

**Oldcastle BuildingEnvelope®**

***SERIES 6000XT STOREFRONT  
INSTALLATION AND GLAZING MANUAL***

*Note: Installation and Glazing Manuals are product specific. **FOR REVIEW ONLY!***

**SERIES 6000XT INSTALLATION MANUAL**

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# **SERIES 6000XT INSTALLATION MANUAL**

## **GENERAL INFORMATION**

The Oldcastle BuildingEnvelope® Series 6000XT (2" x 6") system represents the latest in product development technology complemented by installer on-the-job input and experience. Proper use of this system will assure optimum results in erection and long-term performance.

Over the years many components were added to our flush glaze systems. In addition, there are many ways to install storefront products. This manual represents recommendations for the best results.

### **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 ensure these selections are in strict compliance with applicable laws and building codes.

### **INSTALLER QUALIFICATIONS:**

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.

### **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 so as 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 so as to place the glass into it's 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.

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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## **GENERAL INFORMATION**

### **MATERIAL HANDLING, PROTECTION, AND STORAGE:**

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. Remove material from package if it is wet or is located in a wet 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.

### **CHECK MATERIAL:**

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.

Completely check construction, which 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.

Check shop drawings and installation instructions to become familiar with the project. 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. Due to varying job conditions, all sealants used should be approved by the sealant manufacturer, to insure they will function for conditions shown on instructions and shop drawings. They must be compatible with all surfaces in which adhesion is required, including other sealant surfaces. Use primers where directed by manufacturer of sealant. Be sure to properly store sealants at recommended temperatures and check sealant for remainder of shelf life before using.

### **FIELD CONDITIONS:**

- Do not install wall if there is a walkway with a down slope towards an entrance or a storefront.
- All materials to be installed plumb, level and true. Aluminum to be placed in direct contact with the masonry or incompatible materials should be isolated with a heavy coat of zinc-chromate or bituminous paint.
- After sealant is set and a representative amount of wall has been glazed (250 square feet or more), run a water hose to check installation. On large jobs, hose test should be repeated during glazing operation. Test should be conducted in accordance with AAMA 501.2 specifications.
- Coordinate protection of installed materials with general contractors and other trades.

### **CLEANING MATERIALS:**

Cement, plaster, terrazzo, alkaline and acid based materials used to clean masonry are very harmful to finishes and should be removed with water and a mild soap immediately or permanent staining will occur. A spot test is recommended before any cleaning agent is used.

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## **GENERAL INFORMATION**

### **EXPANSION JOINTS:**

Expansion joints and perimeter seals shown in these instructions and in the shop drawings are shown at normal size. Actual dimensions may vary due to perimeter conditions and/or differences in metal temperature between the time of fabrication and time of installation. For example, a 12 foot unrestrained length of aluminum extrusion can expand or contract 3/32 of an inch over a 50 degree Fahrenheit change. Any movement potential should be accounted for at time of the installation.

### **THERMAL IMPROVEMENT SUGGESTIONS:**

To maintain or improve your wall installation, the following items should be considered:

1. Blinds or drapes prevent warm air from washing the window.
2. Warm air ventilators too far from window will not adequately wash the window with air to prevent condensation.
3. In extreme conditions, the fan of the heating systems should not cycle on and off but run continuously.
4. Some heating systems have a water injection feature that can raise humidity levels. The higher the humidity levels the more likely condensation or frost will form. Raising the temperature and reducing humidity will usually solve this problem.
5. On rare occasions, an extremely cold storm may cause frost to appear on the glass or framing. A space heater and electric fan blowing along the plane of the window wall can reduce or eliminate this temporary condition.

### **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. Fabrication instructions for use of these drill fixtures are described within this manual on page 12.

# SERIES 6000XT INSTALLATION MANUAL

## MATERIAL CUT LIST

Measure ROUGH OPENING to determine FRAME WIDTH and FRAME HEIGHT dimensions. Allow 1/2" minimum clearance at head and 1/4" minimum clearance at jambs and sill for shimming and caulking around perimeter of frame.

Cut material to size per dimensions given below:

### Frame Members

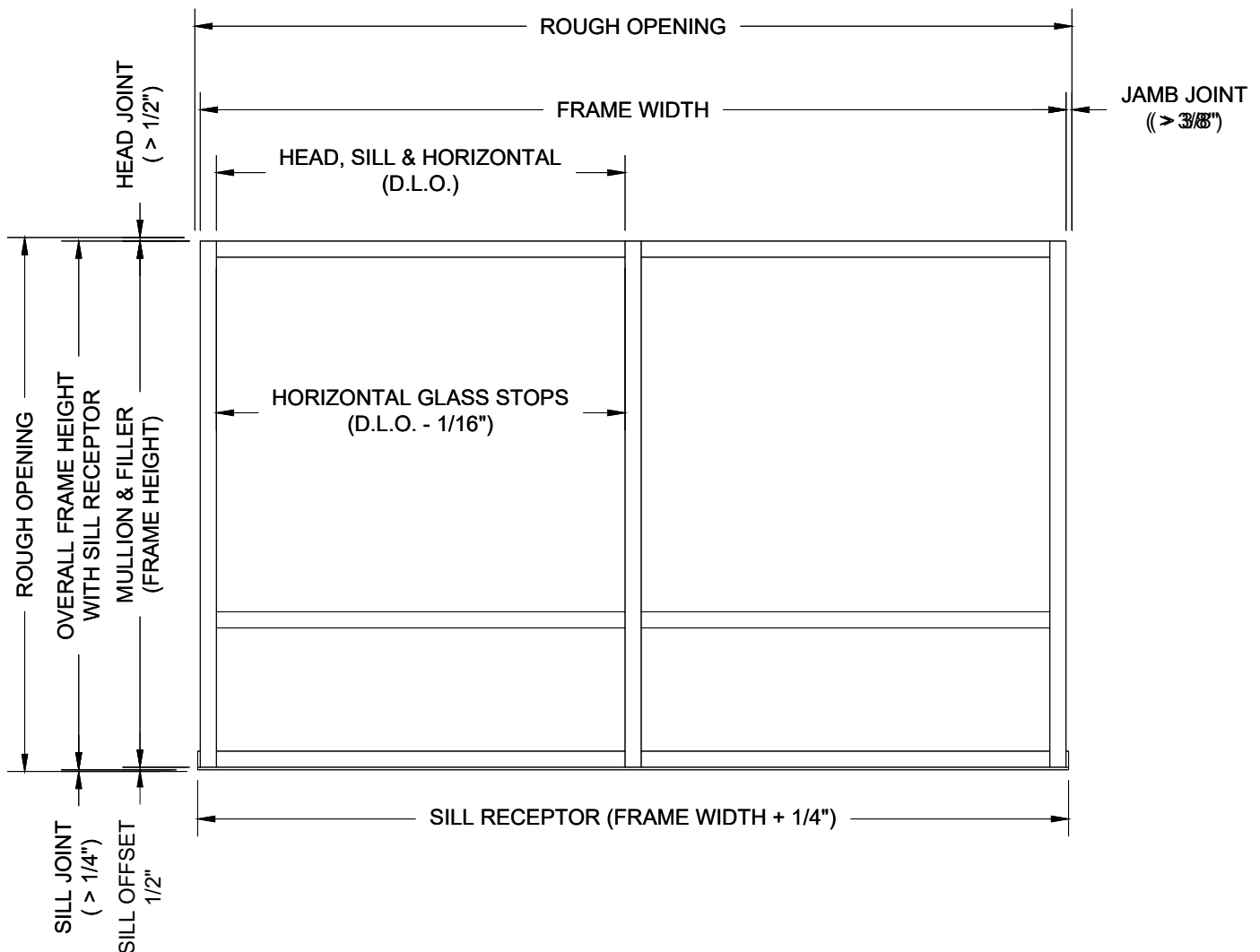
Mullions and Mullion Fillers:	Frame Height (Rough Opening minus Head & Sill Joints minus 1/2")
Sill Receptor:	Frame Width plus 1/4"
Horizontal, Head & Sill:	Day Light Opening (DLO)
Glass Stops:	DLO minus 1/16"

### Gaskets

Horizontal Gaskets:	DLO plus 1/4" per foot
Vertical Gaskets:	DLO plus 1" plus 1/4" per foot

### Accessories

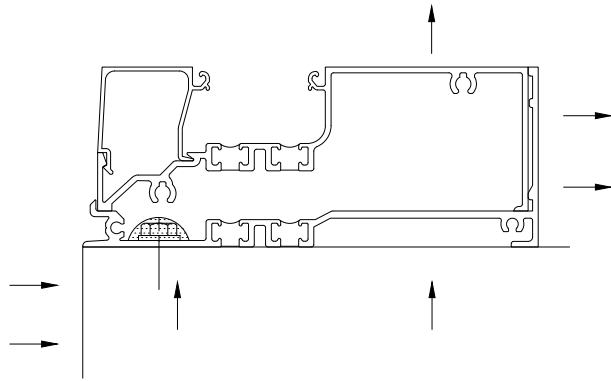
Horizontal Glazing Adaptors:	DLO minus 1/16"
Vertical Glazing Adaptors:	DLO plus 7/8"
Door Jambs:	Rough Opening minus Head Joint



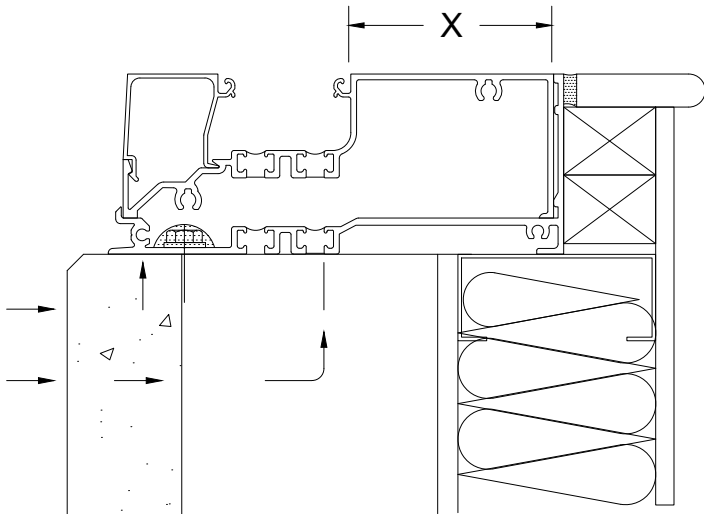
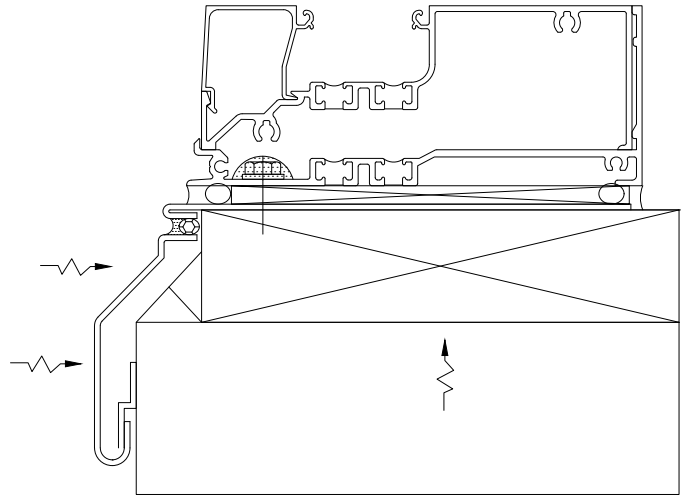
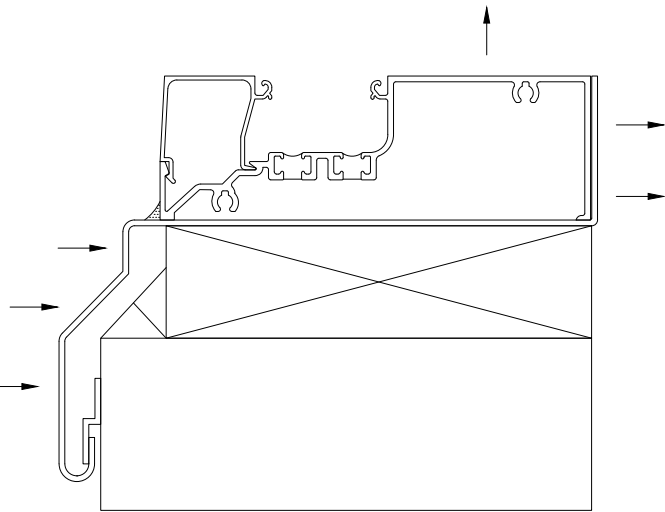
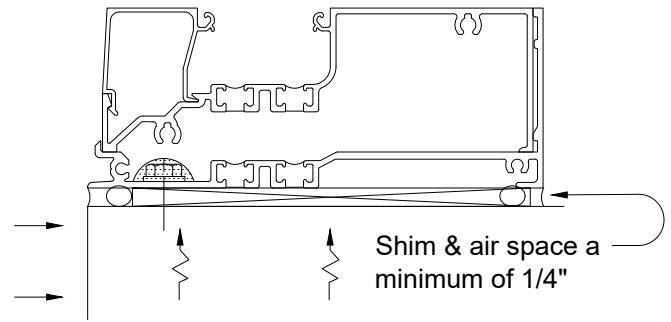
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## INSTALLATION FOR THERMAL PERFORMANCE

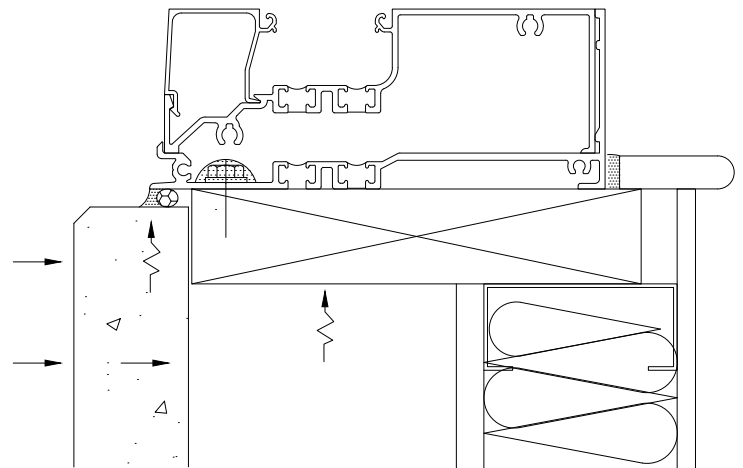
NOT RECOMMENDED



PREFERRED



Not enough metal showing at 'X'



To derive the greatest benefit from your storefront installation,  
we recommend you review the details above.

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## INSTALLATION INSTRUCTIONS FOR SUBSILL

### Install Subsill and End Dam

NOTE: 3/8" minimum caulk joint is required at the head condition to allow frame to be installed.

Anchor subsill within 4" from either side of intermediate mullions. Anchor size and frequency should be determined by structural requirements. Cap seal anchors as shown.

AN-50-01 end dam

Seal end dam to subsill

FG-6511

Shim under FG-6511

Drill 5/16" dia weep holes; locate at mid-lite

1/4" nominal Seal up back leg of sill receptor and marry with perimeter seal

### Install Splice Sleeve

NOTE: Subsill must be installed level.

UW-466 Silicone Splice Sheet

Seal with a non-skinning non-hardening sealant. Fill break in flashing and under splice.

Seal subsill vertical splice joint

Seal subsill joints up vertical leg of the flashing marry into perimeter seal

DETAIL "A"

Set front of frame in subsill and tilt back into place

2.2457

Clean excess sealant away

Interior perimeter seal at sill is optional and for cosmetic purposes only

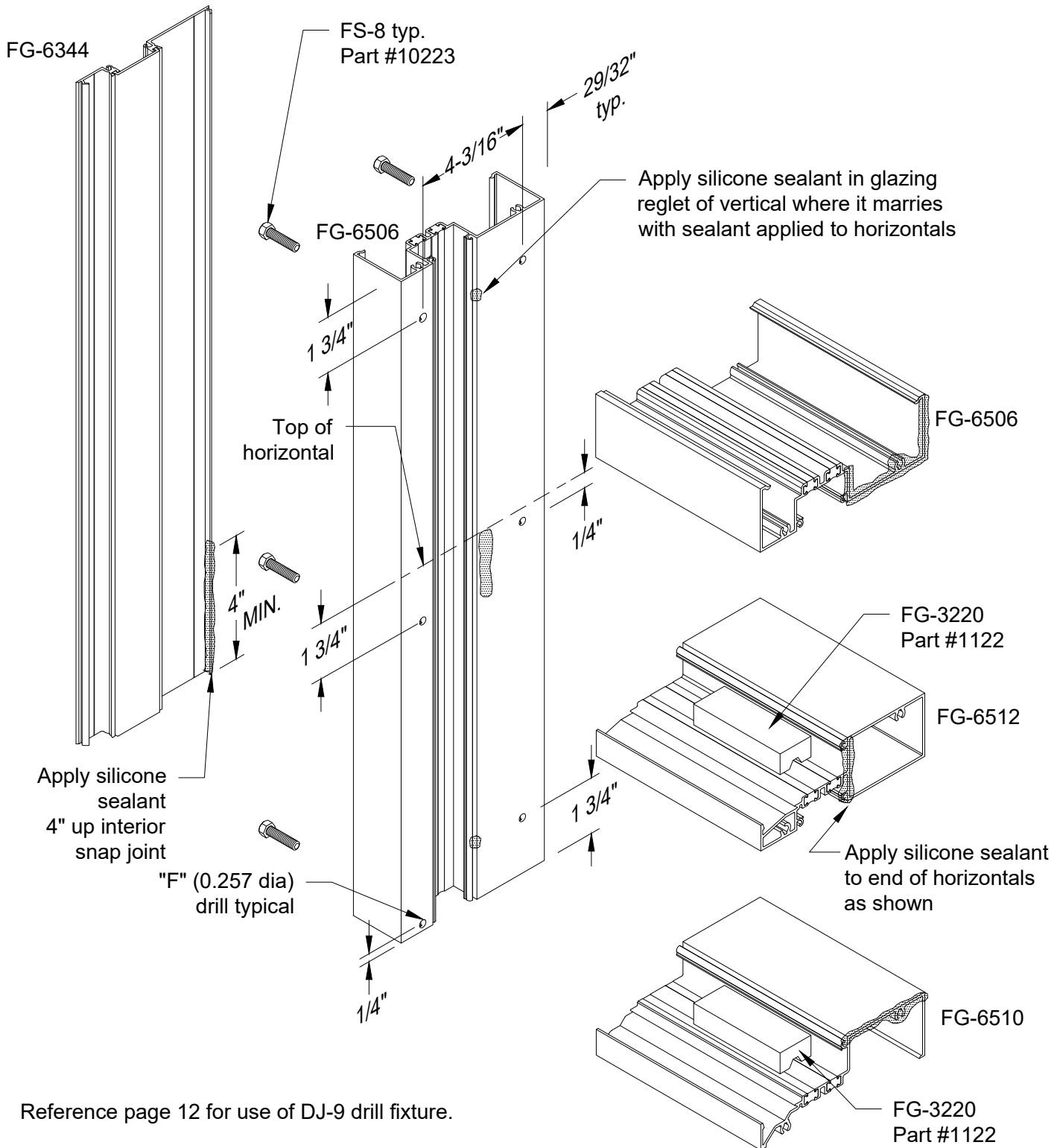
### NOTE:

1. Subsill shall be installed level and should never tilt towards interior of building.
2. The FG-6511 subsill is designed to withstand a maximum end reaction of 600 lbs.
3. Splice the subsill at mid-lite.
4. Locate splice joint at distance of no more than every 12 feet.



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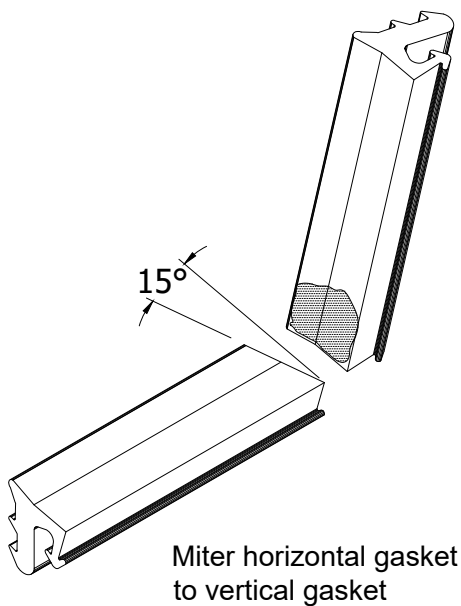
## OUTSIDE GLAZED FRAME ASSEMBLY



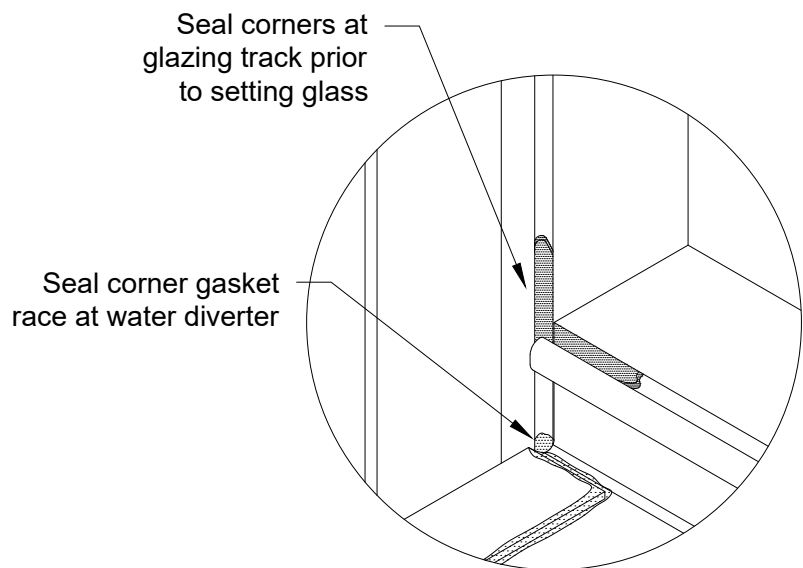
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## **OUTSIDE GLAZING GUIDELINES**

1. Remove gaskets from roll and allow to relax overnight. All gaskets to be cut per sizing on page 6.
2. Vertical gaskets run through horizontal gaskets. Horizontal gaskets should be mitered on ends as shown in Detail "A".
3. Install interior gaskets prior to glazing. Corners of interior gaskets to be set in sealant (Detail "B") and sealed just prior to setting glass (Detail "A"). NOTE: Clean gaskets and surfaces with isopropyl alcohol prior to sealing corners.
4. Locate setting blocks at either 1/4 points or 1/8 points, dependent on the size of the glass.
5. Glass bite at typical members is 7/16". At SSG verticals glass bite is 3/4".
6. Glaze openings from bottom to top. Install water diverters in horizontal above after lite below is in position.
7. Water diverters (FG-1000-FP-2) must be located on each end of horizontals and set in sealant.
8. When installing glass, first wet the top of the setting blocks with soapy water. Once glass is set in place, push glass against interior gasket at the setting block locations. Failure to do so may cause diagonal cracks towards setting blocks due to glass bending while installing the gaskets in the corners.



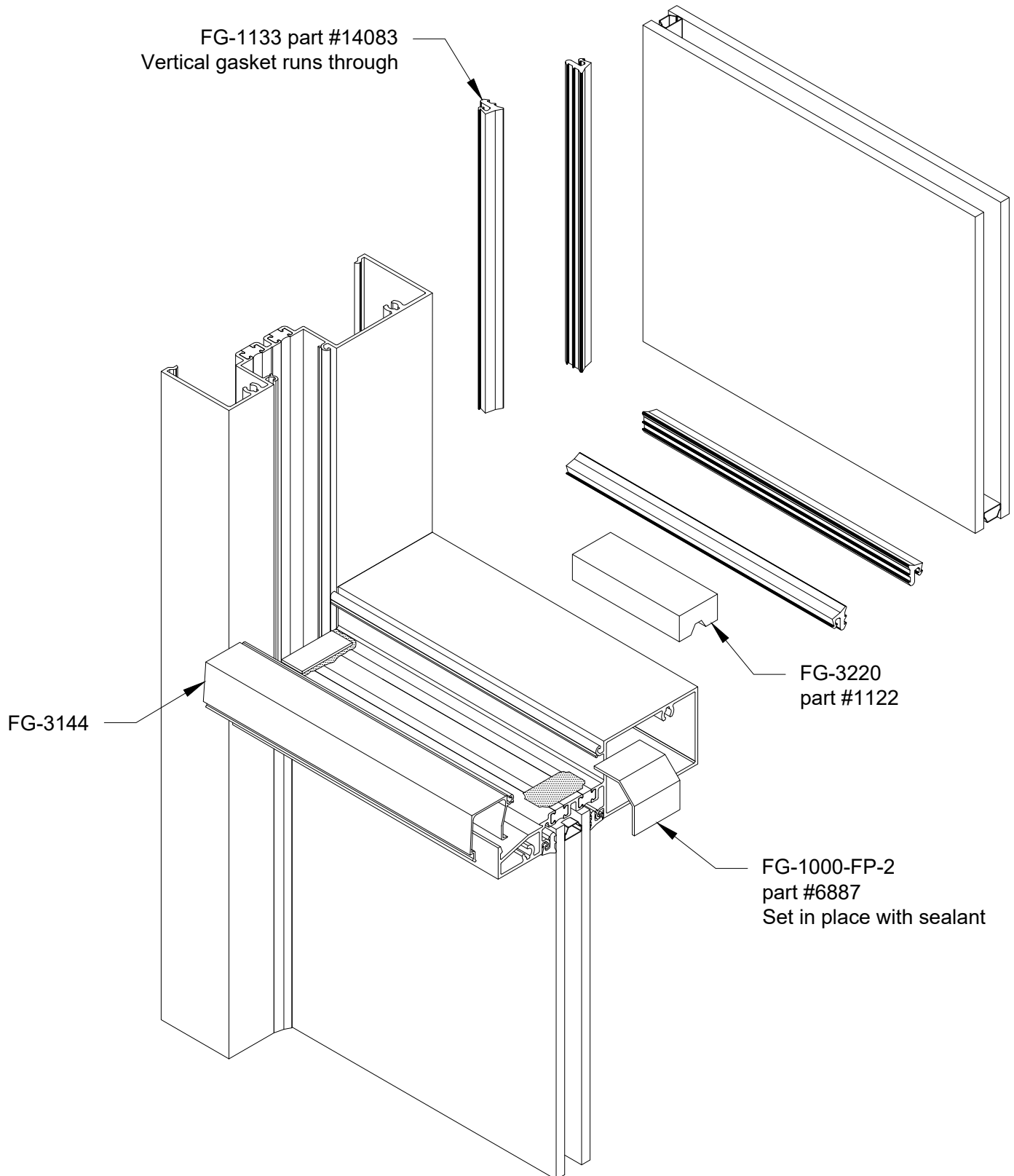
**DETAIL "A"**



**DETAIL "B"**

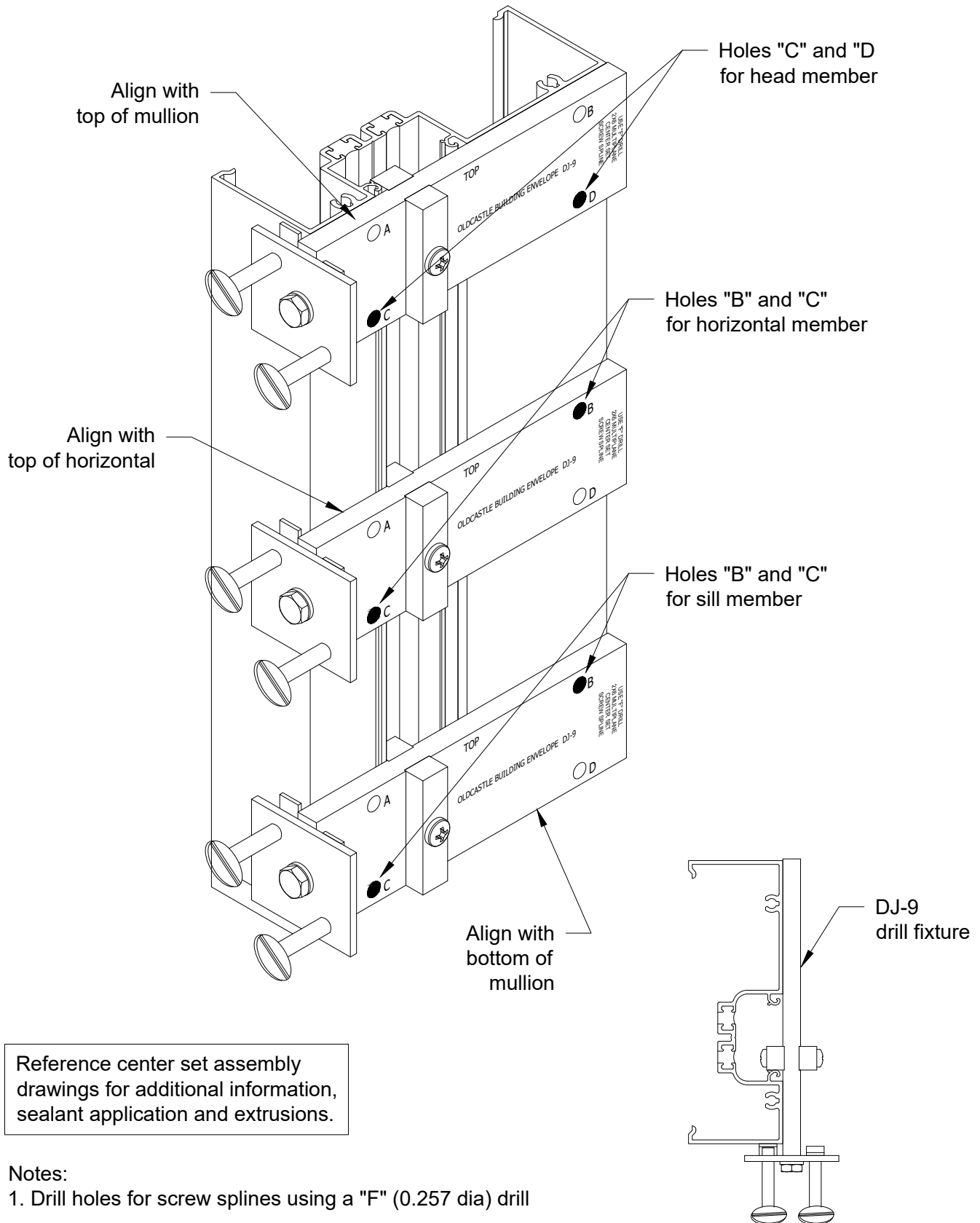
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OUTSIDE GLAZED, CENTER SET  
GLAZING DETAIL



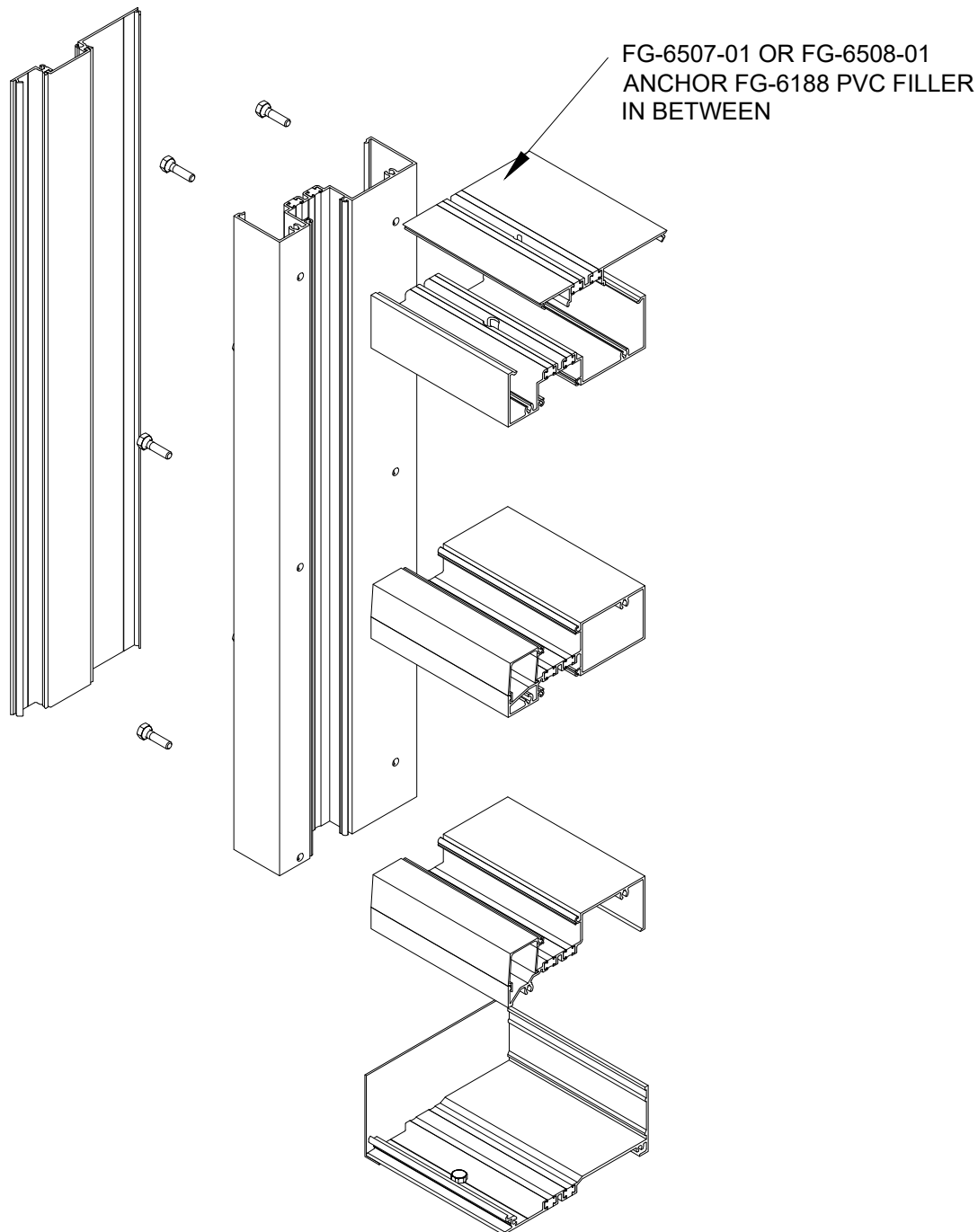
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OUTSIDE GLAZED, CENTER SET MULLION  
FABRICATION USING DRILL FIXTURE



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## FRAME INSTALLATION

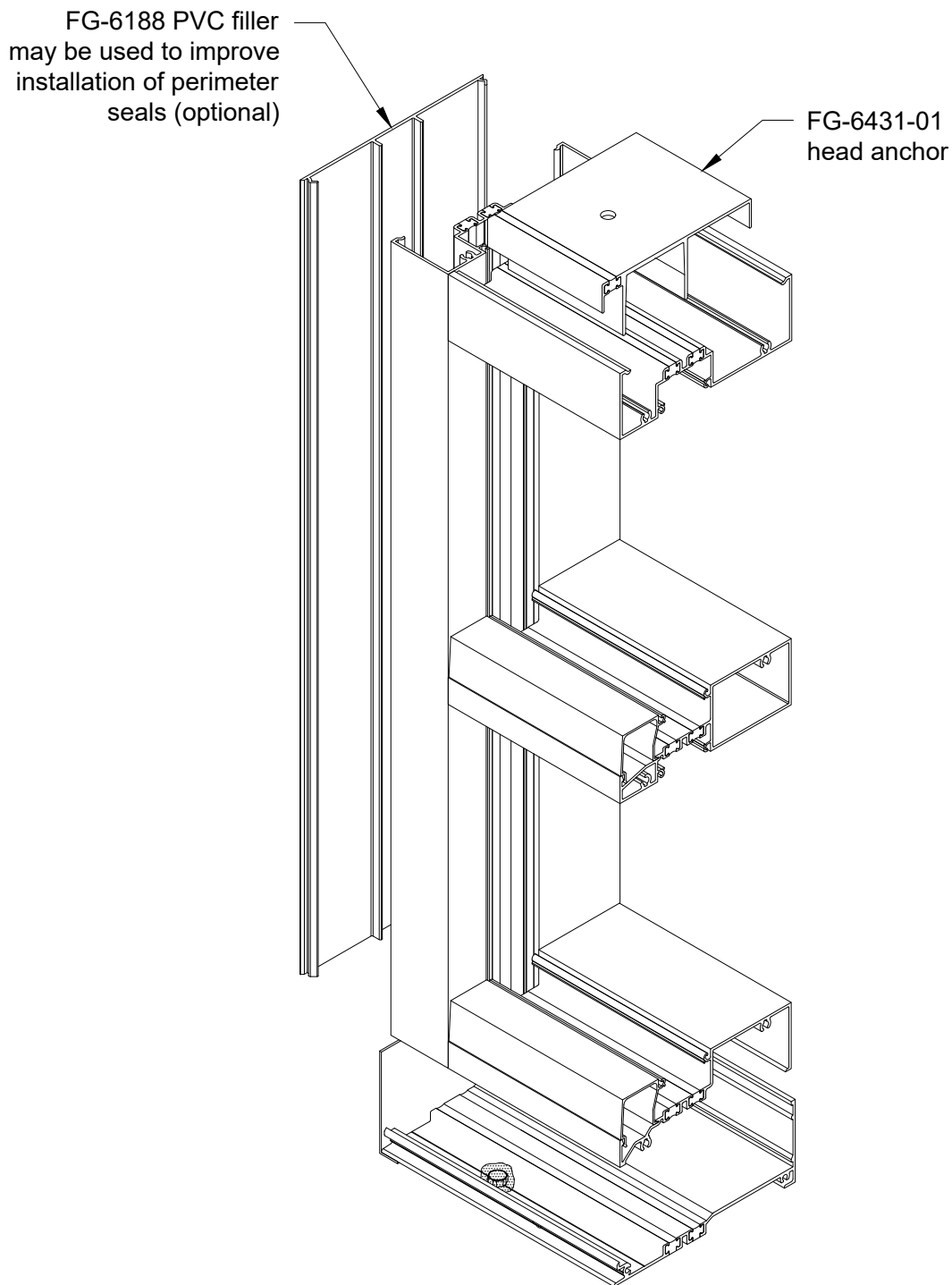


### NOTES:

- 1) WHEN USING FG-6511 SILL RECEPTOR, SILL ANCHORS ARE NOT REQUIRED.
- 2) MAXIMUM END REACTION AT MULLION WHEN USING FG-6511 SILL RECEPTOR IS 600 LBS.
- 3) HEAD ANCHORS SHOULD BE LOCATED SO THAT THE ANCHOR IS NOT MORE THAN 4" AWAY FROM EACH SIDE OF MULLION.
- 4) ASSEMBLY WITHOUT FLASHING IS NOT RECOMMENDED.
- 5) ASSEMBLY USING A NON-THERMAL OR SHEET METAL FLASHING WILL RESULT IN LOSS OF THERMAL CONTINUITY AND IS NOT RECOMMENDED.

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## FRAME INSTALLATION

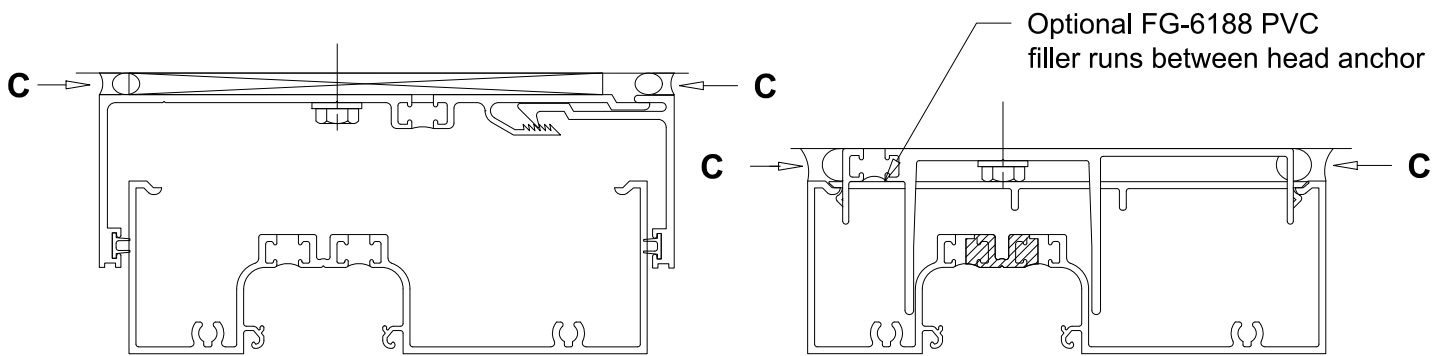


### NOTES:

1. Anchor size and frequency should be determined by structural requirements.
2. Sill and head anchors should be located so that the anchor is not more than 4" away from each side of vertical mullion.
3. Assembly of frames without flashing is not recommended.
4. Assembly of frames using a non-thermal or sheet metal flashing will result in loss of thermal continuity and is not recommended.
5. Do not anchor frame through the vertical leg of subsill.

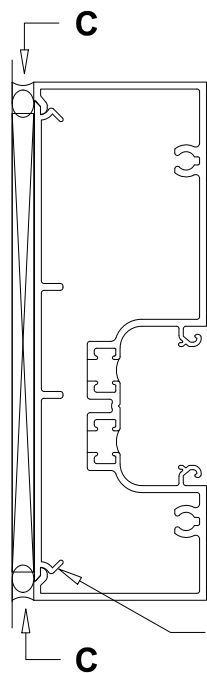
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## OUTSIDE GLAZED ANCHORAGE & PERIMETER SEAL



Optional MO-1188/MO-244  
Head receptor  
Maximum end reaction is 450 lbs

FG-6431-01 head anchor  
for center set system only  
Maximum end reaction is 600 lbs



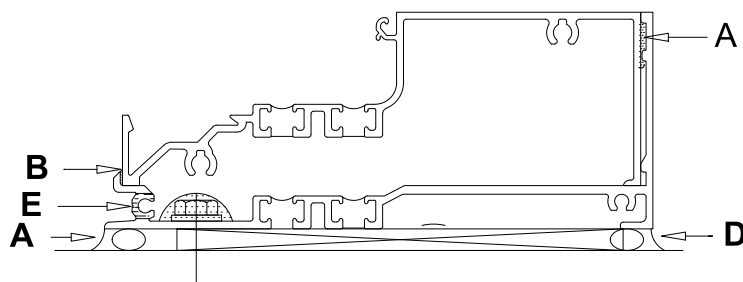
FG-6188  
optional PVC filler  
for sealant backer

Apply sealant along length of sill flashing at point (A).

Once the frame is secured, apply a fillet seal between the sill flashing and the front of the sill member (B).

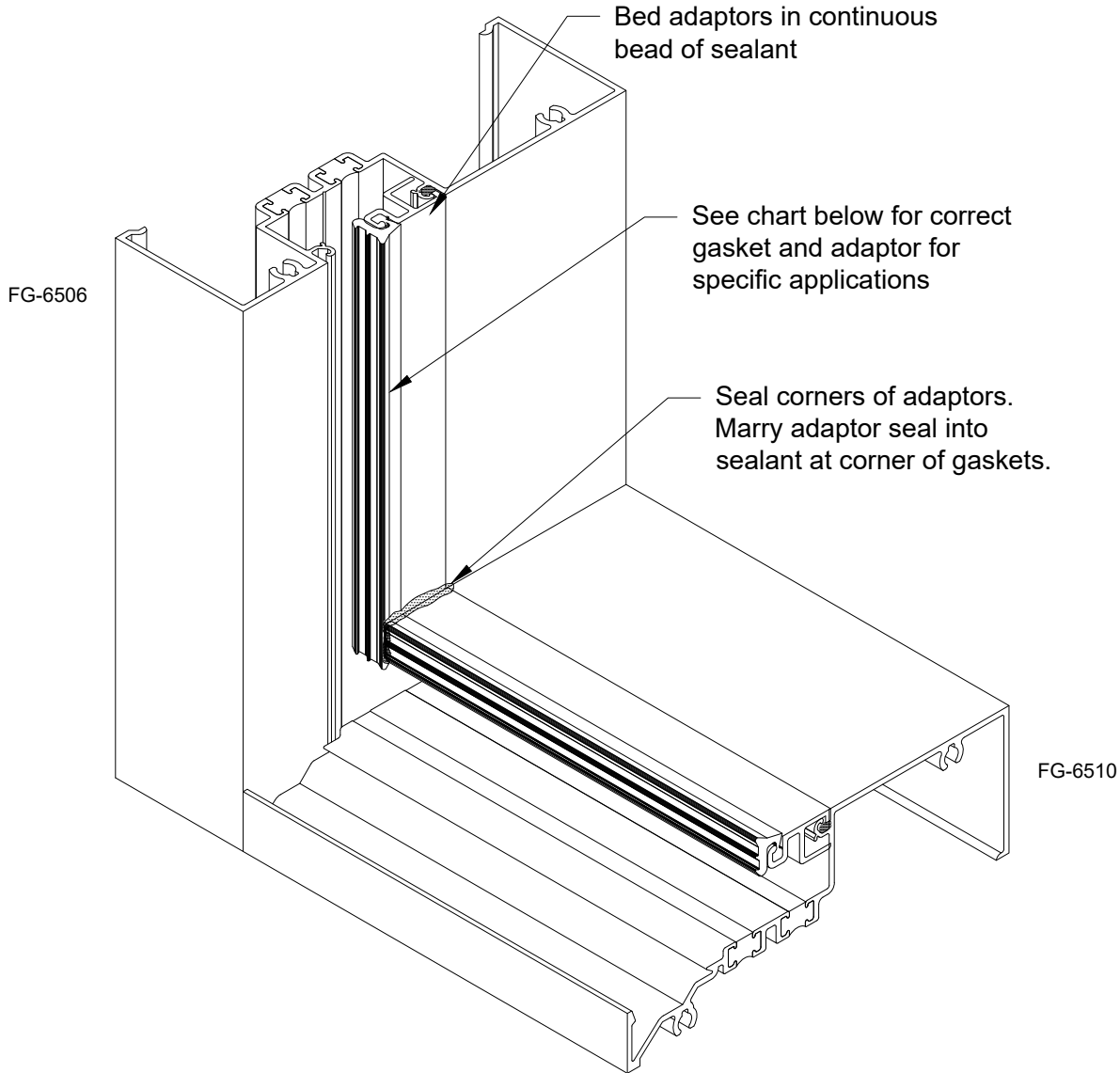
The quality of the inside and outside perimeter seals (C) may be improved by using FG-6188 PVC filler. The part may be used in full lengths or cut into pieces to provide support for the backer rod regardless of joint size. Interior perimeter seal at the sill (D) is optional and for cosmetic purposes only.

**NOTE:**  
5/16" weep holes  
required in flashing (E)  
at mid-lite



# SERIES 6000XT INSTALLATION MANUAL

## GLAZING ADAPTOR INSTALLATION



**NOTE:**

Adaptors should be installed on interior side of all glazing options.

Glass	Adaptor	Gaskets
1/4"	FG-3194 (FG-3594 for FG-6344)	FG-1133 Both Sides
5/16"	FG-3236 (FG-3536 for FG-6344)	FG-5125 Both Sides
3/8"	FG-3236 (FG-3536 for FG-6344)	FG-1133 & FG-5125
7/16"	FG-3236 (FG-3536 for FG-6344)	FG-1133 Both Sides
1/2"	FG-3237 (FG-3537 for FG-6344)	FG-5125 Both Sides
9/16"	FG-3237 (FG-3537 for FG-6344)	FG-1133 & FG-5125

Glass	Adaptor	Gaskets
5/8"	FG-3237 (FG-3537 for FG-6344)	FG-1133 Both Sides
11/16"	FG-3237 (FG-3537 for FG-6344)	FG-1133 & FG-1134
3/4"	FG-3237 (FG-3537 for FG-6344)	FG-1134 Both Sides
13/16"	None	FG-1133 & FG-3129
7/8"	None	FG-5125 Both Sides
15/16"	None	FG-1133 & FG-5125
1"	None	FG-1133 Both Sides
1-1/16"	None	FG-1133 & FG-1134
1-1/8"	None	FG-1134 Both Sides

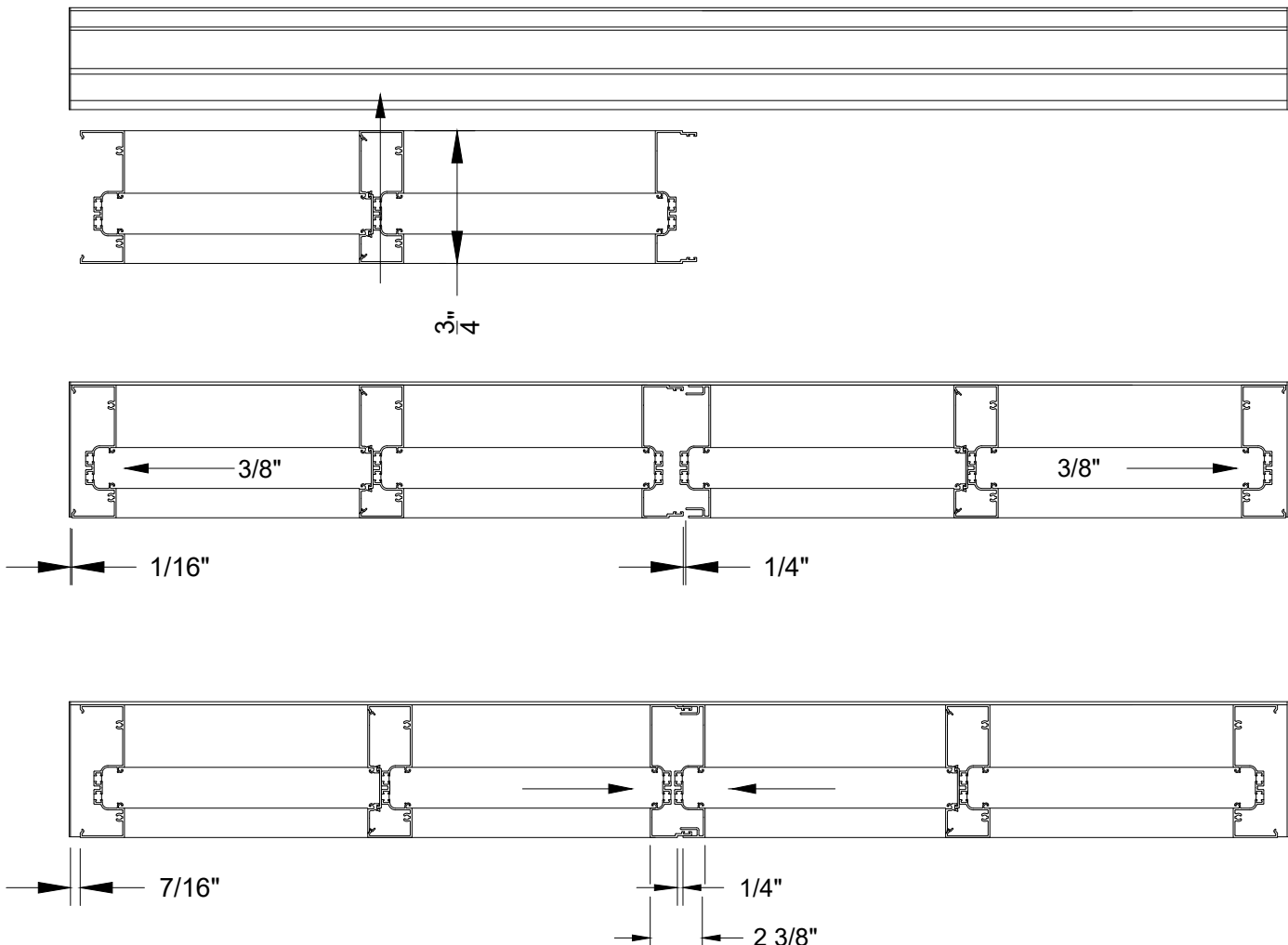


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## EXPANSION MULLION INSTALLATION

The example below shows installation of the center set system, options for front or back set are also available. Please reference price catalog for specific extrusions and anchors required for your installation. Please note the locations of various seals and insure proper locations of these seals when installing typical runs and expansion sections of each of these systems. These seals are shown in the sub-sill installation and assembly sections of this manual. The sub-sills for these products are designed so that sill anchors may be properly sealed prior to frame installation. The frame is either installed over the hook-in anchors or dropped into the sill receptor. This prevents any additional fasteners from penetrating the sill and potentially causing leaks from under the sill. Be sure to properly cap seal all sill anchors prior to beginning installation of frames.

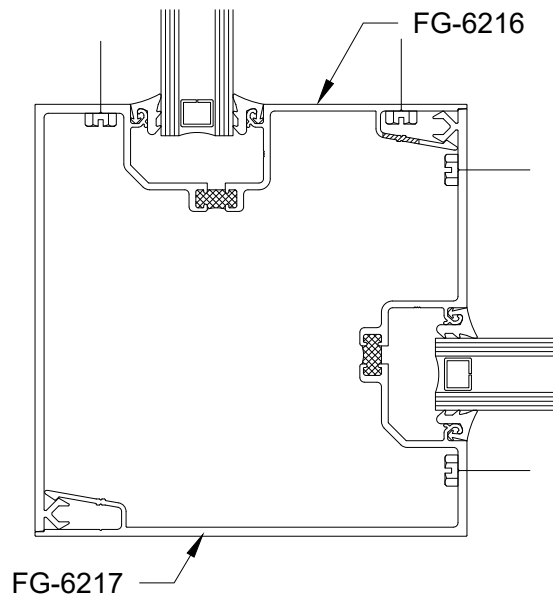
Multiple units may require the use of an expansion mullion if total run exceeds 24 feet in length. When elevation exceeds the 24 foot limit, locate thermal mullions at a distance of no more than every 20 feet. Locate splice in sub-sill at a distance of no more than every 12 feet. A minimum of 7/16" clearance between the jamb and sill end dam must be provided at each end of units when using expansion mullions. This will allow the minimum 3/8" clearance to move the units sideways so that the second unit may be rotated into position and interlocked into first unit. Once in position units should be centered into opening to provide equal joints at the jambs. Oldcastle BuildingEnvelope® recommends the use of the FG-6188 PVC filler in the jambs and head to improve the perimeter seal.



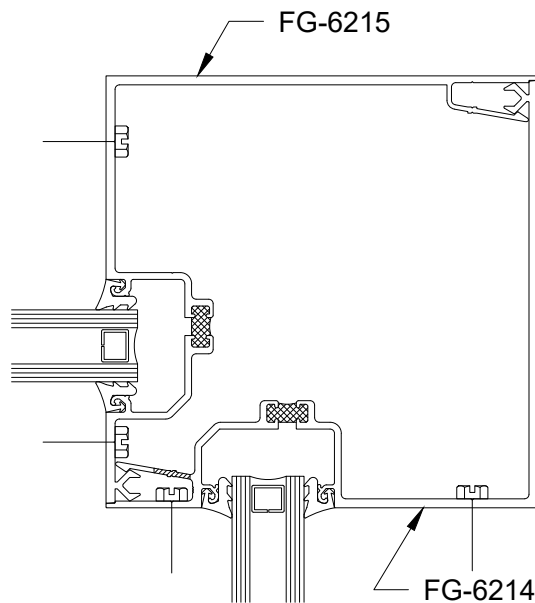
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## **CORNER DETAILS**

(Refer to system details for more info.)



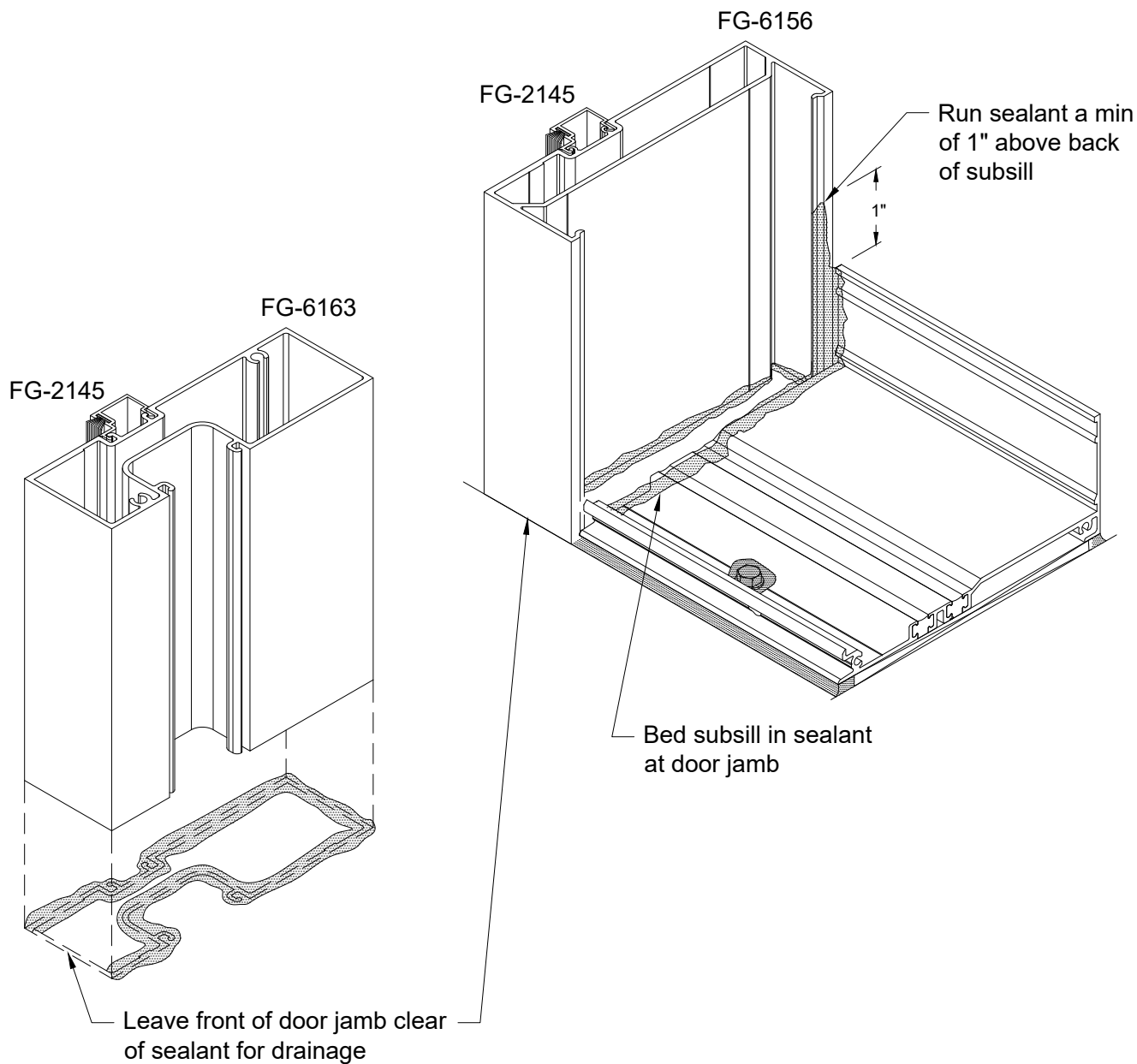
90 Deg Outside Corner



90 Deg Inside Corner

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## DOOR FRAME INSTALLATION



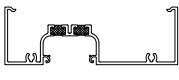
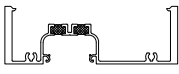
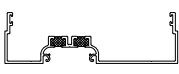
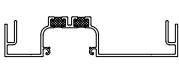
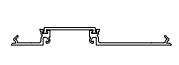
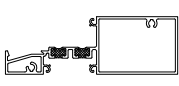
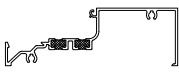


### NOTES:

1. Use shear blocks as shown in frame assembly section of this manual to secure horizontals to tubular frames as required.
2. Door frame is anchored by fasteners through threshold and door frame header.
3. When using the center set system, the two-piece or tubular framing options are available as shown above.

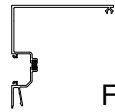
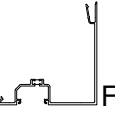
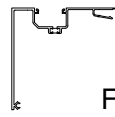
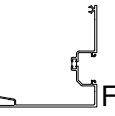
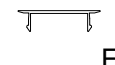



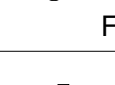
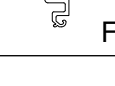

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## PARTS LIST

### Center Set

 FG-6506	Open Back Head/Jamb/Mullion
 FG-6522	Heavy Vertical Mullion
 FG-6519	Expansion Mullion (Requires FG-6520)
 FG-6520	Expansion Mullion (Requires FG-6519)
 FG-6344	Open Back Filler
 FG-6512	Intermediate Horizontal
 FG-6510	Sill
 FG-3144	Glass Stop for FG-6197 and FG-6198
 FG-6511	Sill Receptor

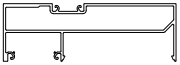



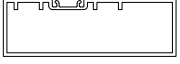



### Auxiliary Extrusions

 FG-6214	Center Set 90° Inside Corner (Requires FG-6215)
 FG-6215	Center Set 90° Inside Corner (Requires FG-6214)
 FG-6216	Center Set 90° Outside Corner (Requires FG-6217)
 FG-6217	Center Set 90° Outside Corner (Requires FG-6216)
 FG-3126	Snap-In Pocket Filler
 FG-3194	Pocket Reducer for 1/4" Glass
 FG-3236	Pocket Reducer for 7/16" Glass
 FG-3237	Pocket Reducer for 5/8" Glass
 FG-3594	Pocket Reducer for 1/4" Glass for FG-6344
 FG-3536	Pocket Reducer for 7/16" Glass for FG-6344
 FG-3537	Pocket Reducer for 5/8" Glass for FG-6344




# SERIES 6000XT INSTALLATION MANUAL

## PARTS LIST








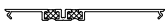
### Door Frame Components

	6" Front Set Door Jamb (Use FG-6284 Filler)
	6" Center Set Door Jamb (Use FG-6344 Filler)
	6" Door Jamb Common Mullion
	6" Door Header Center Set
	6" Door Header OHCC
	Center Set Transom Sash (Use with FG-6163)
	Center Set Transom Sash (Use with FG-3157)
	Door Stop

### Door Frame Accessories

	Shear Block for FG-6160 Door Header (Screws Included)
	Shear Block for FG-6163 Door Header (Screws Included)
	Shear Block for FG-6506 Transom Head (FS-9 Screws Included)

### Accessories









	PVC Flat Filler Caulk Stop 12'-0" long
	Vinyl Pocket Filler for Window Applications 12'-0" long
	Water Diverter for Center Set Outside Glaze
	Weep Baffle
	Silicone Splice Sheet for Subsill
	End Dam for FG-6511
	Anchor for FG-6506
	Anchor for FG-6506

# SERIES 6000XT INSTALLATION MANUAL

## PARTS LIST

### Accessories

 FG-6431-01	Anchor for FG-6506 Head
 DJ-9	Drill Fixture for Center Set (6" Members)
 FG-1133	1" Glazing Gasket
 FG-1134	Light Gasket
 FG-3129	5/8" Glazing Gasket
 FG-5125	Heavy Gasket
 HP-92	Setting Block for FG-6387, FG-6163 Door Headers
 FG-3342	Setting Block for FG-3324 Adaptor
 FG-3220	Setting Block for FG-6512 & FG-6510

 FG-3278	Setting Block for FG-6387 Door Header
 HP-17	Setting Block for FG-3157
 FS-6	#10 x 3/4" PPH Attachment of Shear Blocks at Door Headers
 FS-7	#10 x 3/4" PFH Attachment of Shear Blocks at Door Headers
 FS-8	1/4 x 1" HH STS Assembly Screw
 FS-9	1/4 x 1-1/2" HH STS Attachment of Shear Blocks at Verticals
 FS-55	#10 x 1/2" PPH Attachment of Shear Blocks at Horizontals
 FS-320	M4 x 16mm Headed Helical Pin Attach End Dam to FG-6511 Sub-Sill