

Oldcastle BuildingEnvelope®

Rugged StormMax® Entrance Installation Manual

NOTE

THE INSTALLATION DETAILS FOUND IN THIS PACKAGE ARE GENERIC AND ARE FOR REPRESENTATION ONLY WITH THE INTENT OF GIVING THE INSTALLATION TEAM A VISUAL REPRESENTATION AS TO HOW THE ASSEMBLIES TYPICALLY INSTALL. THE SHOP SUBMISSION DRAWINGS AND DETAILS ARE THE GOVERNING DOCUMENTS AND AS SUCH THIS PACKAGE IS TO BE USED ONLY AS A RESOURCE.

FOLLOW SEALANT MANUFACTURERS' RECOMMENDATIONS FOR USE AND APPLICATION OF ALL STRUCTURAL SILICONE SEALANT AND WEATHER SEAL SILICONE SEALANT.

CUSTOMER / PROJECT QUALITY ASSURANCE PROCEDURES ARE SEPARATE DOCUMENTS AND ARE TO BE FOLLOWED IN CONJUNCTION WITH THIS MANUAL.

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Rugged StormMax® Entrance Installation Manual

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IMPORTANT NOTICE

Completely read these instructions prior to beginning work. These recommendations are for general erection/installation procedures only. For actual job conditions, see shop drawings if applicable. For perimeter anchor types and spacing, refer to the approved shop drawings or consult structural engineer/project design professional.

GENERAL NOTES

Oldcastle BuildingEnvelope®'s Rugged StormMax® Entrance system represents the latest in product development technology. This system was especially designed to meet the stringent requirements of TAS 201, 202, 203 & ASTM E1886 / E1996. Proper use of this system will assure optimal results in erection and long-term performance. Rugged StormMax® Entrances were designed and tested to work in unison with .180 SentryGlas interlayer for Missile Level E HVHZ impact applications for buildings designated as essential facilities.

Check all shop drawings and installation instructions to become familiar with the project before work begins. The shop drawings take precedence and include specific details for the project. The installation instructions are of a general nature and cover the most common conditions.

ARCHITECTURAL PRODUCT

It is the responsibility of Oldcastle BuildingEnvelope® to supply a product / system to meet the architect's specification.

BUILDING CODES

Oldcastle BuildingEnvelope® does not control the application nor selection of its product configurations, sealant, or glazing materials, and assumes no responsibility thereof. It is the responsibility of the owner, architect, and installer to make these selections in strict compliance with applicable laws and building codes.

INSTALLER QUALIFICATION

These architectural framing systems are intended for fabrication, assembly, sealing, installation and glazing by professionals with appropriate knowledge and experience of the system(s) and their incorporation into various building conditions.

STRUCTURAL SEALANTS

The fabrication and installation of a structural silicone-glazed (SSG) or wet glazed system requires more technical knowledge and experience than is required for a conventional pressure-glazed or dry glazed system. The glazing contractor should take all steps as outlined and required by the structural silicone sealant manufacturer, glass fabricator, framing manufacturer, and the project professional engineer of record as well as follow local building code requirements and industry best practices to ensure the proper installation and safe performance of the system.

The glazing contractor for each project needs to ensure compliance with each step, including, but not limited to, design reviews, formal adhesion testing, formal compatibility testing, project specification compliance, validating procedures, field testing, and quality control validation of installed product and surrounding conditions.

Testing of component materials for use in a SSG or wet glazed system is mandatory to fulfill project specifications and warranty requirements and must be submitted by the glazing contractor to the structural silicone manufacturer. All materials that comprise the structural silicone joint, such as the framing system (with the job-specific finish) and job-specific glass must be tested by the structural silicone manufacturer for compatibility and adhesion. All other accessory materials in contact with the structural silicone, such as setting blocks,

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spacers, gaskets, sweeps, air seals and expansion joints, must also be submitted to the silicone sealant manufacturer for compatibility testing.

To ensure that nothing has changed in formulation or chemistry since the initial tests, subsequent testing during periodic time frames of the project is to be conducted to confirm continued acceptance of the material for use on the project.

To ensure the structural performance and integrity of the insulating glass unit (IGU), the glazing contractor must submit the project shop drawings to the glass fabricator to obtain approval for use of their product(s) in any 2, 3 or 4-sided SSG or wet glazed applications.

Quality control procedures for field glazing are to be increased beyond those required for shop glazing. Job conditions will normally have dust, dirt, and other construction debris on the surfaces where structural silicone is to be applied. Great care should be exercised in cleaning and preparing these surfaces for silicone application. The recommendations of the silicone sealant manufacturer are to be strictly enforced and followed. The fabrication and installation of the system and its components, whether shop or field glazed, should be governed by a quality control program, and all steps, procedures, and test reports should be documented throughout the project.

Prior to installation of any SSG or wet glazed system, refer to AAMA Curtain Wall Design Guide Manual, ASTM C1401-14, and AAMA SSGDG-17 for detailed instructions and recommendations.

THE GLAZING CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ENSURING COMPLIANCE WITH THE ABOVE AND ASSUMES FULL LIABILITY FOR ANY ISSUES ARISING FROM NONCOMPLIANCE.

DOWSIL™ 995 Silicone Structural Sealant was used on the test specimen for glass to metal adhesion. **To comply with Florida Building Code HVHZ Protocols, DOWSIL™ 995 Silicone Structural Sealant must be used for glass to metal adhesion.**

PERIMETER SEALANTS

Due to varying job conditions, all perimeter sealants used should be approved by the sealant manufacturer to ensure the sealant will function for the conditions shown in these instructions and shop drawings. Sealants must be compatible with all surfaces where adhesion is required, including other sealant surfaces. Use primers where directed by sealant manufacturer. Be sure to store sealants at recommended temperature and check container for remainder of shelf life before using. DOWSIL™ 795 Silicone Building Sealant was the perimeter sealant used on the test specimen.

MATERIAL AND WORK ACCEPTANCE

OLDCASTLE® BUILDINGENVELOPE MATERIALS

Check all material upon arrival for quality and to assure against shipping damage. Any visible damage must be noted on the freight bill at the time of receipt. If a claim is required, then the receiving party must process a claim with the freight company.

OTHER TRADES WORK

Completely check construction that will receive your materials against contract documents. Notify general contractor by letter of any discrepancies before proceeding with work. Failure to do so constitutes acceptance of work by other trades.

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MATERIAL HANDLING

Handle the material carefully. Do not drop from the truck. Stack with adequate separation so that the material will not rub together. Store material off the ground. Protect against the elements and other construction hazards by using a well-ventilated covering away from other trades. Remove material from package if it is wet or located in a damp area.

SHOP

- Cardboard wrapped or paper interleaved material must be kept dry.
- Check arriving materials for quantity and keep record of where various materials are stored.

JOB SITE

- Material at job site must be stored in a safe place well removed from possible damage by other trades.
- Cardboard wrapped or paper interleaved materials must be kept dry.
- Keep record of where various materials are stored.
- Protect materials after erection. Cement, plaster, and other alkaline solutions are very harmful to the finish.

GLAZING PRACTICES

The air and water performance of the framing system is directly related to the completeness and integrity of the installation process, including but not limited to the assembly seals of the framing joinery, the installed glazing gaskets, and the alignment of the framing joinery glazing plane. Before glazing, verify the glazing pocket width and glazing infill thickness, as both must be in tolerance to assure adequate edge pressure and to achieve the desired air and water performance levels. (In general, framing systems utilizing 1" insulating glass are designed to accommodate a thickness variance of +/- 1/32"). Note: Excessive pressure can cause glass breakage and/or IGU failure. Consult the glass manufacturer for their recommended edge pressure per lineal inch.

To achieve the designed and tested air and water performance, best practices include:

- Glazing gaskets should be cut ¼" longer per foot, and lay flat, preferably for 24 hours.
- Gaskets should be cut as single monolithic pieces and "crowded" during their installation to avoid corner gaps caused by post-installation relaxation.
- The interior glazing gasket should be installed to avoid stretching, buckles, or tears.
- Corners must be cut square, and at a slight angle when required to conform to the bevel on the intersecting gasket; sealed and butted together.
- Gasket corner joinery must also be crowded, and sealant applied onto the gasket contact frame surface and into gasket reglet raceway where applicable.
- Gasket corner seals are to be done just prior to installing glass, while the sealant is still wet and uncured, and ensure exterior gaskets are installed to place the glass into its final in-service condition and allow the sealant to conform to optimum configuration. Note: If the sealant cures prior to glazing, the cured sealant could create excessive edge pressure onto the glass and has the potential to cause glass breakage.
- The glass must be checked for squareness, size dimension, and thickness along the edges paying attention to any variances from center edge to corner edge.
- Check the placement of the installed glass and verify there is proper edge bite into the pocket, and proper edge clearance from framing elements.

When entrance is used in a storefront or curtain wall application, after sealant has set and a representative amount of the wall has been installed and glazed (250 square feet or more) run a water hose test in accordance with AAMA 501.2 specifications to check installation. On large projects the hose test should be repeated during the glazing operation. Consult and follow NGA's GANA Manual and FGMA Glazing Manual for proper glazing technique and procedure.

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CLEANING

Cement, plaster, terrazzo, alkaline and acid-based materials used to clean masonry are very harmful to finishes and should be removed immediately or permanent staining will occur. A spot test is recommended before any cleaning agent is used. Aluminum shall be cleaned with plain water containing a mild detergent or a petroleum product, such as white gasoline, kerosene, or distillate. No abrasive agent shall be used.

FABRICATION SUGGESTIONS

Oldcastle BuildingEnvelope® recommends the use of our EZ Punch tooling for faster and more accurate fabrication of wall systems. If hand fabricating the mullions, Drill Fixtures are available to improve accuracy.

GENERAL CONSTRUCTION NOTES

- Study these instructions, shop drawings, erection drawings, and architectural drawings before starting any work. Follow installation and glazing instructions.
- All materials are to be installed plumb and level.
- All work should start from an established benchmark and column centerlines established by the architect and the general contractor.
- Do not install entrance if there at walkways with a downslope toward building.
- Completely check construction which will receive your materials against contract documents. Notify the general contractor by letter of any discrepancies before proceeding with your work since this constitutes acceptance of work by other trades.
- Protect all aluminum to be placed directly in contact with uncured masonry or incompatible materials with a heavy coat of zinc chromate or bituminous paint.
- Coordinate protection of installed materials with general contractors and other trades.

WARRANTY

A standard limited warranty for Rugged StormMax® Entrance covers approved installation and standard product sizing. Obtain a copy of the product warranty for the approved jobsite from an Oldcastle BuildingEnvelope® sales representative. Warranty does not cover entrance installed with unapproved or untested hardware.

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MAINTENANCE RECOMMENDATIONS

Proper maintenance of the door and door hardware will ensure continued functionality. Failure to upkeep regular maintenance may result in loss of function and/or void warranty. Follow all maintenance guidelines provided.

WARNING

Chemicals used to melt ice should not make contact with aluminum threshold, bottom of door jambs or pivot hardware. These chemicals are very corrosive and may cause door failure and possible personal injury.

Lubrication

Every 3-4 weeks, the following items should be lubricated with STP Spray Silicone:

- Hinges
- Lock Cylinders

Reference manufacturer's lubrication guide for the following items:

- Exit Device
- Closer Arm

Fasteners

Check fasteners that are used to attach hardware periodically to insure they have not loosened from repetitive usage.

Door Closer

Refer to the maintenance guide included from the manufacturer with the Door Closer for complete maintenance schedule. In general, for proper Door Closer function, the Door Closer should be checked regularly and adjusted accordingly. Refer to the manufacturer's maintenance guide for more information.

- Adjust the Sweep Range as required. Adjustment is made by turning the "S" valve on the back of the closer.
- Adjust the Latch Range as required. Adjustment is made by turning the "L" valve on the back of the closer.
- Adjust the Back Check as required. Adjustment is made by turning the "BC" valve on the back of the closer.
- Tighten all screws as needed on the arm and main unit.

Exit Device

Proper clearances are essential for optimal operation of installed doors, which means the installed panic must be kept well maintained. Refer to the maintenance guide included from the manufacturer with the Exit Device for complete maintenance schedule.

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PRODUCT OVERVIEW

HARDWARE LOCATIONS

Hardware locations may change region to region and may be controlled by local codes. The details provided below are general standards; entrances are factory-prepped for some hardware and all details should be verified with site-drawings and codes before ordering.

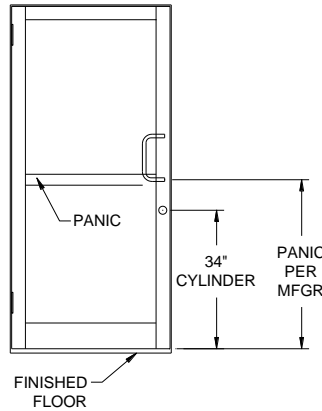


Figure 1: Standard Hardware Locations

DOOR HANDING

To simplify the entrance ordering process, Oldcastle BuildingEnvelope® utilizes a short identifier that relies on Hinged-Side and Swing Direction as opposed to general Door Handing practices. To determine which entrance to order, stand on the outer side of the door and look toward the entrance. The outside of the door is the side that faces out of the building or is the weather-sealed side, if the door is not an exterior door. Take note of which side is the hinge side, which direction the door swings, and, for pairs, where the lock cylinder is located. Reference *Figure 2* for a visual aid on determining door types and verify the correct Level E™ entrance has been ordered prior to fabricating framing members and installing the door.



Figure 2: Door Identification Guide

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MATERIAL INSPECTION

Inspect Door Materials Upon Receipt

Inspect all materials upon receipt to be sure that all items have been received and that no damage has occurred. If there is damage that is clearly due to improper handling or transit, it is up to the customer to settle claims with the freight company. If there is damage or missing/incorrect items due to Oldcastle BuildingEnvelope® error, notify your sales representative or Oldcastle BuildingEnvelope® within 7 days.

The following items are shipped in the **Door Box**:

- Assembled Door
 - Butt Hinge or Gear Hinges (installed on door)
 - Cylinder (installed in door)
 - Exit Device (installed on door **or** Door fabricated to customer provided template)
 - Glass Stops (taped in place)
- A smaller box containing:
 - Pull Handle and Push Bar

The following items are shipped in the **Frame Box**:

- Door Jambs:
 - **FG-5713** or **FG-5717** Door Jamb
 - **D-226** Jamb Subframe
- Door Header:
 - **FG-5765** COC Door Header or **FG-5767** Door Header
 - **D-239** Header Subframe
- Door Stops:
 - **FG-5171** Door Stop Typical or **FG-5768** Door Stop at Gear Hinges
 - **DS-104** Door Stop w/ **SC-1** Spring Clips at COC Door Header
- Threshold
 - **TH-57** or **TH-67** Threshold w/ **TH-403** Clip
- Transom
 - **FG-5181** Transom Sash
 - **FG-5769** Sash Stop
 - **FG-5770** Transom Head (Non-Thermal) or **FGT-5770** Transom Head (Thermal)
 - **FG-5764** Aluminum Transom Bar Reinforcement (as required)
- Screws, Clips, and Gaskets
 - Various Fasteners
 - **FG-5736** Gasket
 - **FG-5731** Spacer Gasket
 - **GP-207** Spacer Gasket (used at Transom Head where applicable)
 - **HP-92S** Setting Block

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- The following items are shipped in separate boxes:
 - **D-118** Sweep Retainer with **D-120** Sweep (Required for air performance with TH-57)
 - Overhead Surface Closer
 - Concealed Overhead Closer
- Doors factory installed with the following hinges:
 - **BH-6** Butt Hinges (Frames factory prepped to match), **or**
 - **GH-02** Continuous Gear Hinge (Frames must be field prepped)
- Rugged StormMax® Entrance is compatible with the following Exit Devices:
 - **PNC-14** Concealed Vertical Rod Panic, or
 - **PNC-15** Concealed Vertical Rod Panic
 - **LK-1** Deadlock with **LK-4** Top Rod and **LK-5** Bottom Rod, with **MH-7** Lock Rod Brackets, **FB-15** Bottom Flush Bolt and **FB-16** Top Flush Bolt
- Rugged StormMax® Entrance may be installed with the following hardware:
 - OBE **PH-20** Pull Handle or Equivalent
 - OBE **PB-21** Push Bar
 - **CY-1** (typical) or **CY-5** (when using CVR Panic) Cylinder, as required

NOTE: The hardware listed above are the only options available per TAS201, 202, 203, E1886/E1996 and AAMA testing. Any surface closer may be used. **No floor closers allowed.**

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SITE CONDITIONS

Review and Prepare Opening

Prior to installation of a door and frame, it is important to consider the surrounding construction. Reference below and if any issue needs attention, contact appropriate trade or General Contractor (in writing) and request a correction prior to installing.

- Verify that the opening for the entrance is in the correct location.
- Make sure the opening is large enough to handle the door and frame that was ordered.
- Allow a minimum 1/4" shim space all around the perimeter of the frame and a minimum 3/8" joint at the Head.
- Remove any obstructions in the opening.
- Verify there is sufficient structure to anchor the frame.
- Verify the support is properly positioned.
- Verify whether the entrance will be installed with or without a sidelite.
 - If the entrance includes a sidelite condition, review all installation instructions for both the sidelite framing system and the entrance.
- Consult with an engineer or determine if floor anchors are required.
- Verify that the slab is level or sloped away from the building.
- Verify that there is proper clearance to install the threshold.
 - Entrance with Level E storefront framing thresholds are **TH-57** (5 5/8" wide x 1/2" tall) or **TH-67** (5-3/32" wide x 1/2" tall)
 - Floor clearance for Door Leaf when using the **TH-57** saddle Threshold should be 11/16", while clearance when using the **TH-67** bumper Threshold is 3/8".

If all conditions are acceptable, the Rugged StormMax® Entrance may be installed.

Floor Slab Slope Guidelines

To ensure proper operation and drainage of water from the face of door, the substrate at the exterior of the door must slope a minimum of 1-degree away from the building. If the substrate slopes towards the building, an outward-swinging door will not open, and water will flow into the building.

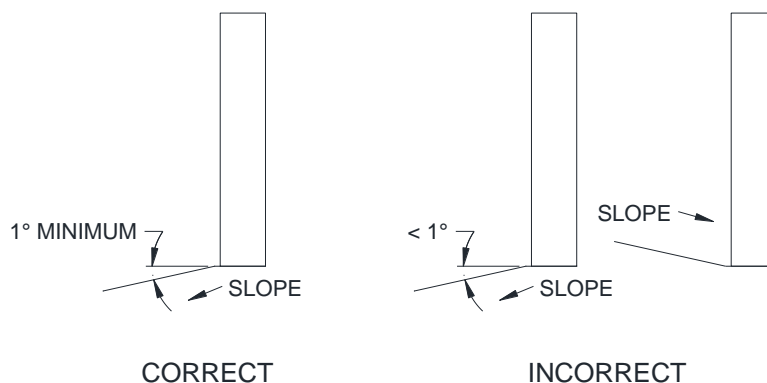


Figure 3: Floor Slab Slope Guide

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FRAME FABRICATION

1.0 Establish Material Size

Rugged StormMax® Entrance can be installed in a variety of locations. It may be installed as a standalone product, retrofit in existing systems, with Level E sidelites, or included in complete Level E storefront or curtain wall installations. In addition, it can be installed with or without a Level E transom. Though the prep work for each location is similar, follow the fabrication guide for the appropriate situation to ensure the proper fit and function of the entrance.

NOTE: No matter the installation type, the entrance opening must be square and plumb.

For all installation types, when measuring the rough or frame opening, take multiple measurements and use the smallest dimension. This assures a proper fit for the entrance framing. For the rough or frame opening's width, measure the top, middle, and bottom of the opening. For the rough or frame opening's height, measure the left, center, and right side of the opening.

- | | |
|---------------------------------------|--|
| Measure width of rough/frame opening. | Measure height of rough/frame opening. |
| A. Measure opening at bottom. | A. Measure opening from top to bottom of left side. |
| B. Measure opening at center. | B. Measure opening from top to bottom of middle. |
| C. Measure opening at top. | C. Measure opening from top to bottom of right side. |

When determining the storefront or stand-alone frame width, allow a minimum of 1/4" and maximum of 3/4" for shimming and perimeter seal at the jambs. If storefront sidelites are used, a minimum of 3/8" is recommended at the Jamb to facilitate perimeter seal between Subsill End Dam(s) and substrate. The Frame Width will be equal to Rough Opening minus (-) Jamb perimeter joints.

To determine storefront Frame Height, use Rough Opening minus (-) Head and Sill perimeter joints. A quick reference guide is below. For job specific installations, reference approved drawings.

FG-5750 and FG-5750T StormMax® Level E entrance and storefront framing

- Jamb Perimeter Joints:
 - Minimum: 1/4"
 - Maximum: 3/4"
- Head and Sill Perimeter Joints:
 - Minimum: 3/8" at Head, 1/4" at Sill
 - Maximum: 3/4"

Curtain Wall Framing

- Jamb and Header Subframe Sealant Joints:
 - Minimum: 1/8"
 - Maximum: 1/4"

For all installations, the Door Jamb or curtain wall Mullion with affixed Jamb Subframe runs to slab with no Sill perimeter joint. For adjacent sidelites, the storefront Subsill butts tight against Door Jamb and will utilize the typical Sill joint from the respective storefront system. Take care when sizing material to account for this. For curtain wall installations, the remainder of the elevation will be installed per curtain wall installation manual.

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1.1 Rugged StormMax® Entrance as Standalone

For standalone installations where the Rugged StormMax® Entrance frame is to be installed directly against other substrate without sidelites, installation is straightforward. Measure the rough opening and use the smallest width and smallest height dimension to verify the entrance system will fit.

Doors are provided at standard single or standard pair sizes, though the Door Jamb members may be provided long in the event a transom is required. For entrances with transoms, use the smallest rough opening height dimension to fabricate the Door Jamb members.

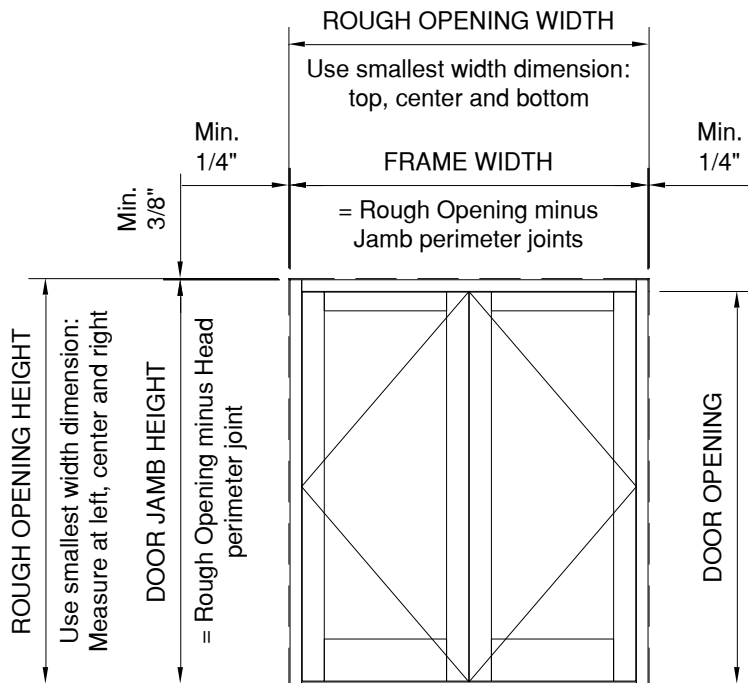
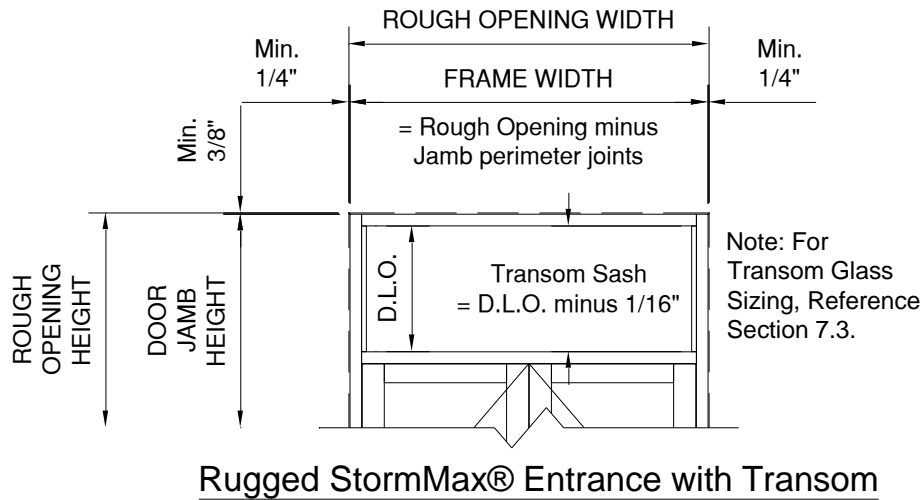
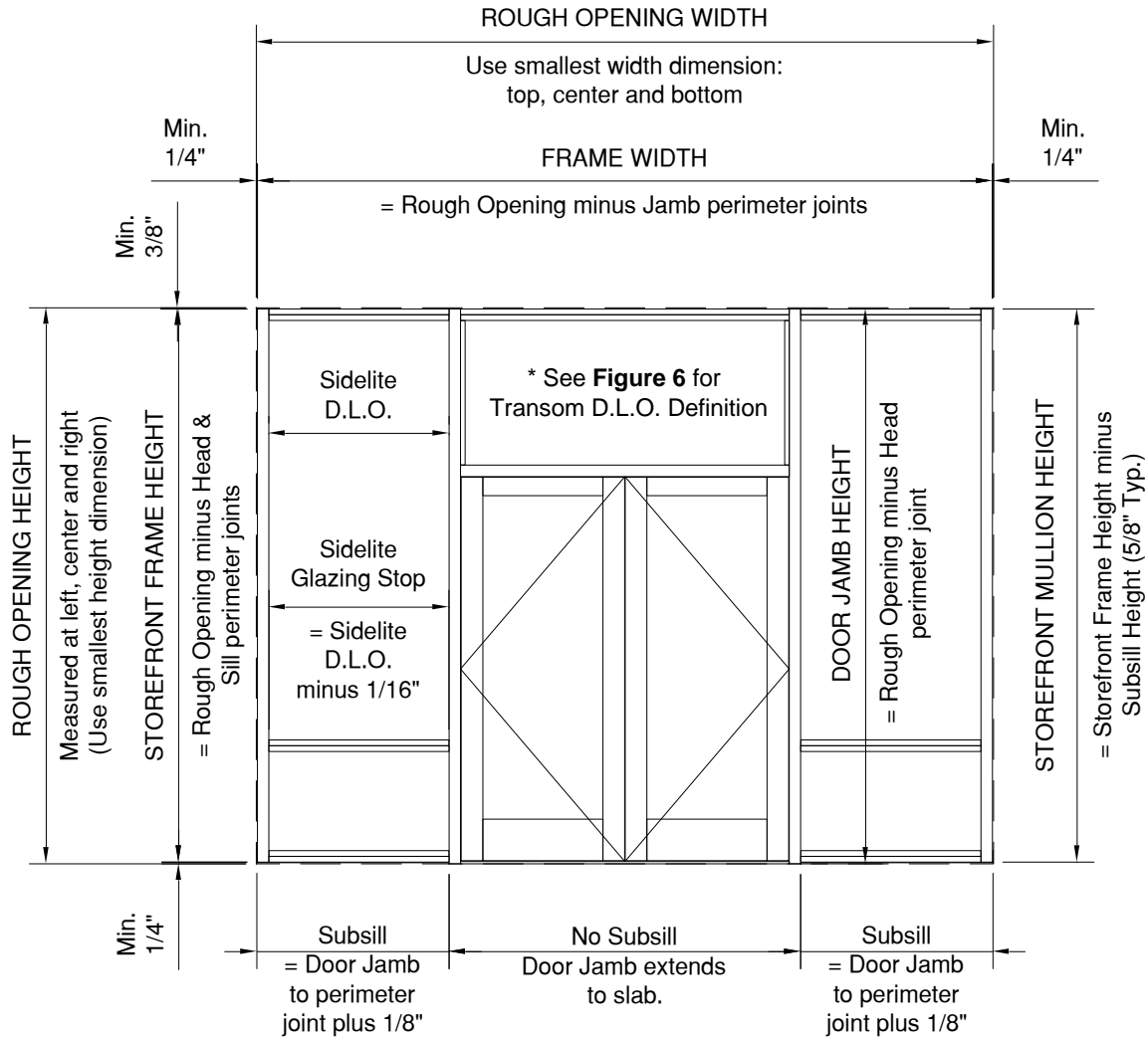


Figure 4: Standalone Rugged StormMax® Entrance Framing Guide with and without Transom

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1.2 Rugged StormMax® entrance in FG-5750 or FG-5750T StormMax® Level E storefront
 For installations where the entrance is to be included in a full storefront elevation, the Rough Opening will determine overall storefront frame size and Door Jamb will be sized accordingly. Typically, this is the Rough Opening minus Head perimeter sealant joint since the Door Jambs bypass the Subsill and terminate at the floor slab or other lower substrate. Verify the measurement with the associated storefront manual.

Doors are provided at standard single and pair sizes, though custom sizes may be requested and ordered. Verify all details with the job-specific shop drawings prior to fabrication.



Rugged StormMax® Entrance with Transom and Sidelite

Figure 5: Level E Storefront Installation with Rugged StormMax® Entrance

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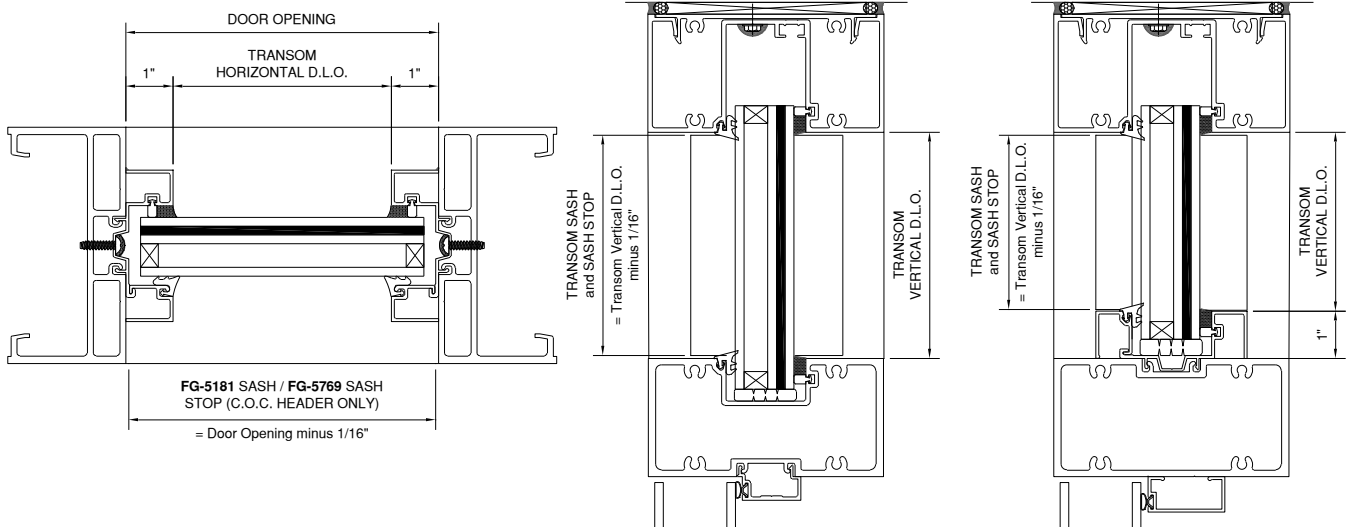


Figure 6: Transom D.L.O. Definition

1.3 Rugged StormMax® Entrance in Curtain Wall Installation

Where the entrance is to be installed within a curtain wall elevation, the curtain wall opening will determine overall Subframe size. Note that the curtain wall vertical Mullions along with affixed Jamb Subframes run to floor without a Sill perimeter joint, while the remainder of the elevation will be installed per typical installation procedure. Curtain wall elements in this manual assume the framing system is Reliance™ StormMax® High Performance. The procedures to install entrance within the Reliance™ StormMax® (typical Level D system) are similar and comparable parts are called out where applicable.

Doors are provided at standard single or standard pair sizes, though custom sizes may be requested and ordered. Verify all details with the job specific shop drawings prior to fabrication.

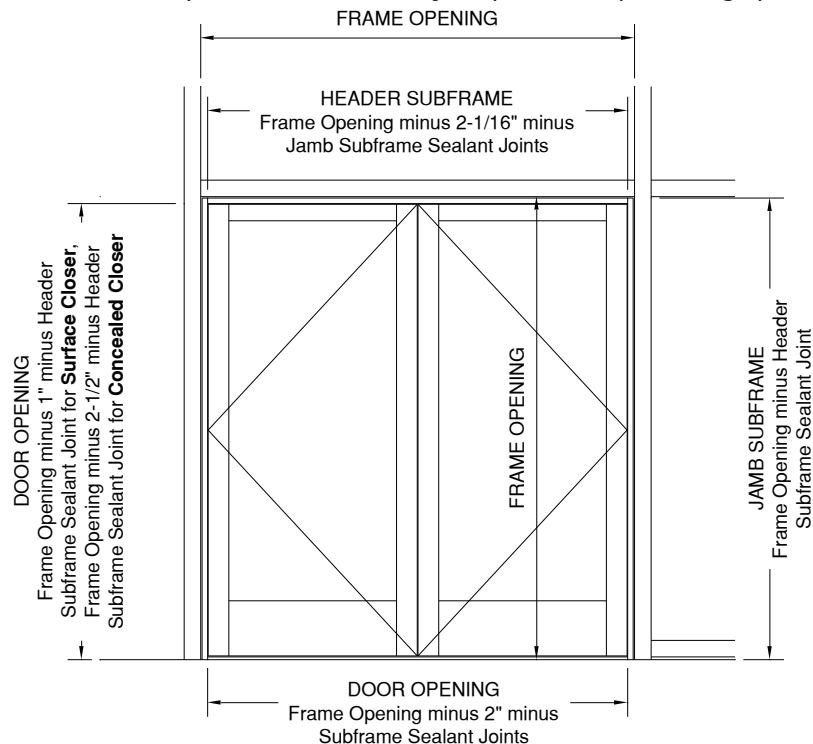


Figure 7: Curtain Wall Installation with Rugged StormMax® Entrance

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1.4 Preparation of Door Frame

- All hardware backup plates are installed in the frame at the factory.
 - Door Stops and Transom Sash are cut to length and prepped at the factory.
 - Curtain wall Subframes will receive the same prep for Door Header and Threshold as storefront Door Jamb
- 1.4.1 Review the frame anchor charts in the approved shop drawings for configuration and substrate for which the frame will be attached. Drill anchor clearance holes into **FG-5713** or **FG-5717** Door Jamb and **FG-5715/FG-5719** Flat Filler per approved shop drawings or anchor charts. At the Door Header, reference approved shop drawings or anchor charts for Anchor layout and drill clearance holes and/or access holes as required. Note that the non-thermal storefront (FG-5750 StormMax®) requires the **FG-5718** screw spline Head Filler for Level E performance. The thermal FG-5750T StormMax® (and its associated entrance framing) does not use this filler or receive the additional prep it requires. Use either the aluminum **FG-5715** or the PVC **FG-5719** flat filler at the head. If entrance contains a Transom, reference the anchor charts or shop drawings for locations and spacing of Anchor Bolts at Transom Head, drilling clearance holes in both the Head and the Head Filler. If anchor holes in Threshold are factory drilled, verify layout, quantity, and spacing per structural review.
- 1.4.2 Stock Transom frames are fabricated for a vertical frame size of 120". If the intended opening is smaller, cut the Verticals and the Sash down to the appropriate length; leave a minimum 3/8" and a maximum of 3/4" perimeter sealant joint at the Head.
- 1.4.3 Prep Door Jamb for the Door Header and/or Transom Head Horizontal. This should be made using either DJ-5750 drill fixture or EZ-Punch die set for FG-5750/FG-5750T framing. Reference
- 1.4.4 Figure 8 for visual detail.
- 1.4.5 For Butt Hinge assembly, the frame will be factory prepped with back-up plates. For Continuous Gear Hinge, the Door Jamb will be sent "blank". Installation guide provided in Section 14.0, *Hanging Gear Hinge Door*.

Rugged StormMax® Entrance Installation Manual

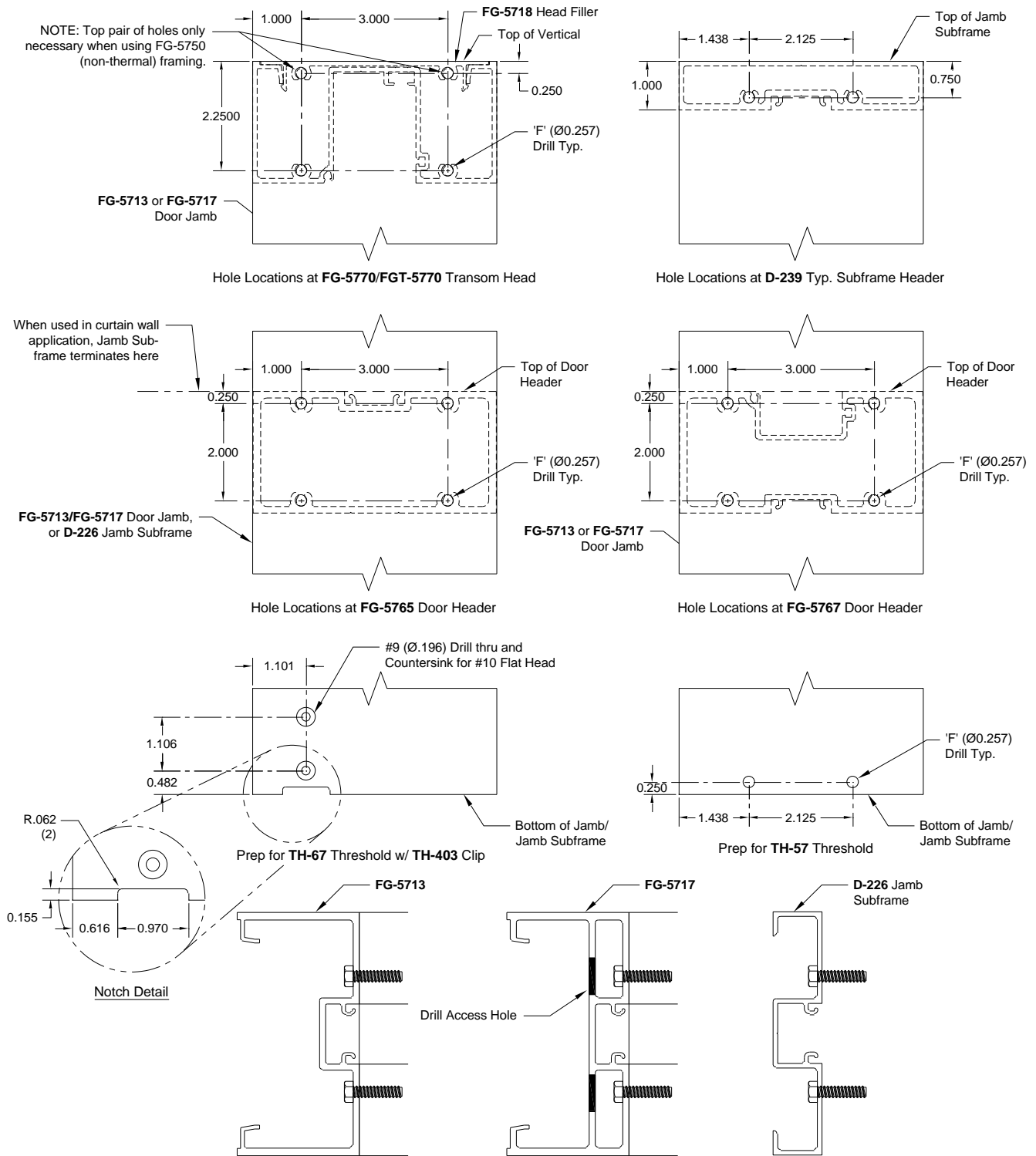


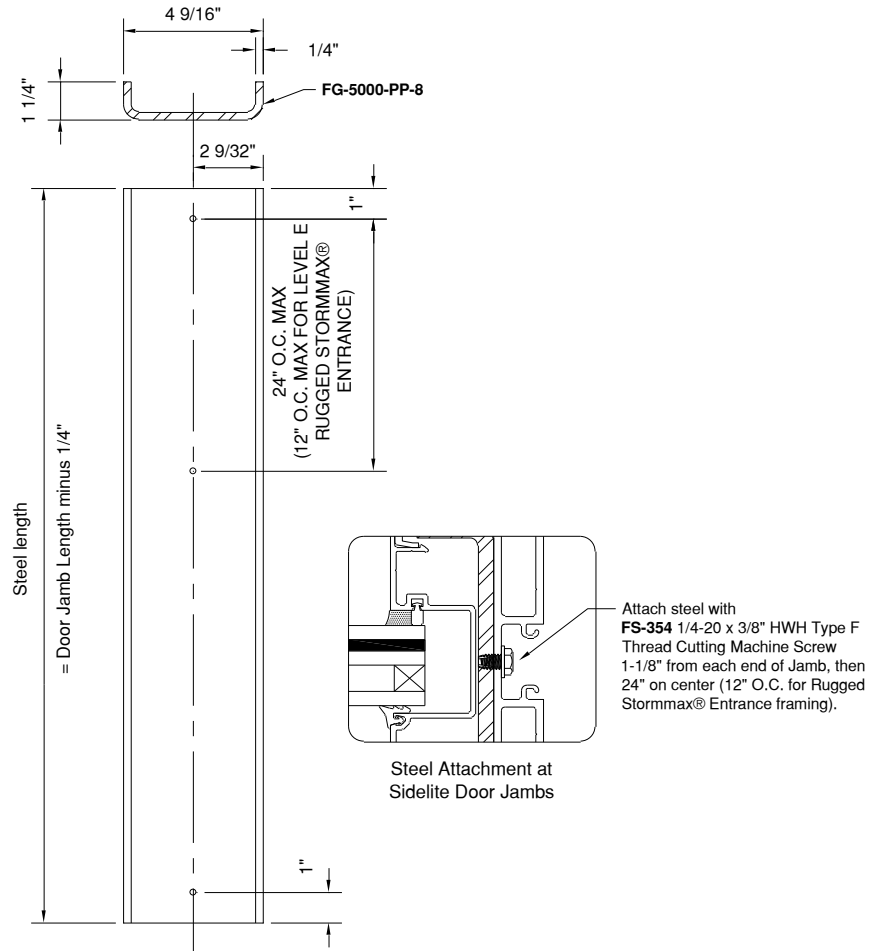
Figure 8: Door Jamb / Jamb Subframe Fabrication

Rugged StormMax® Entrance Installation Manual

2.0 Steel Reinforcement Fabrication for FG-5717 Door Jamb.

Prepare steel reinforcement by placing pilot holes centered in the width of the steel at 1" from ends and up to 24" maximum on center. For Level E installations, the spacing is 12" maximum on center. Steel is to be attached to the Door Jamb with **FS-354** fasteners. *Note: Steel Reinforcement only required for Jambs at sidelite Door frames. In the case of thermal (FG-5750T) framing, if Steel Reinforcement is required at sidelite Door Jambs, the non-thermal **FG-5761** Sidelite Filler must be utilized.*

Reference curtain wall installation manual and/or standard CAD details for Steel Mullion Reinforcement used in curtain wall applications.



3.0 Aluminum Transom Bar Reinforcement

For door pairs with a transom, the storefront Door Header may require the **FG-5764** Aluminum Transom Reinforcement. Design Pressure will dictate the usage of this Reinforcement; reference Product Approval for guidance. Cut to 48" in length regardless of door size, and center in Door Opening. Fabricate clear holes in Header for #12 Fastener, match drill and attach Reinforcement with **FS-322** at 6" from each end of Reinforcement and 12" on center.

Rugged StormMax® Entrance Installation Manual

Where Reinforcement is required when using the **FG-5765** C.O.C. Header, replace the typical Transom Sash attachment screw **FS-6** with **FS-322** along the length of the Reinforcement, match drilling for #12 Fastener through clear holes in Sash and Header and attaching directly to Reinforcement. Where Reinforcement does not occur, attach Sash to Header with **FS-6** per typical procedure outlined in Section 4.0. Take care when fabricating Door Header to use the correct sized tap hole for the #10 **FS-6** versus the clear hole for the #12 **FS-322** at Reinforcement locations. Cap seal all fasteners along Transom Sash. Reference *Figure 10*.

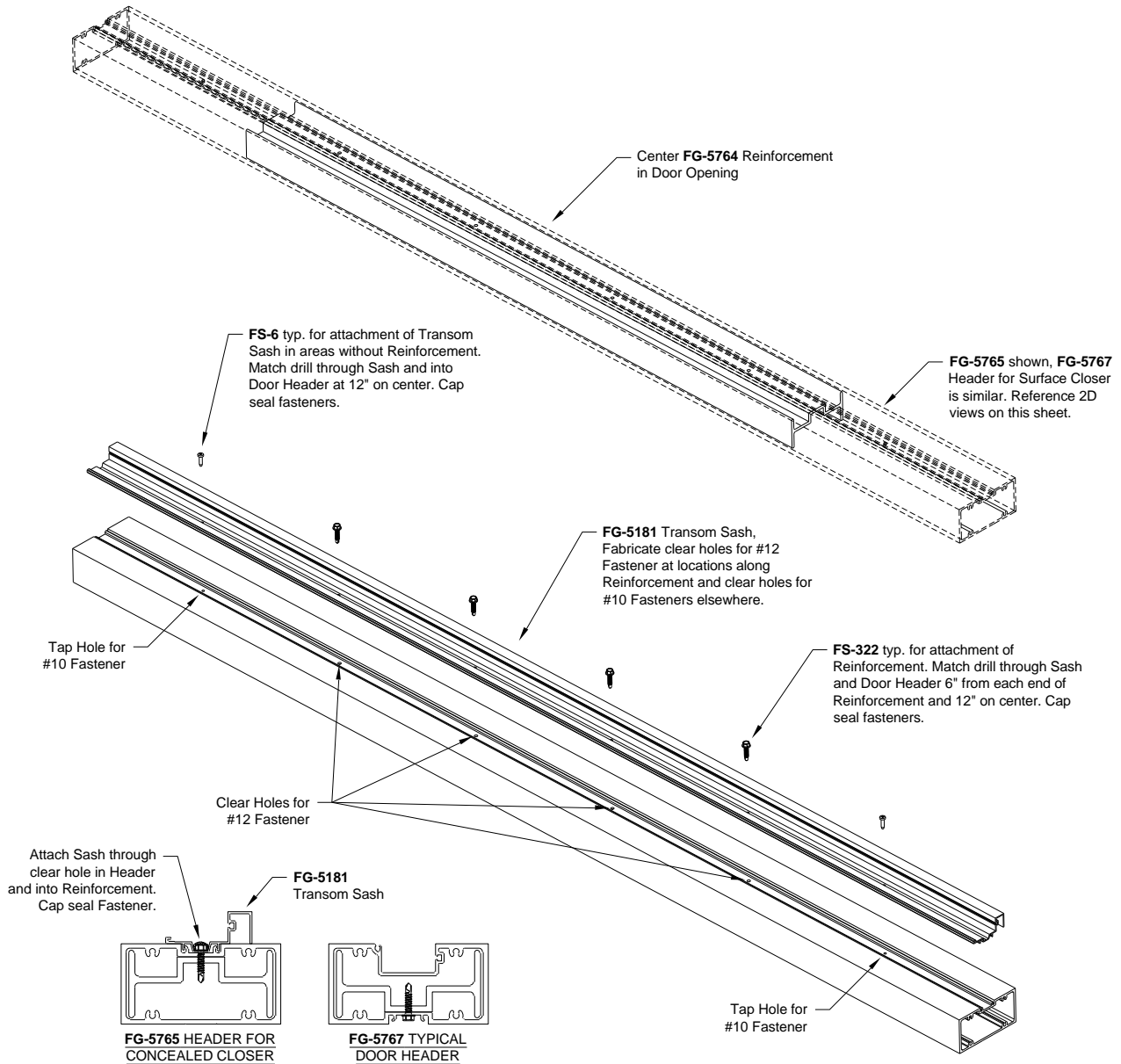


Figure 10: Installing Transom Bar Reinforcement

Rugged StormMax® Entrance Installation Manual

FRAME ASSEMBLY

4.0 Assembling Level E Entrance in Storefront or Stand-alone Application

- 4.1 Reference *Figure 11* to assemble **FG-5713** or **FG-5717** Door Jamb to Door Head and Transom Head (if applicable). Apply **SM-5601** 1/8" x 1/2" Joint Sealant Tape to joint intersections at Door Header or Transom Bar and Transom Head Horizontal and assemble with **FS-8** fasteners. When using **FG-5717**, drill access holes for assembly screws per
- 4.2 *Figure 8* on Page 18.
- 4.3 **TH-57** Threshold will attach directly to Door Jambs with **FS-8** into screw splines of Threshold. Apply **SM-5601** Joint Sealant Tape to both ends of Threshold prior to frame assembly. Take care to ensure screw splines remain unobstructed. Use a razor knife to trim Tape around contour of Threshold; never attempt to trim by pulling or tearing. Again, when using the **FG-5717** Jamb, drill access holes for attachment similar to
- 4.4 *Figure 8* on Page 18. Reference *Step 6.3* on Page 24 for information regarding the **TH-60** Threshold Anchor Stabilizer.
- 4.5 **TH-67** Threshold will attach to door jamb via **TH-403** Threshold Clip. Clip slots into interior of Door Jamb. Countersink Jamb for #10 Fastener and attach Clip with (2) **FS-231** (#10-24 x 5/8" PFH). When using the **FG-5717** Door Jamb, drill access holes in interior web for attachment of Clip to Jamb. **TH-67** attaches to Clip using (2) **FS-16** (#10-24 x 1/2" PFHUC). Reference *Figure 12* on Page 23.
- 4.6 For entrances with Transom, snap **FG-5181** Transom Sash in Door Jamb, and—for entrances with Concealed Closers--Door Header. Attach with **FS-6** at 12" on center. Cap seal fasteners. See previous Section for info on pre-attaching Sash to **FG-5765** Door Header when Transom Bar Reinforcement is used.

Rugged StormMax® Entrance Installation Manual

5.0 Assembling Subframe in Curtain Wall Application

Reference Section 4.0, Steps 4.1 - 4.3, following the same procedure and attaching Header Subframe to Jamb Subframes with **FS-8**. Substitute **D-226** Jamb Subframe for Door Jambs described therein. Reference *Figure 11*.

*Note: When using a Concealed Vertical Rod Panic for Level E performance, the **TH-67** Threshold **MUST** be used. Bore into substrate 1/2" to ensure proper engagement of bottom Lock Rod.*

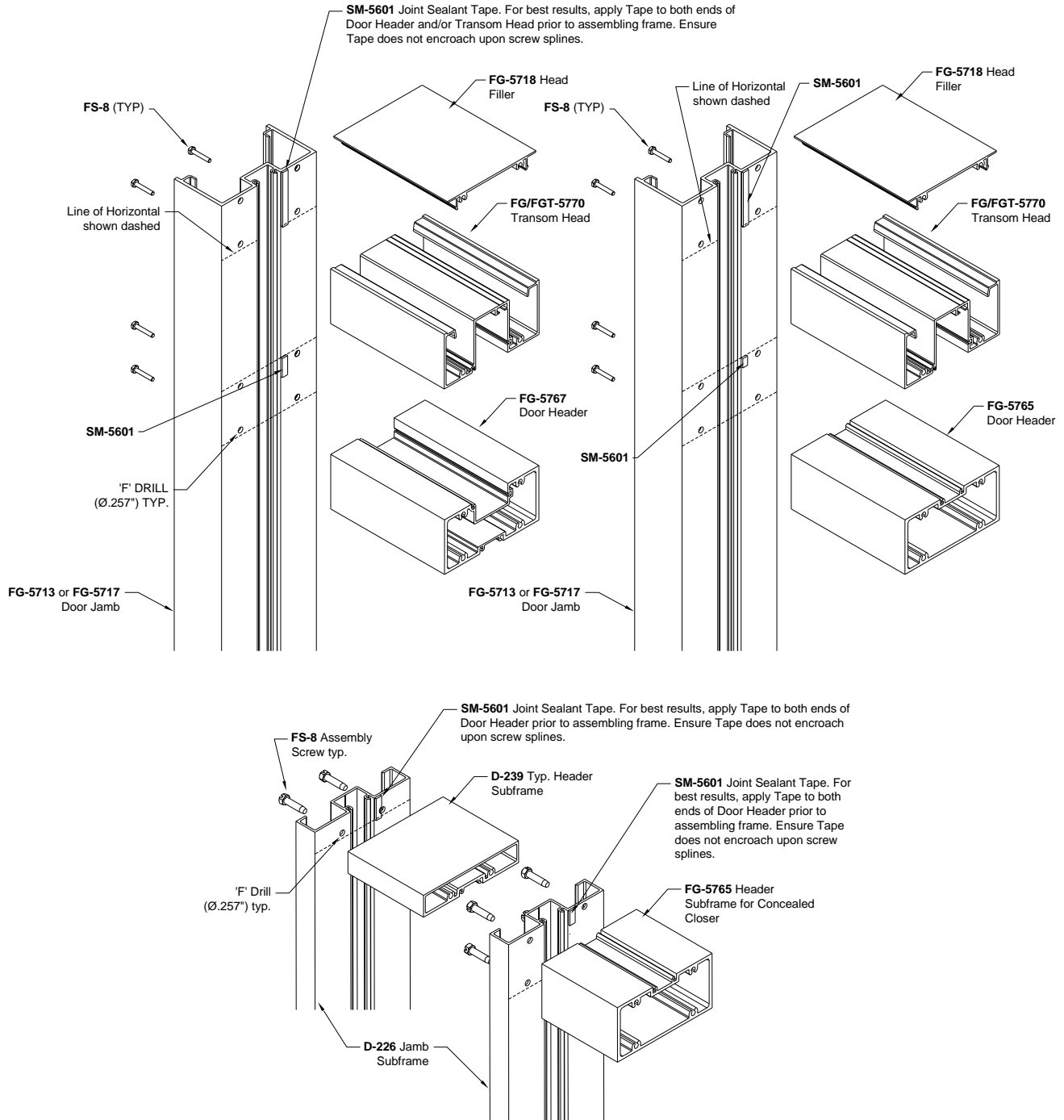


Figure 11: Rugged StormMax® Entrance Frame & Subframe Header Assembly

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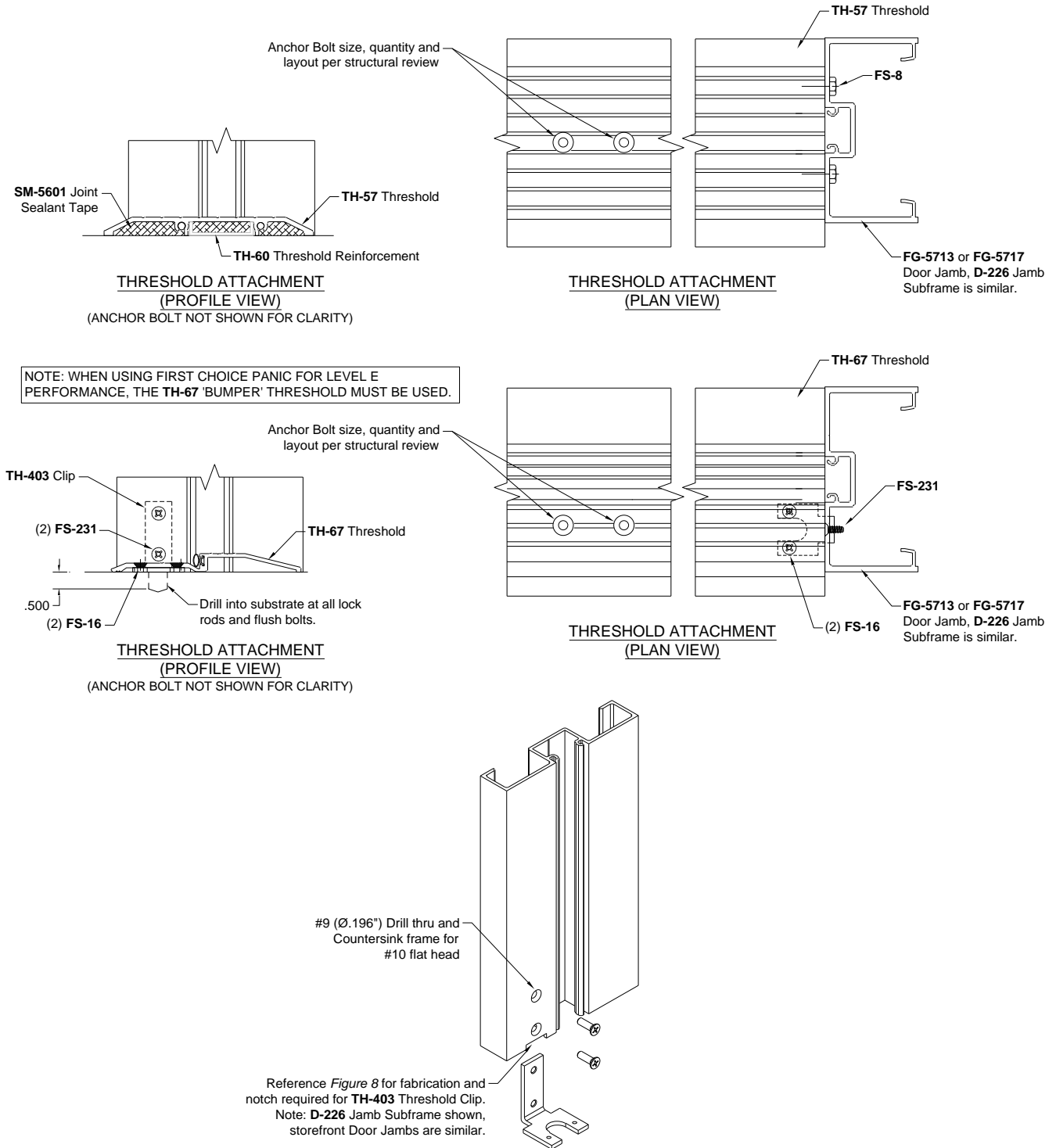


Figure 12: Attaching Threshold to Door Jambs

Rugged StormMax® Entrance Installation Manual

FRAME INSTALLATION

NOTES:

- Thresholds are to be leveled at the high point in the slab, however it is preferable to not have a high point in the slab where entrances occur. The Door Frame is designed to have the Jambs run to the slab.
- Door Frame is anchored by fasteners to substrate through Jamb(s), Threshold, and Door Header. If a transom is being utilized, anchor frame to substrate at Transom Head instead of Door Header.
- For installations with Sidelites, the inside of the Door Jamb Mullion must be sealed to the substrate and the end of the Subsill must also be sealed. Refer to appropriate detail for sealant locations.

6.0 Installing Door Frame for Level E without Sidelite

Door Frame and Threshold shall be completely assembled with joints neatly aligned and tight. Door Frame shall be installed square and plumb.

- 6.1 Door frames without a Sidelite may use either the **FG-5713** or **FG-5717** Door Jamb.
- 6.2 Level Threshold at the high point in the slab. Position shims between the framing and substrate to prevent members from bowing.
- 6.3 If using the **TH-57** saddle type Threshold, cut **TH-60** Threshold Anchor Stabilizer to Door Opening minus 1/4". Fabricate clear holes in Stabilizer at Anchor Bolt locations. The **TH-60** is not attached directly to the substrate; its function is solely to prevent bowing of Threshold and to provide support for the Threshold Anchor Bolts.
- 6.4 Run a generous amount of sealant to underside of Threshold over its full length, both front and rear.
- 6.5 Install frame, sealing base of door frame to substrate at sides and interior-side of Door Jamb to prevent water leakage. Clean away any excess sealant before it can cure.
- 6.6 Install Door Stops per guide in *Section 9.0*.
- 6.7 For entrances with Transoms, reference *Section 10.0*.

Rugged StormMax® Entrance Installation Manual

7.0 Installing Door Frame for Level E with Storefront Sidelite

- 7.1 Door Frames with Sidelites require the **FG-5717** Door Jamb.
- 7.2 If Steel Reinforcement is required, reference *Section 2.0*.
- 7.3 Install Door Frame per the instructions in *Section 6.0*.
- 7.4 Seal the inside of the Door Jamb(s) to the substrate per *Figure 13*, leaving the front face unsealed for drainage.
- 7.5 Apply sealant to the Door Jamb where the Subsill makes contact to provide complete seal. **NOTE: Do not install End Dam at Door Jamb.**
- 7.6 Set the sidelite Subsill in a bed of sealant and butt tight against Door Jamb.
- 7.7 Apply a minimum of 6" of sealant above the Subsill over the interior-side snap track before installing the Door Jamb Filler.
- 7.8 Connect sidelite horizontals to **FG-5761** or **FGT-5780** Sidelite Filler, referencing Frame Assembly Section from Level E storefront installation manuals.

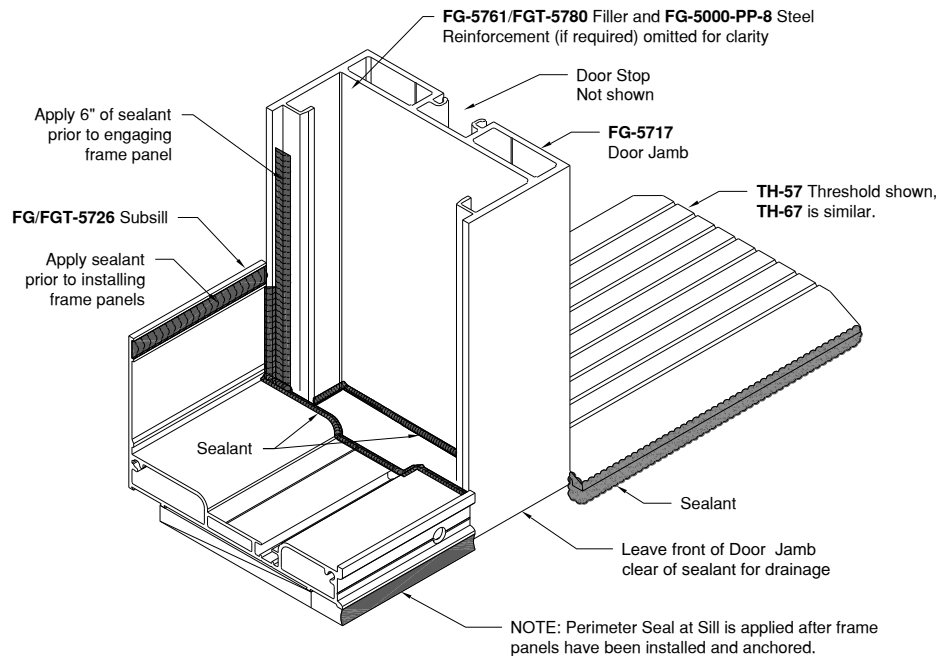


Figure 13: Door Jamb and Subsill Sealant Application at Level E Sidelite

Rugged StormMax® Entrance Installation Manual

8.0 Installing Curtain Wall Floor Anchor and Subframe

When installing the Rugged StormMax® Entrance in a curtain wall elevation, special Floor Anchors for the curtain wall Mullions at the slab are required. Reference *Figure 15*. The curtain wall frame opening will dictate the door and Subframe size; reference Section 1.3 on Page 16. Note that parts shown in this section are for the Reliance™ StormMax® High Performance (Level E) curtain wall. Where applicable, the equivalent parts for Reliance™ StormMax® (Level D) are noted for reference. Curtain wall Mullions will be set in a bed of sealant (**CRITICAL**). Reference *Figure 14* for typical Reliance™ StormMax® High Performance Header and Jamb details.

Note: Reliance™ StormMax® (Level D) details are similar. Reference standard CAD details for the Rugged StormMax® Entrance.

- 8.1 Locate Floor Anchors and attach directly to substrate. Bolt size and spacing are to be per job-specific loading requirements.
- 8.2 Insert Anchors/Sleeves into top and bottom of curtain wall Mullion. Pre-attach the Shear Block at the Head to freeze Anchor Sleeve in place. At floor level, secure Anchor Sleeve to Mullion by attaching adjacent Sill Shear Block. Note that Reinforcement Sleeve will rest on top of the Floor Anchor. Take care when fabricating for Shear Blocks on opposite side of Mullion to account for the Sill perimeter joint.
- 8.3 Prepare substrate with a generous bed of sealant and carefully drop curtain wall Mullion over Floor Anchor, taking care that the Anchor legs slot into the Anchor Sleeve. Use care when maneuvering Mullion to sit flat on the floor substrate. Tool and clean away excess sealant at the Mullion to substrate joinery immediately. Anchor at Head per procedure outlined in curtain wall manual.
- 8.4 Once frame opening is installed and ready for entrance, ensure Threshold has sealant on the underside at both front and rear and install assembled Subframe in opening. Jamb Subframe will be set in a bed of sealant, leaving the front unsealed to allow water exfiltration. Shim and attach Subframes with **FS-336** at 12" on center along Jamb and across Door Header. Shim space should be between 1/8" and 1/4", inclusive. When using the **FG-5765** Concealed Closer Header, hide access holes behind the **DS-104** Door Stop and **SC-1** Clip and attach Header to curtain wall Horizontal with **FS-316** at 12" O.C. At Concealed Closer locations, the flat head **FS-351** may be used to avoid interference with Closer hardware.
- 8.5 Run Backer Rod and seals along Shim space where Subframe meets curtain wall framing, both interior and exterior.
- 8.6 Install remainder of curtain wall elevation per approved shop drawings.

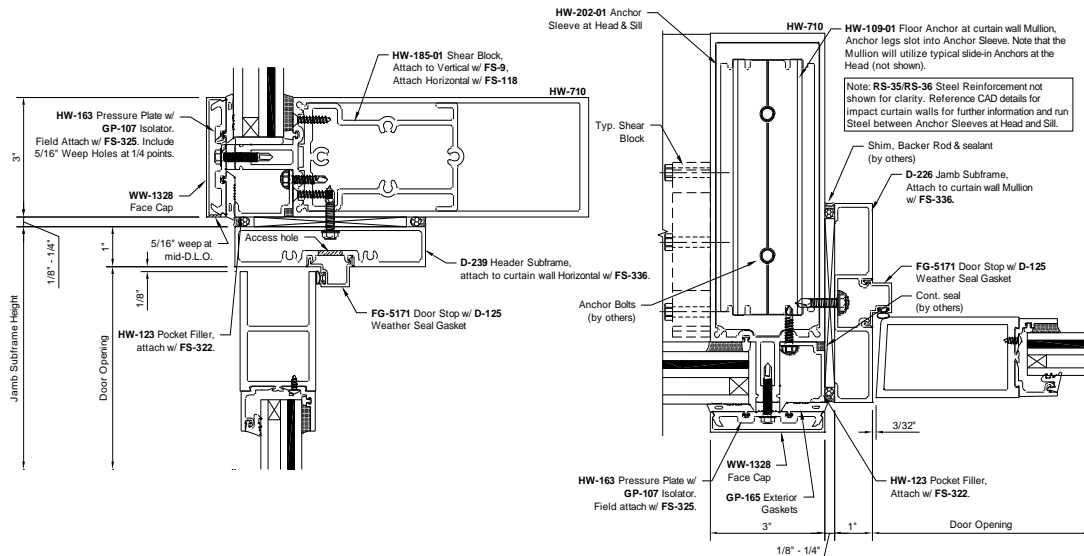


Figure 14: Typical Curtain Wall Details

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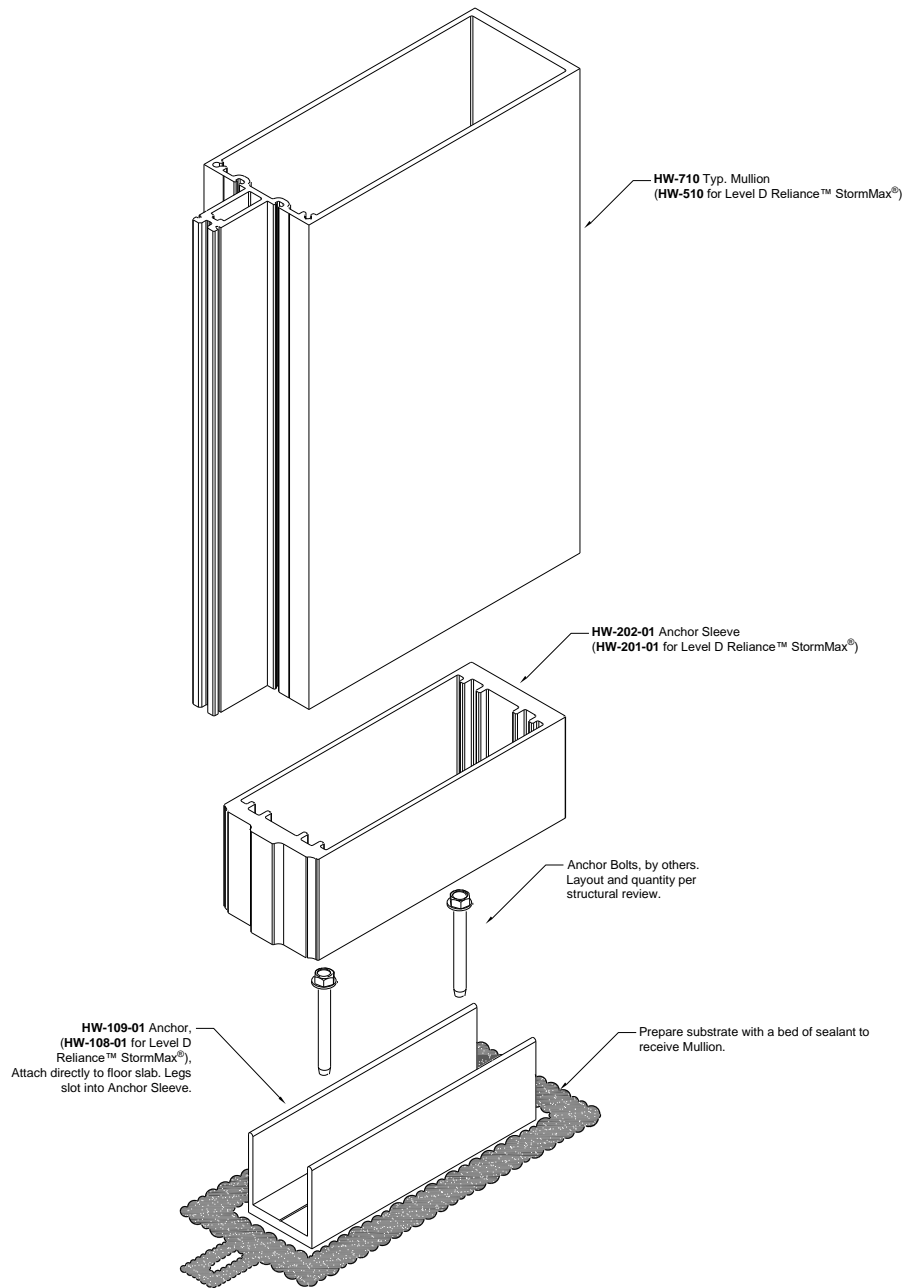


Figure 15: Curtain Wall Floor Anchor

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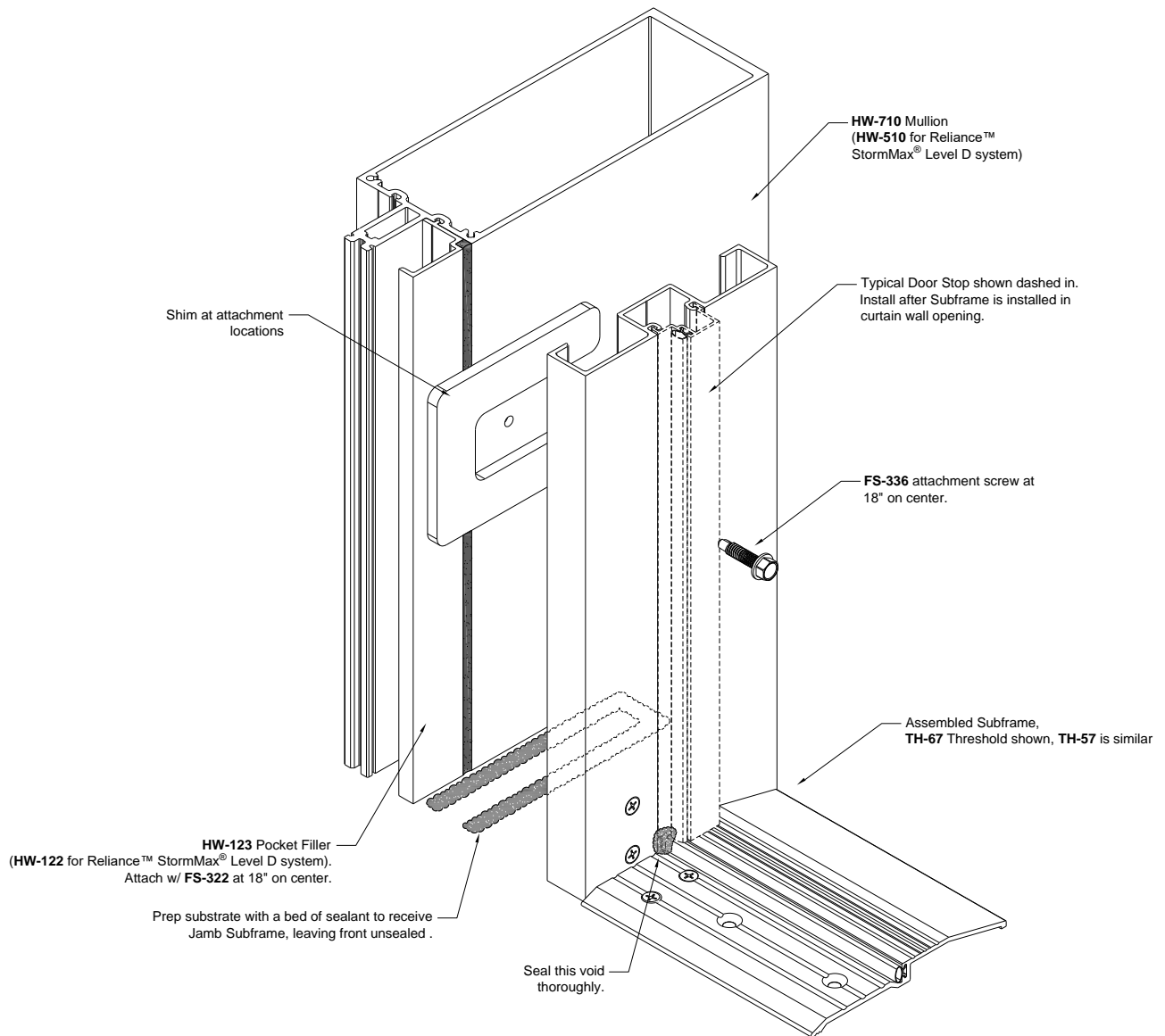


Figure 16: Curtain Wall Subframe Installation

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9.0 Installing Door Stops

Door Stops are determined by the Hinge and Closer type and will always use the **D-125** Weather Seal Gasket. Gasket may come pre-installed in Stops. If not, cut to Door Stop length and insert into Stop before installation, staking at both ends to secure. Verify the Door Stop received matches with the Hinge type being installed. Reference the below for correct Door Stop selection:

- Butt Hinge – **FG-5171** Door Stop at Jambs and at **FG-5767** Door Header for Surface Closer
- Gear Hinge – **FG-5768** Door Stop at Hinge Jamb and **FG-5171** at Lock Jamb for single Doors
- Butt or Gear Hinge – **DS-104** w/ **SC-1** Spring Clips at **FG-5765** Door Header for Concealed Closer

9.1 **FG-5171** or **FG-5768** Snap-in Door Stops

- 9.1.1 Insert front leg into the front snap track and rotate Door Stop into the back snap.
- 9.1.2 Carefully, strike Door Stop with a dead-blow hammer to snap Stop into place. Reference *Figure 17*.

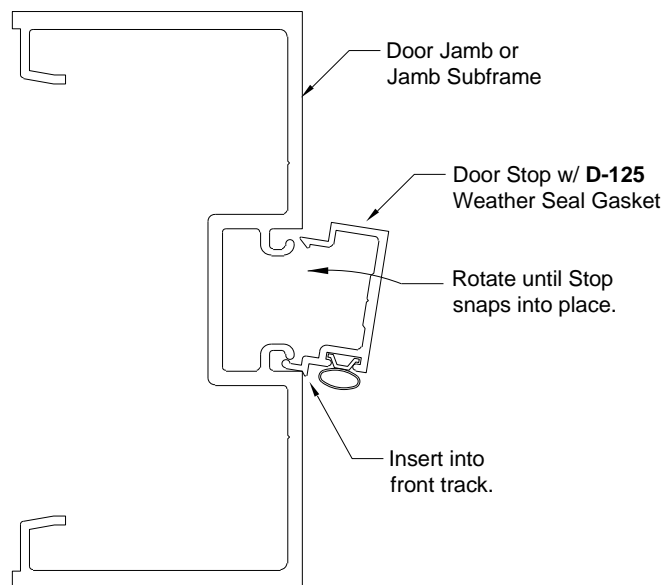


Figure 17: Installing Snap-in Door Stops

9.2 **DS-104** Screw Applied Door Stop

- 9.2.1 Locate **SC-1** Spring Clips and attach w/ **FS-15** Drive Rivets at 12" O.C. Nominal attachment distance from front face of Door Header is 3-1/16".
- 9.2.2 Snap Door Stop over **SC-1** Clips. A dead blow hammer may be GENTLY used to aid in engaging Stop. Take care not to break Clips.
- 9.2.3 For pairs of Doors, secure **DS-104** Door Stop with a single **FS-201** fastener at the centerline of Door opening. Reference *Figure 18*.

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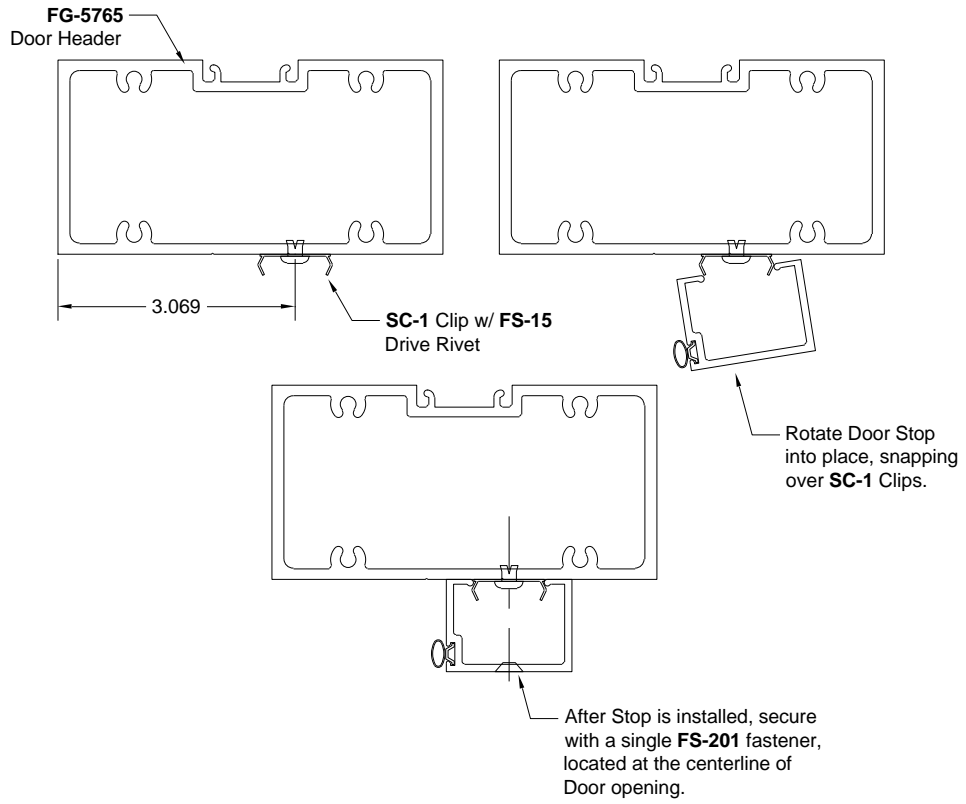


Figure 18: Installing Screw Applied Door Stop for Concealed Closer Door Header

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10.0 Transom Sash

Entrance installations that require a transom will use the **FG-5181** Transom Sash to accommodate glazing. Transom Sash and Transom Sash Stops are cut to length and prepped at the factory. Verify the lengths required per *Figure 6* on Page 16.

10.1 Installing Transom Sash

- 10.1.1 Snap or slide **FG-5181** Transom Sash into the door stop pocket of the Door Jamb or Header (as applicable).
- 10.1.2 Secure Transom Sash with **FS-6** fasteners at 12" intervals on center.
- 10.1.3 Note that when Transom Bar Reinforcement **FG-5724** is used with a Concealed Overhead Closer, the **FG-5181** should be pre-attached along the length of the **FG-5765** Header to allow simultaneous installation of Sash and Reinforcement. Reference
- 10.1.4 *Figure 10* on Page 20 for more information.
- 10.1.5 Clean Door Jamb and Transom Sash surfaces with isopropyl alcohol and mask off Sash and Jamb with 1" wide (minimum) low-adhesion masking tape. Reference *Figure 19* for masking tape locations.
- 10.1.6 Run continuous fillet seal along joinery to Jamb (and Door Header as applicable) at rear of Transom Sash, creating a smooth and finished joint as shown below. Remove masking tape before sealant skins, taking care not to damage tooled sealant.

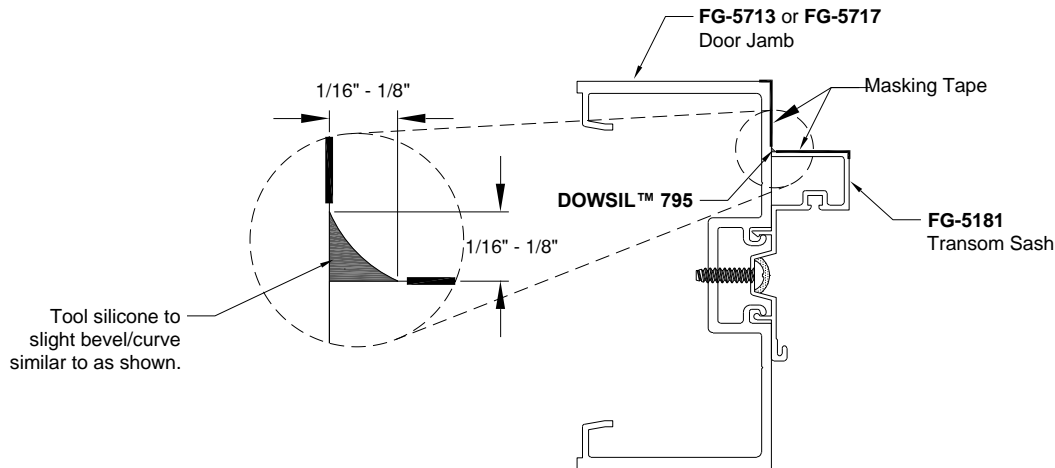


Figure 19: Installing Transom Sash

Rugged StormMax® Entrance Installation Manual

10.2 Transom Glass Sizing

When the Rugged StormMax® Entrance uses a Transom, the Transom glass will match the glass used in the Level E Storefront (FG-5750 or FG-5750T). Installation will be similar to typical Level E storefronts; reference storefront manuals for more information but note that a special push-in S.S.G. Spacer is utilized at the Rugged StormMax® Transom Head. This Gasket will be installed after Transom infill is in place. Reference *Figure 20* and the following formulas for glass sizing:

Rugged StormMax® Entrance with FG-5750 / FG-5750T Level E framing

- 1-5/16" impact glazing required
- GLASS WIDTH: Transom D.L.O plus (+) 1-1/8"
- GLASS HEIGHT: Transom D.L.O. plus (+) 1-1/8"

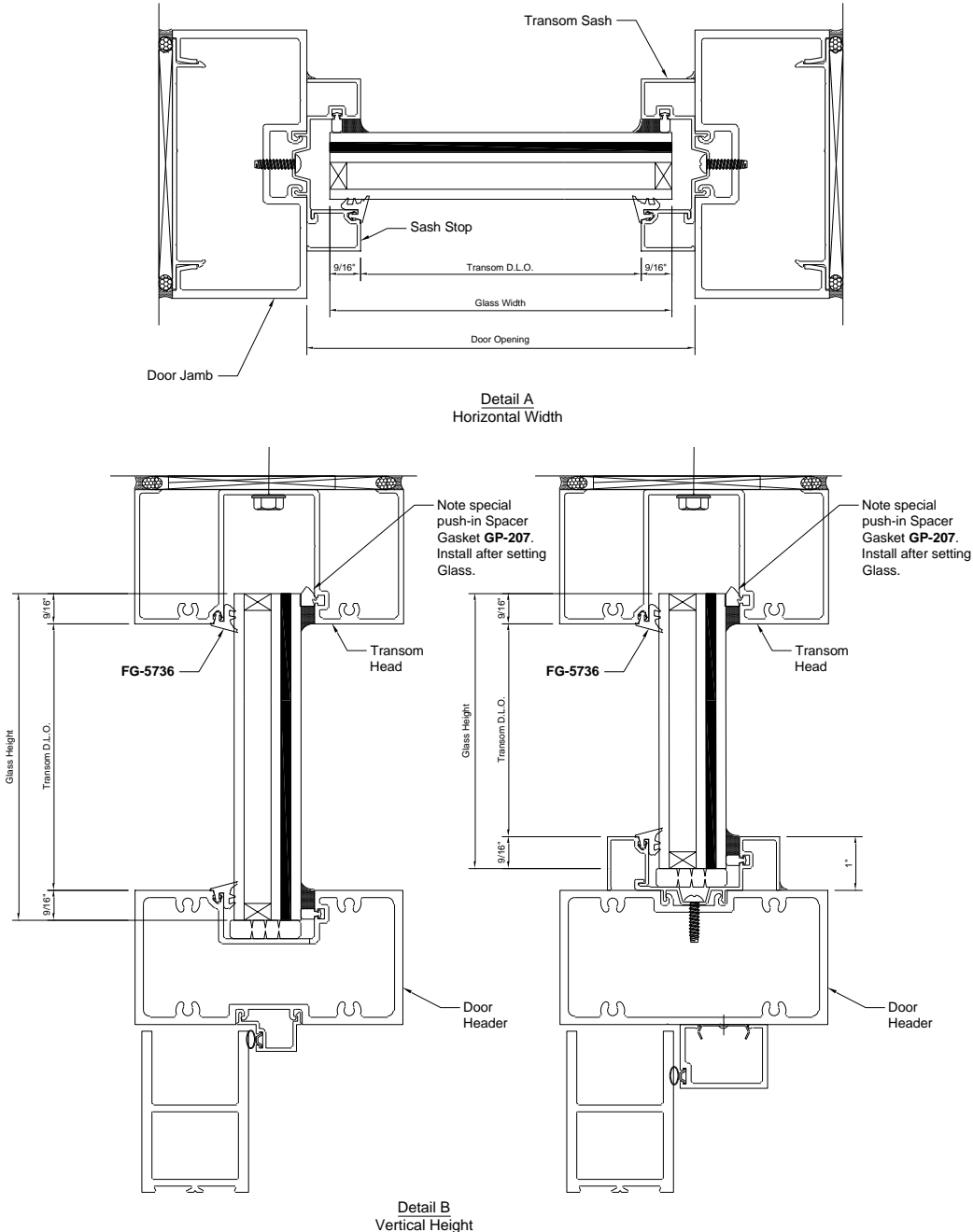


Figure 20: Determining Glass Size for Transom

Rugged StormMax® Entrance Installation Manual

11.0 Glazing the Door

Note: Door glazing instructions are provided for 9/16" (nominal) .180 SentryGlas or 1-1/16" .180 SentryGlas glazing.

11.1 Door Glass Sizing

The Rugged StormMax® Entrance is designed and tested for optimal performance and is designed for 9/16" laminated or 1-1/16" insulating laminated impact glazing in the door. This manual is written to the standard 9/16" glazing thickness along with its respective glazing components. The **FG-5188** Spacer Gasket will be used on the wet glazed side regardless of Infill thickness. A chart of glazing thicknesses and parts is provided below:

Glazing Thickness	Interior Glass Stop	Exterior Glass Stop	Exterior Gasket
9/16"	S-98	S-83	FG-5125
1-1/16"	S-98	S-99	FG-1133

When ordering the desired glass, reference Figure 21 and use the following formulas:

- GLASS WIDTH: 9/16" Glass Opening minus (-) 7/16"
- GLASS HEIGHT: 9/16" Glass Opening minus (-) 7/16"
- GLASS WIDTH: 1-1/16" Glass Opening minus (-) 9/16"
- GLASS HEIGHT: 1-1/16" Glass Opening minus (-) 9/16"

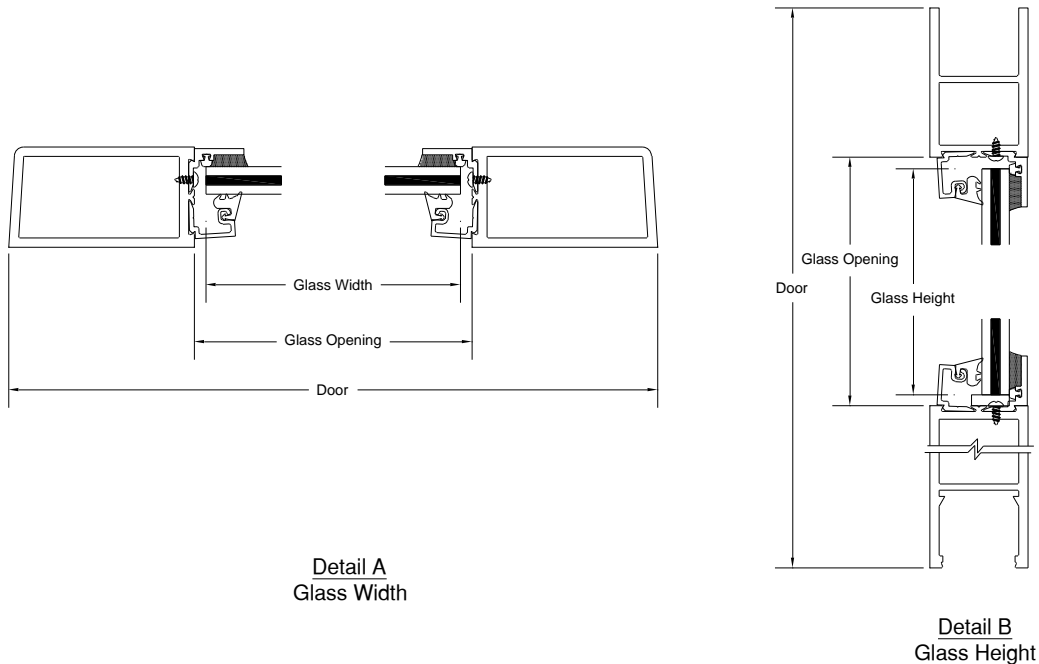


Figure 21: Determining Glass Size for Entrance Leaf

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11.2 Preparing Door for Glazing

All glazing materials are shipped separately in the Frame Box. Verify all required parts arrived. Rugged StormMax® Entrance is designed for wet glazing on the interior via the **S-98** Glass Stop with **FG-5188** silicone Spacer Gasket. Exterior Stops and Gaskets depend on infill; reference table in *Section 11.1*.

Door may have **S-98** Glass Stop factory installed. If it is not, match drill rails of the door and attach with **FS-114** fasteners at 12" on center, taking care to avoid damaging pre-installed **FG-5188** Spacer.

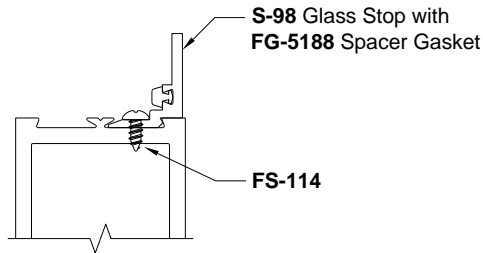


Figure 22: Installing S-98 Glass Stop

11.2.1 Install **FG-5000-PP-1** Setting Blocks / Side Blocks per *Figure 23*. The blocks are adhesive backed for easy installation. Blocks may be doubled as required to compensate for glass tolerances.

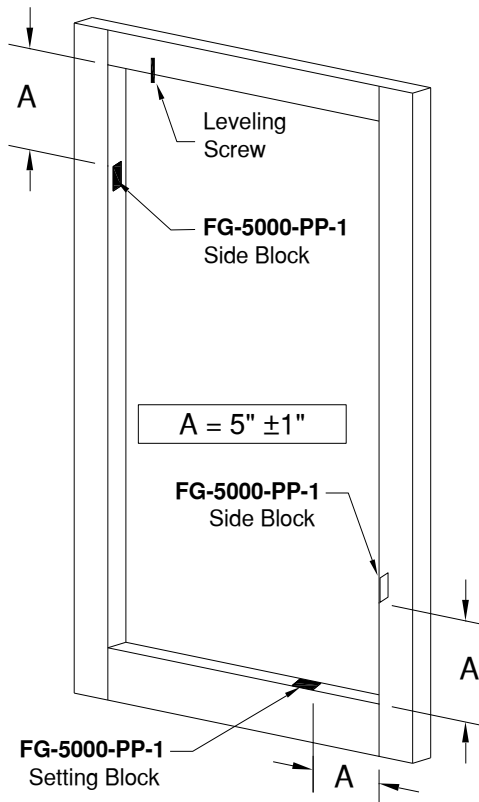


Figure 23: Locating Setting Blocks / Side Blocks

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11.3 Cut Gasket to Length

11.3.1 Cut the **FG-1133** or **FG-5125** Gasket to a minimum length of Glass Opening plus (+) 1/4" per foot.

11.3.2 Miter the horizontal gaskets per *Figure 24*.

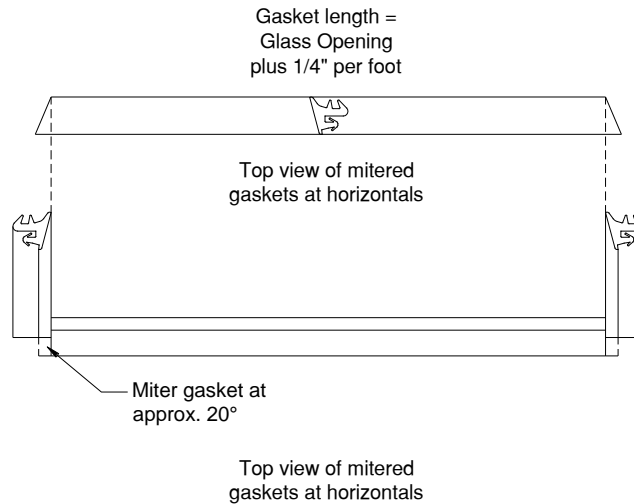


Figure 24: Gasket Cut Guide

11.4 Setting Glass

11.4.1 Center glass in the opening on the Setting Blocks and align with the Side Blocks.

11.4.2 Once the glass is in the correct position, tighten the Glass Leveling Screw down to the top of the glass just enough to hold the glass into place.

11.4.3 Square the door. Measure the door leaf in a diagonal corner-to-corner method and adjust the Glass Leveling Screw as needed until the door is square.

11.4.4 Install the **S-83/S-99** Glass Stop into the horizontals. Hook the stop into the dovetail on the door rail and rotate into place, as shown in *Figure 25*.

Note: The top rail Glass Stops are notched to clear the Leveling Screw

11.4.5 After the horizontal Glass Stops are installed, install the vertical stops.

11.4.6 Roll the **FG-5125** Gasket into the reglet in **S-83** or **FG-1133** Gasket into the reglet in **S-99**.

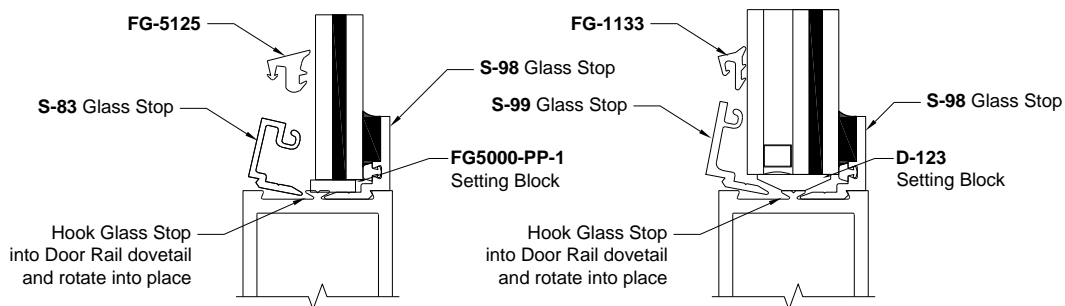


Figure 25: Installing Glass Stop

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11.5 Application of Structural Sealant

- 11.5.1 Verify that the door is square. Measure the door leaf in a diagonal corner-to-corner method and adjust the Glass Leveling Screw as needed until the door is square.
- 11.5.2 Clean glass with isopropyl alcohol and mask off glass with 1" wide (minimum) low-adhesion masking tape. For masking tape application location, reference *Figure 26*.
- 11.5.3 Fill the cavity between the glass and the **S-98** Glass Stop with **DOWSIL™ 995** Silicone Structural Sealant, as shown in *Figure 26*. Care should be taken not to leave any voids and to eliminate air bubbles in the sealant. Immediately tool, creating a finished joint with a slight beveled/curved joint surface.
- 11.5.4 Remove masking tape before sealant skins, taking care not to damage tooled sealant.

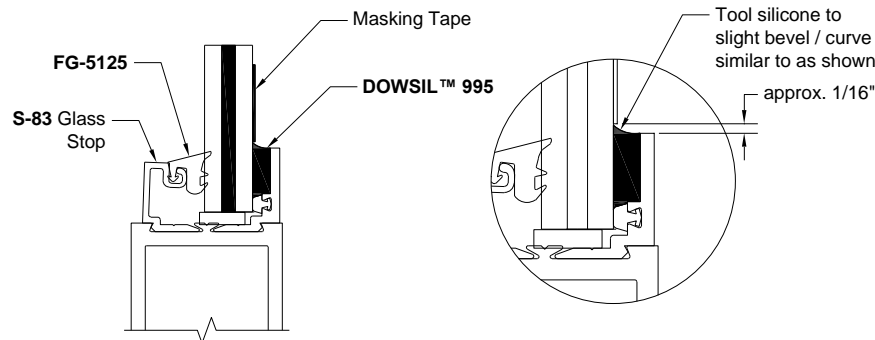


Figure 26: Wet Glazing Door

12.0 Transom Glazing

When installing an entrance with a Transom, the process is similar to typical Level E storefronts. Where significant differences occur, the steps have been sorted by framing type. The instructions below are meant to be generic for this reason. Reference the provided figures, the product section details, and the approved shop drawings and job specific details when glazing transoms.

- 12.1 Remove **FG-5736**, **FG-5731** and **GP-207** Spacer Gasket from roll and allow to relax in a protected location overnight.
- 12.2 Cut Gasket to lengths of Door Head, Transom Head, and Transom Sash.
- 12.3 Remove all debris from glazing pockets to prevent blockage of weeps/drains.
- 12.4 Install **FG-5731** Spacer Gasket across top of Door Header and vertically in Transom Sash. **GP-207** Spacer Gasket runs the length of the Transom Head.
- 12.5 Install **HP-92S** Setting Blocks at quarter points of each lite or as specified by glass manufacturer. A full Wet Glaze assembly is shown in *Figure 27*.
- 12.6 Install **FG-5731** Spacer Gasket, then transom glass. Once glass is in place, install **FG-5736** exterior gasket, followed by **GP-207** at Transom Head. **GP-207** will be pressed in gently until its leg catches the Head's Gasket reglet, leaving a sealant joint of approximately 11/32".

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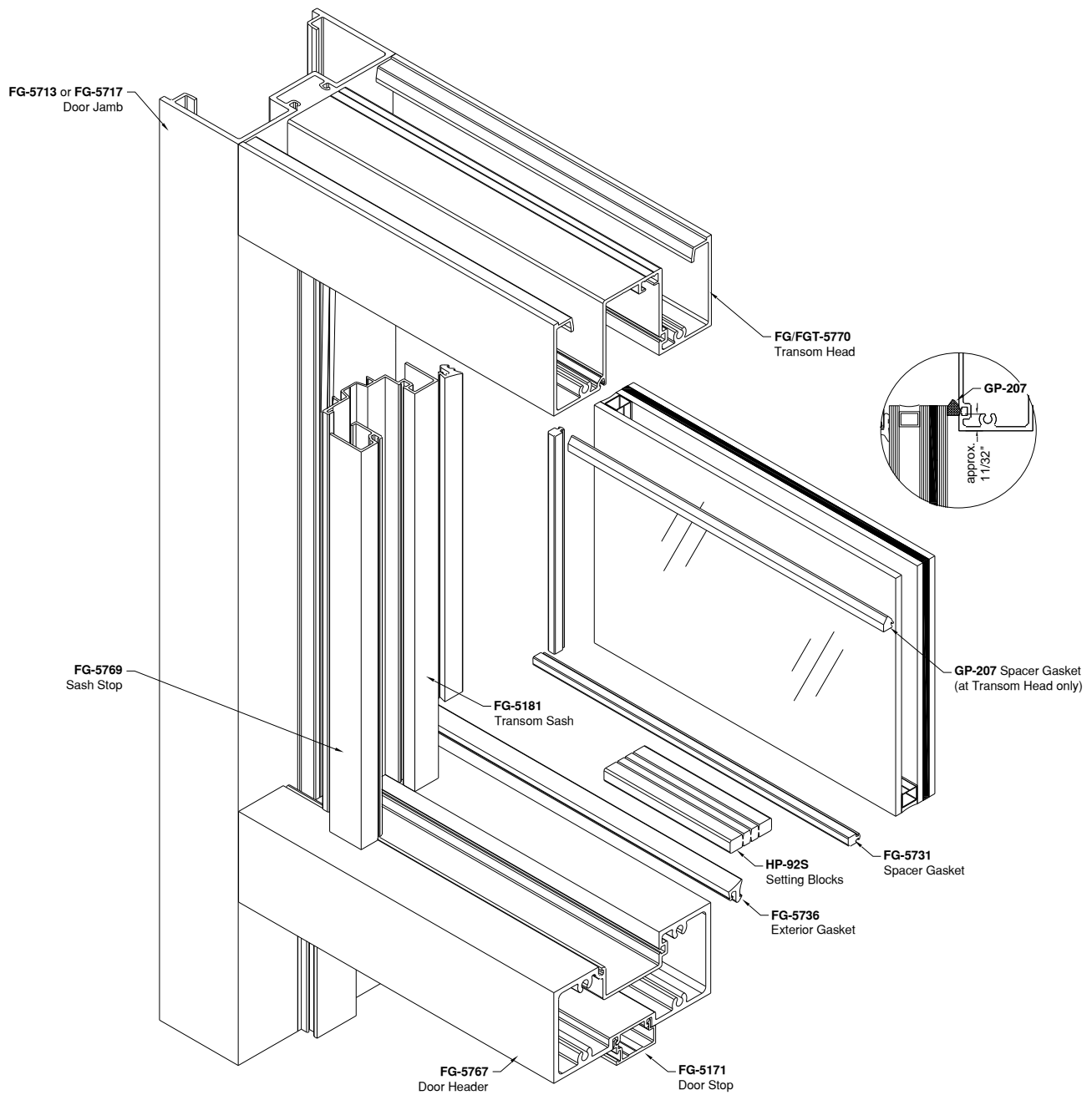


Figure 27: Level E Transom Glazing Components

Rugged StormMax® Entrance Installation Manual

12.7 Setting Glass and Installing Exterior Gasket

- 12.7.1 Install Level E impact Glazing into framing, pushing in to the deep pocket of the Transom Head first. After centering in the D.L.O., lift infill and position the Setting Blocks.
- 12.7.2 Install the Sash Stop. FG-5769 Sash Stop installation is shown in Figure 28.

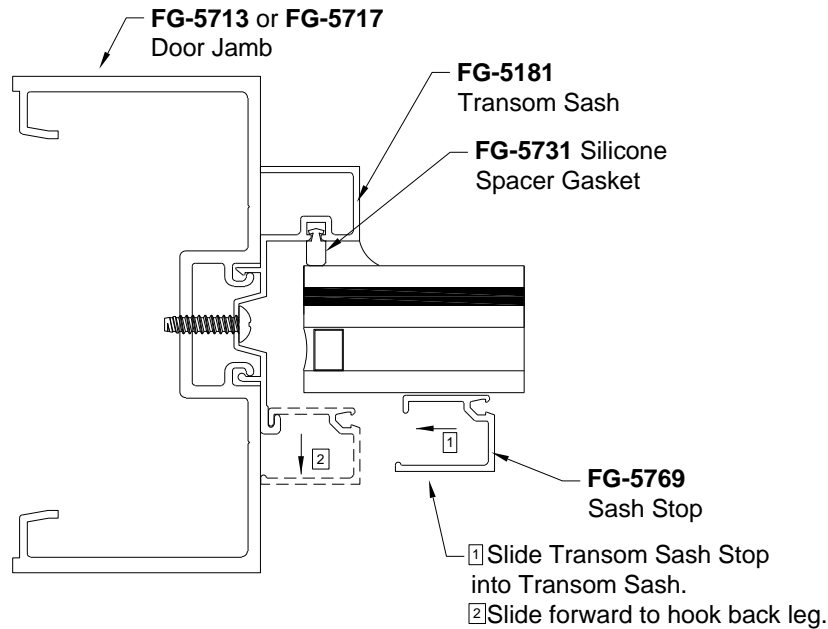


Figure 28: Level E Transom Sash Stop Installation

- 12.7.3 Cut the **FG-5736** Gasket a minimum of 1/4" per foot longer than the D.L.O., to provide adequate compression, and miter the ends of the gaskets at a 20° angle, as shown in *Figure 24 (page 35)*.
- 12.7.4 Install exterior **FG-5736** glazing Gaskets starting at the middle of the opening.
- 12.7.5 After gaskets are pressed into place, pull gasket from pocket at corners as shown in *Figure 29, Detail A*. Clean glass and gaskets a minimum of 2" from each end with iso-propyl alcohol.
- 12.7.6 Apply sealant and push Gasket into reglet, compressing from the corner first as shown in *Figure 29, Detail B*. Clean squeeze out immediately.

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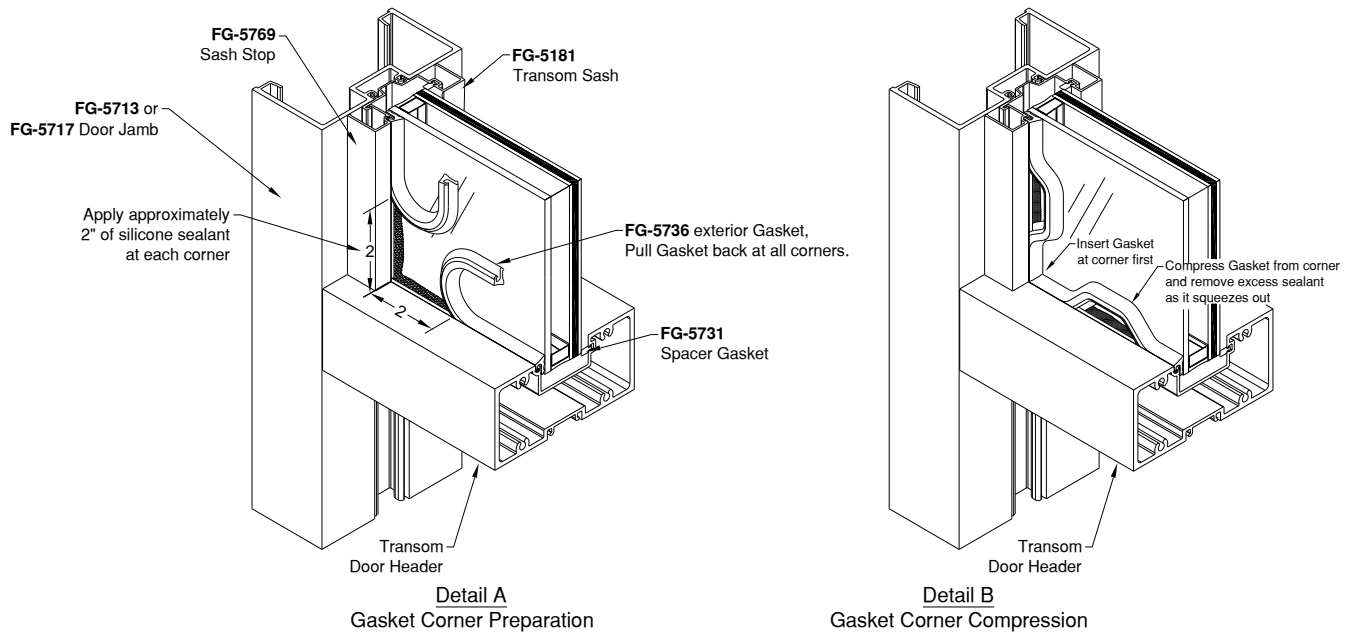


Figure 29: Exterior Gasket Installation

12.8 Application of Interior Structural Sealant

- 12.8.1 Glass bite is 9/16" for Level E Storefront Framing. Remove exterior Gasket, reference illustration in *Section 10.2* and adjust infill to attain proper glass bite.
- 12.8.2 Clean glass and transom framing with isopropyl alcohol and mask off glass with 1" wide (minimum) low-adhesion masking tape. Reference *Figure 30, Detail A* for masking tape application location.
- 12.8.3 Fill cavity around full perimeter of D.L.O. with **DOWSIL™ 995** Silicone Structural Sealant, as shown in *Figure 30*; care should be taken not to leave any voids and eliminate air bubbles in sealant. Immediately tool, creating a finished joint with a beveled/curved joint surface similar to *Figure 30 Detail B*.
- 12.8.4 Remove masking tape before sealant skins, taking care not to damage tooled sealant.

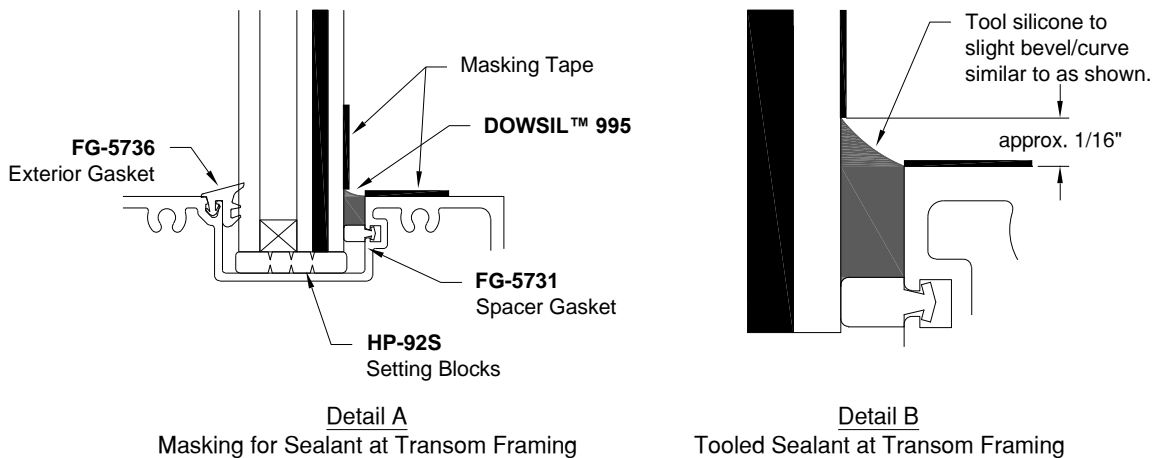


Figure 30: Glazing Interior of Transom

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HANGING THE DOOR

NOTES:

- Some hardware may be factory installed for shipping purposes. Remove hardware as needed to facilitate glazing the door, taking care not to damage any parts or pieces. Re-install hardware once the door is glazed.
- Door may be glazed before or after attaching door to the frame. If the door is not pre-glazed, glaze the door before attaching hardware. It is recommended to have hardware installed before hanging.
- Back-up plates for Butt Hinges are factory installed in Frame and hinges are factory installed to Door.
- Continuous Gear Hinge is factory installed on Door. Door Jamb is not factory-prepped to receive the continuous hinge.

13.0 Hanging Butt Hinge Door

- 13.1 Lift Door until Butt Hinges align with hinge cut-out in Door Jamb.
- 13.2 Block under Door when hinge aligns with cut-out.
- 13.3 Attach hinges to the back-up plates in frame using **FS-22** (#12-24 x 1/2" UCPFH).
- 13.4 If the door mounted hinge and the frame slots are misaligned, back off the screws and re-adjust the door until it fits properly, then tighten down fasteners.
- 13.5 Continue to Section 15.0 to complete hardware installation or Section 16.0 to make final adjustments to the hardware.

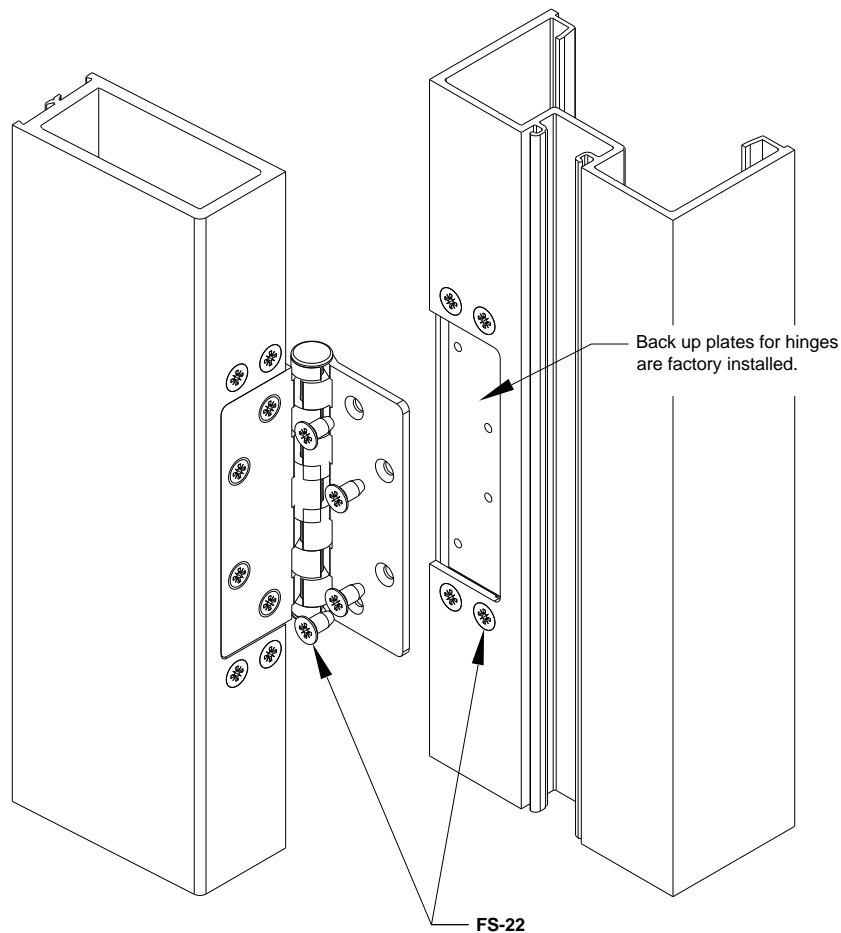


Figure 31: Hanging Door with Butt Hinges

Rugged StormMax® Entrance Installation Manual

14.0 Hanging Gear Hinge Door

- 14.1 Place a 1/8" shim at the top of the Door Jamb at the Header to locate the top of Door.
- 14.2 Align Continuous Gear Hinge to Door Jamb by using the locator leg as a guide. Locator leg is identified in *Figure 32 Detail A*.
- 14.3 Block under Door to help maintain alignment of Door and maintain the 1/8" clearance provided by the shim.
- 14.4 Attach Continuous Gear Hinge to the Door Jamb using the Tek fasteners provided by the Gear Hinge manufacturer.
- 14.5 **NOTE: Take special care when attaching the hinge to the frame. No adjustments can be made once the hinge is attached.**
- 14.6 Continue to Section 15.0 to complete hardware installation or Section 16.0 to make final adjustments to other hardware.

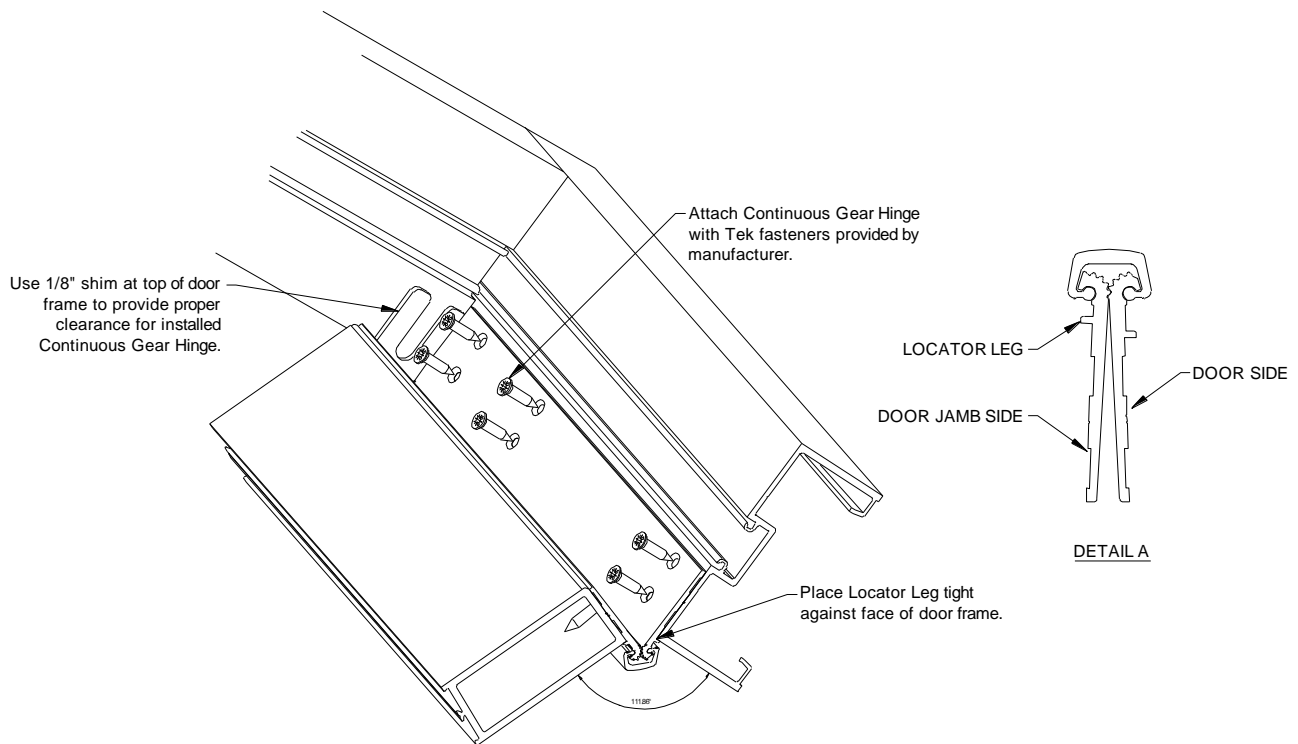


Figure 32: Hanging Door with Continuous Gear Hinge

Rugged StormMax® Entrance Installation Manual

15.0 Installing Hardware

15.1 Closers

Refer to the instructions included from the manufacturer with the Door Closer.

15.2 Panics

Refer to the instructions included from the manufacturer with the Panic.

15.3 Other Hardware

15.3.1 Cylinder

- Doors requiring Cylinders have locking Cylinders factory installed. If changing the locking Cylinder is required, follow all instructions from the manufacturer of the customer-provided Cylinder.

15.3.2 Door Pull Handle

15.3.2.1 Holes for **PH-12** are factory drilled in Door.

15.3.2.2 Verify Door Pull kit includes through-bolts and washers. Contact OBE Sales Rep if anything is missing.

15.3.2.3 Place Washers over the Through-Bolts. Align Door Pull with holes in Door on the exterior of Door.

15.3.2.4 Insert Through-Bolts into Door and into Door Pull from interior of Door.

15.3.3 Door Sweep (used with TH-57 saddle type Threshold)

15.3.3.1 The **D-118** Sweep Retainer is shipped pre-fabricated. Cut **D-118** and **D-120** Sweep to fit between the Door Stops on single Doors, and from edge of Door Stile to Door Stop on pairs. Maximum distance for attachment holes from edges is 1". If necessary, drill an additional clear hole into the **D-118** 1" from edge and countersink for #8 flat head fastener.

15.3.3.2 Align **D-118** so top edge is located 1-1/8" from bottom edge of door rail, then match drill rail for #8 fasteners. Depending on door clearances this location may vary so that the Sweep has good contact with Threshold.

15.3.3.3 Attach **D-118** to Bottom Rail w/ **FS-2** Fasteners. Slide **D-120** Sweep into slot of **D-118**. Extend **D-120** about 1/8" beyond ends of Retainer and stake at both ends to secure.

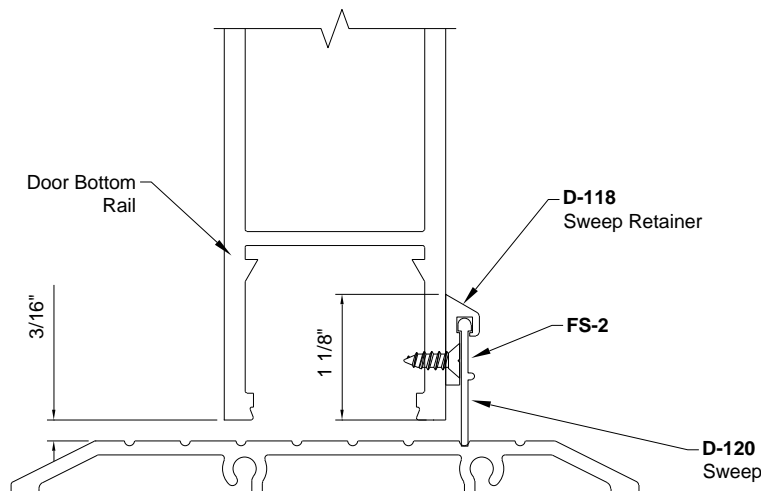


Figure 33: Installing the Door Sweep

Rugged StormMax® Entrance Installation Manual

16.0 Final Adjustments to Door

After installation and hanging, the door needs to be checked and adjusted for proper clearances and functionality.

- 16.3 The top rail of Door should remain at 1/8" spacing below the Door Header.
- 16.4 For Saddle Threshold **TH-57**: The bottom of Door should remain a consistent 3/16" above Threshold for a ground clearance of 11/16".
- 16.5 For Bumper Threshold **TH-67**: The bottom of Door should remain a consistent 1/8" above lower front section of Threshold for a ground clearance of 3/8".

- If the gap is too large at the top rail, deglaze the door and verify Door is square before re-applying structural silicone sealant.

16.6 The hinge-side gap between Door and Door Frame should be as follows:

Butt Hinge: 3/32"

Continuous Gear Hinge: 5/16" (note that Lock Jamb for single Gear Hinge Doors utilizes a 3/32" offset distance, identical to a Butt Hinge detail for shop drawing purposes)

The corrective action for doors out of compliance will vary by type:

- Butt Hinges may be shimmed out to adjust clearance when there is more than 3/32" at Lock Cylinder side of Door.
- Continuous Gear Hinge Doors out of alignment will need to be removed completely from the door frame and re-installed. This will compromise the stability and strength of the Door Frame.

16.7 Door Pairs should have a consistent 1/8" gap between Doors.

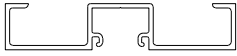

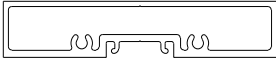
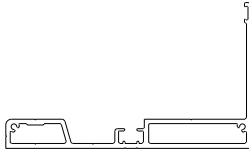
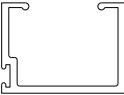


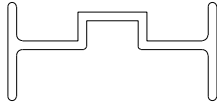
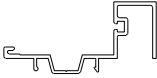
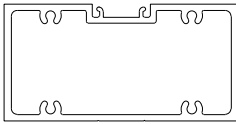
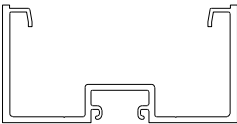
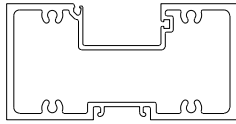
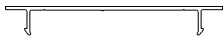

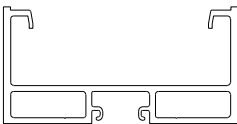

- If the gap is not consistent or not 1/8", adjust the screws in the adjustable Astragal until a 1/8" gap is attained.

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PARTS LIST

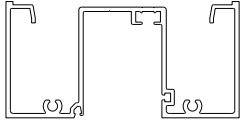

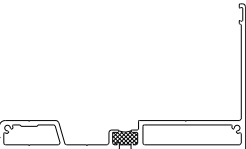
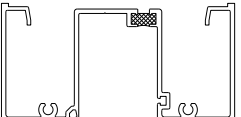
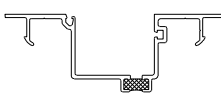
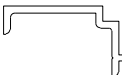
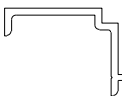
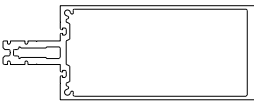
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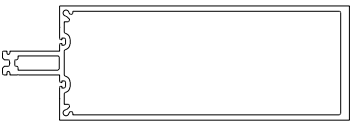


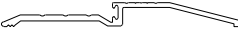
Level E Door Framing Extrusions

D-226		Jamb Subframe	FG-5718		Flat Filler (Transom Head)
D-239		Header Subframe	FG-5726		Storefront Subsill (FG-5750)
DS-104		Door Stop (for C.O.C. Header)	FG-5761		Sidelite Filler (Non-thermal)
FG-5171		Door Stop (Typical)	FG-5764		Aluminum Transom Bar Reinforcement
FG-5181		Transom Sash	FG-5765		Door Header (For Concealed Closer)
FG-5713		Door Jamb (Typical)	FG-5767		Door Header (For Surface Closer)
FG-5715		Flat Filler, Jamb	FG-5768		Door Stop (at Gear Hinge Jamb)
FG-5717		Door Jamb (Heavy/Sidelite)	FG-5769		Transom Sash Stop


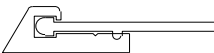

Rugged StormMax® Entrance Installation Manual

Level E Framing cont.

FG-5770 	Transom Head (FG-5750)
FG-5777 	Anchor Bolt Reinforcement (Door Header)
FGT-5726 	Storefront Subsill (FG-5750T)
FGT-5770 	Transom Head (FG-5750T)
FGT-5780 	Sidelite Filler (Thermal)
HW-122 	Pocket Filler (Reliance™ StormMax® Curtain Wall)
HW-123 	Pocket Filler (Reliance™ StormMax® High Performance Curtain Wall)
HW-510 	Typical Curtain Wall Horizontal/Vertical (Reliance™ StormMax®)

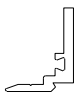

HW-710 	Typical Curtain Wall Horizontal/Vertical (Reliance™ StormMax® High Performance)
TH-57 	Saddle Threshold
TH-60 	Anchor Bolt Reinforcement (TH-57 Threshold)
TH-67 	Bumper Threshold

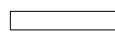
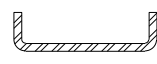






Door Extrusions

AS-6 	Astragal
D-118/D-120 	D-118 Door Sweep Retainer w/ D-120 Sweep Gasket
S-83 	Door Glass Stop (9/16" Infill)

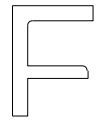
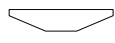

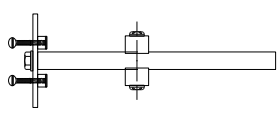

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Door Extrusions cont.

S-98 	Door Glass Stop (Wet Glaze)
S-99 	Door Glass Stop (1-1/16" Infill)





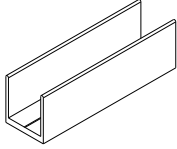
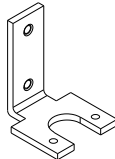
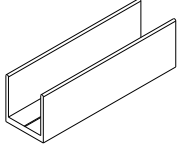

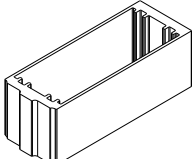

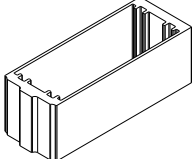

FG-5000-PP-1 	Door Side/Setting Block (for monolithic infill)
FG-5000-PP-8 	Steel Reinforcement
FG-5125 	Door Glazing Gasket (Typical for 9/16" Infill)
FG-5188 	Door Silicone Spacer Gasket
FG-5730 	Exterior Framing Alternate Gasket (3/16" face clearance)
FG-5731 	Framing Silicone Spacer Gasket
FG-5735 	Exterior Framing Alternate Gasket (1/4" face clearance)
FG-5736 	Exterior Framing Gasket (Typical, 1/8" Face Clearance)

Parts & Accessories

AC-112-1 	Clip for Concealed Closer
D-123 	Door Setting Block (for insulating infill)
D-125 	Door Stop / Bumper Threshold Weather Seal Gasket
DJ-5750 	Drill Fixture for Level E Storefront Framing
FG-1133 	Door Glazing Gasket (Typical for 1-1/16" Infill)

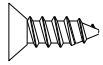
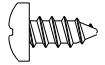
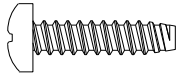

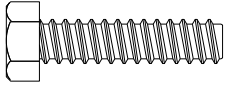
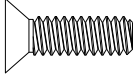

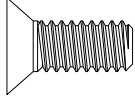

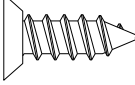
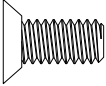

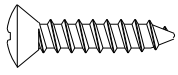
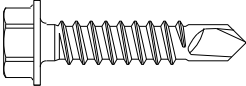
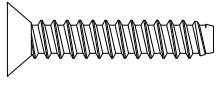
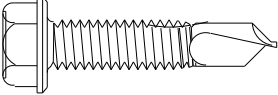
Rugged StormMax® Entrance Installation Manual

Parts & Accessories cont.

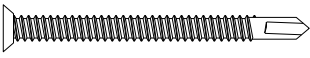
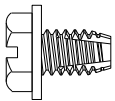
<p>GP-207</p> 	<p>Push-in Silicone Spacer Gasket (at Transom Head)</p>	<p>SC-12</p> 	<p>Spring Clip (for Astragal Adjustment Screw)</p>
<p>HP-92S</p> 	<p>Setting Block (at Transom)</p>	<p>SM-5601</p> 	<p>½" Wide x 1/8" Thick Joint Sealant Tape</p>
<p>HW-108-01</p> 	<p>Curtain Wall Mullion Floor Anchor (Reliance™ StormMax®)</p>	<p>TH-403</p> 	<p>Threshold Clip (attaches TH-67 Threshold to Door Jamb / Subframe)</p>
<p>HW-109-01</p> 	<p>Curtain Wall Mullion Floor Anchor (Reliance™ StormMax® High Performance)</p>	<p>TH-68-01</p> 	<p>Panic Stop</p>
<p>HW-201-01</p> 	<p>Anchor Sleeve (Reliance™ StormMax®)</p>	<p>WP-085</p> 	<p>Astragal Weatherstripping</p>
<p>HW-202-01</p> 	<p>Anchor Sleeve (Reliance™ StormMax® High Performance)</p>		
<p>SC-1</p> 	<p>Spring Clip (attaches DS-104 Door Stop to C.O.C. Header)</p>		

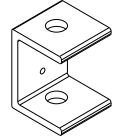
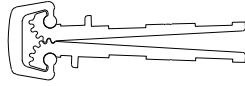
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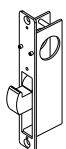
Fasteners

<p>FS-2</p> 	<p>#8 x 1/2" PPH A Pt. (attaches Door Sweep Retainer)</p>	<p>FS-114</p> 	<p>#8 x 3/8" PPH AB Pt. (attaches wet glaze Door Stop to Stiles/Rails)</p>
<p>FS-6</p> 	<p>#10 x 3/4" PPH B Pt. (attaches Transom Sash)</p>	<p>FS-201</p> 	<p>#10 x 2" PPH A Pt. (secures DS-104 Door Stop in place, pairs only)</p>
<p>FS-8</p> 	<p>#14 x 1" HH Slotted B Pt. (Typical Frame assembly Fastener)</p>	<p>FS-231</p> 	<p>#10-24 x 5/8" PPH MS (attaches TH-403 Threshold Clip to Jamb)</p>
<p>FS-15</p> 	<p>Drive Rivet (attaches SC-1 Spring Clip)</p>	<p>FS-235</p> 	<p>1/4"-20 x 5/8" PPH MS (attaches TH-68-01 Panic Stop to Threshold)</p>
<p>FS-16</p> 	<p>#10-24 x 1/4" PFHUC MS (attaches TH-67 Threshold to TH-403 Clip)</p>	<p>FS-255</p> 	<p>#14 x 3/4" PFHUC A Pt. (attaches AC-112-1 Clip to Jamb)</p>
<p>FS-22</p> 	<p>#12-24 x 1/2" PFHUC MS (attaches Backup Plates)</p>	<p>FS-316</p> 	<p>1/4"-20 x 2" HWH Dril Flex (attaches C.O.C. Header to C.W. Horizontal)</p>
<p>FS-49</p> 	<p>#8 x 3/4" POH A Pt. (Astragal adjustment screw)</p>	<p>FS-322</p> 	<p>#12-14 x 1" HWH Dril Flex (attaches Transom Bar Reinforcement)</p>
<p>FS-58</p> 	<p>#10 x 1" PPH B Pt. (attaches C.O.C. Header to AC-112-1 Clip)</p>	<p>FS-336</p> 	<p>1/4"-20 x 1-1/8" HWH Kwik Flex (attaches Subframes to C.W. members)</p>

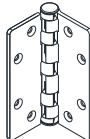



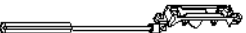
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FS-351 	1/4"-20 x 3" PFH Dril Flex (attaches C.O.C. Header to C.W. Horizontal at Closer locations)
FS-354 	1/4"-20 x 3/8" HWH Type F T.C.S. (attaches Steel Reinforcement)


FBG-5 	Flush Bolt Guide
GH-02 	Continuous Gear Hinge

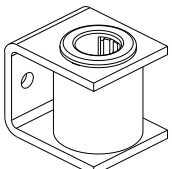
LK-1 	Deadlock
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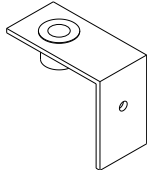
Approved Hardware

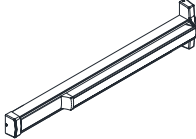
BH-6 	Butt Hinge
CY-1 	Typical Cylinder
CY-5 	Cylinder for Panic Device
FB-15 	Bottom Flush Bolt
FB-16 	Top Flush Bolt

LK-4 	Threshold Bolt
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LK-5 	Header Bolt
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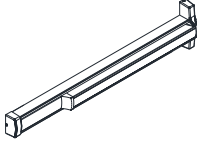
MH-7 	Lower Bolt Guide Assembly
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MH-9 	Lock Rod Support Angle
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PNC-14 	Concealed Vertical Rod Panic, Option 1
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Approved Hardware cont.

<p>PNC-15</p> 	<p>Concealed Vertical Rod Panic, Option 2</p>
<p>Concealed/ Surface Closer</p>	<p>Varies</p>