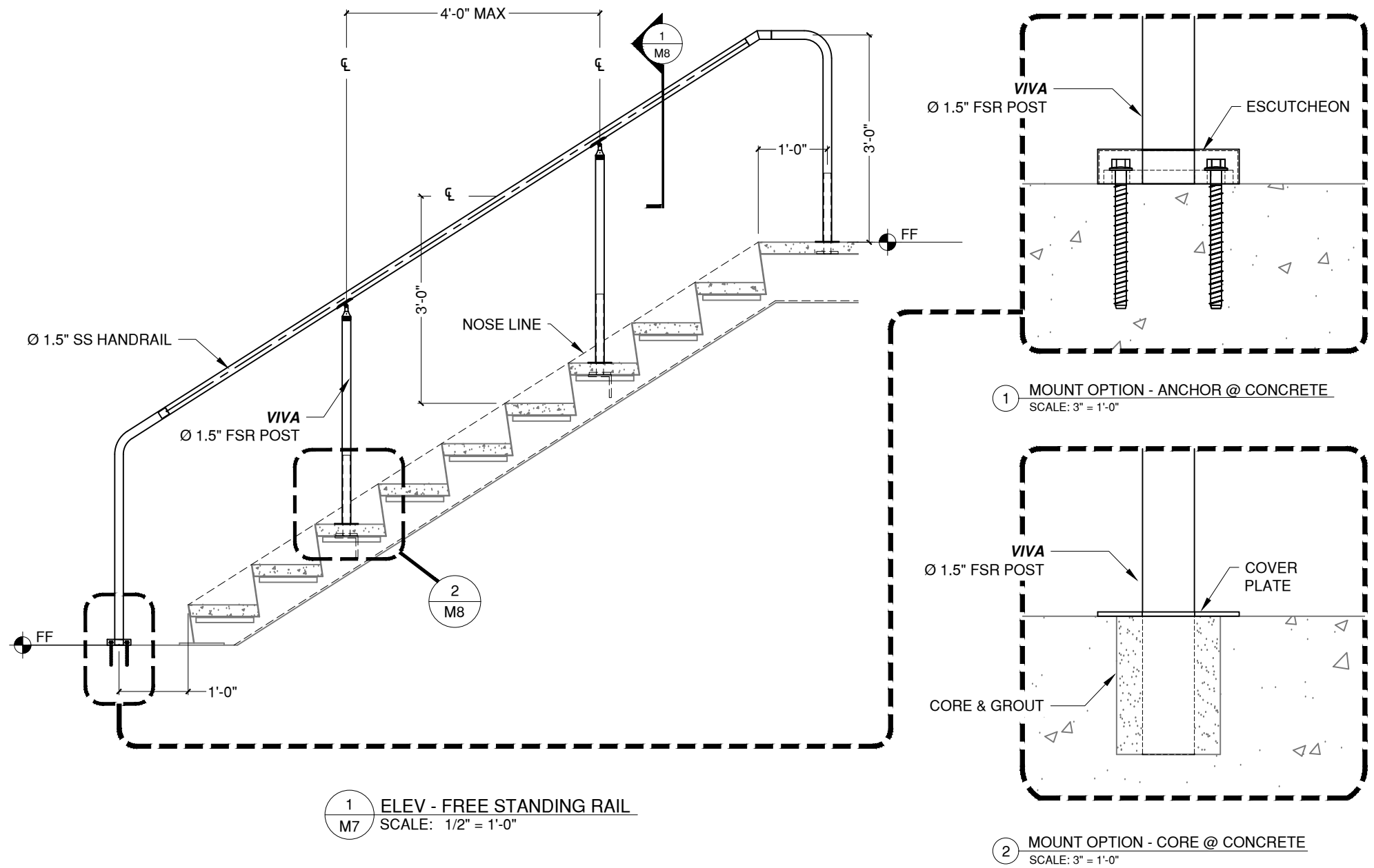
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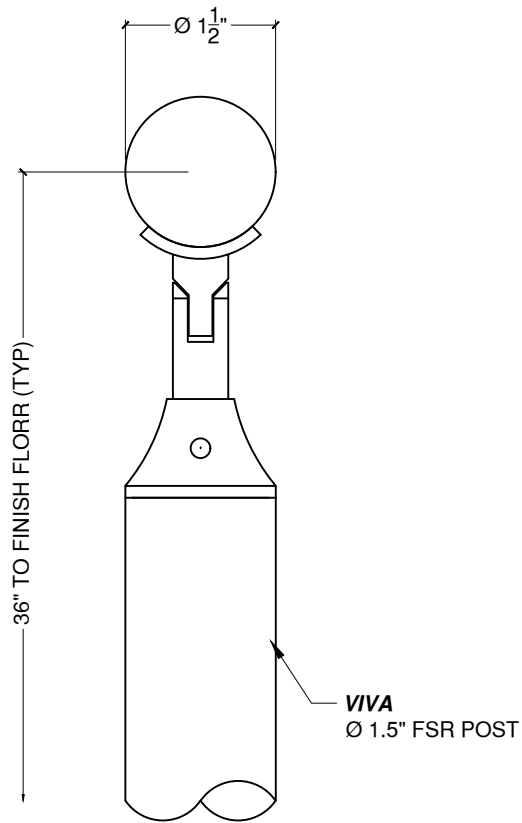


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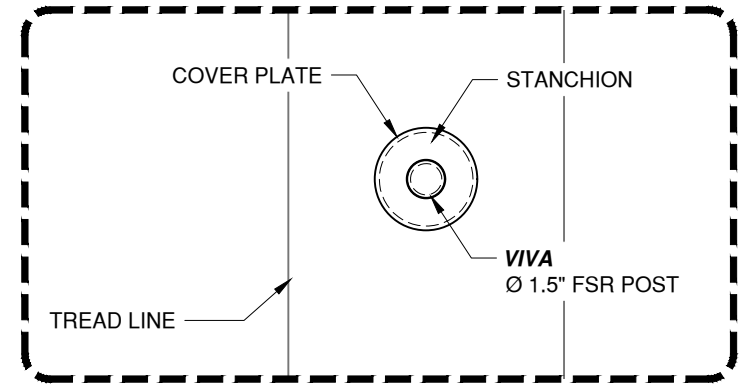
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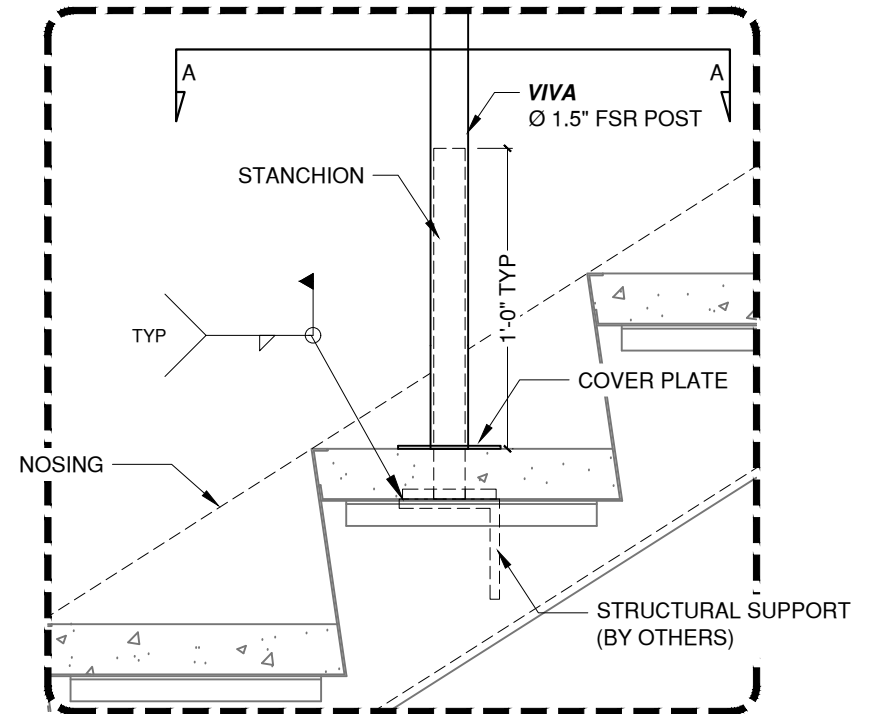
1  
M8

SECT - FREE STANDING iRAIL  
SCALE: 6" = 1'-0"



A

SECTION  
SCALE: 1-1/2" = 1'-0"



2  
M8

FSR STANCHION MOUNT DETAIL  
SCALE: 1-1/2" = 1'-0"



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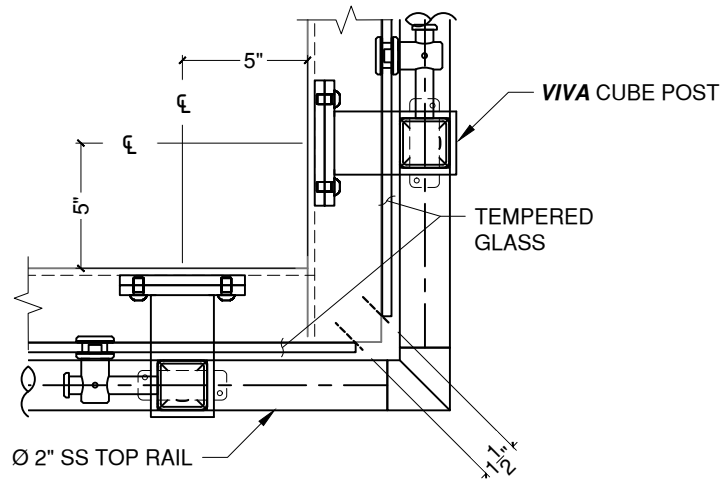
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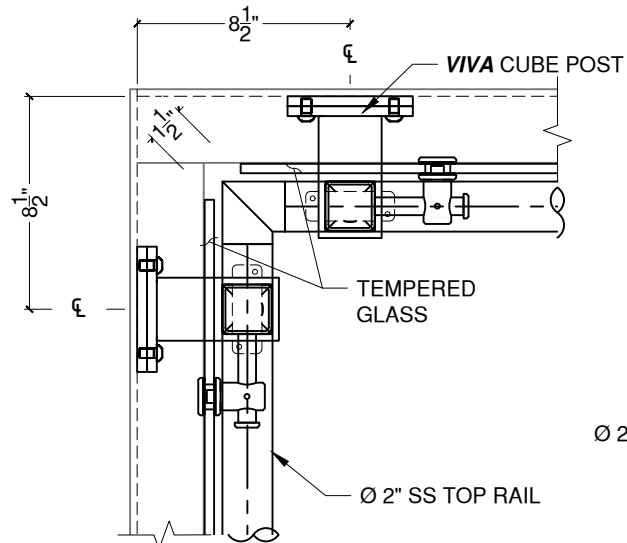
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**M8 OF M24**

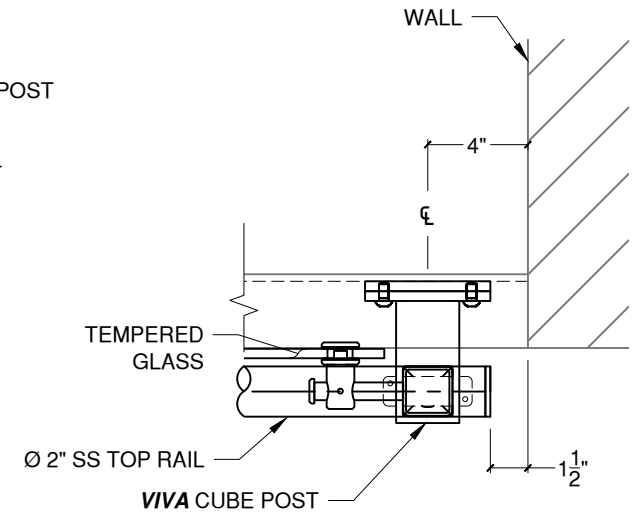
# GLASS CORNER & WALL BRACKET MOUNTING DETAILS



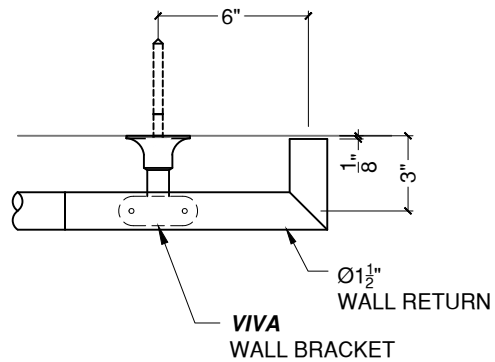
1 OUTSIDE CORNER  
M9 SCALE: 1 1/2" = 1'-0"



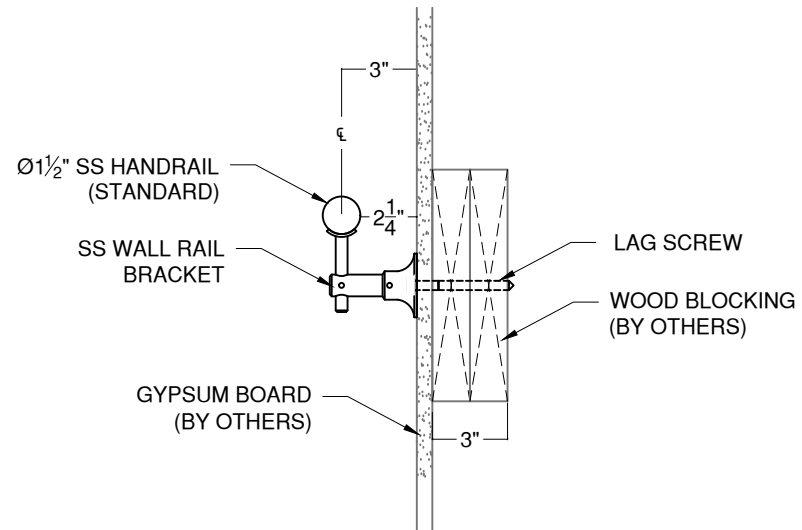
2 INSIDE CORNER  
M9 SCALE: 1 1/2" = 1'-0"



3 END CONDITION  
M9 SCALE: 1 1/2" = 1'-0"



4 WALL BRACKET & RETURN PLAN  
M9 SCALE: 1 1/2" = 1'-0"



5 WALL BRACKET SECTION  
M9 SCALE: 1 1/2" = 1'-0"



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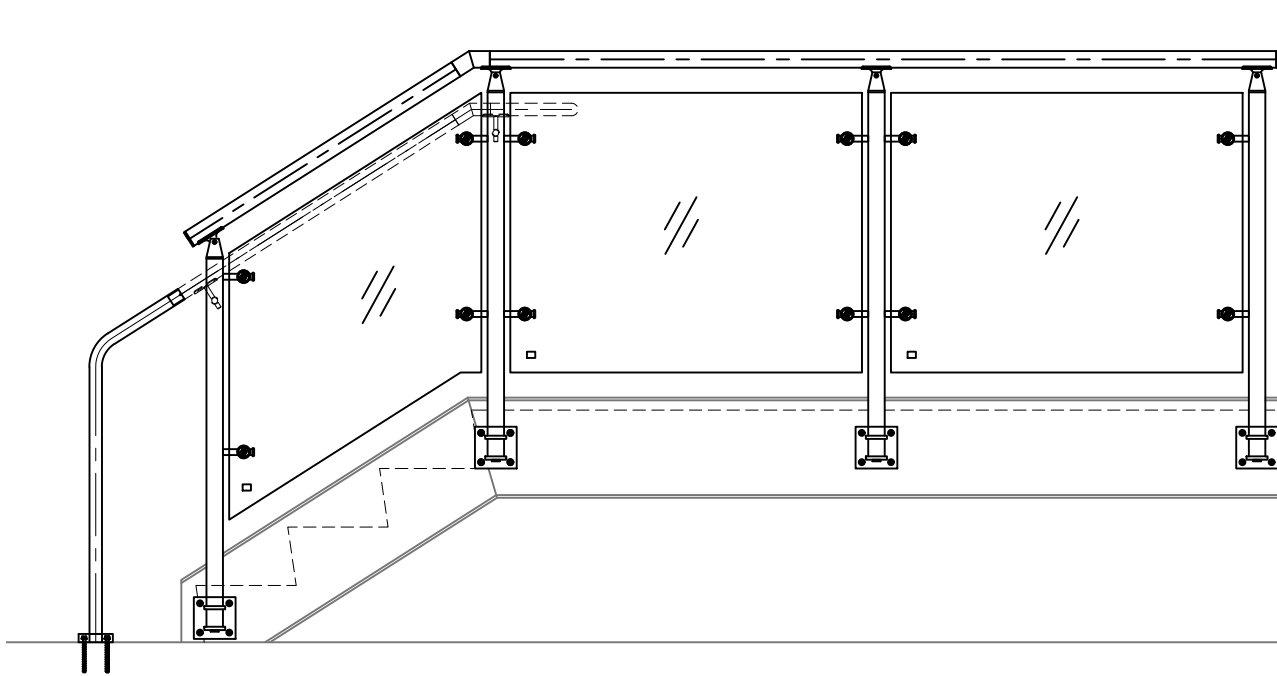
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SHEET NUMBER  
**M9 OF M24**

# VIVA - CUBE GLASS

for more infill detail visit

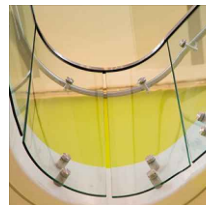
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CLEAR  
MONOLITHIC



CLEAR  
LAMINATED  
(PVB or SGP)



BENT



TINTED



SATIN  
ETCHED



CERAMIC  
FRIT



COLORED  
LAMINATE  
(PVB ONLY)

AVAILABLE IN MONOLITHIC AND LAMINATED



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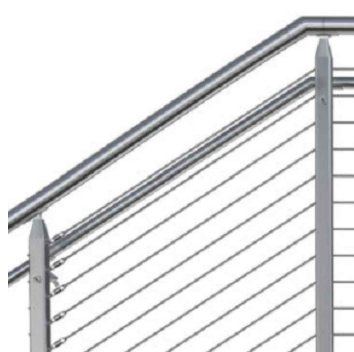
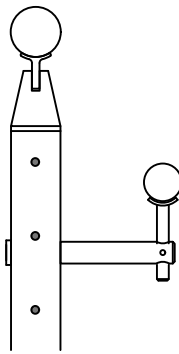
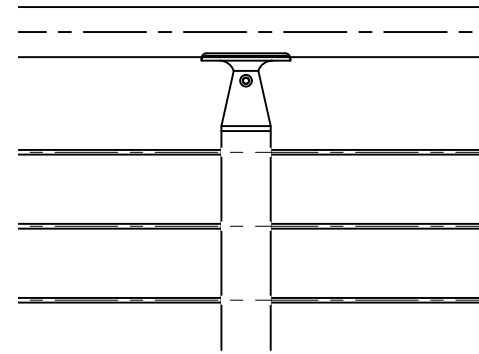
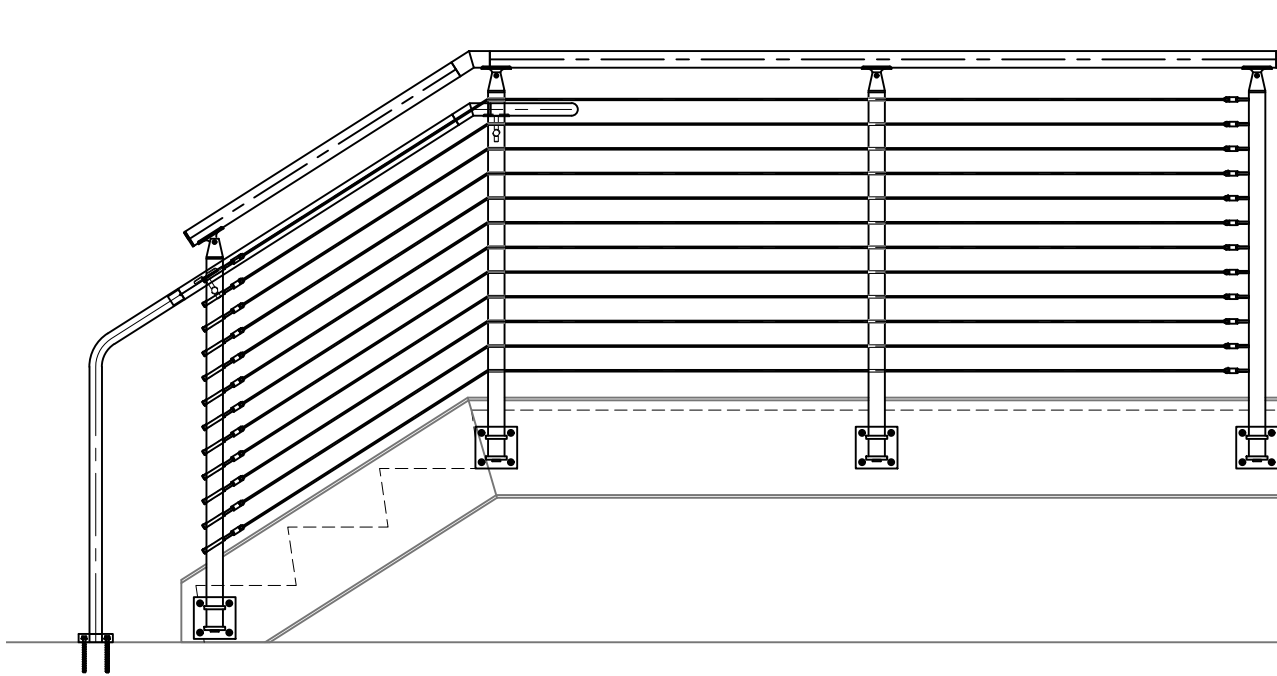
SHEET NUMBER

M10 OF M24

# VIVA - CUBE CABLE

for more infill detail visit

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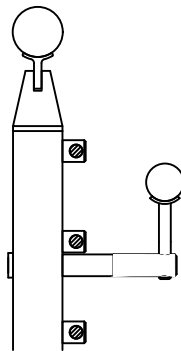
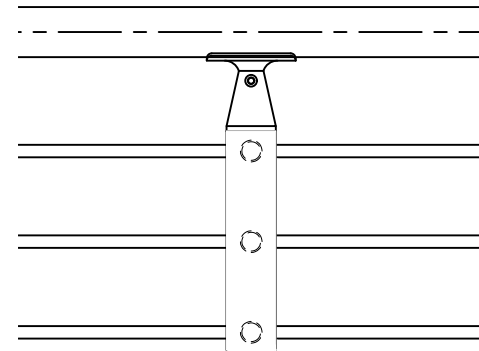
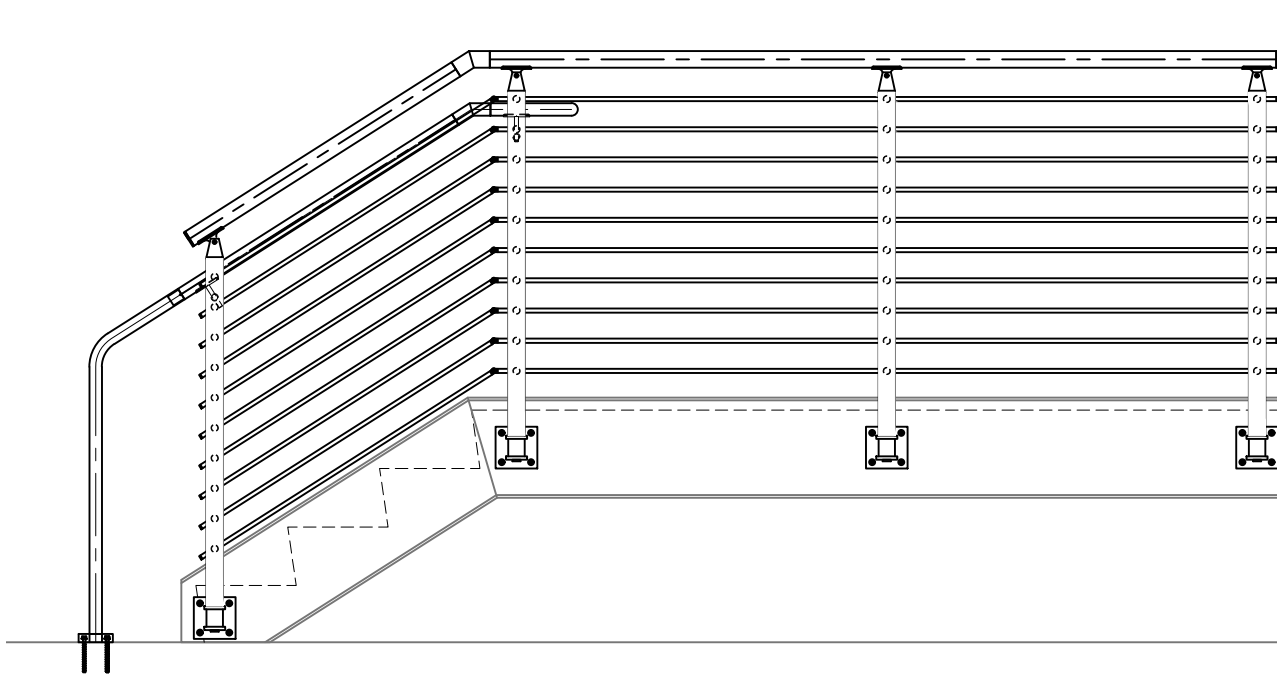
SHEET NUMBER

M13 OF M24



# VIVA - CUBE HORIZONTAL MULTI-LINE

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DESCRIPTION:  
**VIVA CUBE SYSTEM**  
**PRODUCT DATA**

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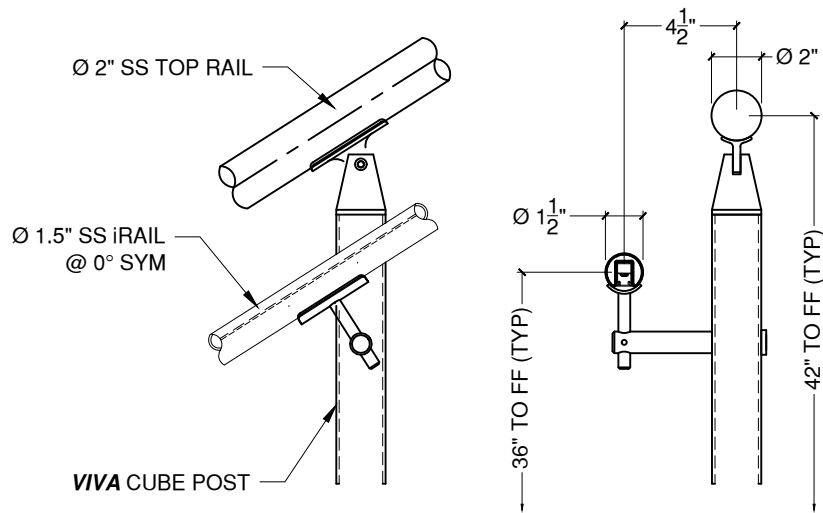
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**JCM**

SHEET NUMBER  
**M15 OF M24**

# VIVA - CUBE iRAIL SAMPLER

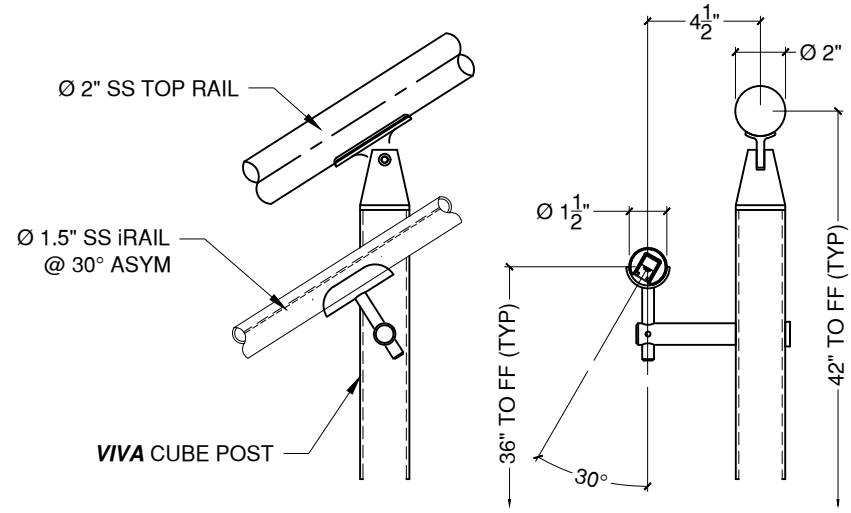
for more information and specific detail

REF - VIVA iRAIL PRODUCT DATA @ [www.vivarailings.com](http://www.vivarailings.com)



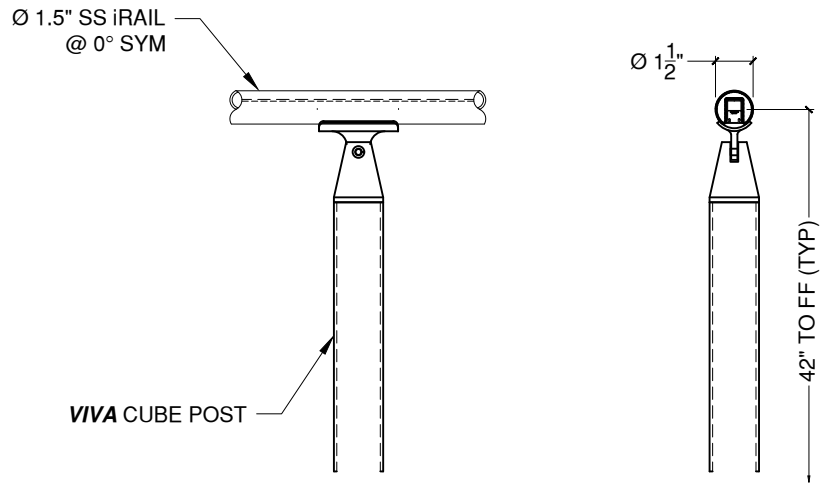
1  
M11

DETAIL - iRAIL 0° OPTION @ SLOPE  
SCALE: 1-1/2" = 1'-0"



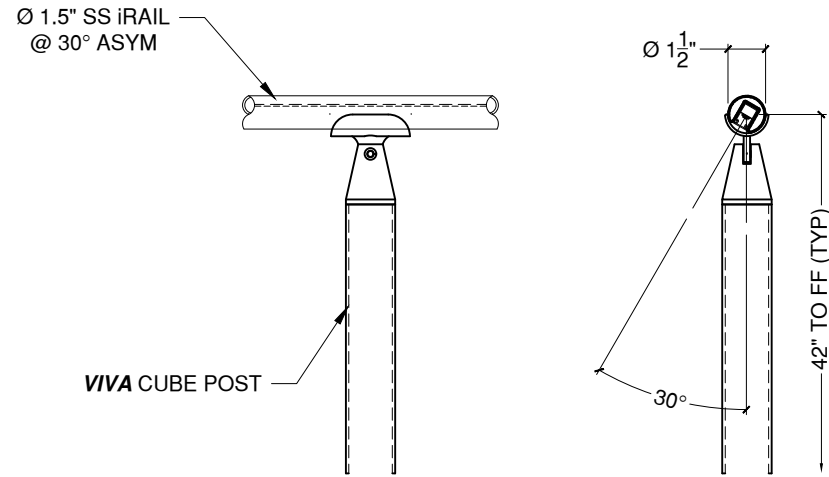
2  
M11

DETAIL - iRAIL 30° OPTION @ SLOPE  
SCALE: 1-1/2" = 1'-0"



3  
M11

DETAIL - iRAIL 0° OPTION @ LEVEL  
SCALE: 1-1/2" = 1'-0"



4  
M11

DETAIL - iRAIL 30° OPTION @ LEVEL  
SCALE: 1-1/2" = 1'-0"



VIVA RAILINGS, LLC  
1454 HALSEY WAY  
CARROLLTON, TX 75007  
P: 972-353-8482  
F: 972-353-0013  
e: [info@vivarailings.com](mailto:info@vivarailings.com)  
[www.vivarailings.com](http://www.vivarailings.com)

DESCRIPTION:

VIVA CUBE SYSTEM  
PRODUCT DATA

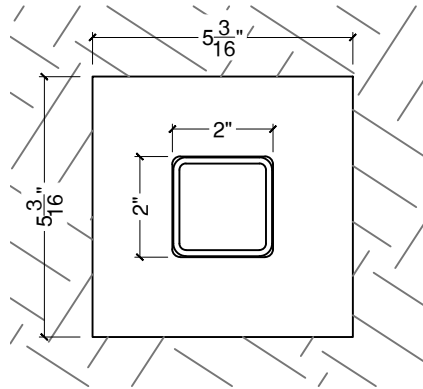
-

DRAWN BY  
JCM

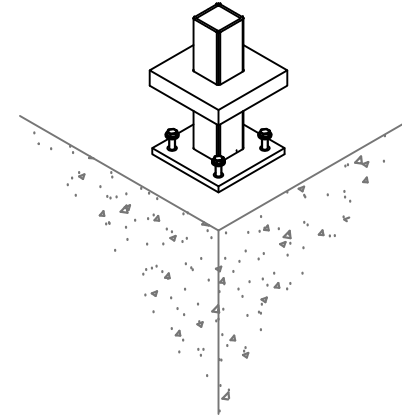
SHEET NUMBER  
M11 OF M24

# TOP MOUNTING DETAIL

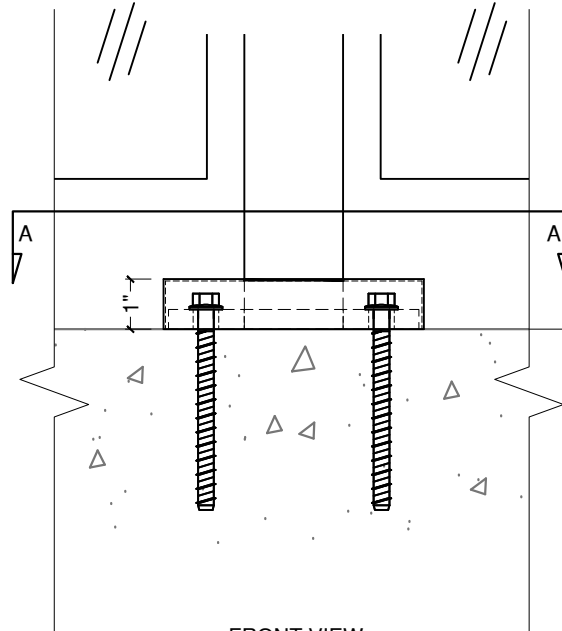
CONNECTION DESIGN BASED ON **4K** psi CONCRETE @ INTERIOR w/ 4'-0" MAX POST TO POST SPACING AND MINIMUM ANCHOR TO EDGE DISTANCE AS SHOWN.



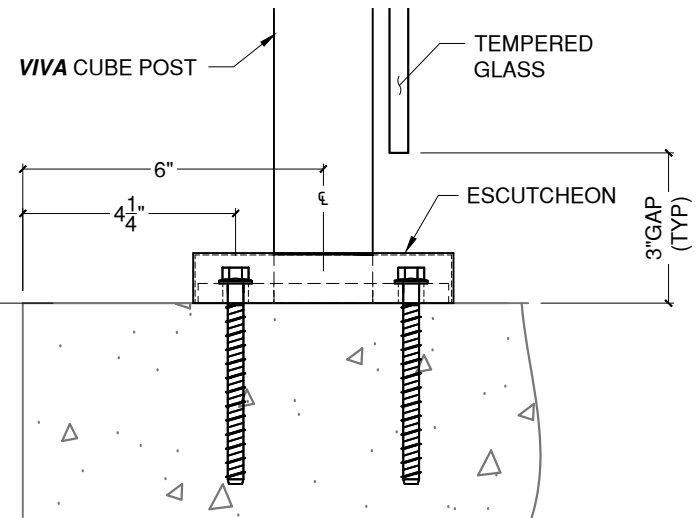
SECTION 'A-A'



ISOMETRIC



FRONT VIEW



SIDE VIEW

1  
M21

DETAIL - @ CONCRETE w/ ANCHOR  
SCALE: 3" = 1'-0"



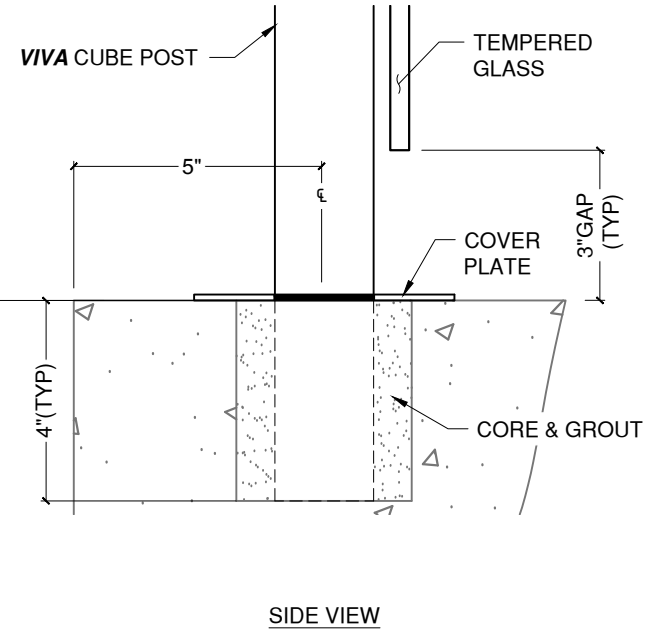
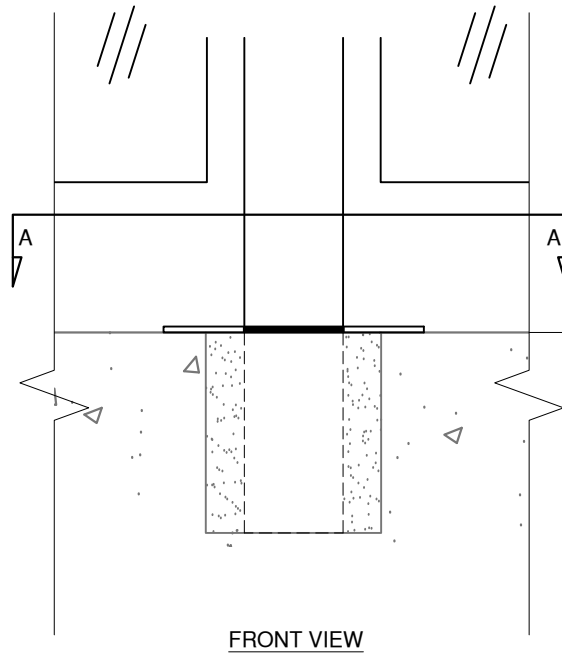
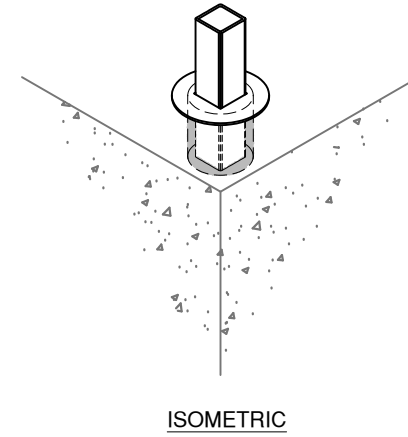
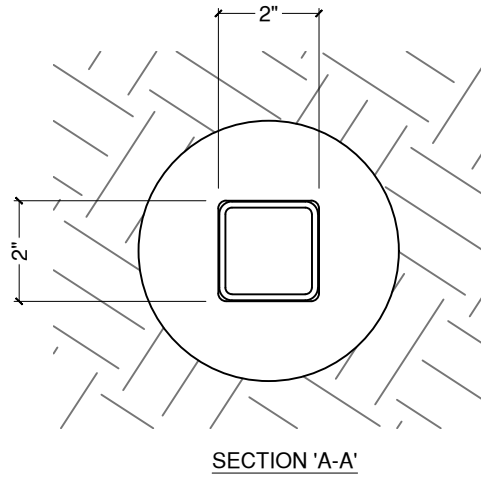
**VIVA RAILINGS, LLC**  
1454 HALSEY WAY  
CARROLLTON, TX 75007  
P: 972-353-8482  
F: 972-353-0013  
e: info@vivarailings.com  
www.vivarailings.com

DESCRIPTION:  
**VIVA CUBE SYSTEM**  
**PRODUCT DATA**

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**JCM**

SHEET NUMBER  
**M21 OF M24**

# TOP MOUNTING DETAIL



1  
M22

DETAIL - @ CONCRETE w/ CORE & GROUT  
SCALE: 3" = 1'-0"



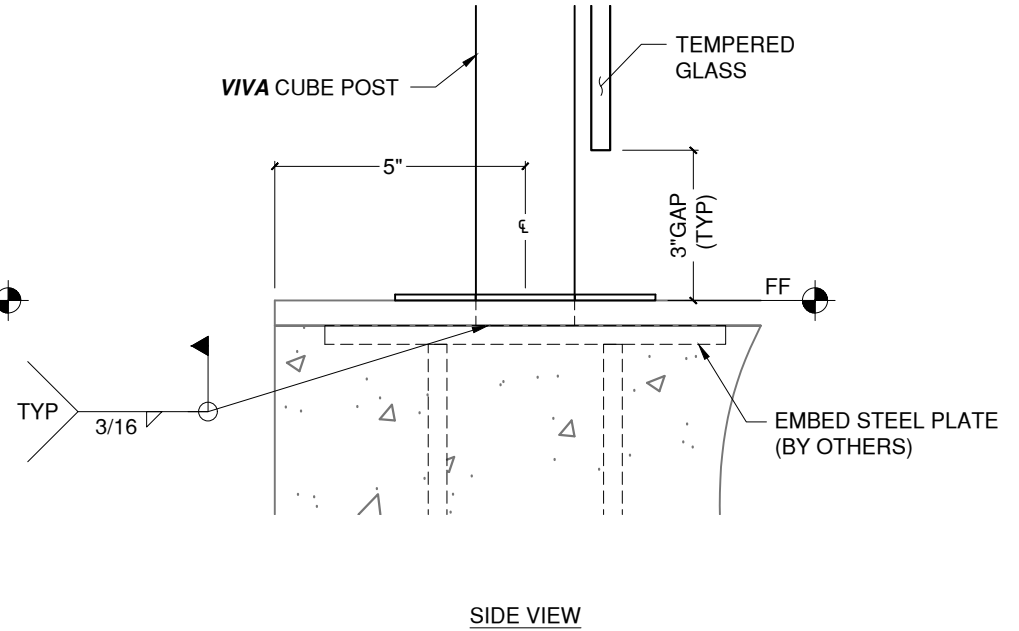
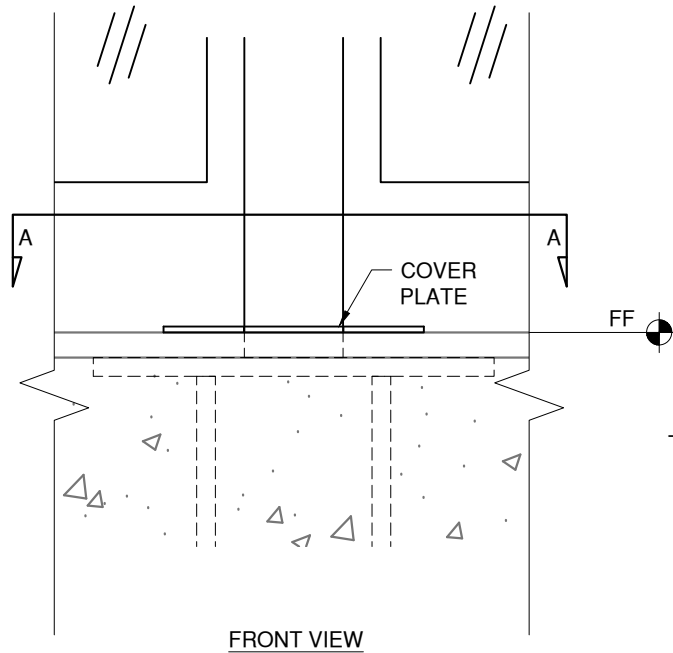
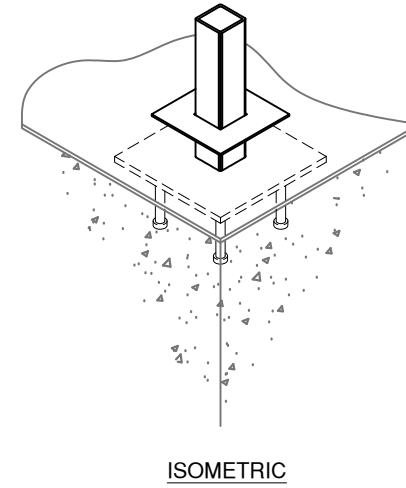
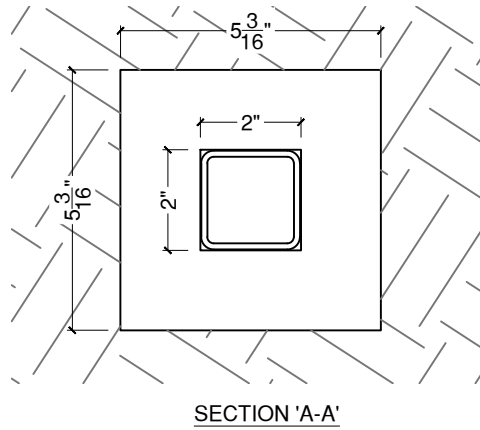
**VIVA RAILINGS, LLC**  
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F: 972-353-0013  
e: info@vivarailings.com  
www.vivarailings.com

DESCRIPTION:  
**VIVA CUBE SYSTEM**  
**PRODUCT DATA**

DRAWN BY  
**JCM**

SHEET NUMBER  
**M22 OF M24**

# TOP MOUNTING DETAIL



1  
M24 DETAIL - @ EMBED STEEL w/ TOP WELD  
SCALE: 3" = 1'-0"



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F: 972-353-0013  
e: info@vivarailings.com  
www.vivarailings.com

DESCRIPTION:  
VIVA CUBE SYSTEM  
PRODUCT DATA

-

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SHEET NUMBER  
M24 OF M24



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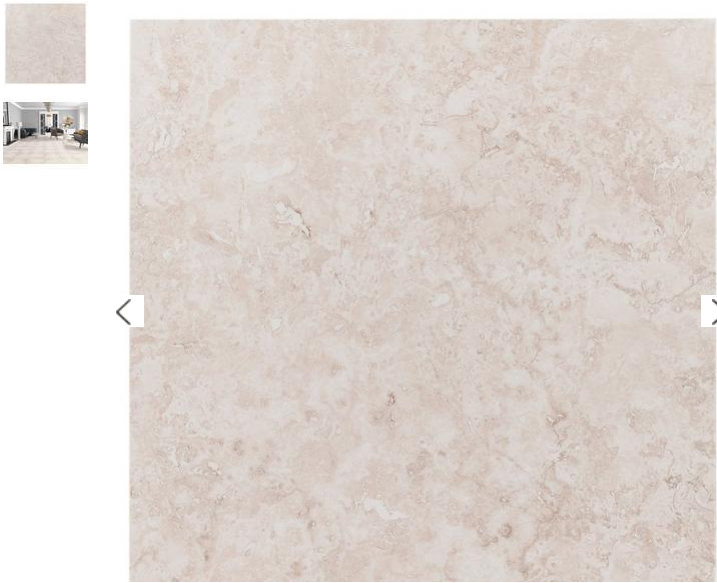
HOME > TILE > SHOP BY TYPE > PORCELAIN

Crosscut Light Beige Porcelain Tile

Size: 24 x 24 | SKU: 100066232   **\$2.29 / sqft**   \$26.61 / box

FSC BLDG : FINISHES: PFT

**PRINT**   **EMAIL**



Visualize it!

HOW MUCH DO YOU NEED?

**CALCULATE MY SQUARE FOOTAGE**

OR   Enter sqft   SqFt

☐ Add 10% for contingency (recommended)

QUANTITY OF BOXES

-	1	+	Square Feet: 11.63
			<b>Subtotal: \$26.61</b>

1 box = 11.63 sqft | 3 pieces | \$26.61

In order to see local inventory, please select a store. [Select A Store](#)

PICKUP OR DELIVERY

☐ Pick up in store - Charges May Apply

☐ **Have it Delivered - Charges May Apply**

This item will be **SHIPPED** and should arrive in **7 - 10** days  
Shipping charges may apply. Items may arrive in multiple shipments.

**Estimate Shipping + Handling Cost**

We're unable to ship this item to: AK, GU, HI, PR, VI, or foreign countries

FREE In-Store Returns **MORE**

ADD TO CART

**ORDER SAMPLE - \$3.00**

**ADD TO MY PROJECT LIST**

MATERIALS YOU NEED FROM START TO FINISH

Mapei Ultraflex LFT White - Large For...  
Size: 50lb.

**\$29.84 / piece**

-1+

ADD TO CART

Mapei 00 White FlexColor CQ Grout  
Size: 1gal.

**\$45.47 / piece**

-1+

ADD TO CART

Mapei Novoplan Easy Self-Leveling U...  
Size: 50 lb.

**\$28.29 / piece**

-1+

ADD TO CART

Rubi Tile Level Quick Kit

**\$39.99 / piece**

-1+

ADD TO CART

SPECIFICATIONS



Style/Design	①	Matte	Placement	①	Indoor/ Outdoor
Print Quality	①	Inkjet	Edge	①	Pressed
PEI Rating	①	4	Country of Origin	①	Spain
Water Resistance	①	Waterproof	Durability	①	YES
Color		Beige	Product Type		Porcelain
Size		24 x 24	Length		23.6
Width		23.6	Thickness		10.5mm


PRODUCT DETAILS

Liven up any room with the Crosscut Light Beige Porcelain Tile. This 24 x 24 tile features a matte finish. Durable stone-look tile is an affordable alternative to natural stone, and it looks great throughout the house. Plus, you can get the authentic look of stone with an easy-to-maintain surface, as stone-look tile is waterproof and doesn't require sealing.

This beautiful tile was made in Spain, a country renowned for its high-quality tile.

BLOGS & VIDEOS


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HOME > TILE > SHOP BY TYPE > PORCELAIN

## Basilea Bone Matte Porcelain Tile

Size: 24 x 48 | SKU: 100593557 **\$2.29 / sqft** \$35.20 / box

PRINT EMAIL



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### HOW MUCH DO YOU NEED?

CALCULATE MY SQUARE FOOTAGE

OR Enter sqft SqFt

☐ Add 10% for contingency (recommended)

### QUANTITY OF BOXES

-	1	+	Square Feet: 15.37
			<b>Subtotal: \$35.20</b>

1 box = 15.37 sqft | 2 pieces | \$35.20

In order to see local inventory, please select a store. [Select A Store](#)

### PICKUP OR DELIVERY

☐ Pick up in store - Charges May Apply

☐ **Have it Delivered - Charges May Apply**

This item will be **SHIPPED** and should arrive in **7 - 10** days  
Shipping charges may apply. Items may arrive in multiple shipments.

**Estimate Shipping + Handling Cost**

We're unable to ship this item to: AK, GU, HI, PR, VI, or foreign countries

FREE In-Store Returns **MORE**

### ADD TO CART

ORDER SAMPLE - \$3.00

ADD TO MY PROJECT LIST

### MATERIALS YOU NEED FROM START TO FINISH

Mapei Ultraflex LFT White - Large For...

Size: 50lb.



\$29.84 / piece

-1+

ADD TO CART

Mapei 00 White FlexColor CQ Grout

Size: 1gal.



\$45.47 / piece

-1+

ADD TO CART

Mapei Novoplan Easy Self-Leveling U...

Size: 50 lb.



\$28.29 / piece

-1+

ADD TO CART

Rubi Tile Level Quick Kit



\$39.99 / piece

-1+

ADD TO CART

### SPECIFICATIONS

Style/Design	①	Matte	Placement	①	Indoor/ Outdoor
Print Quality	①	Inkjet	Edge	①	Straight or Rectified
PEI Rating	①	4	Country of Origin	①	Spain
Water Resistance	①	Waterproof	Durability	①	YES
Color		Gray	Product Type		Porcelain
Size		24 x 48	Length		48.0
Width		24.0	Thickness		10MM

PRODUCT DETAILS


+

BLOGS & VIDEOS

+

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+



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HOME > TILE > SHOP BY TYPE > PORCELAIN

## Pianetto Cypress Beige Polished Porcelain Tile

Size: 24 x 48 | SKU: 100582675 **\$3.79 / sqft** \$58.34 / box

PRINT EMAIL



Visualize it!

Pianetto

### HOW MUCH DO YOU NEED?

CALCULATE MY SQUARE FOOTAGE

OR Enter sqft SqFt

Add 10% for contingency (recommended)

### QUANTITY OF BOXES

- 1 +

Square Feet: 15.39  
Subtotal: **\$58.34**

1 box = 15.39 sqft | 2 pieces | \$58.34

In order to see local inventory, please select a store. [Select A Store](#)

### PICKUP OR DELIVERY

Pick up in store - Charges May Apply

Have it Delivered - Charges May Apply

This item will be **SHIPPED** and should arrive in **7 - 10** days  
Shipping charges may apply. Items may arrive in multiple shipments.

**Estimate Shipping + Handling Cost**

We're unable to ship this item to: AK, GU, HI, PR, VI, or foreign countries

FREE In-Store Returns **MORE**

### ADD TO CART

ORDER SAMPLE - \$3.00

ADD TO MY PROJECT LIST

### MATERIALS YOU NEED FROM START TO FINISH

Mapei Ultraflex LFT White - Large For...

Size: 50lb.



\$29.84 / piece

- 1 +

ADD TO CART

Mapei 00 White FlexColor CQ Grout

Size: 1gal.



\$45.47 / piece

- 1 +

ADD TO CART

Mapei Novoplan Easy Self-Leveling U...

Size: 50 lb.



\$28.29 / piece

- 1 +

ADD TO CART

Rubi Tile Level Quick Kit

\$39.99 / piece



- 1 +

ADD TO CART

### SPECIFICATIONS

Style/Design	①	Polished or High Gloss	Placement	①	Indoor
Print Quality	①	Inkjet	Edge	①	Straight or Rectified
PEI Rating	①	4	Country of Origin	①	Brazil
Water Resistance	①	Waterproof	Durability	①	YES
Color		Beige	Product Type		Porcelain
Size		24 x 48	Length		23.5
Width		47.1	Thickness		11MM

PRODUCT DETAILS

This beige polished or high gloss Cypress Beige Polished Porcelain Tile is 24 x 48.

Inkjet technology offers the very best in tile design. Offering excellent color range, sharp details and exceptional variation, inkjet technology will create a tile that is stunningly realistic.

Straight or rectified tiles are cut so that they can be installed with minimal grout lines and give a very clean look.


This tile was made in Brazil. Known for culture and craftsmanship, tiles made in Brazil are durable and beautiful.

PEI measures a tile's durability and ability to withstand foot traffic, on a scale of 1-5. This tile, rated at 4 PEI, can withstand moderate to heavy traffic and is suitable for all residential and medium commercial floor and wall applications.

Offering modern to classic appeal, our polished porcelain and ceramic tiles flaunt a shiny, high-gloss finish.

BLOGS & VIDEOS


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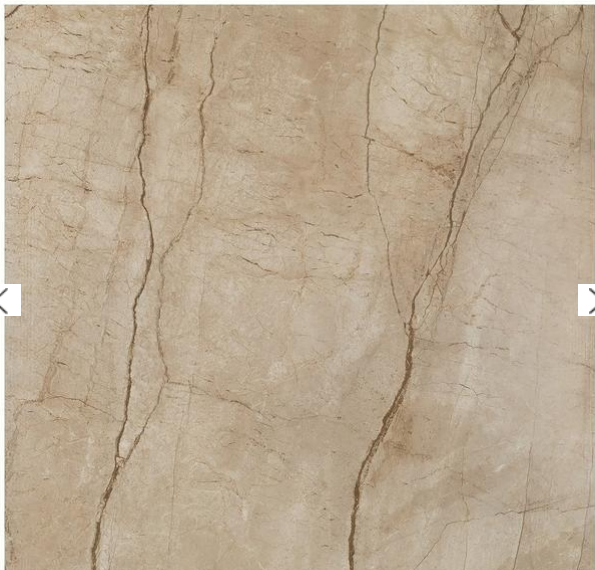
[HOME](#) > [TILE](#) > [SHOP BY TYPE](#) > [PORCELAIN](#)

## Pianetto Martello Noce Polished Porcelain Tile

Size: 48 x 48 | SKU: 100582667

**\$4.99** / sqft \$76.81 / box

[PRINT](#) [EMAIL](#)



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*Pianetto*

### HOW MUCH DO YOU NEED?

[CALCULATE MY SQUARE FOOTAGE](#)

OR Enter sqft SqFt

☐ Add 10% for contingency (recommended) [i](#)

### QUANTITY OF BOXES

- 1 +

Square Feet: 15.39  
**Subtotal: \$76.81**

1 box = 15.39 sqft | 1 pieces | \$76.81

In order to see local inventory, please select a store: [Select A Store](#)

### PICKUP OR DELIVERY

☐ Pick up in store - Charges May Apply

☒ **Have it Delivered - Charges May Apply**

This item will be **SHIPPED** and should arrive in **7 - 10** days  
Shipping charges may apply. Items may arrive in multiple shipments.

**Estimate Shipping + Handling Cost** [▶](#)

We're unable to ship this item to: AK, GU, HI, PR, VI, or foreign countries

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### ADD TO CART

**ORDER SAMPLE - \$3.00**

[♥ ADD TO MY PROJECT LIST](#)

### MATERIALS YOU NEED FROM START TO FINISH

#### Mapei Ultraflex LFT White - Large For...

Size: 50lb.



**\$29.84 / piece**

- 1 +

[ADD TO CART](#)

#### Mapei 00 White FlexColor CQ Grout

Size: 1gal.



**\$45.47 / piece**

- 1 +

[ADD TO CART](#)

#### Mapei Novoplan Easy Self-Leveling U...

Size: 50 lb.



**\$28.29 / piece**

- 1 +

[ADD TO CART](#)

#### Rubi Tile Level Quick Kit

**\$39.99 / piece**



- 1 +

[ADD TO CART](#)

### SPECIFICATIONS



Color	Brown	Product Type	Porcelain
Size	48 x 48	Length	47.0
Width	47.0	Thickness	12MM

## PRODUCT DETAILS

With a polished or high gloss finish, this brown Martello Noce Polished Porcelain Tile is 48 x 48.

Inkjet technology offers the very best in tile design. Offering excellent color range, sharp details and exceptional variation, inkjet technology will create a tile that is stunningly realistic.

Straight or rectified tiles are cut so that they can be installed with minimal grout lines and give a very clean look.

This tile was made in Brazil. Known for culture and craftsmanship, tiles made in Brazil are durable and beautiful.

PEI measures a tile's durability and ability to withstand foot traffic, on a scale of 1-5. This tile, rated at 4 PEI, can withstand moderate to heavy traffic and is suitable for all residential and medium commercial floor and wall applications.

Offering modern to classic appeal, our polished porcelain and ceramic tiles flaunt a shiny, high-gloss finish.

## BLOGS & VIDEOS

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HOME > [TILE](#) > [SHOP BY TYPE](#) > [PORCELAIN](#)

Hainaut Gray Matte Porcelain Tile

Size: 24 x 48 | SKU: 100593722 **\$3.99 / sqft** \$61.84 / box

**PRINT** **EMAIL**



HOW MUCH DO YOU NEED?

**CALCULATE MY SQUARE FOOTAGE**

OR  SqFt

☐ Add 10% for contingency (recommended)

QUANTITY OF BOXES

-	1	+	Square Feet: 15.50
			<b>Subtotal: \$61.84</b>

1 box = 15.50 sqft | 2 pieces | \$61.84

In order to see local inventory, please select a store. [Select A Store](#)

PICKUP OR DELIVERY

☐ Pick up in store - Charges May Apply

☐ **Have it Delivered - Charges May Apply**

This item will be **SHIPPED** and should arrive in **7 - 10** days  
Shipping charges may apply. Items may arrive in multiple shipments.

**Estimate Shipping + Handling Cost**

We're unable to ship this item to: AK, GU, HI, PR, VI, or foreign countries

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**ORDER SAMPLE - \$3.00**

**ADD TO MY PROJECT LIST**

MATERIALS YOU NEED FROM START TO FINISH

<div>Mapei Ultraflex LFT White - Large For...</div> <div>Size: 50lb.</div> <div></div> <div><b>\$29.84 / piece</b></div> <div><div>-1+</div><div>ADD TO CART</div></div>	<div>Mapei 00 White FlexColor CQ Grout</div> <div>Size: 1gal.</div> <div></div> <div><b>\$45.47 / piece</b></div> <div><div>-1+</div><div>ADD TO CART</div></div>	<div>Mapei Novoplan Easy Self-Leveling U...</div> <div>Size: 50 lb.</div> <div></div> <div><b>\$28.29 / piece</b></div> <div><div>-1+</div><div>ADD TO CART</div></div>	<div>Rubi Tile Level Quick Kit</div> <div></div> <div></div> <div><b>\$39.99 / piece</b></div> <div><div>-1+</div><div>ADD TO CART</div></div>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------

SPECIFICATIONS

Style/Design	①	Matte	Placement	①	Indoor/ Outdoor
Print Quality	①	Inkjet	Edge	①	Straight or Rectified
PEI Rating	①	4	Country of Origin	①	Italy
Water Resistance	①	Waterproof	Durability	①	YES
Body Color	①	Color Body	Color		Gray
Product Type		Porcelain	Size		24 x 48
Length		47.1	Width		23.5
Thickness		9MM			

PRODUCT DETAILS

This gray Hainaut Gray Matte Porcelain Tile is 24 x 48 with matte finish.

Inkjet technology offers the very best in tile design. Offering excellent color range, sharp details and exceptional variation, inkjet technology will create a tile that is stunningly realistic.


Straight or rectified tiles are cut so that they can be installed with minimal grout lines and give a very clean look.

PEI measures a tile's durability and ability to withstand foot traffic, on a scale of 1-5. This tile, rated at 4 PEI, can withstand moderate to heavy traffic and is suitable for all residential and medium commercial floor and wall applications.

Use contemporary ceramic and porcelain tiles for a classic feel and for durability. Whether you're looking for simple, clean designs or large format designs, these tiles offer long-lasting beauty that is versatile, affordable, and easy to maintain.

BLOGS & VIDEOS


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# ULTIMA® ULTIMA® High NRC

Tegular  
fine texture

## 6.0 Suspended Ceilings



**TOTAL  
ACOUSTICS®**  
Sound Absorption (NRC)  
+ Sound Blocking (CAC)



**SUSTAIN®**  
High Performance  
Sustainable  
Ceiling Systems



**DESIGNFlex™**  
A New World of Choice  
for Ceiling Systems

## DESIGNFlex™ CEILING SYSTEMS



SHAPES



SIZES

See Ultima® Shapes Page 148-151

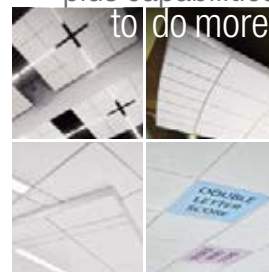
### Personalize Your Design!

Mix and match different sizes, shapes, and materials to reinvent your ceiling. More at:

[armstrongceilings.com/designflex](http://armstrongceilings.com/designflex)



plus capabilities  
to do more



See more photos at:  
[armstrongceilings.com/photogallery](http://armstrongceilings.com/photogallery)  
SEARCH: ultima

Ultima®

Ultima® High NRC



Ultima® Beveled Tegular panels with Sonata® 9/16" suspension system (Pg. 466)

A smooth visual ceiling with Total Acoustics® performance, sound absorption, and blocking needed for today's flexible spaces.

### KEY SELECTION ATTRIBUTES



- DesignFlex™ options include shapes and made-to-order sizes available to ship in 3 weeks
- Get total noise control and floor plan versatility with Total Acoustics® ceiling panels: NRC + CAC = Total Acoustics Performance
- Ultima® panels are part of the Sustain® portfolio, and meet the most stringent sustainability compliance standards today
- Smooth, clean, durable finish – Washable, Impact-resistant, Scratch-resistant, Soil-resistant
- Excellent sound absorption
- Ceiling-2-Ceiling™ Post-consumer Recycled Content options: items 1911HRC, 1912HRC, 1914HRC, 1915HRC. 71% Pre-consumer; 15% Post-consumer
- USDA-Certified Biobased Product – 88%
- Available with AirGuard™ coating
- Item 1912 available with Create!™ printed images and patterns
- Non-directional visual reduces scrap and installation time
- Compatible with the TechZone® Ceiling Systems
- 30-Year Limited System Warranty against visible sag (excludes items 1905 and 1929), mold, and mildew
- 10-Year replacement panel available for items 1911, 1912, 1914, 1915
- Available with factory-cut holes for USAI® trimless downlight fixture integration. For details, refer to the Center Cut Panels for Recessed Downlighting data page.



### TYPICAL APPLICATIONS

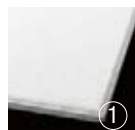
- Offices – closed spaces for privacy and confidentiality; open spaces for focus, collaboration, and teaming
- Healthcare – assists in addressing HIPAA, HCAHPS, and FGI acoustical requirements
- Classrooms
- Corridors
- Lobbies/reception areas
- Department stores/retail

### COLOR



White  
(WH)

### DETAILS (Other Suspension Systems compatible. Refer to listing on page 381.)



1. Ultima® Beveled Tegular
2. Ultima® with Suprafine® 9/16" suspension system
3. Ultima® with Silhouette® XL® 9/16" suspension system with 1/4" reveal

# ULTIMA® ULTIMA® High NRC

Tegular  
fine texture

Now in  
Shapes!

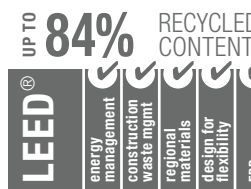


**GREENGUARD**  
Gold Certified  
(details below)

**Declare**  
Living Building  
Challenge Compliant



**SUSTAIN**  
High Performance  
Sustainable  
Ceiling Systems



Calculate LEED contribution at  
armstrongceilings.com/greengenie

## VISUAL SELECTION

Edge Profile	Susp. Dwg. Pgs. 474-478 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)
<b>ULTIMA® High NRC</b>			
15/16" Beveled Tegular	15	<b>1941</b>	24 x 24 x 7/8"
	15	<b>1944</b>	24 x 48 x 7/8"
	15	<b>1433</b>	24 x 60 x 7/8"
	15	<b>1436</b>	24 x 72 x 7/8"
9/16" Beveled Tegular	29, 44, 48, 52, 56	<b>1942</b>	24 x 24 x 7/8"
	29, 44, 48, 52, 56	<b>1942HRC</b>	24 x 24 x 3/4"
	29, 44, 48, 52, 56	<b>1945</b>	24 x 48 x 7/8"
	29, 44, 48, 52, 56	<b>1431</b>	30 x 30 x 7/8"
	29, 44, 48, 52, 56	<b>1434</b>	24 x 60 x 7/8"
	29, 44, 48, 52, 56	<b>1437</b>	24 x 72 x 7/8"

## Size Capabilities

	Width	Length
15/16" & 9/16" Beveled Tegular	<b>7/8" Thick</b>	
	4" – 6"	12" – 72"
	6-1/2" – 30"	4" – 72"
	30-1/2" – 48"	4" – 30"

**1 CTN MIN**  
**Made-to-Order**  
**Sizes**  
**(3 Wks)**

## PERFORMANCE SELECTION

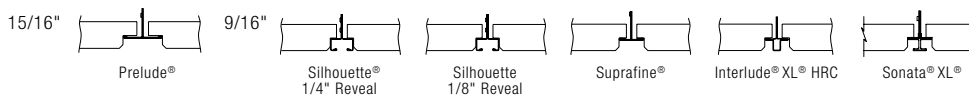
Dots represent high level of performance.

UL Classified Acoustics	Total Acoustics <sup>1</sup>	Articulation Class	Fire Performance	Light Reflect	Mold & Mildew Protection	Sag Resist	Certified Low VOC Emissions	Wash	Impact	Scratch	Soil	Recycled Content	Recycle Program	30-Yr Warranty
NRC + CAC =	NRC CAC	AC	Fire	Light	Mold & Mildew	Sag	Certified Low VOC	Wash	Impact	Scratch	Soil	Recycled Content	Recycle Program	30-Yr Warranty
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.75 • 35 •	<b>BETTER</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
0.80 • 35 •	<b>BEST</b>	170 •	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•
N/A N/A – –	Class A	0.87 •	•	•	•	•	•	•	•	•	•	•	•	•

**MORE ITEMS ►**

<sup>1</sup> Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.  
**GOOD** (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)

## SUSPENSION SYSTEMS



## Blizzard White – Suspension System Finish

A color and texture coordinated suspension system to complement Ultima ceiling panels for a monolithic look and feel.

## PHYSICAL DATA

### Material

Wet-formed mineral fiber with DuraBrite® acoustically transparent membrane

### Surface Finish

DuraBrite scrim with factory-applied latex paint

### Fire Performance

ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled). Fire Guard™: A fire-resistive ceiling when used in applicable UL assemblies (Class A).

### ASTM E1264 Classification

Type IV, Form 2, Pattern E  
Fire Class A

### Humidity/Sag Resistance

HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

### Mold/Mildew Protection

Ceiling panels with BioBlock® performance resist the growth of mold and mildew.

### VOC Emissions

**GREENGUARD Gold Certified**

Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010. This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

### Acoustical Performance

CAC testing conducted using Prelude® XL® suspension system for 15/16" edge detail and Silhouette® suspension system for 9/16" edge detail.

### Primary (Embodied) Energy

See all LCA information on our EPDs.

### High Recycled Content

Contains greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines. HRC items contain 15% or greater post-consumer recycled ceilings.

**PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS**  
UL.COM/CC  
UL 2818



### Insulation Value

R Factor – 2.2 (BTU units)  
R Factor – 0.39 (Watts units)

### 30-Year Performance Guarantee & Warranty

When installed with Armstrong® Suspension System. Details at armstrongceilings.com

### Weight; Square Feet/Carton

1945 – 1.14 lbs/SF; 48 SF/ctn	1436 – 1.04 lbs/SF; 72 SF/ctn
1941, 1942 – 1.125 lbs/SF; 40 SF/ctn	1431 – 1.06 lbs/SF; 62.5 SF/ctn
1944 – 1.125 lbs/SF; 48 SF/ctn	1434 – 1.05 lbs/SF; 60 SF/ctn
1433 – 1.05 lbs/SF; 60 SF/ctn	1437 – 1.04 lbs/SF; 72 SF/ctn

### Minimum Order Quantity

1 carton

### Metric Items Available

1941M, 1944M, 1945M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

TechLine 877 276-7876

armstrongceilings.com/commercial

**Armstrong®**  
CEILING & WALL SOLUTIONS

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MINERAL FIBER



# ULTIMA® ULTIMA® High NRC

Tegular  
fine texture

Now in  
Shapes!

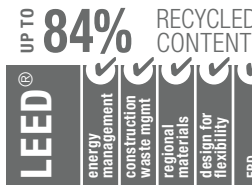


GREENGUARD  
Gold Certified  
(details below)

Declare<sup>SM</sup>  
Living Building  
Challenge Compliant



SUSTAIN<sup>SM</sup>  
High Performance  
Sustainable  
Ceiling Systems



Calculate LEED contribution at  
armstrongceilings.com/greengenie

LOCATION DEPENDENT

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## VISUAL SELECTION

## PERFORMANCE SELECTION

Dots represent high level of performance.

Edge Profile	Susp. Dwg. Pgs. 474-478 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)
<b>ULTIMA®</b>			
15/16" Beveled Tegular	15	<b>1422</b>	6 x 48 x 3/4"
	15	<b>1917</b>	12 x 24 x 3/4"
	15	<b>1993</b>	12 x 48 x 3/4"
	15	<b>1994</b>	12 x 60 x 3/4"
	15	<b>1995</b>	12 x 72 x 3/4"
	15	<b>1911</b> <b>1911HRC</b>	24 x 24 x 3/4"
	15	<b>1951</b>	24 x 24 x 3/4"
	15	<b>1894</b>	24 x 24 x 3/4"
	15	<b>1914</b> <b>1914HRC</b>	24 x 48 x 3/4"
	15	<b>1985</b>	24 x 60 x 3/4"
9/16" Beveled Tegular	29, 44, 48, 52, 56	<b>1423</b>	6 x 48 x 3/4"
	29, 44, 48, 52, 56	<b>1427</b>	6 x 60 x 3/4"
	29, 44, 48, 52, 56	<b>1916</b>	12 x 24 x 3/4"
	29, 44, 48, 52, 56	<b>1996</b>	12 x 48 x 3/4"
	29, 44, 48, 52, 56	<b>1997</b>	12 x 60 x 3/4"
	29, 44, 48, 52, 56	<b>1998</b>	12 x 72 x 3/4"
	29, 44, 48, 52, 56	<b>1912</b> <b>1912HRC</b>	24 x 24 x 3/4"
	29, 44, 48, 52, 56	<b>1952</b>	24 x 24 x 3/4"
	29, 44, 48, 52, 56	<b>1895</b>	24 x 24 x 3/4"

UL Classified Acoustics	Total Acoustics <sup>1</sup>	Fire Performance	Light Reflect	Mold & Mildew Protection	Sag Resist	Certified Low VOC Emissions	Wash	Impact	Scratch	Soil	Recycled Content	Recycle Program	30-Yr Warranty
NRC + CAC =	NRC CAC			Bio-Block Humi-Guard+									
N/A	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
N/A	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
0.65	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
0.65	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
0.65	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
0.75	35	<b>BETTER</b>	Class A	0.90	•	•	•	•	•	•	•	•	•
0.60	40	<b>GOOD</b>	Class A	0.90	•	•	•	•	•	•	•	•	•
0.60	40	<b>GOOD</b>	Fire Guard™	0.90	•	•	•	•	•	•	•	•	•
0.75	35	<b>BETTER</b>	Class A	0.90	•	•	•	•	•	•	•	•	•
0.75	35	<b>BETTER</b>	Class A	0.90	•	•	•	•	•	•	•	•	•
0.75	35	<b>BETTER</b>	Class A	0.90	•	•	•	•	•	•	•	•	•
N/A	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
N/A	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
N/A	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
0.65	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
0.65	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
0.65	N/A	—	Class A	0.90	•	•	•	•	•	•	•	•	•
0.75	35	<b>BETTER</b>	Class A	0.90	•	•	•	•	•	•	•	•	•
0.60	40	<b>GOOD</b>	Class A	0.90	•	•	•	•	•	•	•	•	•
0.60	40	<b>GOOD</b>	Fire Guard	0.90	•	•	•	•	•	•	•	•	•

<sup>1</sup> Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.  
GOOD (NRC 0.60-0.65; CAC 35+) BETTER (NRC 0.70-0.75; CAC 35+) BEST (NRC 0.80+; CAC 35+)



MINERAL FIBER



# ULTIMA® ULTIMA® High NRC

Tegular  
fine texture

Now in  
Shapes!

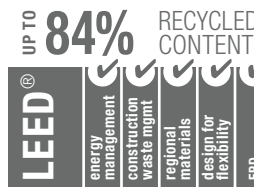


**GREENGUARD**  
Gold Certified  
(details below)

**Declare**  
Living Building  
Challenge Compliant



**SUSTAIN**  
High Performance  
Sustainable  
Ceiling Systems



Calculate LEED contribution at  
armstrongceilings.com/greengenie

## VISUAL SELECTION

Edge Profile	Susp. Dwg. Pgs. 474-478 armstrongceilings.com/catdwgs	Item No.	Dimensions (Inches)
		<b>1915</b> <b>1915HRC</b>	24 x 48 x 3/4"
		<b>1986</b>	24 x 60 x 3/4"
		<b>1982</b>	24 x 72 x 3/4"
		<b>1905</b> <b>1905HRC</b>	30 x 30 x 3/4"
		<b>1929</b> <b>1929HRC</b>	30 x 54 x 3/4"

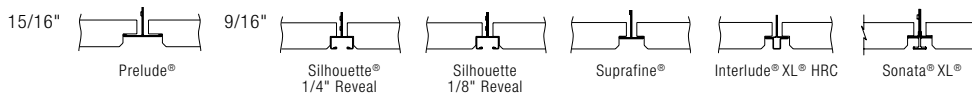
Size Capabilities	Width	Length
15/16" & 9/16" Beveled Tegular	3/4" Thick	
<b>1 CTN MIN</b> <b>Made-to-Order</b> <b>Sizes (3 Wks)</b>	4" - 6"	12" - 72"
	6-1/2" - 30"	4" - 72"
	30-1/2" - 48"	4" - 30"

**ULTIMA® with AirGuard™ Coating** Actively removes formaldehyde from indoor air.

15/16" Beveled Tegular	15	<b>1901</b>	24 x 24 x 3/4"	0.75	35	<b>BETTER</b>	Class A	0.90											
	15	<b>1904</b>	24 x 48 x 3/4"	0.75	35	<b>BETTER</b>	Class A	0.90											
9/16" Beveled Tegular	29, 44, 48, 52, 56	<b>1902</b>	24 x 24 x 3/4"	0.75	35	<b>BETTER</b>	Class A	0.90											
	29, 44, 48, 52, 56	<b>1906</b>	24 x 48 x 3/4"	0.75	35	<b>BETTER</b>	Class A	0.90											

<sup>1</sup> Total Acoustics® ceiling panels have an ideal combination of noise reduction and sound-blocking performance in one product.  
**GOOD** (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)

## SUSPENSION SYSTEMS



### Blizzard White – Suspension System Finish

A color and texture coordinated suspension system to complement Ultima ceiling panels for a monolithic look and feel.

## PHYSICAL DATA

**Material**  
Wet-formed mineral fiber with DuraBrite® acoustically transparent membrane

**Surface Finish**  
DuraBrite with factory-applied latex paint

**Fire Performance**  
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled).  
**Fire Guard™**: A fire-resistive ceiling when used in applicable UL assemblies (Class A).

**ASTM E1264 Classification**  
Type IV, Form 2, Pattern E  
Fire Class A

**Humidity/Sag Resistance**  
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications. (Excludes items 1905 and 1929).

**Mold/Mildew Protection**  
Ceiling panels with BioBlock® performance resist the growth of mold and mildew.

**VOC Emissions**  
**GREENGUARD Gold Certified**  
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010.  
This standard is the guideline for low emissions in LEED, CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

**Acoustical Performance**  
CAC testing conducted using Prelude® XL® suspension system for 15/16" edge detail and Silhouette® suspension system for 9/16" edge detail.

**Primary (Embodied) Energy**  
See all LCA information on our EPDs.

**High Recycled Content**  
Contains greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines. HRC items contain 15% or greater post-consumer recycled ceilings.

**Insulation Value**  
R Factor – 2.2 (BTU units) R Factor – 0.39 (Watts units)

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Declare™ is a service mark of The International Living Future Institute  
UL is a registered trademark of UL LLC. All other trademarks used herein are the property of AWI Licensing LLC and/or its affiliates  
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PRODUCT CERTIFIED  
FOR LOW CHEMICAL  
EMISSIONS  
UL.COM/GG  
UL 2818



**30-Year Performance Guarantee & Warranty**  
When installed with Armstrong® Suspension System.  
Details at armstrongceilings.com

**Weight: Square Feet/ Carton**  
1917, 1993 – 1.05 lbs/SF; 24 SF/ctn  
1422 – 1.08 lbs/SF; 24 SF/ctn  
1905 – 1.05 lbs/SF; 62.5 SF/ctn  
1911, 1912, 1914, 1915 – 1.05 lbs/SF; 48 SF/ctn  
1916, 1996 – 1.05 lbs/SF; 24 SF/ctn  
1423 – 1.08 lbs/SF; 24 SF/ctn  
1427 – 1.07 lbs/SF; 24 SF/ctn  
1929 – 1.02 lbs/SF; 68 SF/ctn  
1895, 1952, 1951 – 1.31 lbs/SF; 48 SF/ctn  
1901, 1902, 1904, 1906 – 1.08 lbs/SF; 48 SF/ctn  
1997, 1994 – 1.05 lbs/SF; 30 SF/ctn  
1998, 1995 – 1.05 lbs/SF; 36 SF/ctn  
1981, 1982 – 1.08 lbs/SF; 72 SF/ctn  
1894, 1985, 1986 – 1.08 lbs/SF; 80 SF/ctn

**Minimum Order Quantity**  
1 carton

**Metric Items Available**  
1905M, 1912M, 1912MHRC, 1914M, 1915M, 1916M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

**Armstrong®**  
CEILING & WALL SOLUTIONS

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MINERAL FIBER

# INTERLUDE® XL®

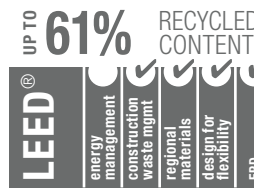
## High Recycled Content

### 9/16" Dimensional Tee System



**Declare<sup>SM</sup>**  
Living Building  
Challenge Compliant

**SUSTAIN<sup>SM</sup>**  
High Performance  
Sustainable  
Ceiling Systems



Calculate LEED contribution at  
armstrongceilings.com/greengenie



#### KEY SELECTION ATTRIBUTES

- Seismic Rx® Suspension System saves time and money; offer an ICC-ES approach to installations (ESR-1308)
- Interlude® XL® is part of the Sustain™ portfolio and meets the most stringent sustainability compliance standards today
- Hot dipped galvanized coating inhibits red rust better than electrogalvanized or painted systems
- XL<sup>2</sup> staked-on end detail provides secure locked connection
- Rotary-stitched during manufacture for additional torsional strength and extra stability during installation
- Unlimited intersections for flexibility of cross tee placement
- Accommodates virtually any fixture, especially 1' x 4' light fixtures and air handling
- Made-to-Order main beams and cross tees can be ordered for your project needs in one carton minimums
- Continuous rolled single piece system
- Some items available in metric sizes
- 10-Year Limited System Warranty; 30-Year Limited Ceiling Systems Warranty when used with HumiGuard® Plus products



#### TYPICAL APPLICATIONS

- Offices
- Lobbies and corridors
- Conference rooms
- Retail
- Hospitality












Blizzard White powder-coated finish coordinates perfectly with Lyra®, Calla®, Optima®, and Ultima® ceiling panels for a clean, seamless, monolithic installed visual.

Linear lighting integration is easy with made-to-order main beam-to-cross tee adapters, rout spacing, miter spacing, and short cross tees (3" to 6" lengths).

#### VISUAL SELECTION

#### PERFORMANCE

#### PACKAGING

Item No.	Face Profile	Description	Rout Spacing	Dimensions (Inches)	Hanger Spacing* Lbs./Lin. Ft.				Fire Guard™	Seismic Category 	Pcs./ Ctn.	Lin. Ft./ Ctn.	
					1 Ft.	2 Ft.	4 Ft.	5 Ft.					
Interlude XL									Dots represent high level of performance.				
 6100HRC_ _ ♦	9/16"	12' ID Main Beam	6" O.C.	144 x 9/16 x 1-3/4"	—	—	12.6	—	—	—	20	240	
 6101HRC_ _ ♦	9/16"	12' HD Main Beam	6" O.C.	144 x 9/16 x 1-3/4"	—	—	16.79	—	—	●	20	240	
 610010HRC_ _ ♦	9/16"	10' ID Main Beam	6" O.C.	120 x 9/16 x 1-3/4"	—	—	12.6	—	—	—	20	200	
 XL6180HRC_ _ ♦	9/16"	8' Cross Tee	12" O.C.	96 x 9/16 x 1-3/4"	—	—	12.6	—	—	●	20	160	
 XL6190HRC_ _ ♦	9/16"	6' Cross Tee	12" O.C.	72 x 9/16 x 1-3/4"	—	—	12.6	—	—	●	20	120	
 XL6150AHRC_ _ ♦	9/16"	5' Cross Tee	6", 20", 30"	60 x 9/16 x 1-3/4"	—	—	—	5.8	—	●	60	300	
 XL6140HRC_ _ ♦	9/16"	4' Cross Tee	12" O.C.	48 x 9/16 x 1-3/4"	3.0	—	12.6	—	—	●	60	240	
 XL6170HRC_ _ ♦	9/16"	2.5' Cross Tee	—	30 x 9/16 x 1-3/4"	38.8	—	—	—	—	●	60	100	
 XL6120HRC_ _ ♦	9/16"	2' Cross Tee	—	24 x 9/16 x 1-3/4"	—	66.89	—	—	—	●	60	120	
 XL6110HRC_ _ ♦	9/16"	1' Cross Tee	—	12 x 9/16 x 1-3/4"	66.89	—	—	—	—	●	120	120	
Size Capabilities		Main Beams Length	Cross Tees Length										
9/16"	1 CTN MIN Made-to-Order Sizes or Colors (2 Wks)	36" – 144"	6" – 144"										
		Rout spacing 3" from ends, 6" thereafter											
		NOTE: Up to 6 Weeks for Color & Size Combinations											
													ASTM Class HD - Heavy-duty ID - Intermediate-duty LD - Light-duty

Made-to-Order main beams and cross tees can be ordered with special sizes, rout spacing, and colors for your project needs in one carton minimums.

#### Interlude XL items for TechZone® Ceiling Systems

□ 6195AHRC_ _ ♦	9/16"	126" HD Main Beam	10", 30", 50", 70", 90", 110", 116"	126 x 9/16 x 1-3/4"	—	—	16.79	—	—	•	20	210
□ 6127AHRC_ _ ♦	9/16"	120" HD Main Beam	15", 42", 48", 75", 102", 108"	126 x 9/16 x 1-3/4"	—	—	16.79	—	—	•	20	220
□ XL6164AHRC_ _ ♦	9/16"	54" Cross Tee	6", 27", 48"	54 x 9/16 x 1-3/4"	—	—	9.2 @ 4.5'	—	—	•	60	270
□ XL6162HRC_ _ ♦	9/16"	42" Cross Tee	—	42 x 9/16 x 1-3/4"	—	—	20 @ 3.5'	—	—	•	60	210
□ XL6167HRC_ _ ♦	9/16"	27" Cross Tee	—	27 x 9/16 x 1-3/4"	—	49.32	—	—	—	•	60	120
□ XL6106HRC_ _ ♦	9/16"	6" Cross Tee	—	6 x 9/16 x 1-3/4"	—	—	—	—	—	•	60	30
□ XL6104HRC_ _ ♦	9/16"	4" Cross Tee	—	4 x 9/16 x 1-3/4"	—	0000	0	0	—	•	60	20

NOTE: Additional Interlude XL items for TechZone Ceiling Systems are listed in the TechZone Technical Guide (BPCS-4486). Available online at armstrongceilings.com/techzone

# INTERLUDE® XL®

## High Recycled Content

### 9/16" Dimensional Tee System

Item No.	Description	Length	(A) Flange	(B) Flange	(C) Flange	Pcs./Ctn.	Lin. Ft./Ctn.
<b>Suggested Wall Moldings and Shadow Moldings</b> Additional molding options available. See <a href="http://armstrongceilings.com/suspensionsystems">armstrongceilings.com/suspensionsystems</a> (search: accessories and moldings)							
<input type="checkbox"/> <b>7800HRC</b> _ ♦	12' Hemmed Angle Molding	144"	7/8"	7/8"	—	30	360
<input type="checkbox"/> <b>7804HRC</b> _ ♦	12' Hemmed Angle Molding	144"	9/16"	7/8"	—	30	300
<input type="checkbox"/> <b>7873</b> _ ♦	10' Shadow Molding	120"	9/16"	15/16"	3/8"	30	360
<input type="checkbox"/> <b>7874</b> _ ♦	10' Shadow Molding	120"	9/16"	15/16"	1/4"	30	300
<input type="checkbox"/> <b>7877</b> _ ♦***	10' Seismic Shadow Molding	120"	15/16"	15/16"	1/4"	30	300
<input type="checkbox"/> <b>7878</b> _ ♦***	10' Seismic Shadow Molding	120"	15/16"	15/16"	3/8"	30	300


\* Simple Span

\*\*\* Suitable for Category D, E, F Seismic Installation with BERC2 clip

♦ Items available in Blizzard White powder-coated finish only.

When specifying or ordering items with a color or finish, add the two-letter suffix to the end of the item number (e.g., 7804**ZW** – Blizzard White)

## MAXIMUM FIXTURE WEIGHT

Configuration		Item No.	Fixture		Planning Module		Hanger Spacing		Maximum Weight	
A	B		A	B	A	B	A	B	A	B
Main Beam to Main Beam — Drawing Key: Main beam ( ↑ ) Cross tee ( --- ) Hanger wire ( ✚ )										
		6100HRC	24" x 48"	—	48" x 48"	—	48"	—	75.0 lbs.	—

Main Beams tested as follows: 6100 tested at 12.6 lbs./LF to 1/360 of 4' span.

<b>Cross Tee and Cross Tee – Drawing Key: Main beam (↑) Cross tee (---) Hanger wire (✚)</b>										
		<b>XL6140HRC</b>	24" x 48"	24" x 24"	48" x 48"	48" x 48"	48"	48"	75.0 lbs.	41.0 lbs.

Cross tees tested as follows: XL6140 tested at 12.6 lbs./LF to 1/360 of 4' span.

Fixtures weighing more than 56 lbs. should be independently supported. Fixture weight is based on single fixture only. For end-to-end fixtures or other configurations not shown, consult your Armstrong Ceilings representative.  
NOTE: The above data is based on 48" hanger wire spacing, board weight of 1 lb./SF, maximum deflection of tees not to exceed 1/360 of the span, and suspension system installed in accordance with ASTM C636.

## COLOR AND FINISH SELECTION

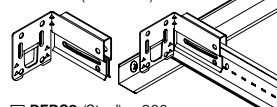


♦ Items available in powder-coated finish

## ACCESSORIES

**BERC2 – 2" Beam End Retaining Clip** – Allows you to create a code compliant Seismic D, E, F ceiling installation while eliminating the need to use 2" wall molding, or spreader bars.

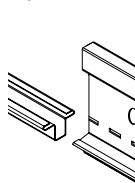
**ALBERC2** (aluminum)



- ☐ **BERC2** (Steel) – 200 pcs
- ☐ **FZBERC2** (Steel) – 50 pcs

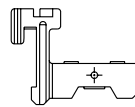
- ☐ **ALBERC2** (Aluminum) – 200 pcs
- ☐ **FZALBERC2** (Aluminum) – 50 pcs

**IES3 - Interlude Expansion Sleeve**



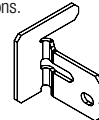
- ☐ **IES3** – 200 pcs
- ☐ **FZIES3** – 50 pcs

**C1430 – Variable Placement Hook Clip** – Attach to T-Bar to create special length tees and position anywhere along the main beams.



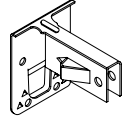
- ☐ **C1430** – 200 pcs
- ☐ **FZC1430** – 50 pcs

**STAC – Single Tee Adapter Clip** – Used to create code compliant non-seismic and seismic C and D, E, F off-module main beam to cross tee connections.



- ☐ **STAC** – 120 pcs
- ☐ **FZSTAC** – 50 pcs

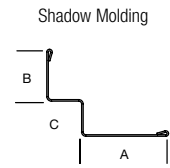
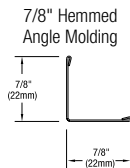
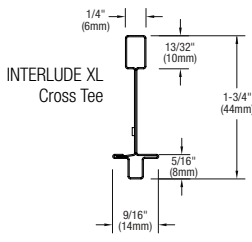
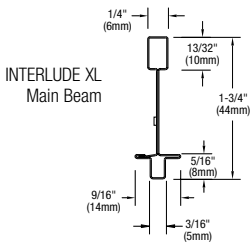
**GCWA – Grip Clip Wall Attachment** – Joins main beam or cross tee to wall molding via locking barbs without pop rivets or screws.



- ☐ **GCWA** – 250 pcs
- ☐ **FZGCWA** – 50 pcs

INTERLUDE® XL®  
High Recycled Content  
9/16" Dimensional Tee System

DETAILS



SEISMIC PERFORMANCE

**Main Beams**  
6101HRC, 6127AHRC, 6195AHRC  
**Minimum Lbs. To Pull Out Compression/Tension**  
329.0

**Cross Tees**  
XL6110HRC, XL6120HRC, XL6140HRC, XL6150AHRC,  
XL6161HRC, XL6162HRC, XL6164AHRC, XL6167HRC,  
XL6170HRC, XL6180HRC, XL6190HRC  
**Minimum Lbs. To Pull Out Compression/Tension**  
373.0

**ICC Reports**  
For areas under ICC jurisdiction, see ICC evaluation report number ESR-1308 for allowable values and/or conditions of use concerning the suspension system components listed on this page. The report is subject to reexamination, revisions, and possible cancellation.  
To derive maximum lbs/SF, divide the on-center spacing of the component into the lbs/LF given in the load test data table.

PHYSICAL DATA

**Material**  
Hot dipped galvanized steel  
**Surface Finish**  
Baked polyester paint or powder-coated finish  
Manufactured and tested in accordance with ASTM C635

**Face Dimension**  
9/16"  
**Profile**  
Dimensional tee  
**Cross Tee/Main Beam Interface**  
Flush fit and center protrusion

**End Detail**  
Main Beam: Coupling  
Cross Tee: Staked-on XL clip  
**Duty Classification**  
Intermediate or Heavy-duty

Square Lay-in  
medium texture

## FSC Bldg-Kitchens & Washrooms



This is a non-directional ceiling panel for special application areas prone to moisture.

### KEY SELECTION ATTRIBUTES

- Inorganic product. Resistant to the growth of mold and mildew
- Durable – Washable, Soil-resistant
- Resistance to chemical fumes
- Non-directional visual reduces scrap and installation time
- Superior resistance to sagging in high humidity conditions including standing water and outdoor applications
- 30-Year Limited System Warranty against visible sag, mold, and mildew

### TYPICAL APPLICATIONS

- Laboratories
- Locker rooms/indoor pools
- Hydrotherapy/shower areas
- Food preparation areas (unperforated only)
- Exterior soffits/canopies
- Indoor parking garages
- Marine use (See note under "Application Considerations")

### COLOR



White  
(WH)

### DETAILS



1. Ceramaguard® Square Lay-in
2. Ceramaguard® with Prelude® Plus XL® 15/16" suspension system



Square Lay-in  
medium texture

**GREENGUARD**  
Gold Certified  
(details below)

Calculate LEED contribution at  
[armstrongceilings.com/greengenie](http://armstrongceilings.com/greengenie)



LOCATION DEPENDENT

**PERFORMANCE SELECTION** Dots represent high level of performance.

\$\$\$\$

UL Classified Acoustics		=	Total Acoustics <sup>1</sup>	Fire Performance	Light Reflect	Mold & Mildew Protection	Sag Resist	Certified Low VOC Emissions	Wash	Soil	Recycled Content	Recycle Program	30-Yr Warranty
NRC	+ CAC												
N/A	40	–	Fire Guard™	0.88	•	•	•	•	•	•	Std	–	•
0.55	38	–	Fire Guard	0.82	•	•	•	•	•	•	Std	–	•
0.55	40	–	Fire Guard	0.82	•	•	•	•	•	•	Std	–	•

\* Plain pattern (unperforated) is not appropriate where aesthetics or visual consistency is important.

15/16"



Prelude®, Prelude® Plus XL® Aluminum, Prelude® XL® Fire Guard™, Prelude® Plus XL® Fire Guard™, Prelude Plus XL Stainless Steel, Prelude XL for Exterior Applications

## Material

### Wet-formed ceramic and mineral fiber composite

### Surface Finish

Factory-applied vinyl latex paint

### Fire Performance

**Fire Performance**  
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index 25 or less. Smoke Developed Index 50 or less (UL labeled). Fire Guard™: A fire-resistive ceiling when used in applicable UL assemblies (Class A).

### ASTM E1264 Classification

**ASTM E1264 Classification**  
Type XX (high density ceramic-like composition with scrubbable finish).  
Pattern C E (items 607, 608);  
Pattern G (item 605)  
Fire Class A

### Humidity/Sag Resistance

**Humidity/Sag Resistance**  
HumiGuard® Max ceiling panels are recommended for areas with maximum humidity, including outdoor applications.

### Mold/Mildew Protection

Ceiling panels with BioBlock® performance resist the growth of mold and mildew.

### VOC Emissions

**GREENGUARD Gold Certified**  
Third-party certified compliant  
with California Department of  
Public Health CDPH/EHLB/Standard  
Method Version 1.1, 2010. This standard is the  
guideline for low emissions in LEED, CalGreen  
Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green  
Building Assessment Protocol.

**PRODUCT CERTIFIED  
FOR LOW CHEMICAL  
EMISSIONS**  
UL.COM/GG  
UL 2818

**GREENGUARD**

**GOLD**

### Insulation Value

R Factor — 1.4 (BTU units)  
R Factor — 0.25 (Watts units)



## Application Considerations

**Application considerations**  
For outdoor soffits and canopies, wind uplift should be considered. Ceramaguard® is non-combustible per ASTM E136 and ISO 1182. See USCG Approval 164.109/52/0 for marine applications in all waters.

### 30-Year Performance Guarantee & Warranty

**30-Year Performance Guarantee & Warranty**  
When installed with Armstrong® Suspension System.  
Details at [armstrongceilings.com](http://armstrongceilings.com)

## Weight: Square Feet/Carton

605, 608 – 1.52 lbs/SF; 48 SF/ctn  
607 – 1.48 lbs/SF; 48 SF/ctn

**Minimum Order Quantity**

1 carton

### Metric Items Available

**Metric Items Available**  
605M, 607M, and 608M – Metric items are subject to extended lead times and minimum quantities. Contact your representative for more details.

**TechLine / 1 877 276-7876**  
**armstrongceilings.com/commercial**  
 (search: ceramaguard)  
**BPCS-3224-819**

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# MINERAL FIBER

# 7.0 Concrete Waterproofing

AQUAFIN Inc.  
505 Blue Ball Rd. #160  
Elkton, MD 21921  
p: 410-392-2300  
f: 410-392-2324  
e: info@aquafin.net  
w: www.aquafin.net



## Technical Datasheet

### AQUAFIN-IC (IntegraCoat) Crystalline Waterproofing Slurry

#### CSI Div. 7

07 16 16 Crystalline Waterproofing

#### LEED Points

MR Credit 5.1, Regional Materials.....Up to 2 Points  
IEQ Credit 4.2, Low-Emitting Materials Paints and Coatings...1 Point  
*Using this AQUAFIN product can help contribute to LEED certification of projects in the categories shown above.*



#### Product Description:

AQUAFIN-IC is a state-of the art one component, penetrating cementitious material which waterproofs and protects new or old structurally sound concrete. It resists strong hydrostatic pressure and is not a vapor barrier (allows concrete to "breathe").

AQUAFIN-IC is powered by Aquafin's advanced crystalline technology which chemically reacts with moisture and free lime to reduce the water absorption of the resultant cement matrix within the concrete. This is a result of the formation of nano-scale crystals by the active catalysts present in the capillary system. This sustains a durable waterproof effect in the concrete, thereby blocking the passage of water. This reaction will continue to take place anytime water is present for the life of the concrete structure where by making the AQUAFIN-IC a truly permanent and integral waterproofing solution. The AQUAFIN-IC nano-crystals will also grow in and along static hairline crack sealing them and preventing further incoming water.

#### Typical Applications:

- Exterior (positive side) or interior (negative side) waterproofing of below grade foundations, basements, retaining walls, utility vaults, elevator pits.
- Water tanks, wastewater tanks, water catchment basins, manholes, parking garages, tunnels, slurry walls.

#### Advantages:

- Advanced crystalline technology that penetrates deep into concrete
- Potable water approved - NSF/ANSI 61
- Applied to moist (damp) substrate
- Environmentally friendly, norganic - non toxic, zero VOC's
- Permanently active
- Easy to use - needs only water for mixing
- Can be applied to green concrete as soon as forms are stripped
- Protects concrete against fresh water, salt water, waste water & aggressive ground water
- Resists strong hydrostatic pressure

#### Physical and Technical Data

Aggregate State	Powder
Color	Cement gray or white
Bulk Density	68 lbs/ft <sup>3</sup> (1.09 kg/dm <sup>3</sup> ) gray
VOC	0 g/L
Pot Life	30 minutes
Setting Time	~45 mins (gray); ~60 mins (white)
Potable water certified (www.wqa.org)	NSF/ANSI 61 (gray + white)
Permeability (CRD-C 48-92)	No measurable leakage up to 460 feet (140 m) head pressure or 200 psi (14 bar), positive or negative water pressure side.
All data are average values obtained under laboratory conditions. In practical use temperature, humidity and absorbance of the substrate may influence the above given values.	

complexes which seal the capillaries and minor shrinkage cracks. They penetrate even against strong hydrostatic pressure, becoming an integral part of the concrete. The waterproofing chemicals remain active for the life of the structure, permanently sealing it from water penetration. Unlike a membrane, AQUAFIN-IC may require up to one month to reach its maximum waterproofing capability. Environmental factors such as ambient temperature, density of concrete, moisture present and weather conditions all can affect the timing of the sealing process. Under dry conditions the AQUAFIN-IC chemicals lie dormant, however they reactivate whenever re-exposed to moisture. AQUAFIN-IC post seals static shrinkage cracks up to 1/64" (0.4 mm), which occur after the product has been applied and cured.

#### Substrate Preparation:

The substrate must be sound, clean, and have an "open" capillary system ("tooth and suction"), and feel like fine sand paper (ICRI CSP 3 - 4 profile) to insure mechanical bond (surface adhesion) and allow AQUAFIN-IC chemicals to penetrate. Horizontal surfaces should have a rough wood float or broom finish. Smooth formed walls, or smooth troweled slabs; must be roughened, otherwise AQUAFIN-IC application may not achieve sufficient bond.

- Remove all dirt, cement laitance, form release agents, curing compounds, loose particles, paints, etc. by means of wet or dry sandblasting, high pressure water blasting (i.e. 4,000 psi (275 bar) adjusting higher or lower depending on 28 day concrete strength) or

# AQUAFIN-IC

- Fill repair areas flush with surface using MORTAR-IC.
- Thoroughly rinse all the surfaces to be waterproofed with clean water. Prewater several times so that the concrete or masonry is saturated to control surface suction and ensure the growth of the crystalline formation deep within the pores of the substrate. When AQUAFIN-IC is applied, the surface should be damp, but not wet. Any surface water on horizontal surfaces must be removed.

## Mixing:

Approximate mixing ratio is:

- by volume: 3 parts powder to 1 part water
- 50 lb powder to 1.6 - 1.9 gallons water (22.7 kg powder to 6.1 - 7.3 liters water)

Add the AQUAFIN-IC powder to water and mix thoroughly until the mixture is completely free of lumps. Mix only as much material as can be used within 30 minutes. AQUAFIN-IC should be mechanically mixed with clean water to a consistency of thick oil paint. Separate containers (equal volume), should be used for measuring the powder and water. If „false setting“ occurs after mixing, do not add water; restir to restore workability.

## Application

- Do not apply AQUAFIN-IC at temperatures below 40° F (5° C) or to a frozen substrate. For temperatures of 90° F (32° C) and above consult our office.
- Do not apply to a dry substrate.
- Use AQUAFIN-1K for brick or stone substrates.

## HORIZONTAL SURFACES & CONSTRUCTION JOINTS

### A. Dry-sprinkle and power-trowel or wooden float application:

A trial dry-shake application is highly recommended prior to the actual application.

- Standard application for concrete with design strength up to 4000 psi (27.6 MPa): When the concrete to be treated starts to reach initial set, the specified amount of AQUAFIN-IC is dry distributed, by hand, using a sieve, or similar device, onto the concrete surface. It is then troweled in until coverage is uniform and the specified finish is achieved (smooth or brushed). Consult Technical Guideline G001.

### B. Mud Slabs / Split Slabs / Construction Joints:

- Apply AQUAFIN-IC in slurry or dry powder consistency to pre-watered concrete substrate, "mud slab", split slabs or construction joints immediately prior to casting the structural slab or wall. Consult Technical Guideline G002.

### C. Brush or spray application:

Note: Slab surfaces must have a rough wood float or broom finish.

- Apply AQUAFIN-IC in slurry consistency in the specified quantity, in one coat.

## VERTICAL SURFACES & CONSTRUCTION JOINTS

### A. Brush application:

- Apply two coats of AQUAFIN-IC, in the specified quantity, in a slurry consistency with a masonry brush. Brush on the material evenly and work it well into the surface. Apply second coat while the first coat is still tacky ("green").

### B. Spray Application:

- AQUAFIN-IC may be applied using appropriate compressed air system.

## Curing: and Protection:

Outdoor, or exposed treated areas:

- Keep damp (moist) for a period of 2 - 3 days for standard waterproofing applications, 7 days for potable water tanks. Start curing as soon as AQUAFIN-IC has hardened sufficiently so as not to be damaged by a fine water spray. Alternatively a dissipating resin curing agent in elevator pits, wastewater tanks, etc. can be used. Call our office for guidance.
- Protect exposed surfaces against direct sun, wind and frost by covering with plastic sheeting, burlap, or similar. Do not lay plastic sheeting directly on AQUAFIN-IC as air contact is required for proper curing.
- The freshly treated surfaces should be protected from rain for a minimum period of 24 hrs.
- Back filling can be carried out 36 hrs after completion of the AQUAFIN-IC treatment. Protection boards are generally not required. Backfill material shall be moist and not contain rocks or larger aggregate.

Indoor treated areas:

- Self curing in cool areas with high humidity.
- Keep moist for 2 - 3 days in areas with low humidity and 7 days for potable water tanks.
- Provide air circulation for minimum 24 hrs. following the AQUAFIN-IC treatment in poorly ventilated areas and deep pits.

Water Tanks:

- Can be carefully filled after 3 days. Do not fill large tanks faster than 6½ feet per 24 hrs (2 m/24 hrs).
- After complete curing of AQUAFIN-IC, potable water reservoirs should be thoroughly rinsed with potable water prior to being placed in service.

## Decoration, Coating and Tiling

- All surfaces treated with AQUAFIN-IC which are to be coated or painted must be left to cure for at least 4 weeks. At the end of the curing period, the surfaces should be saturated with water and neutralized with a 1:8 solution of muriatic acid. Following this, the areas must be thoroughly rinsed with water.
- When a plaster or render finish is required on top of AQUAFIN-IC treatments, it is essential to apply a thin rough cast of sand and cement on the final AQUAFIN-IC layer when it has reached initial set. If this is not practical, carefully clean the hardened AQUAFIN-IC surface and apply an appropriate bonding agent prior to rendering.
- Do not use for waterproofing applications under thin set tile mortar (i.e. swimming pools, balconies, etc.).
- Slabs on or below grade to be covered with vinyl tiles or other non-breathable products (i.e. epoxy, some carpets, resilient flooring, etc.) must be checked for *moisture vapor emission* as per ASTM F 1869-98 before installation of tiles, etc. since AQUAFIN-IC is not a vapor barrier. Use AQUAFIN VAPORTIGHT COAT-SG if vapor emission is an issue. Contact our Technical Department.

## Packaging:

50 lb. (22.7 kg) bags or pails.

## Storage & Shelf Life:

AQUAFIN-IC must be stored in a dry enclosed area off the ground. Shelf life in unopened, dry undamaged bags or pails is 12 months.

# AQUAFIN-IC

## Safety:

Refer to Safety Data Sheet (SDS). The use of a dust mask, safety goggles and gloves is recommended. This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use. Dispose of water and materials in accordance with Federal, State and Local regulations. Keep out of the reach of children.

LIMITED WARRANTY: AQUAFIN, INC. warrants this product for a period of one year from the date of installation to be manufactured free of defects and to be consistent with its technical properties as stated in our current Technical Data Sheet. This product must be used as directed and within its stated shelf life. AQUAFIN INC. will replace or at our discretion refund the purchase price of any product, excluding cost of labor, which is proven to be defective. Our product recommendations are based on industry standards and testing procedures. It is the buyer's obligation to test the suitability of the product for an intended use prior to using it. We assume no warranties written, expressed or implied as to any specific methods of application or use of the product. AQUAFIN INC. MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. AQUAFIN, INC. shall not be liable for damages of any sort including remote or consequential damages, down time, or delay. Any claim for a defective product must be filed within 30 days of discovery of a problem, and must be submitted with written proof of purchase.

**For Professional Use Only.**



**Certified to  
NSF/ANSI Standard 61**

see [www.wqa.org](http://www.wqa.org) for use restrictions

Consumption & Yield			AQUAFIN-IC (Gray or White)
Structure	No. of coats	Rate/Coat lb./yd <sup>2</sup> (kg/m <sup>2</sup> )	Yield/Coat ft <sup>2</sup> /50 lb. (m <sup>2</sup> /22.7 kg)
Dampproofing:			
Normal surface applications	1	1.40 (0.75)	320 (30.3)
Hydrostatic pressure:			
Walls, internal / external	2 total	1.25 - 1.4 (0.75) 2.50 - 2.8 (1.50)	320 - 360 (30.3) 160 - 180 (15.1)
Concrete slabs	1	2.00 (1.00)	225 (22.7)
Top of mud slabs + split slabs	1	2.25 (1.20)	200 (18.9)
Construction joints	1	2.00 (1.00)	225 (22.7)
<b>Note:</b> For salt & waste water environments, apply 2.8 lb/y <sup>2</sup> (1.5 kg/m <sup>2</sup> ) total. All above values theoretical. Coating thickness, approximately 1/32" (0.8 mm).			

## 8.0 Washroom Accessories

### Scott® Essential SRB Tissue Dispenser

---





## FEATURES & BENEFITS

Scott Essential provides reliable balance of efficiency, performance and value. When you need a sleek, toilet paper dispenser, the black (Smoke) Double Roll Dispenser from Scott Essential is a great choice. The Double Roll Bathroom Tissue Dispenser offers a high capacity, easy maintenance system that can help lower maintenance costs. This system can be used with both cored and coreless standard bathroom tissue rolls from Kleenex and Scott Brand, since it includes appropriate adaptors for both types of rolls. It's easy to use and install and helps reduce waste by only allowing access to the reserve roll once the lower roll is completely used. It's ADA compliant when properly installed and features a lock to help reduce pilferage.

- Manual dispensing of toilet paper / bathroom tissue
- Smoke (black) color is versatile and sleek
- The dispenser is ADA compliant when installed properly
- Includes a lock to reduce pilferage

The 'Intelligent' Washroom

(/workplacesolutions/offices/bathroom-intelligence)   [read more \(/workplacesolutions/offices/bathroom-intelligence\)](#)

details

variants

reviews

resources

find distributors

Spare Parts/Keys

buy online

## resources

### ECATALOG

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2019 Health & Wellness Catalog - English

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### INSTRUCTIONS FOR USE

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### TOOLS

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Dispenser Key Cross Reference - English

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### BID SPECIFICATIONS

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bid specifications - 09021 - English

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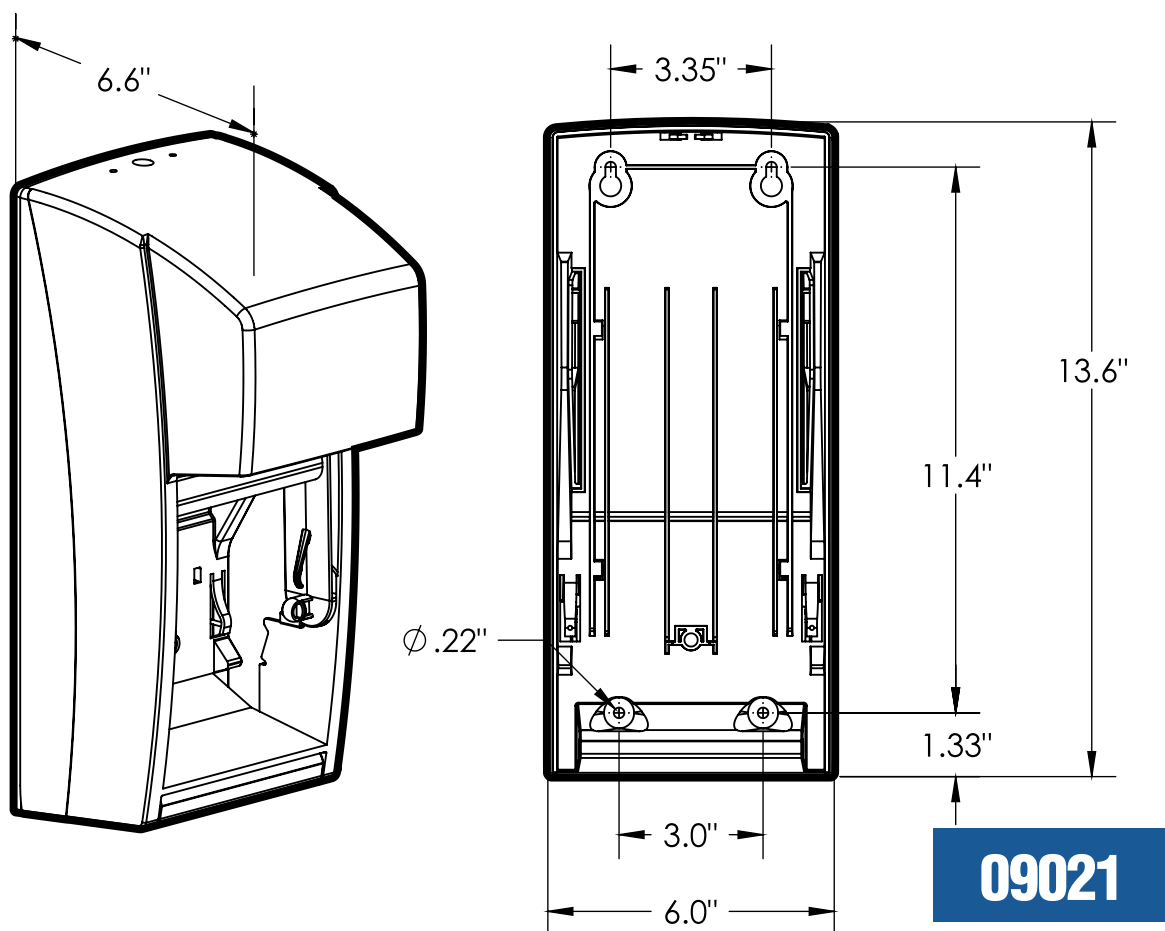


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## DOUBLE ROLL VERTICAL TISSUE DISPENSER, SMOKE/GREY WITH ADAPTERS

This Double Roll Bath Tissue Dispenser offers a high capacity, easy maintenance system.

Made of durable plastic; this system can be used with both KLEENEX® Brand or SCOTT®

Brand coreless bath tissue. The dispenser is ADA compliant when installed properly.

**Shipped 1 per box.**

*NOTE: Unless otherwise noted, suggested mounting height is the distance from the floor to the bottom of the dispenser.*

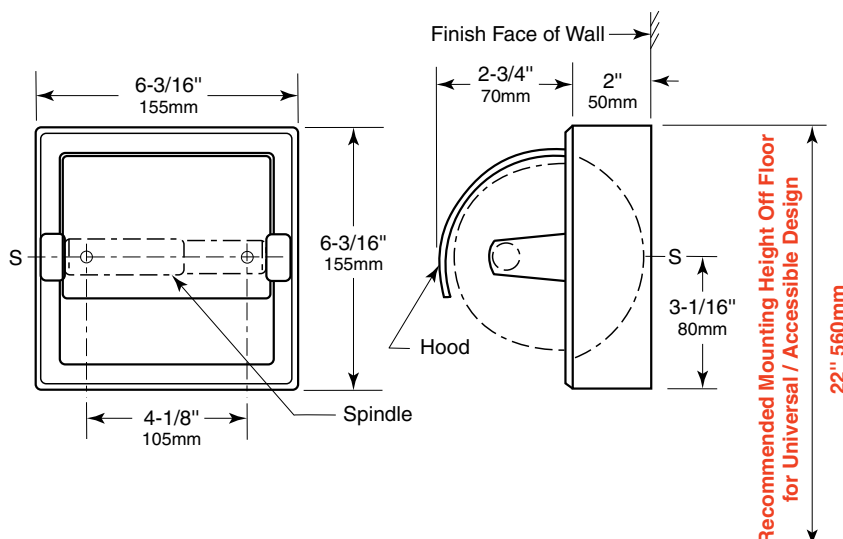


## Technical Data

# SURFACE-MOUNTED SINGLE-ROLL TOILET TISSUE DISPENSER WITH HOOD

**B-6699**  
**B-66997**

Specify Model Required: ☐ Model B-6699 Bright polished stainless steel  
☐ Model B-66997 Satin-finish stainless steel



### MATERIALS:

**Shell and Flange** — 18-8, Type-304, 22-gauge (0.8mm) stainless steel. Drawn, one-piece, seamless construction with two countersunk mounting screw holes.

**Skirt** — 18-8, Type-304, 22-gauge (0.8mm) stainless steel. All-welded construction.

**Support Posts (2)** — Heavy-duty cast zamak with chrome-plated finish.

**Hood** — 18-8, Type-304, 18-gauge (1.2mm) stainless steel. Hood hinged to shell.

**Spindle** — Chrome-plated plastic equipped with heavy-duty internal spring.

*Designer's Note:* Theft-resistant toilet tissue spindle, which is removable only with special key provided, are available as an optional accessory - part no. 283-604.

### INSTALLATION:

Mount unit on wall or toilet partition with two sheet-metal screws, furnished by manufacturer, at points indicated by an S. For partitions with particle-board or other solid core, secure with sheet-metal screws furnished, or provide through-bolts, nut, and washers.

For hollow-core metal partitions, provide solid backing into which the furnished sheet-metal screws can be secured.

For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure unit with sheet-metal screws furnished.

For other wall surfaces, provide fiber plugs or expansion shields for use with sheet-metal screws furnished, or provide 1/8" (3mm) toggle bolts or expansion bolts.

### SPECIFICATION:

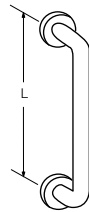
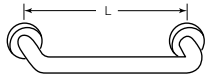
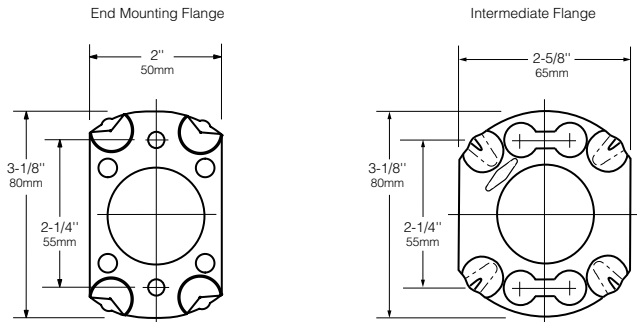
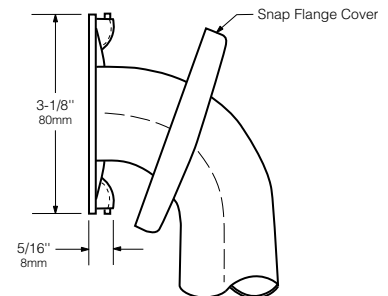
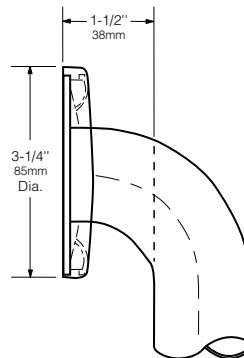
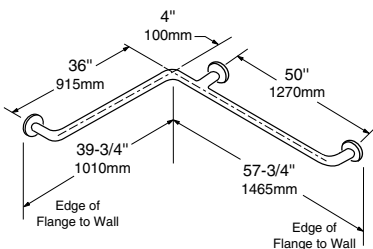
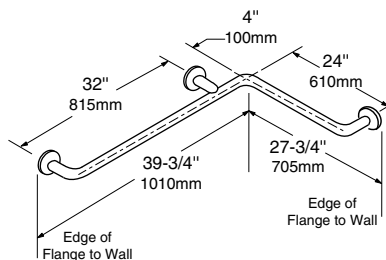
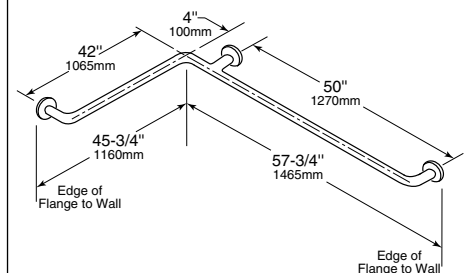
Surface-mounted toilet tissue dispenser shall be Type-304 stainless steel with \_\_\_\_\_ (insert one: bright polished or satin) finish. Skirt shall be 22 gauge (0.8mm) with all-welded construction. Shell and flange shall be 22 gauge (0.8mm) and have drawn, one-piece, seamless construction. Unit shall be equipped with 18-gauge (1.2mm) hood hinged to shell. \*Spindle shall be chrome-plated plastic with a heavy-duty internal spring.

*\*Theft-resistant spindle (part No. 283-604) available as a replacement part.*

Surface-Mounted Toilet Tissue Dispenser With Hood shall be Model \_\_\_\_\_ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

**BOBRICK****Technical Data****1 1/4" (32mm) DIAMETER  
STAINLESS STEEL GRAB BARS  
WITH SNAP FLANGE****B-5806  
SERIES**

Specify Finish Required: ☐ Satin finish  
☐ Satin finish with peened gripping surface; add suffix .99 to model number

**HORIZONTAL****VERTICAL****B-5806 x 18, 24, 30, 36, 42, 48****TWO-WALL  
TUB / SHOWER  
COMPARTMENT BAR****B-5837****HORIZONTAL  
TUB / SHOWER  
COMPARTMENT BAR 24 x 36****B-58616****TWO-WALL  
TOILET COMPARTMENT BAR 42 x 54****B-5897**

continued ...



## MATERIALS:

**Grab Bar** — 18-8, Type-304, 18-gauge (1.2mm) stainless steel tubing with satin-finish. 1-1/4" (32mm) outside diameter. Ends are heliarc welded to concealed mounting flanges. Clearance between the grab bar and wall is 1-1/2" (38mm).

**Concealed Mounting Flanges** — 18-8, Type-304, 11-gauge (3.2mm) thick, stainless steel plate; end flanges 2" x 3-1/8" (50 x 80mm) with holes for attachment to wall. Intermediate flanges 2-5/8" x 3-1/8" (65 x 80mm) wide x 3-1/8" (80mm) diameter.

**Snap Flange Covers** — 18-8, Type-304, 22-gauge (0.8mm) drawn stainless steel with satin-finish. 3-1/4" (85mm) diameter x 5/8" (16mm) deep. Each cover snaps over mounting flange to conceal mounting screws.

## STRENGTH:

Bobrick grab bars that provide 1-1/2" (38mm) clearance from wall can support loads in excess of 900 pounds (408kg) if properly installed. Other grab bar configurations can support loads in excess of 250 pounds (113kg) if properly installed, complying with accessible design (including ADAAG in the U.S.A.) for structural strength.

**Safety Warning:** Grab bars are no stronger than the anchors and walls to which they are attached and, therefore, must be firmly secured in order to support the loads for which they are intended. To avoid potential injury, the building owner or maintenance personnel should remove the grab bar from service if the grab bar is not adequately secured to wall or if there is any observed damage to the welds.

## INSTALLATION:

Provide concealed anchor device or backing as specified or required in accordance with local building codes before wall is finished. Fasten concealed mounting flanges to anchor device or backing with at least two screws opposing each other in each flange. Snap flange covers over each mounting flange to conceal mounting screws. Concealed anchor devices and mounting screws are not included with Bobrick grab bars and must be specified as an accessory.

For Grab Bars with an Intermediate Flange(s), Pull Snap-Flange Covers away from mounting flanges. Place grab bar in desired mounting location. Use intermediate flange as a template to mark location of mounting screws at intermediate flange only. Mark screw locations at the center of the slot in the middle of the double-keyhole shaped mounting holes (2) in the intermediate flange. Remove grab bar from wall. Drive the intermediate flange mounting screws into wall at marked locations. **Note:** Make sure to leave a space of just over 1/8" (3.17mm) between the underside of the screw head and the wall. Install grab bar on the wall by placing the round ends of the intermediate flange double-keyhole shaped mounting holes over the mounting screws (2) are located in the middle of the flange slots. Install the mounting screws into the wall at the end flanges and secure tightly. Tighten the mounting screws at the intermediate flange. Press all snap-flange covers into place to conceal mounting flanges.

**Note:** Recommend use of 1/4" or #14 sheet metal or wood screws to install Intermediate Flange. #12 screws may also be used.

## Important Notes:

1. **Mounting Kits** — Bobrick offers a mounting kit for installing grab bars; **one Bobrick mounting kit is required for each flange.**

Mounting Kit No.	Description
252-30	Consists of (3) #14 x 2½" Type-304 stainless steel, Phillips round-head, sheet-metal screws.

2. **Grab Bar Fastener** — Bobrick offers a grab bar fastening system that secures all Bobrick grab bar series; **one Bobrick fastener is required for each flange.** Install grab bar without backing in wall requires minimum 5/8" (16mm) thick painted or tiled drywall.

WingIt™ Fastener No.	Description
251-4	Consists of 10–32 x 5/16" round-head, Phillips 18/8 stainless steel screws. (1) WingIt grab bar fastener.

3. **Optional Anchor Device** — Bobrick grab bar anchor device includes stainless steel machine screws to be used for attaching grab bars to anchors. **one Bobrick concealed anchor device is required for each flange.**

Optional Anchor No.	Description
2583	Anchor for 3/4" to 1" (19-25mm) panel 1 anchor required for each flange.
2586	Anchor for 1/2" to 1" (13mm) panel 1 anchor required for each flange.

## SPECIFICATION:

Grab bar shall be Type-304 stainless steel with satin-finish. Grab bar shall have 18-gauge (1.2mm) wall thickness and 1-1/4" (32mm) outside diameter. Clearance between the grab bar and wall shall be 1-1/2" (38mm). Concealed mounting flanges shall be 11-gauge (3.2 mm) thick stainless steel plate, 2" x 3-1/8" (50 x 80mm), and equipped with at least two screw holes for attachment to wall. Flange covers shall be 22-gauge (0.8mm) stainless steel, 3-1/4" (85mm) diameter, and shall snap over mounting flanges to conceal mounting screws and/or WingIt fasteners. Ends of grab bar shall pass through concealed mounting flanges and be heliarc welded to form one structural unit. Grab bar shall comply with accessible design (including ADAAG in the U.S.A.) for structural strength.

Grab Bar shall be Model \_\_\_\_\_ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; and Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

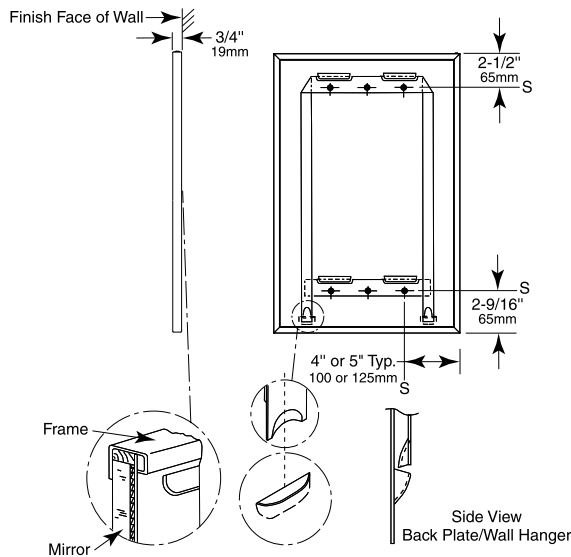


**Designer's Notes:**

1. Special-order sizes available on request.
2. Maximum size mirror available, 96" x 72" (244 x 183cm); minimum size, 12" x 12" (30 x 30cm).
3. All Bobrick framed mirrors are manufactured to overall width and height dimensions. EXAMPLE: A 24" x 36" (61 x 91cm) mirror will be furnished 24" x 36" (61 x 91cm) outside-of-frame to outside-of-frame.
4. To specify special sizes use Series Number followed by width x height in inches. EXAMPLE: B-165 2024 20" x 24" (51 x 61cm)
5. Bobrick framed mirrors are manufactured to a tolerance 1/8" (3.2mm).
6. For sufficient space to lift mirror onto wall hanger(s), provide 1" (25mm) minimum clearance above top of mirror frame.
7. Provide 1" (25mm) minimum clearance at bottom of mirror for unlocking mirror from wall and 1/2" (12.7mm) minimum clearance on each side.

**Snap Locking Design  
(Rear View)**

*Figure: 1*

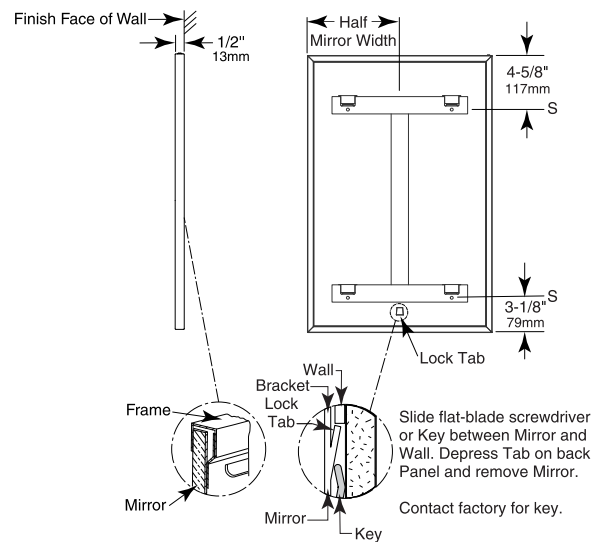


**STANDARD B-165 SERIES MIRRORS**

MODEL NO.	OVERALL SIZE	
	W	H
B-165 1824	18" (46cm)	24" (61cm)
B-165 1830	18" (46cm)	30" (76cm)
B-165 1836	18" (46cm)	36" (91cm)
B-165 2430	24" (61cm)	30" (76cm)
B-165 2436	24" (61cm)	36" (91cm)
B-165 2448	24" (61cm)	48" (122cm)
B-165 2460	24" (61cm)	60" (152cm)

**Lock Tab Design  
(Rear View)**

*Figure: 2*



**STANDARD B-165 SERIES MIRRORS**

MODEL NO.	OVERALL SIZE	
	W	H
B-165 4836	48" (122cm)	36" (91cm)

**All Other Size Mirrors**

**Note:** Mirrors greater than 30" in width will have multiple hanger brackets with a typical 8" off each edge.

## MATERIALS:

**Frame** — Type-430 stainless steel, 1/2" x 1/2" x 3/8" (13 x 13 x 9.5mm) channel with 1/4" (6mm) return at rear for Snap Locking Design; 1/2" x 1/2" x 1/2" (13 x 13 x 13mm) channel for Lock Tab Design, with bright polished finish. One piece frame with 90 degree mitered corners. Galvanized steel back has integral horizontal hanging brackets near the top for hanging the mirror and near the bottom to prevent the bottom of the mirror from pulling away from the wall. Locking devices secure mirror to concealed wall hanger.

**Mirror** — No. 1 quality, 1/4" (6mm) select float glass: selected for silvering, electrolytically copper-plated by the galvanic process, and guaranteed for 15 years against silver spoilage. Back is protected by full-size, shock-absorbing, water-resistant, nonabrasive, polyethylene padding.

**Concealed Wall Hanger** — 16 gauge cold roll steel construction. Incorporates upper and lower support members, which engage backplate louvers to keep mirror against wall.

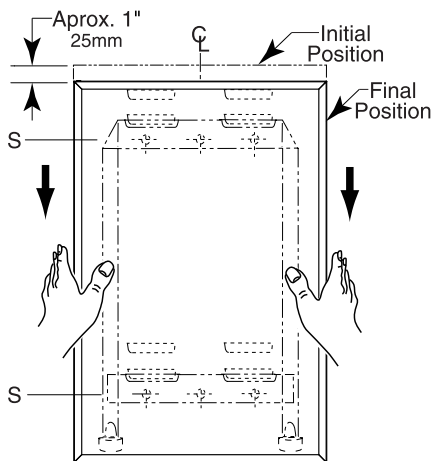
## INSTALLATION:

Mount wall hanger on wall with screws (not furnished) at points indicated by an S. For plaster or dry wall construction, provide backing to comply with local building codes, then secure wall hanger with screws (not furnished). When providing a concealed backing, allow backing to cover minimum range of mounting hole locations shown on drawing. For other wall surfaces, provide fiber plugs or expansion shields for use with screws (not furnished), or provide 1/8" (3mm) toggle bolts or expansion bolts. Hang mirror on wall hanger with all four backplate louvers engaged behind horizontal wall hanger members. To do this, mirror must be centered in front of the wall hanger horizontally, pressed flat against the wall approximately 1" (25mm) above final position and then lowered into final position.

**Snap Locking Design** — Locking devices automatically secure mirror to concealed wall hanger when it is lowered into final position (see figure 3). Locking devices may be unlocked by inserting two flat blade screwdrivers behind each side of mirror near the bottom or under the bottom of the mirror and pulling mirror bottom forward and then up.

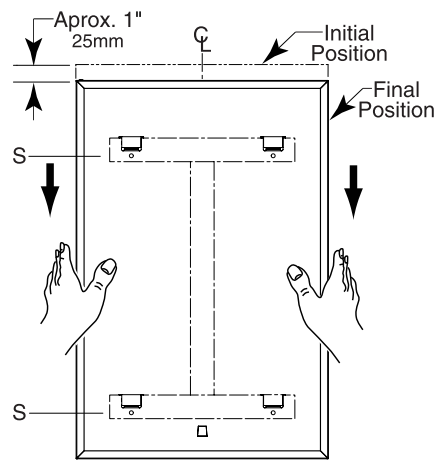
**Lock Tab Design** — Locking devices automatically secure mirror to concealed wall hanger when it is lowered into final position (see figure 4). Locking device may be unlocked by sliding a flat-blade screwdriver or Key between mirror and wall at center of mirror and depressing tab on back panel. If key is required, please contact the factory.

**Snap Locking Design  
(Front View)**



*Figure: 3*

**Lock Tab Design - Up to 30" Width  
(Front View)**



*Figure: 4*

## SPECIFICATION:

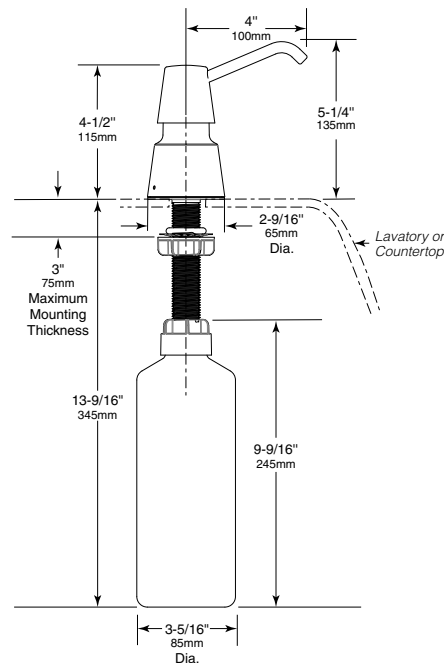
Mirror shall have a one-piece type-430 stainless steel channel frame, with 90° mitered corners; all exposed surfaces shall have bright polished finish. Select float glass mirror shall be guaranteed for 15 years against silver spoilage. The back shall be protected by full-size, shock-absorbing, water-resistant, nonabrasive, polyethylene padding. Galvanized steel back shall have integral horizontal hanging brackets located at top and bottom for mounting on concealed wall hanger to prevent the mirror from



## Technical Data

# TOP-FILL COUNTER-MOUNTED MANUAL FOAM SOAP DISPENSER

# B-823



### MATERIALS:

**Spout** — Type-304 stainless steel with bright polished finish.

**Cover Shell** — High polished deep drawn stainless steel.

**Cover Spacer** — Rigid, impact-resistant Acetal.

**Escutcheon** — Chrome-plated, die-cast metal, concealed locking mechanism.

**Integrated Funnel** — Red polypropylene plastic.

**Body, Foam Pump and Shank** — High-impact-resistant Acetal.

**Valve** — High impact resistant Acetal cylinder & piston. Stainless steel springs.

**Container** — Translucent, shatter-resistant polyethylene. Capacity: 34-fl oz (1.0-L).

### OPERATION:

Press down on Cover Shell to dispense commercially marketed all-purpose foam soaps. Vandal-resistant spout can rotate 360° without damage to unit. Escutcheon locks to body with concealed locking mechanism that is opened with special key provided. To fill with foam soap only from top, unlock cover and Foam Dispensing assembly. Unit may also be filled by removing container from below counter.

*Designer's Note:* Bobrick foam soap dispensers are designed to dispense commercially marketed all-purpose foam hand soaps.

### INSTALLATION:

Unit is designed for installation in 1" (25mm) diameter hole in porcelain-enameled steel, cast-iron or vitreous-china lavatories, as well as in countertops adjacent to lavatories. Unit may be mounted in unused faucet hole or through special hole requisitioned when counter is ordered from manufacturer (specify punching location). Shank accommodates maximum 3" (76mm) mounting thickness and can be cut in the field. Clearance required for container diameter is 3-3/8" (85mm).

### SPECIFICATION:

Top-fill counter-mounted manual foam soap dispenser shall dispense 7ml of foam using 0.5ml of commercially marketed foam soaps. Cover shall be constructed of durable high polished deep drawn stainless steel with bright polish finish. Spout assembly shall be Type-304 stainless steel with bright polished finish. Dispenser shall be equipped with integrated funnel to facilitate re-filling of soap. Spout shall rotate 360° without damage to valve mechanism. Escutcheon shall lock to body with concealed locking mechanism that is opened with special key provided. Foam Dispensing assembly shall be removable from top for filling and maintenance. Shank shall accommodate mounting thicknesses up to 3" (76mm). Translucent, shatter-resistant polyethylene container shall have a capacity of 34-fl oz (1.0-L).

**Top-Fill Counter-Mounted Manual Foam Soap Dispenser shall be Model B-823 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.**