

**Installation Instructions --  
250 Series Curtain wall Framing**

Introduction:

These instructions have been prepared to assist you in properly erecting and glazing curtain wall. It is **important** that storefront framing be installed with great care and attention to attain their specific performance and function.

The success of an installation is dependent upon:

- 1) Handling of the curtain wall prior to installation.
- 2) Installation of the frame in the opening.
- 3) Installation and/or adjustment of hardware.

Job site curtain wall frames are shipped from the factory as finished products or in stock lengths. After the frames are received, they must be protected from damage during storage at your facility and during transit to the openings. You must prevent dropping or walking the frames to prevent severe racking and corner joinery problems that cannot be rectified in the field.

Keep frames away from standing water, mud and spray to avoid later cleaning problems. It is especially important that rain, snow or ice be kept away from frames with hard coat finishes. Protect the frames after erection by wrapping with Kraft paper or by erecting a Visqueen or canvas screen. Cement, plaster, terrazzo and other alkaline solutions will harm the finish and must be immediately removed with water and mild soap.

When transporting the frames; they must be adequately blocked and secured.

**Important**

Before attempting to install the framing, make certain that the opening is the correct size. It should be square and free of any protrusions. All unacceptable conditions must be corrected before installation begins.

Wherever aluminum comes in direct contact with steel (or other dissimilar metals), concrete, mortar or plaster, a protective coating of zinc chromate primer, bituminous paint or tape mastic must be applied to the contacting surfaces.

**In this section:**

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**PLEASE NOTE**

Images and text are shown as 250 CW.  
Additional installation instructions for "xpt" series are on page 11 and "x" pressure plates on page 12.

**STICK METHOD ERECTION**

(refer to figures 1 and 2)

**Step 1**

Establish all control lines and grades.

**Step 2**

Attach steel intermediate anchors except at jambs.

**Step 3**

Install starter jamb mullion. Establish dimension "B" so that steel clip angle can be preattached to jamb mullion. Locate angle onto mullion to dimension "B" and the correct grade from the bottom of mullion. (See shop drawings and architectural drawings).

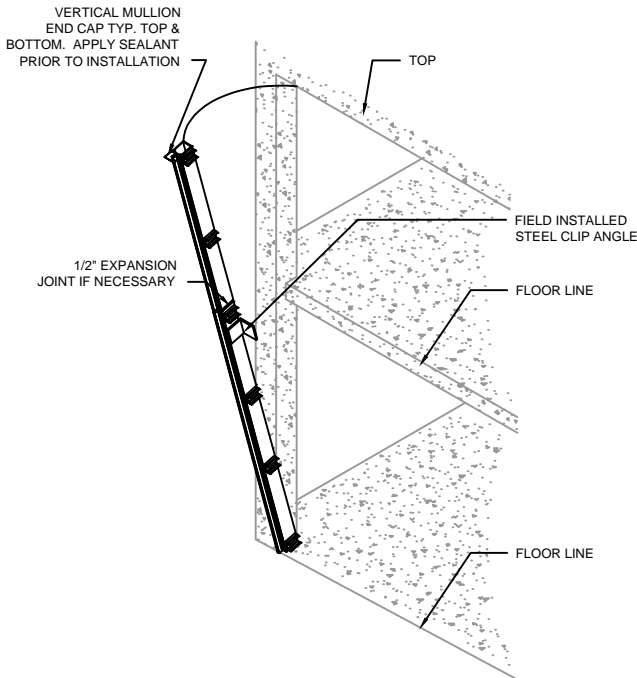
Use steel clip angle as a drill template and drill through mullion. Install bolts with bolt heads on the masonry side of the jamb mullion.

Shim sill anchor, if necessary, to the correct grade and plumb line. Install bolts at sill, shim steel clip angle as required and install bolts into edge of floor slab. Install bolt and sleeve at head.

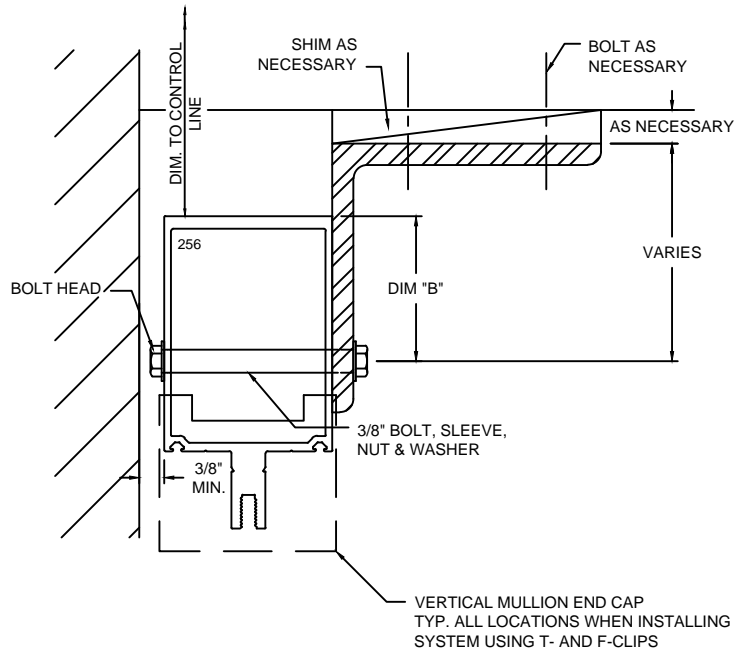
**NOTE:**

Preattaching the steel angle to the mullion needs only to be done on the jamb mullion where job conditions prevent getting the bolt into place if the steel angle is attached to the floor slab first. All intermediate vertical anchors may be attached to the floor slab prior to erection of the mullion. Ensure all verticals are plumb and aligned with control lines before tightening anchor bolts.

**FIGURE 1**



**FIGURE 2**



(refer to figures 3 and 4)

**Step 4**

Install intermediate horizontal mullions to the jamb mullion over the channel-shaped anchor clip and secure with truss head screws. Locate screws on the unexposed side of the horizontal mullion.

**Step 5**

If necessary, engage the upper and lower portion of the intermediate vertical mullion with the expansion sleeve installed. Separate the two portions with a 1/2" spacer so as to maintain the 1/2" expansion joint. Install into opening, engaging the ends of the horizontal mullions with the channel-shaped clip anchors that are mounted on the vertical mullions. Secure with truss head screws.

**Step 6**

Install anchor bolts at the sill T-anchor, the steel angle clip and the head T-anchor. Do not tighten bolt at the head and sill anchors beyond the point where the vertical cannot be shifted by tapping with a mallet. This will insure a tight joint at the vertical and horizontal intersection when final adjustments are made.

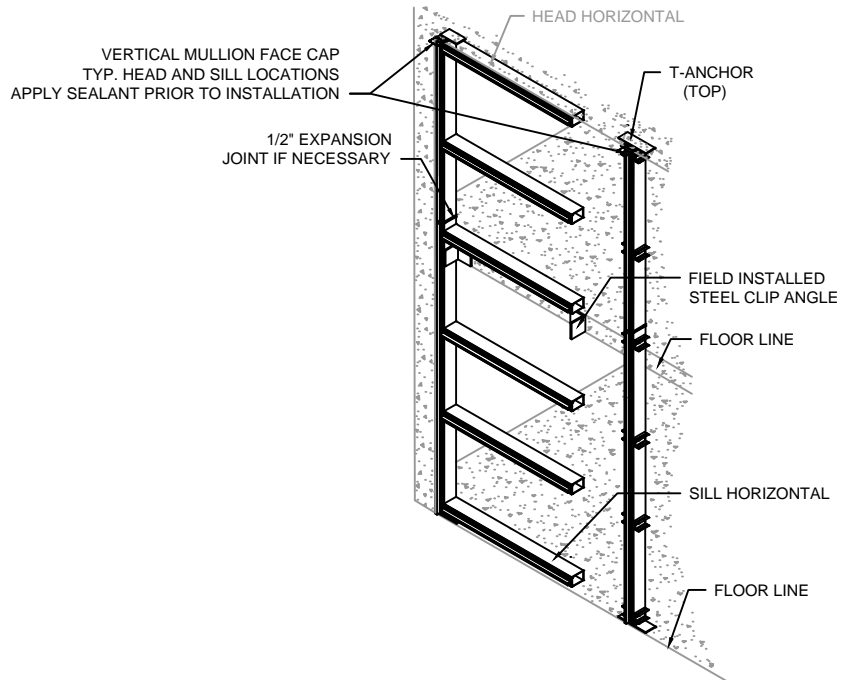
**Step 7**

Install head and sill horizontal mullions. These mullions have a notch on both ends of the extrusion to clear the head and sill anchor. Slip the head and sill horizontals over the head and sill anchors that are located at the top and bottom of the vertical mullion. (The mullion may be shifted to obtain more clearance). Tap the vertical mullion against the horizontal mullions with a mallet and apply the truss head screws through the front of the horizontal mullions.

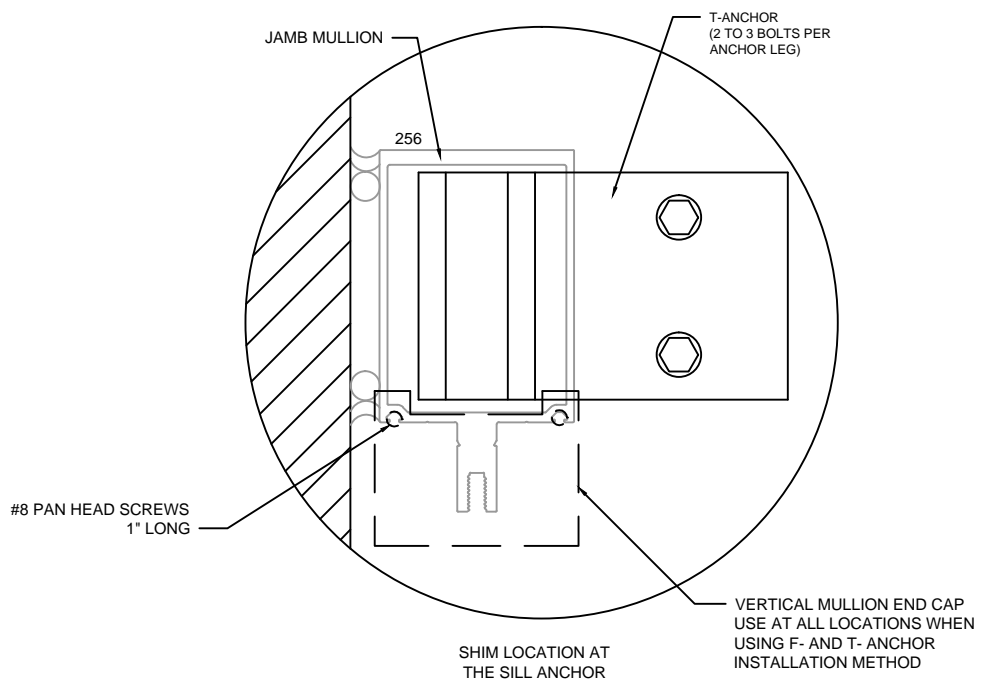
**Step 8**

Make final adjustments at this time and tighten all screws and bolts. Remove 1/2" space at expansion joint. Repeat the process of installing verticals and horizontals until all of the intermediate verticals are installed. Install the jamb as described in Step 3.

**FIGURE 3**



**FIGURE 4**



(refer to figure 5)

**Step 9**

Install the last set of intermediate horizontals. This will require the use of a spreader bar (Wood-2"x6"). This bar should be long enough to spread the verticals approximately 1/2" from their normal position.

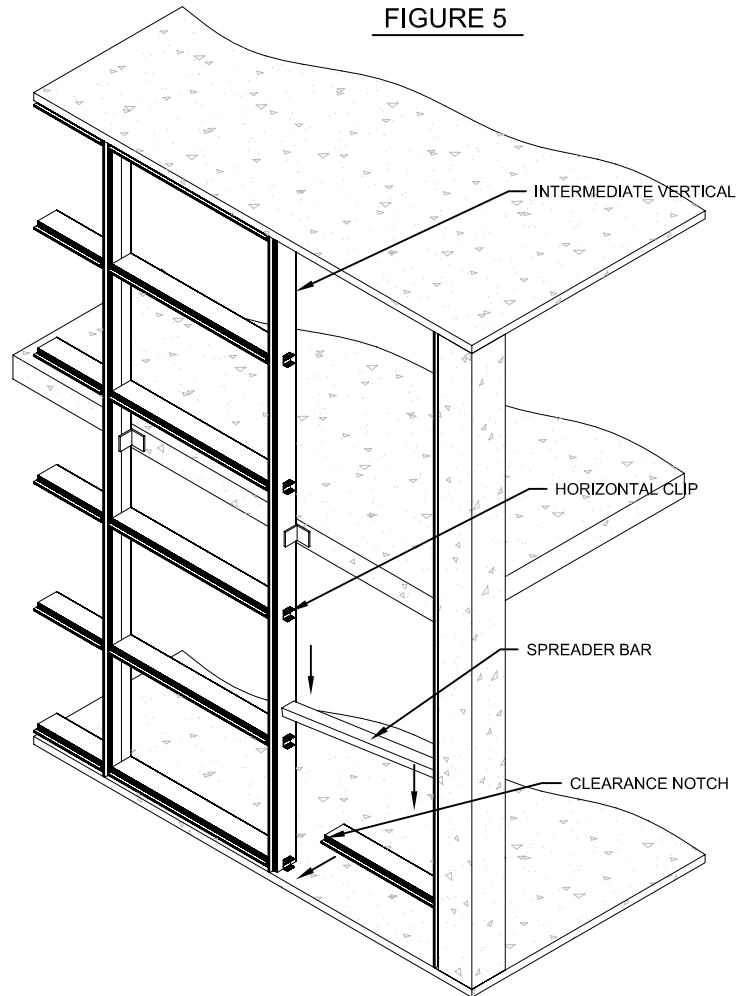
The intermediate horizontals are notched on the front side to clear the channel-shaped anchor clip with the spreader bar in place.

**Step 10**

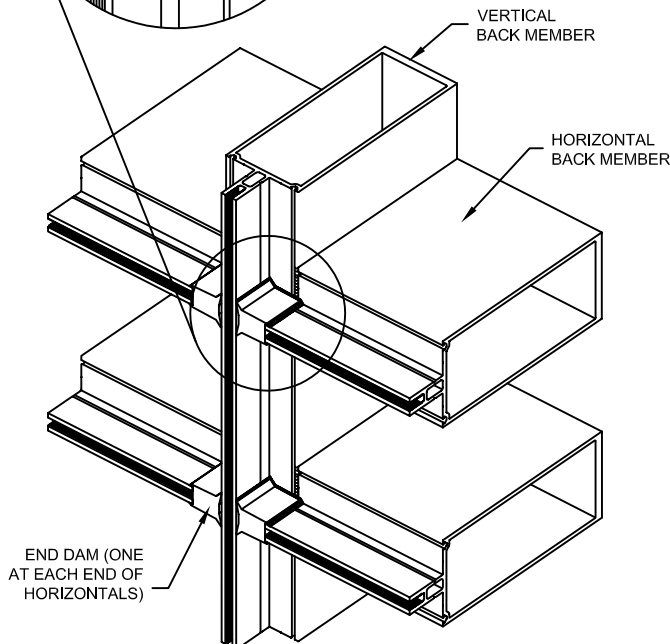
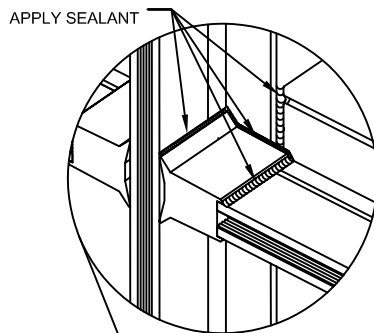
Install the head and sill horizontals as shown in Figure 3. Apply the truss head screws to all of the horizontals and tighten. The wall is now ready for perimeter sealants and joint sealant.

**Step 11**

Install end dams as required as shown in Figure 6.



**FIGURE 5**



**FIGURE 6**

## INSTALLATION

### Step 1A

Same as step 1

### Step 2A

Same as step 2

### Step 3A

(refer to figure 1; pg 2)

Same as step 3

### Step 4A

(refer to figure 7)

Engage the upper and lower portion of the intermediate vertical mullion (with expansion sleeve installed). Separate the two portions with a 1/2" spacer so as to maintain the 1/2" expansion joint. Install into opening.

### Step 5A

Install anchor bolts at the sill anchor, the steel angle clip and the head anchor. Be sure vertical mullions are properly positioned (centerline to centerline) before tightening bolts.

### Step 6A

Repeat the process of installing verticals until all of the intermediate verticals are installed. Install the jamb vertical as described in Step 3. Remove 1/2" spacer at expansion joints.

### Step 7A

Install the sill, intermediate and head horizontals over the anchors and secure with truss head screws.

The sill and head horizontal mullions have a notch on both ends of the extrusion to clear the sill and head anchors. The screws are applied through the front of the horizontal mullions.

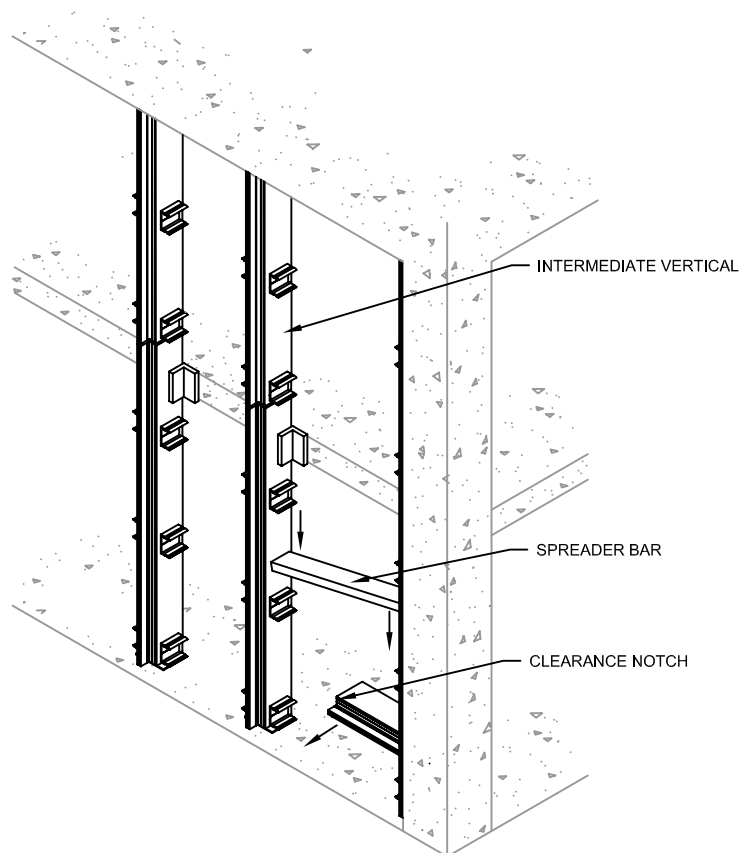
The intermediate horizontal mullions are notched on the front side to clear the channel-shaped anchor clip with the spreader bar in place. Locate screws on the unexposed side of the horizontal mullion.

### Step 8A

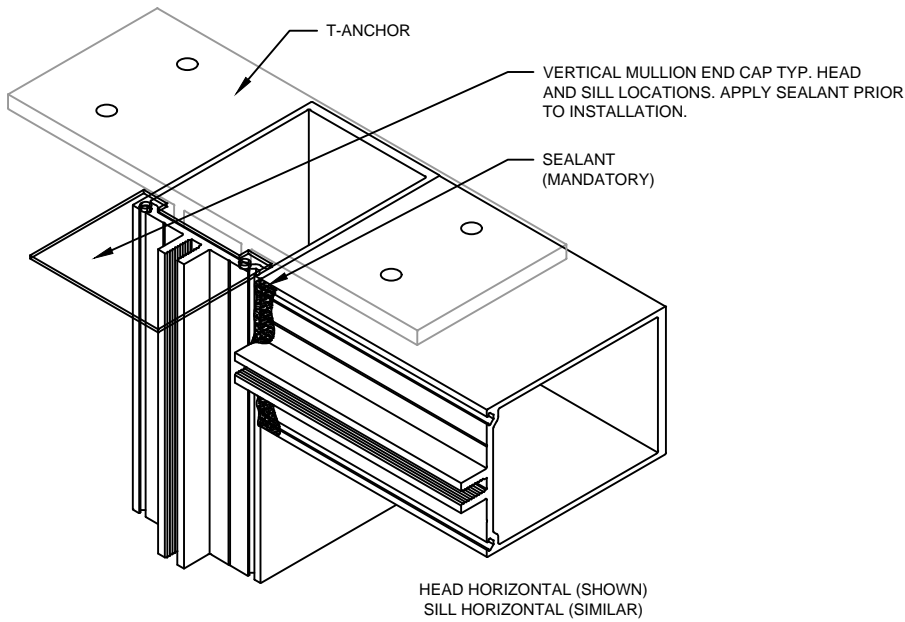
The wall is now ready for perimeter sealants and joint sealant.

When all horizontal mullions have been installed, follow "Unit Sealing" instructions for sealing horizontal and vertical intersections, install water deflectors as required.

FIGURE 7



**FIGURE 8**



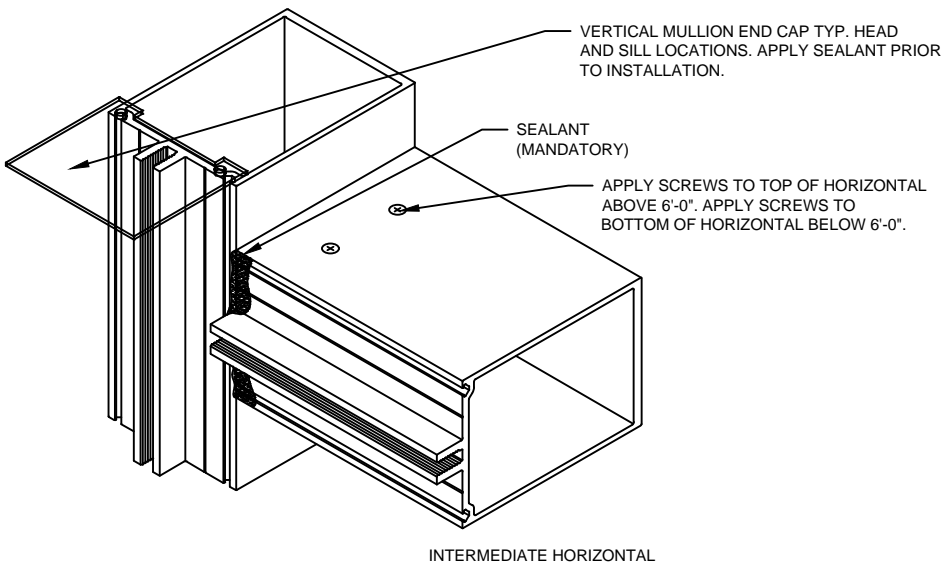
When head and sill horizontals have been installed, apply non-hardening, non-skinning sealant (shown shaded) to horizontal and vertical intersection, to form a water-tight joint. Also apply sealant to #12 x 3/4" truss head screw completely covering the head of the screw to make water tight. (refer to figure 8)

**NOTE:**

Sealants in these instructions termed non-hardening, non-skinning should be of a good, construction grade quality.

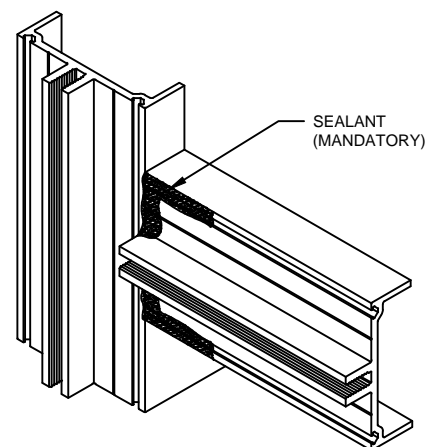
When an intermediate horizontal has been installed, apply non-hardening, non-skinning sealant (shown shaded) to horizontal and vertical intersection, to form a water tight joint. (refer to figure 9)

**FIGURE 9**



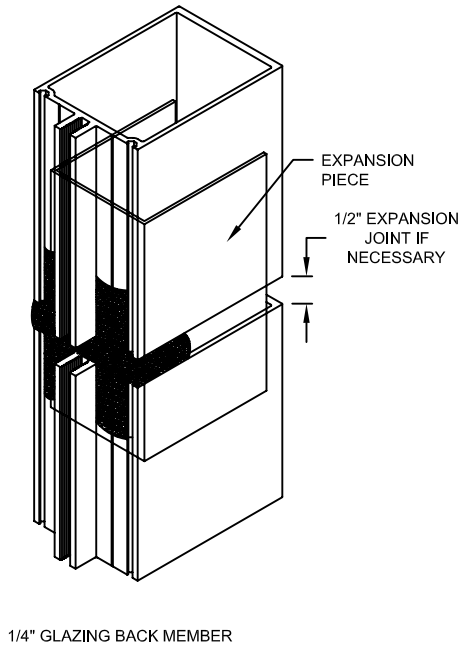
The last set of intermediate horizontals (or all horizontals if alternate method of installation is used) in a elevation are notched on the front side for installation. These notches must be made water tight with sealant.

**FIGURE 10**

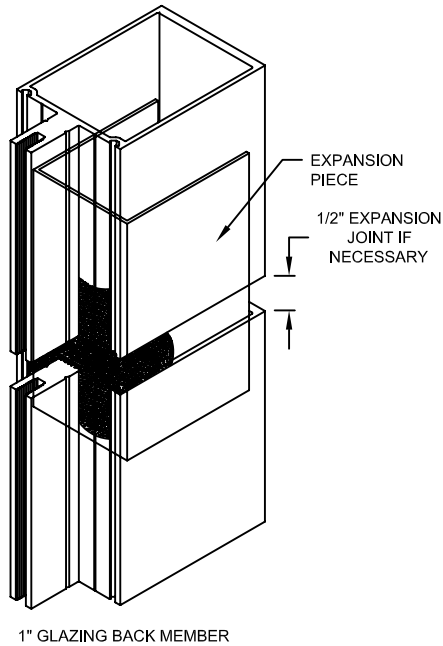


# VERTICAL MULLION EXPANSION JOINTS

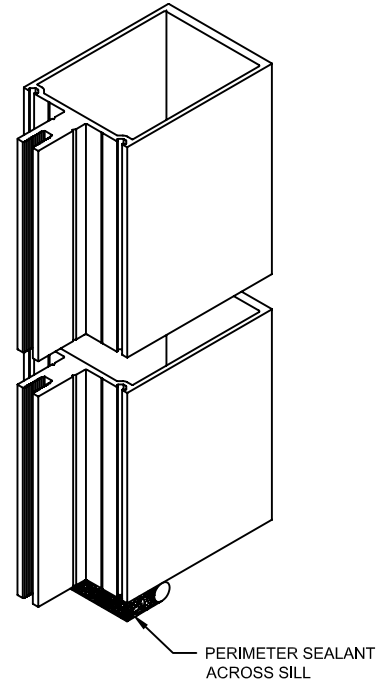
**FIGURE 11**



**FIGURE 12**



**FIGURE 13**



**SINGLE GLAZED VERTICAL**  
(refer to figure 11)

When vertical mullion has been properly located and anchored, apply non-hardening, non-skinning sealant at 1/2" nominal expansion joint to entire front surface and return on each side approximately 1/2". Apply enough sealant to front side of mullion to make a sealant reservoir so when mullion expands, sealant will not be over-stretched.

**INSULATED GLAZED VERTICAL**  
(refer to figure 12)

When vertical mullion has been properly located and anchored, apply non-hardening, non-skinning sealant at 1/2" nominal expansion joint to entire front surface and return on each side approximately 1/2". Apply enough sealant to front side of mullion to make a sealant reservoir so when mullion expands, sealant will not be over-stretched.

**MULLION END CAP SEALING:**  
(refer to figure 13)

When applying perimeter sealant at head and sill, apply sealant to ledge across the front of each vertical mullion as shown to make water-tight.

Ends caps are used on both single and insulated glazed verticals.

## GLAZING

(refer to figure 13) Install interior gaskets (sponge neoprene): Cut vertical gaskets 1 1/2" longer than daylight opening and horizontal gaskets 1/2" longer than daylight opening. Then seal with a good grade of butyl sealant as shown in figure 14.

FIGURE 13

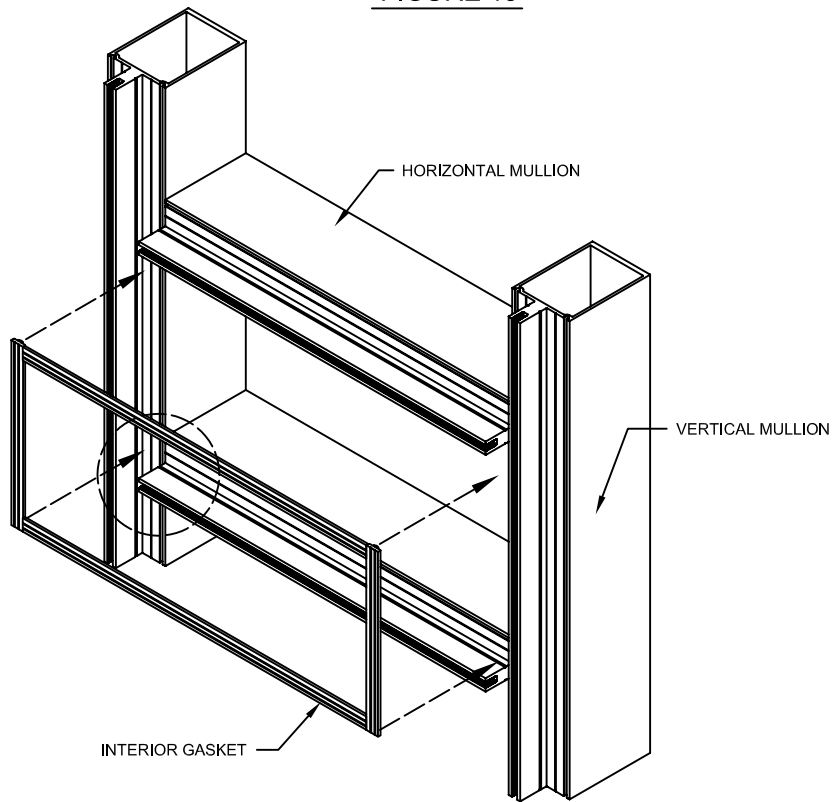
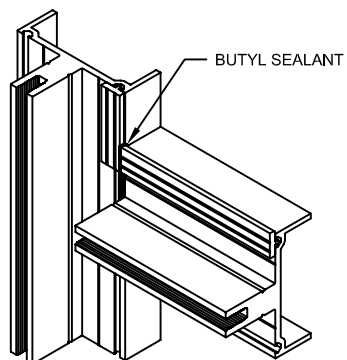


FIGURE 14





Step 2  
(refer to figure 15) Position setting blocks as recommended by the glass manufacturer- normally at 1/4 points.

Step 3  
(refer to figure 15) Start at lower left side of opening and install glass. Apply vertical pressure plate on the left side of the glass with 1/4-20 x 3/4" H.H.M.S. 6" O.C. maximum, then install lower horizontal pressure plate, centered between vertical pressure plates or with 1/8" space (as shown in figure 16) to bottom of glass.

Step 4  
Install glass and repeat sequence in Step 2.

Step 5  
Install all the glass and pressure plates on the bottom of the frame including the last vertical pressure plate.

Step 6  
Move up to the next series of lights and repeat steps 2, 3 and 4 until wall is completely glazed.

**NOTE:**  
**ALL GLAZING MATERIAL MUST BE SMOOTH, FLAT AND THE CORRECT THICK-NESS TO INSURE A GOOD SEAL TO THE INTERIOR GASKET.**

**PANELS MUST BE OF SUCH CONSTRUCTION, OR MODIFIED, SO AS TO BE IMPERVIOUS TO THE ELEMENTS.**

FIGURE 15

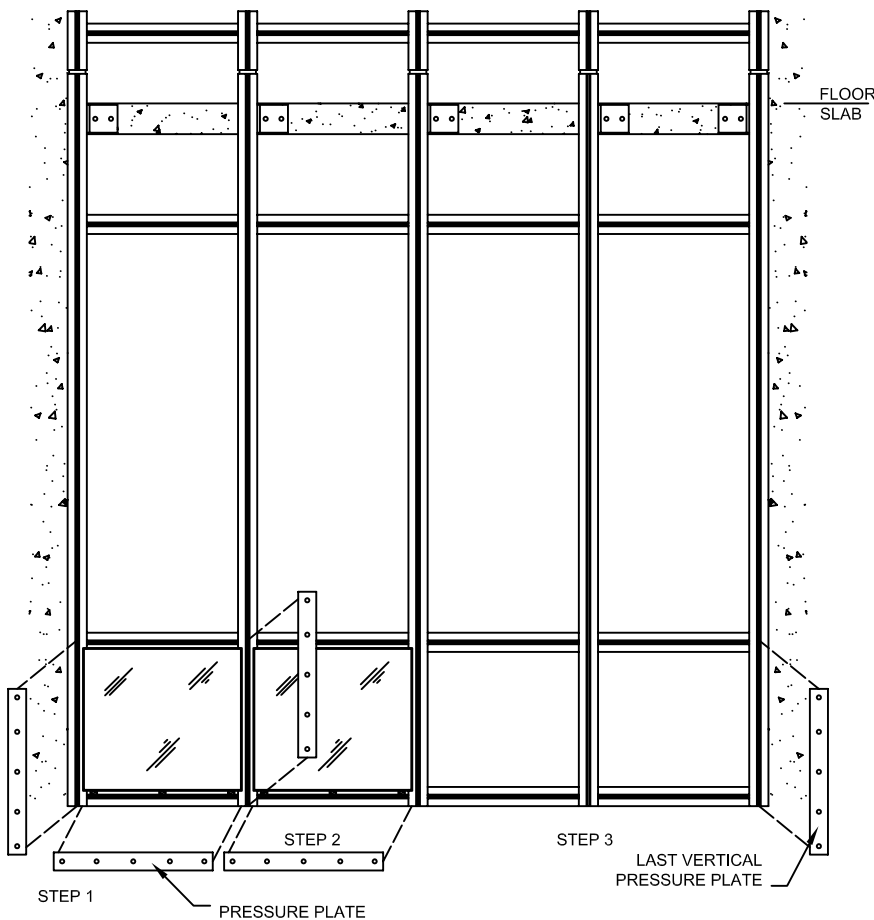
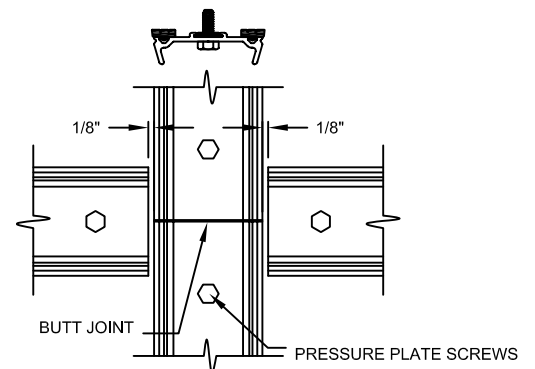


FIGURE 16



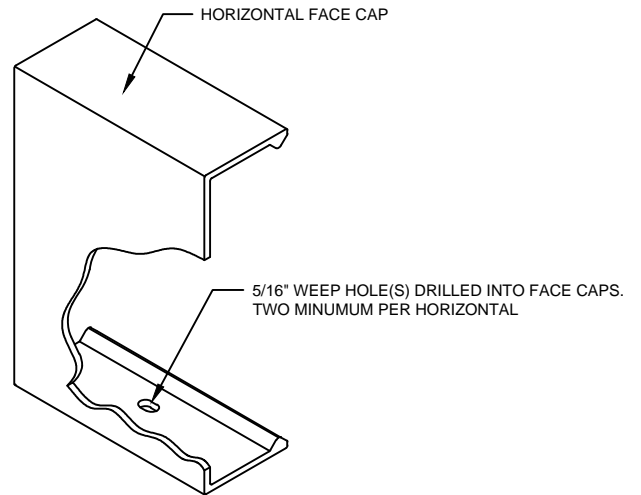
NOTE: TORQUE PRESSURE PLATE SCREWS TO 40 IN. LBS.  
PRESSURE PLATE INTERSECTION

Step 7  
Install face caps:

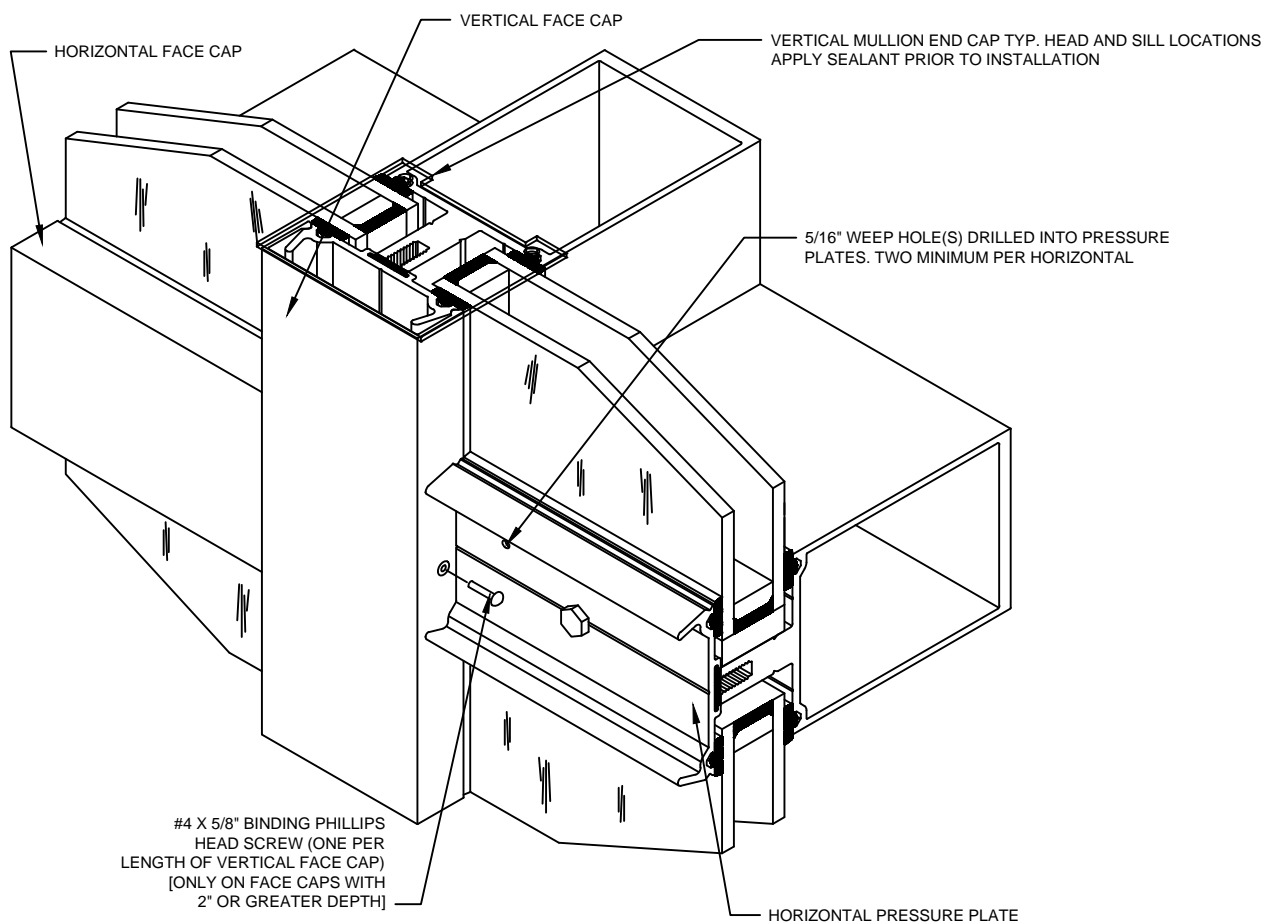
Install vertical face caps and install one #4 x 5/8" long Phillips binding head screw at the centerline of the horizontal pressure plate nearest the center of the vertical face cap. (refer to figure 18)

Install all horizontal face caps. Be sure to drill two weep holes (minimum) per horizontal face caps. (refer to figure 17)

**FIGURE 17**



**FIGURE 18**

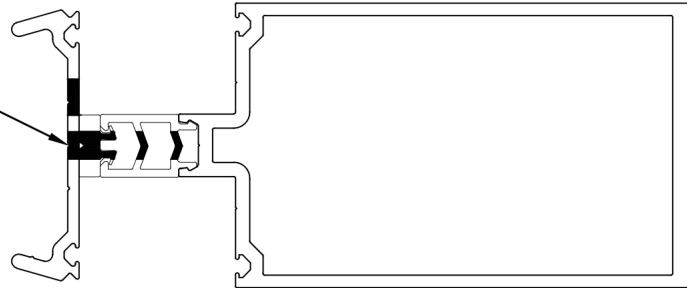


# 200xpt & 250xpt Series

## Additional Installation Instructions

### 200xpt-2 & 250xpt-2

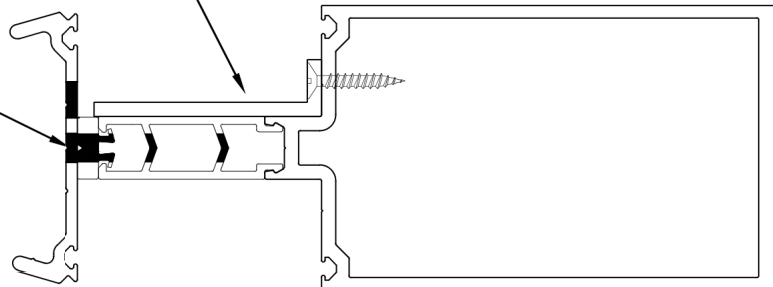
PRE-DRILL RUBBER GASKET & POLYAMIDE THERMAL BREAK WITH 1/4" DRILL BIT USING PRE PUNCHED PRESSURE PLATE AS A TEMPLATE (DO NOT DRILL ALUMINUM)



4" LONG ALUMINUM SETTING CHAIR AT 1/4 POINTS. FASTEN WITH 2 EA. FRS-6 SCREWS

### 200xpt-3 & 250xpt-3

PRE-DRILL RUBBER GASKET & POLYAMIDE THERMAL BREAK WITH 1/4" DRILL BIT USING PRE PUNCHED PRESSURE PLATE AS A TEMPLATE (DO NOT DRILL ALUMINUM)



- **Fill any temporarily drilled polyamide thermal break holes with caulking**
- **Use fasteners and screws associated with 200xpt or 250xpt section in Manko 2017 price book, which may differ from ones in previous pages of these installation instructions**

# 200 & 250 Series with Rovex® “x” Pressure Plate Option Additional Installation Instructions

*The “x” pressure plates (215x & 260x) utilized with 200 & 250 series curtain wall systems employ a pressure plate made from Rovex®. Rovex® is an advanced composite polymer material made from continuous glass fibers and polyurethane resins. Regardless of the pressure plate (aluminum or “x”) used, installation methods are identical, per above traditional installation instructions in this document. **The difference is the storing, handling, and fabrication of the “x” pressure plate.***

**Handling** – While not fiberglass, Rovex® *does* contain continuous glass fibers, and it is possible to get splinters from handling. **As such it is recommended that users wear a light pair of gloves.**

**Cutting** - Carbide tipped saw blades can be utilized, but longevity will be greatly reduced. If carbide tipped blades are used, use a blade with a high tooth count (80 or greater) at a slow feed rate. **A diamond tipped blade like the Dewalt® XP/XP4 series blades will give the best cuts and will significantly outlast traditional blades.** While not required, wet sawing will further increase blade life while reducing dust. **A dust mask is recommended for sawing operations.**

**Drilling** – Traditional drill bits will work. But the hardness of the Rovex® material will quickly dull black oxide and other bits. **A cobalt alloy bit with a pilot point and a split tip** will yield the best results and greatly outlast other bits.

**UV Stability** – Rovex® **should not be subjected to extended periods of direct sunlight (30+ days). Product cannot be stored outside.**