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I. Care and Maintenance

This product is factory finished. Please handle with extreme care. Protect all exposed surfaces from contact with caustics, corrosives, solvents, abrasions, impacts, wet packing material etc. **FAILURE TO DO SO WILL NULLIFY THE WARRANTY.** Before **ANY CLEANING**, review the Care & Maintenance Instructions (go to www.fleetwoodusa.com for more information).

Contact the local dealer with any questions or concerns. Fleetwood strongly recommends that all products be cleaned after installation and totally protected from construction debris and equipment.

II. Tools / Materials, & Requirements

Tool Requirements: Tape measure, Level, Shims, Nails, Screws, Sealant, caulk gun, Backer Rod, Scissors or utility knife, 7/16" wrench, 3/8" wrench, 5/16" wrench, drill bit, drive bit and powered drill.

Sealant Requirements

1. The sealant referred to within this document for seals associated with the assembly of the product should conform to **AAMA 800-16**. It is recommended that all other sealants should also conform to **AAMA 802-16** but may be a sealant recommended and approved by the sealant manufacturer that is compatible with the framing, finish and surrounding materials.
2. The size of all sealant beads must meet or exceed the sealant manufacturers' minimum size requirements.
3. Some exterior wall finishes require additional sealing between the perimeter of the frame and adjacent finish wall material. The Owner / General Contractor is responsible for identifying the need for any additional sealant which will be applied by others. Such sealant shall be elastomeric material, with the framing, finish and surrounding materials.

Anchor Instructions

Frame may be either direct mounted to the opening, mounted onto a continuous wood spacer, anchored to a min. 18 ga. 33 ksi metal stud or anchored to a min. 2x4 no. 3 southern pine wood buck. When anchored to a 2x_ buck or metal stud, no. 10 screws shall be used. When direct mounted or mounted with spacer to block/concrete, 3/16" concrete screws shall be used. Proper material shall be used between all dissimilar materials (block/concrete & aluminum).

Extreme Weather Conditions (Thermally Broken Product Only)

An aluminum sillpan is provided to ensure that any incidental water that penetrates the thermal break or mulled connection is collected and directed to the exterior of the building. In extreme weather conditions Fleetwood recommends that the aluminum sillpan be replaced or covered with a nonconductive material to avoid frost or condensation from migrating to the interior of the building.

III. Structure Verification & Sillpan¹ Installation

Note: Sillpan Substitution- If the factory provided sillpan is not desired, the product warranty will remain intact if the substitute panning system emulates the essential design of the factory pan.

1. Opening Verification

- Check the measurements of the opening and verify that the door will fit into the opening. Measure all four sides of the opening to make sure it is 1/2" larger than the doors in width and 1/2" in height.
- Remove the window(s) from the packaging and lay it in front of the opening. Check width and height dimensions.
- Verify the opening is plumb and level.

2. Pre-Fit and Leveling

- Place sillpan into the opening and determine any leveling that must be done prior to installation (Figure 2).
- Shim as necessary to stabilize the entire depth and length of the sillpan. No unsupported width of more than 8" is allowed. Shim to be load bearing, non-porous, non-absorbent and inorganic.
- If more than 1/8" shim height is required, it is recommended that pouring self-leveling "Rock Hard" (or equal) to achieve level and stable surface.

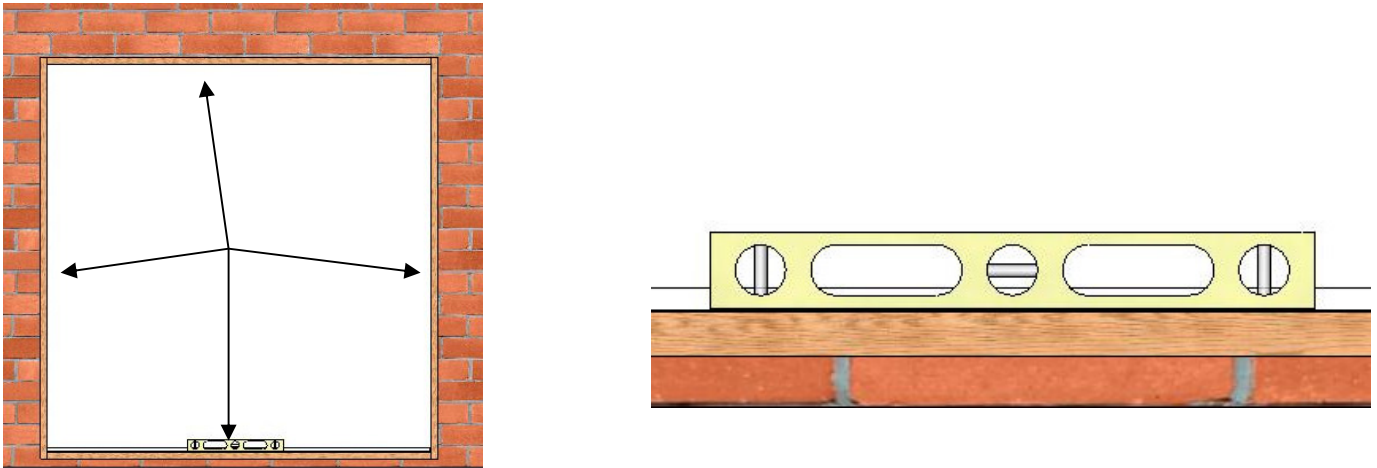


Figure 2:
Use level to determine if the opening is plumb and level

¹ Sillpan refers to a factory provided aluminum pan (or equivalent).
DOC: SERIES 4800-T INSTALLATION INSTRUCTIONS

3. Sillpan Installation

Note: For splicing and multiple piece Sillpans – (See Appendix A)

- Apply bituminous paint to raw masonry or concrete at the sill to eliminate electrolytic and chemical reactions. We recommend a PVC liner be placed to ensure separation of the metal frame with the substrate. In balcony situations flash the sill with aluminum or galvanized brake metal (Sillpan is provided).
- Apply sealant in all corners and seams of the sill pan (Figure 3).
- With bottom side of sillpan up, apply a 3/8" bead of compatible sealant 1/2" in from interior leg. Sealant bead to run across the bottom as well as up each vertical leg of the sill pan. Also apply sealant beads near the sides and across the front (Figure 4).
- Secure the sillpan to the floor with glue. Position sill pan as necessary to allow for proper installation of frame assembly (Figure 5).

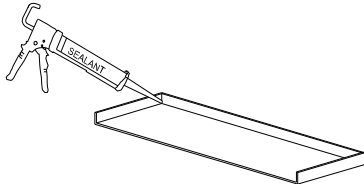


Figure 2:
Seal corners and seams

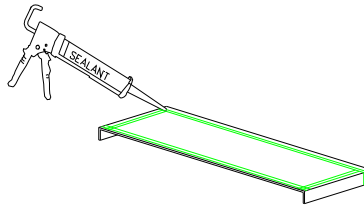


Figure 3:
Seal corners and seams

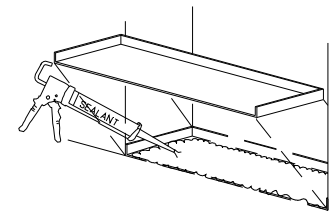


Figure 4:
Seal underside of Sillpan

IV. Frame Assembly (When frame is received unassembled).

Important Note: Glass stops must be field cut to size after the frame is assembled. Failure to assemble the frame according to the installation instructions, nullifies warranties related to this product.

1. Apply a compatible sealant to the corners of the frame. Assemble the frame with screws provided (Figure 6).
2. Install Jambs to Head and Sill using #10 X 1" PHP (provided).
3. After the frame is assembled, seal inside of all four corners and above the thermal break (Figure 6) with a thin bead of self leveling compatible sealant.
4. Field cut glass stops to fit.

Non-intersecting TDL bars

1. Correct orientation for vertical TDL's is to have anchor mounting screws at 24" spacing (Figure 6).
2. Install each full length (vertical or horizontal) TDL bar, using #10 X 1" PHP into pre-drilled holes (Figure 6).

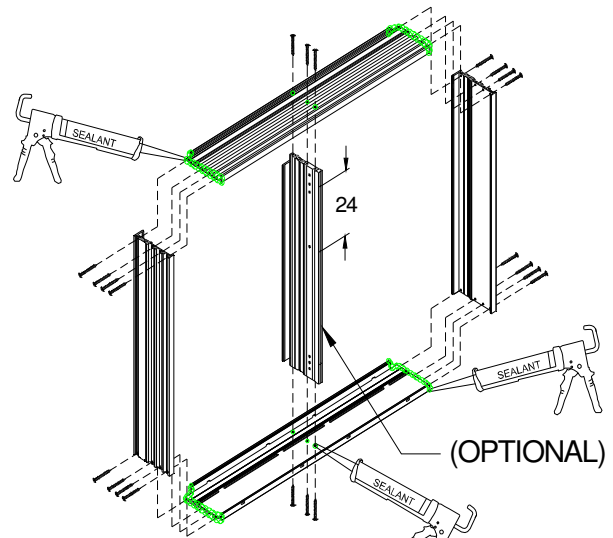


Figure 6:
Assemble Frames and Sealant

Intersecting TDL Bars, Non-Impact / not HVHZ

Important Note: All bolts and nuts are provided in a plastic bag.

1. Intersecting TDL bars are to come with the intersecting plate attached.
2. If intersecting plate does not come attached, use #10 X 1" FHP screw. Use wax to reduce Torque on screw head. Reapply wax as needed while inserting screw (Figure 7).
3. Install each full length (vertical or horizontal) TDL bar, use #10 X 1" PHP into pre-drilled holes (Figure 8).
4. Attach each partial length (vertical or horizontal) TDL bar to the jamb(s) use #10 X 1" PHP into pre-drilled holes.
5. To secure the partial length TDL to the full length TDL use #10-32 Hex Head Screw, 0.75" through the intersecting plate and #10-32 Thin Nylon Insert Locknut (Figure 8).
6. Apply a compatible sealant to the slot, screw heads, TDL ends (Figure 9).

Note: Do not cover weep holes on TDL with sealant.

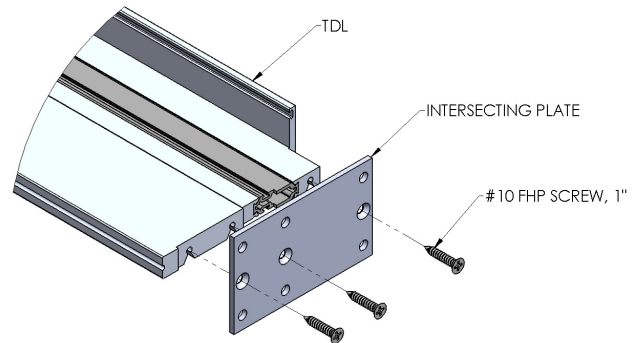


Figure 7:
Intersecting Plate Attachment

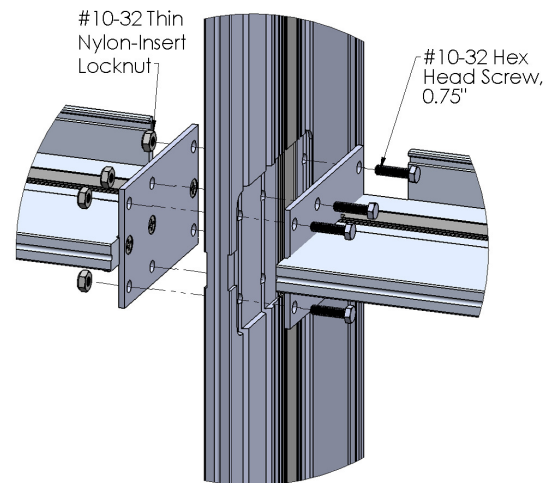


Figure 8:
Intersecting TDL Bars

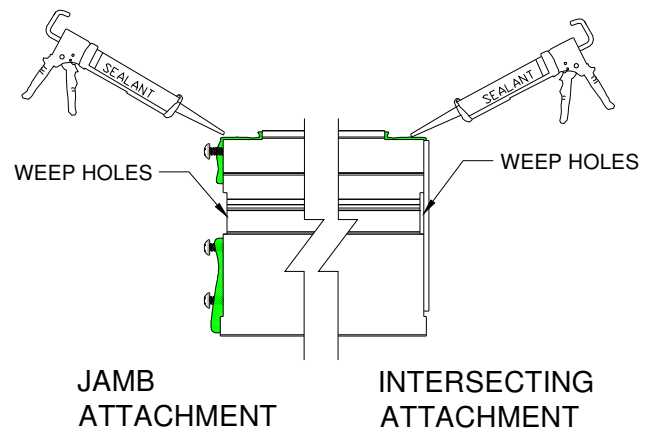


Figure 9:
Intersecting TDL Sealant Locations

V. Frame Installation

Nail-fin Frames

1. Prepare the opening to accept the frame ensuring that the weep-screed or diado flashing at the sill is adjusted to maintain a weatherboard style flashing.
2. Seal frame and vent joints completely with compatible sealant.
3. Apply a heavy bead of sealant to the interior side of the mounting flange (nail-on) where the frame jamb and sill join. Sealant must cover the entire joint (from the flange to the inside leg) and extend 1 1/2" up the jamb and along the sill (Figure 10).

Note: Inside glazed products-see inside glazed product procedure for frame orientation, page 11.

4. Insert the frame into the opening and set the sill in a full bed of sealant (Figure 11). Cross-measure and adjust as necessary to achieve a plumb square and level condition, as well as an even reveal around the framed opening. Shim with non-porous, non-absorbent, inorganic shims where needed. Seal all fastener heads with compatible sealant. (Only drill holes through Sill as required for design load)
5. Anchor Location and Sealant. Frame installation anchors furnished by installer, not by Fleetwood. Stainless steel screws are recommended. (See Installation Instructions-Anchor Schedule). Fleetwood recommends countersink for all frame anchors.
6. The installer is responsible for the integrity of all framing joints after installation and must therefore water test all joints to guarantee a completely sealed product. Apply joint sealer and/or sealant necessary to ensure watertight joints. Retest as necessary.

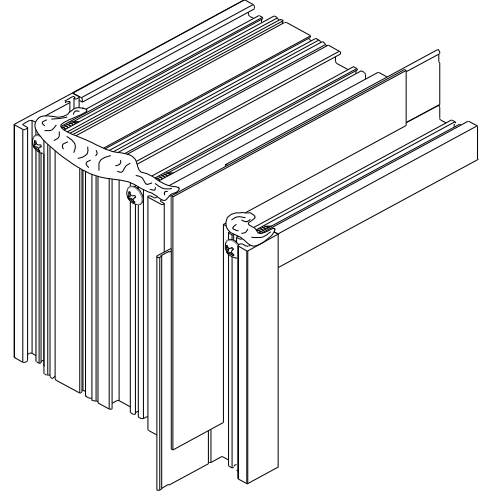


Figure 10:
Nail-fin sealant location

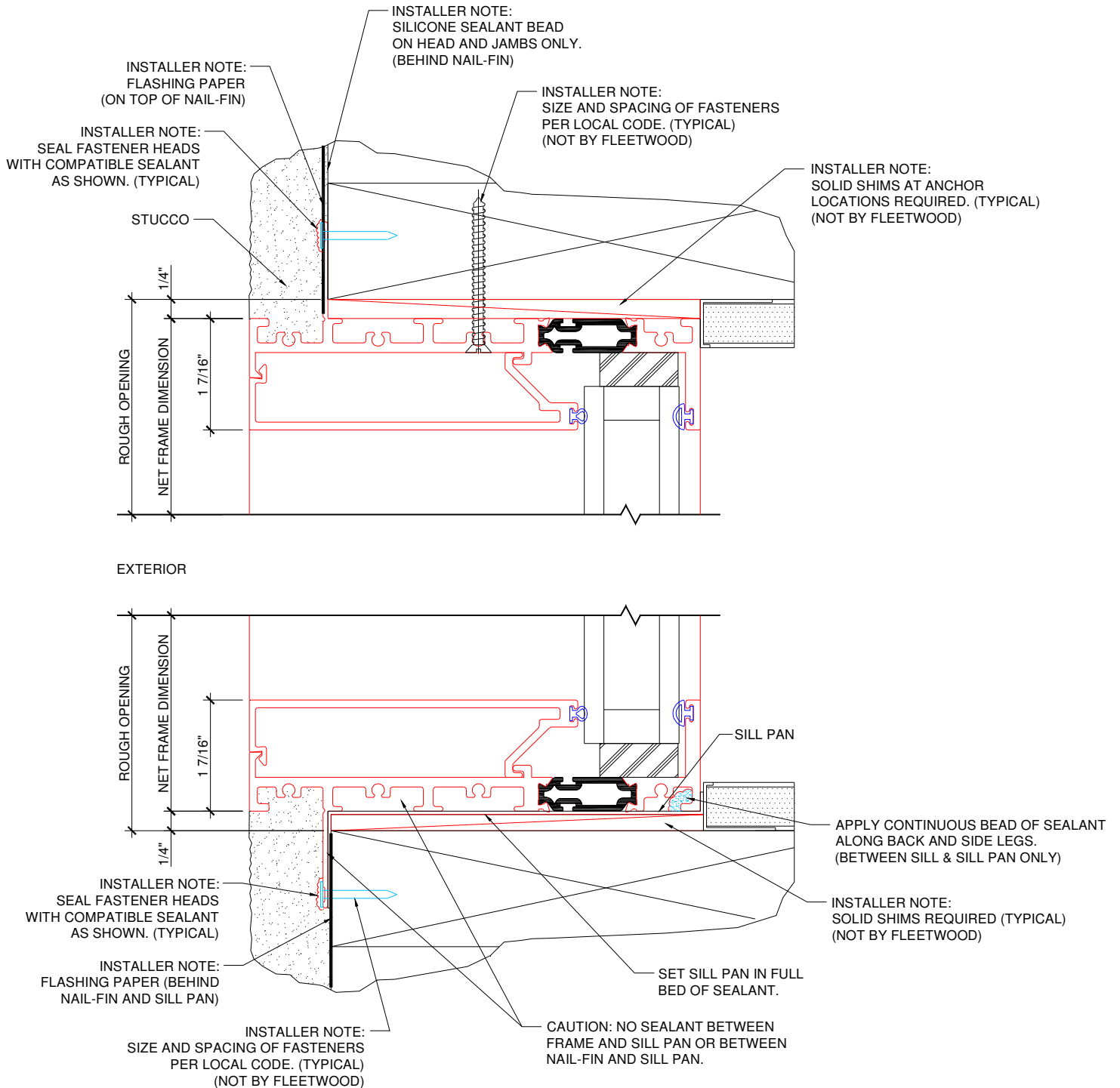


Figure 11:
 Typical Nail-fin with Sealant Shown (Exterior Glazed)

Block Frames

1. Prepare the opening to accept the frame ensuring that the weep-screed or diado flashing at the sill is adjusted to maintain a weatherboard style flashing.
2. Seal frame and vent joints completely with compatible sealant. Apply a heavy bead of sealant to the interior side of the mounting flange (nail-on) where the frame jamb and sill join. Sealant must cover the entire joint (from the flange to the inside leg) and extend 1 1/2" up the jamb and along the sill (Figure 11).

Note: Inside glazed products-see inside glazed product procedure for frame orientation, page 11.

3. Insert the frame into the opening and set the sill in a full bed of sealant (Figure 12). Cross-measure and adjust as necessary to achieve a plumb square and level condition, as well as an even reveal around the framed opening. Shim with non-porous, non-absorbent, inorganic shims where needed. Seal all fastener heads with compatible sealant. Only drill holes through Sill as required for design load.
4. Anchor Location and Sealant. Frame installation anchors furnished by installer, not by Fleetwood. Stainless steel screws are recommended. (See Installation Instructions-Anchor Schedule). Fleetwood recommends countersink for all frame anchors.
5. The installer is responsible for the integrity of all framing joints after installation and must therefore water test all joints to guarantee a completely sealed product. Apply joint sealer and/or sealant necessary to ensure watertight joints. Retest as necessary.
6. To complete the installation, apply backer rod and a complete bed of sealant to the entire exterior and interior joint between the frame and the building structure. Tool the sealant to eliminate bubbles, voids and/or breaks and ensure a completely watertight seal. (See Anchor Location Drawing, Figure 15).

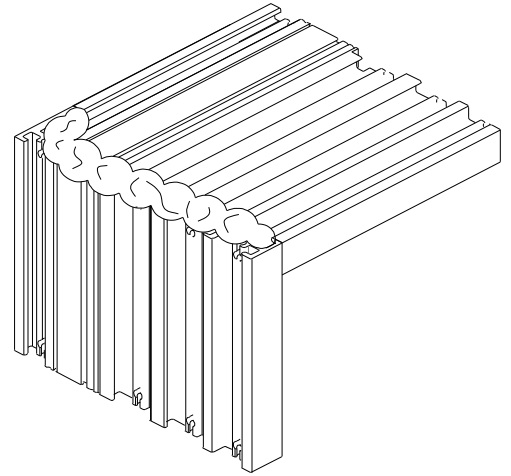


Figure 11:
Block frame sealant location

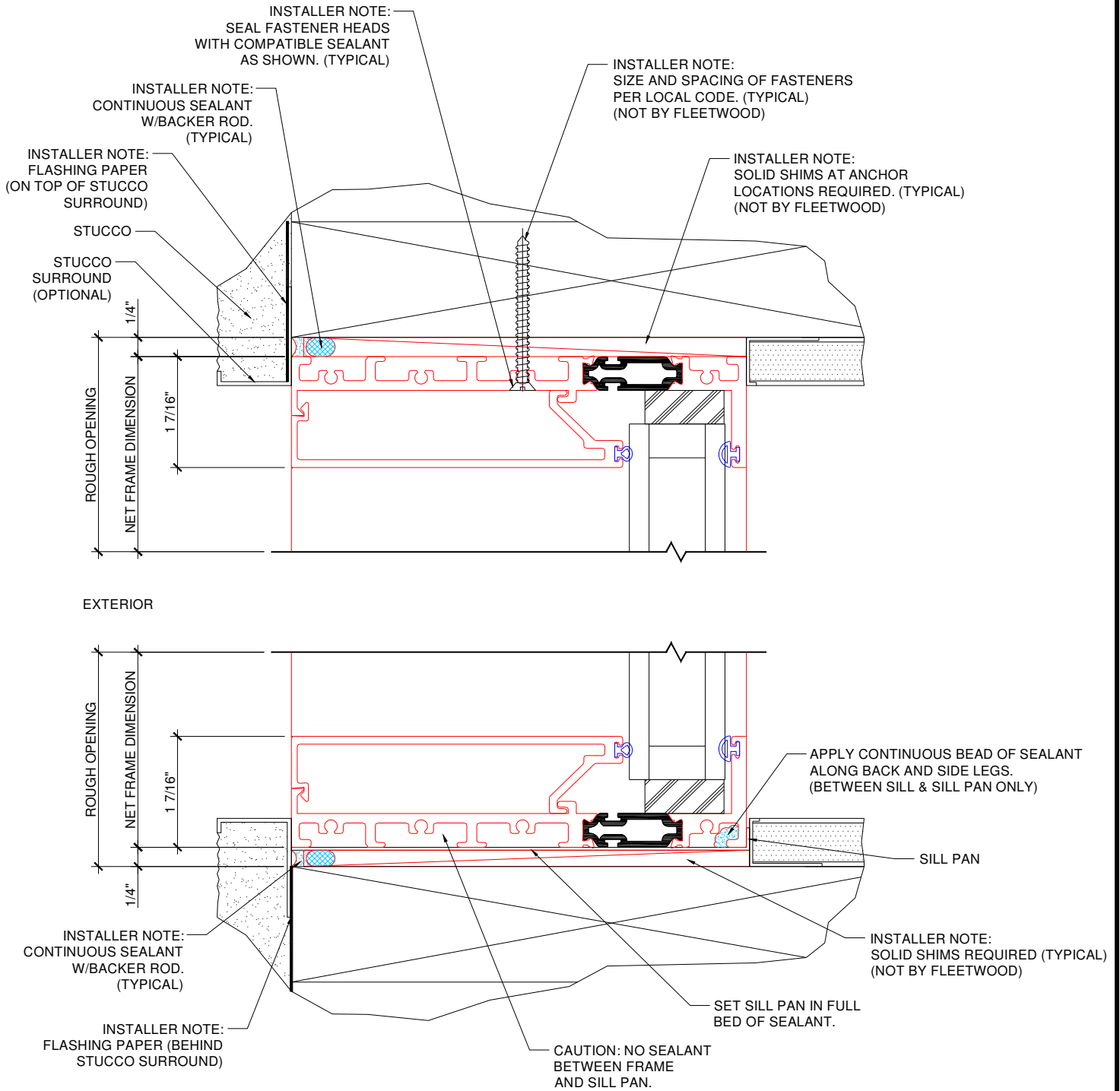


Figure 12:
Standard Sill with Sealant Shown (Exterior Glazed)

VI. Flashing after Installation

The flashing paper referred to in this document is Moistop or other code compliant flashing material that conforms to **Federal Specification UU-B-790a, Type 1, Grade A, Style 4**. The strips of flashing paper are to be no less than 9 inches wide (or wider as required by local codes). Flashing paper must be applied with galvanized nails or corrosion resistant staples. Flashing paper shall be applied in a weatherboard fashion around the full perimeter of the framed opening.

1. Once satisfied that the frame is water tight, and immediately prior to application of the flashing paper at the head and jambs, apply a continuous bead of sealant to the exposed mounting flange (nail-fin) at the top (head) and sides (jambs) of the installed frame. Also, apply sealant at corners of the frame, the full length of the seams where the nail fin flashing is mounted.
2. At each jamb, embed the flashing paper into the sealant onto mounting flange and fasten into place. The flashing paper should be cut sufficiently long enough to extend at least 3 inches past the weep-screed or diado flashing and at least 6 inches above the head of the window (Figure 13).
3. Finally, at the head, embed the flashing into the sealant on the mounting flange and fasten into place. The flashing paper should be cut sufficiently long enough to extend past the flashing paper at each jamb by at least 3 inches (Figure 14).
4. Weather resistant building paper should be applied in a weatherboard fashion to complete the installation (Figure 15).

Note: Where weather resistant building paper, insulating board, or other materials by other trades may constitute the primary weather barrier behind the exterior wall finish (i.e., stucco, masonry, siding, etc.), the owner / General Contractor are responsible to ensure that the weather barrier is continuous by effectively sealing the material to the window.

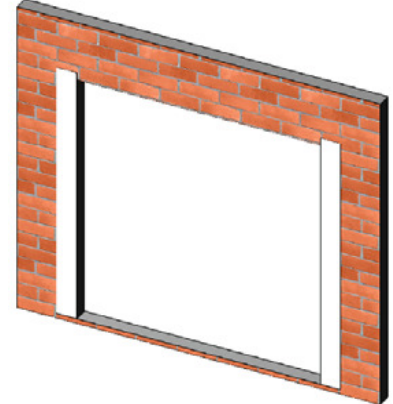


Figure 13:
Jamb Flashing

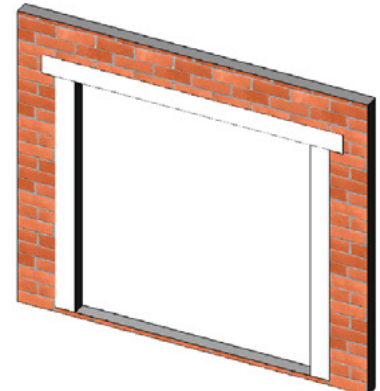


Figure 14:
Head Flashing

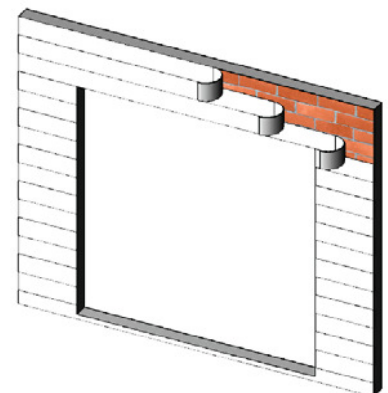


Figure 15:
Building Flashing

VII. Glazing Instructions per Glass (block frame shown).

Note: Glass stops must be removed before continuing. If sent KD glass stops and anchor must be cut to size.

Dry Glazing Procedure

1. Each setting block is to be 7/16" in height. This can be achieved by combining the provided setting blocks.
2. Insert setting blocks at 1/4 points along the head, sill, and jamb (Figure 16).
3. All four corners must be sealed 1/2" x 1/2" x 4" (Figure 17) then set glass into opening.
4. Finish assembly by inserting the two horizontal glass stops then install the two vertical glass stops.

Anchor Attachment

1. Each setting block is to be 7/16" in height. This can be achieved by combining the provided setting blocks.
2. Remove all Hex Screws, washers, nuts, and anchors from assembly and set aside for glazing.
3. Insert the setting blocks into the frame at the 1/4 points (Figure 16).
4. Using a glass lifter or suction cups carefully place the glass into the frame.
5. Place the anchor onto the TDL and secure using the 1/4-20 x 0.75" Hex Head Screws and washer provided. Tighten the screws down until the 1/4-20 x 1.625" Hex Head Screws can be placed into the holes located on the sides of the anchor (Figure 18).
6. Secure the 1/4-20 x 1.625" Hex Head Screws with a 1/4-20 Nylon-Insert Locknut.
7. Finish assembly by snapping in anchor cover and glass stops. Standard convention for Fleetwood glass stop products is to place the horizontal pieces first then vertical.

Alternate Glazing Procedure

Note: Applies to inside glazed or outside glazed products, where additional water sealant is required.

1. Before glazing, apply a continuous bead of sealant to the fixed leg of the frame (Figure 19).
2. After glazing, apply a continuous bead of sealant to the fixed frame leg and glass (Figure 20).

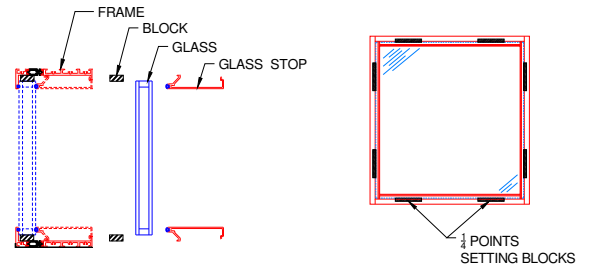


Figure 16:
Setting Block Locations

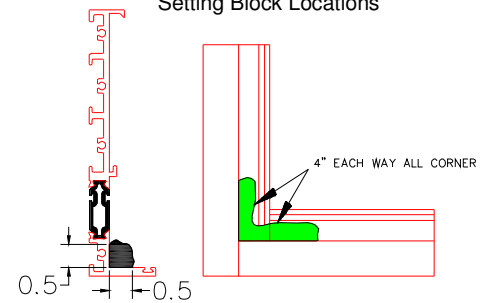


Figure 17:
Sealant Location and Sizes

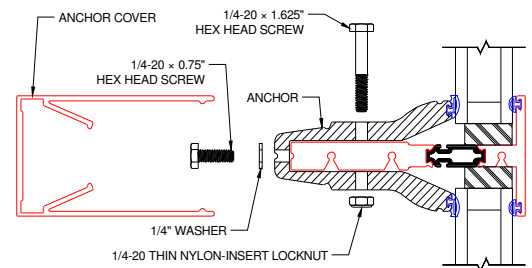


Figure 18:
Before Glazing Locations

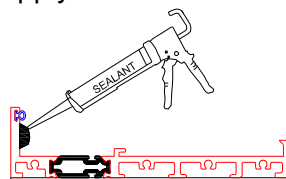


Figure 19:
Before Glazing Locations

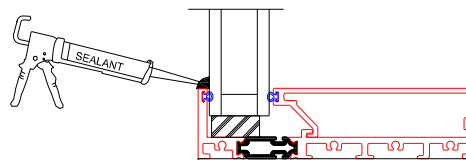


Figure 20:
After Glazing Locations

Appendix A: Joining Sillpans

Follow the instructions below for joining multiple piece Sillpans. Multiple piece Sillpans are required on products with net frame widths greater than 14 feet (168 inches) and corner units.

1. Install Sillpans per product installation instructions.

Caution: Apply a compatible sealant to the underside of the sillpan at the seam joint.

2. Cut a piece of adhesive backed waterproof material to fit the joint as specified in drawing below, $A = 3/8"$. *Caution: Select waterproofing material that is compatible for your application. Waterproofing material must have an adhesive backing and be capable of withstanding the temperature ranges for your region.*

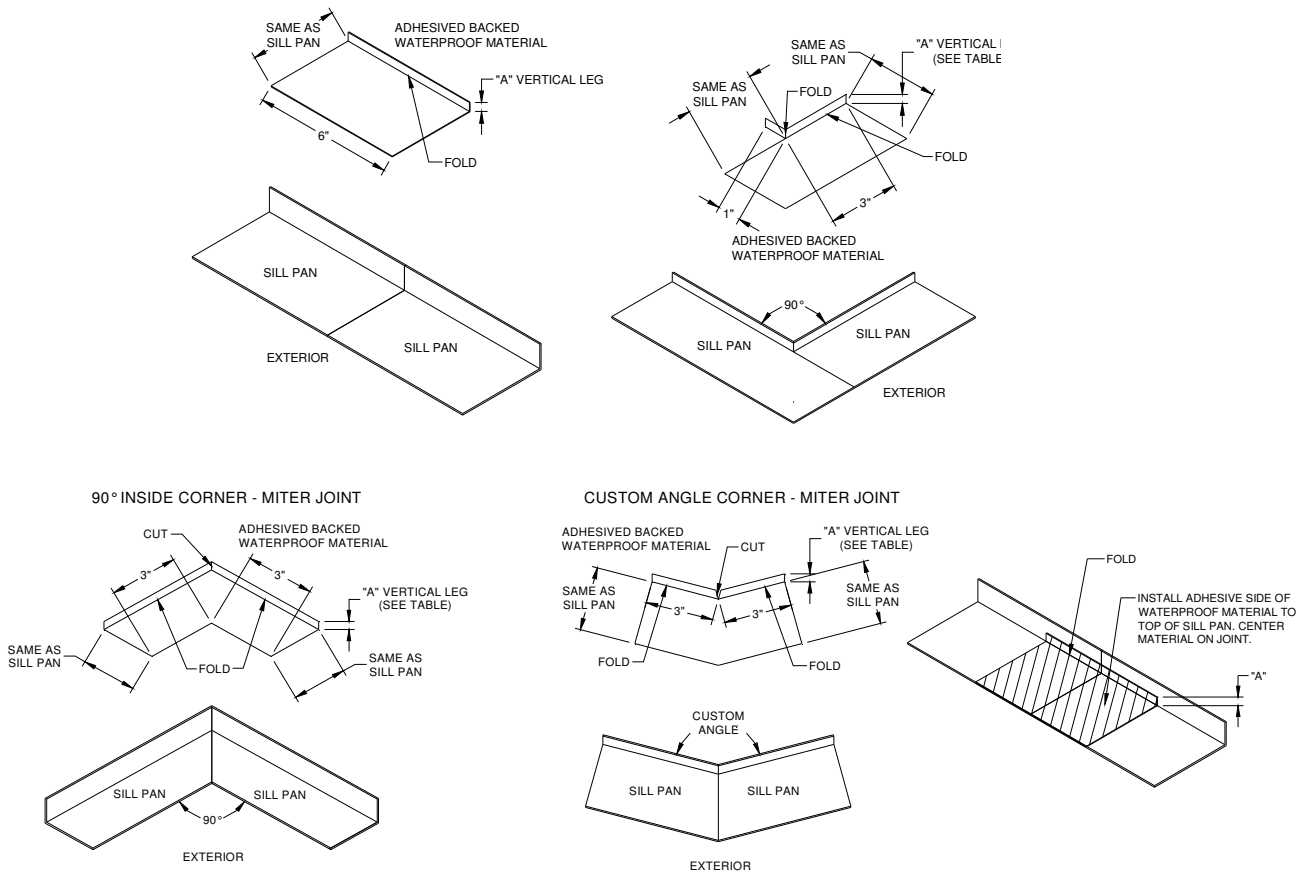


Figure A1:
Showing multiple piece sill pans joining

3. Remove excess sealant at joint on top of the sillpan that may have migrated in during installation.
4. Remove the adhesive backing from the waterproof material and apply to the sillpan. Waterproof material shall contain a fold on the interior water leg and attach to the sillpan as shown.

Appendix B: Stucco Surround Application (Optional)

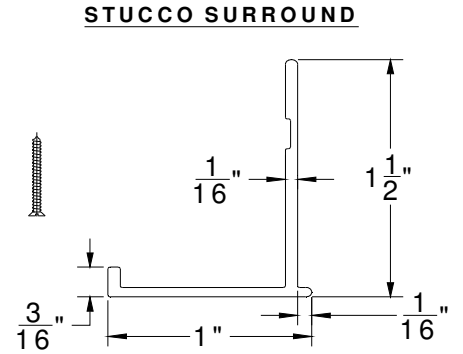
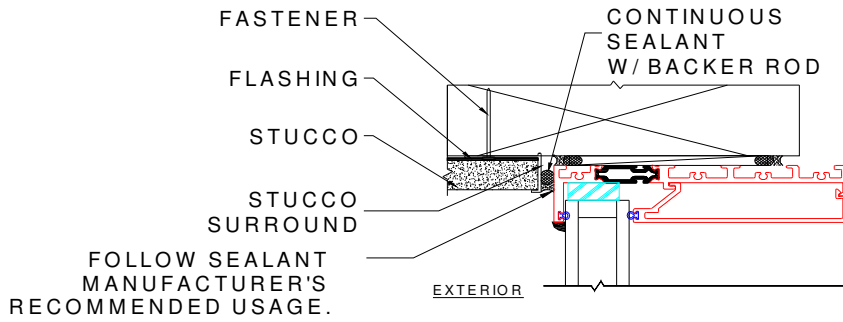


Figure B1:
 Stucco Surround Detail and Extrusion

Appendix C: Glazing Anchor Cover Removal

1. Remove frame glass stops adjacent to desired glazing anchor.
2. Locate the removal slots at the ends of the Glazing Anchor Cover (Figure C1).
3. Insert a flat head screw driver into the slots on both sides of the Glazing Anchor until the heads of the screwdriver are firmly on top of the anchor underneath.
4. Apply even pressure on both screwdrivers by pulling away from the glazing until the end of the anchor comes loose.
5. Work loose along the length of the extrusion.
6. Repeat steps 1-4 on the opposite end of the anchor cover as necessary.

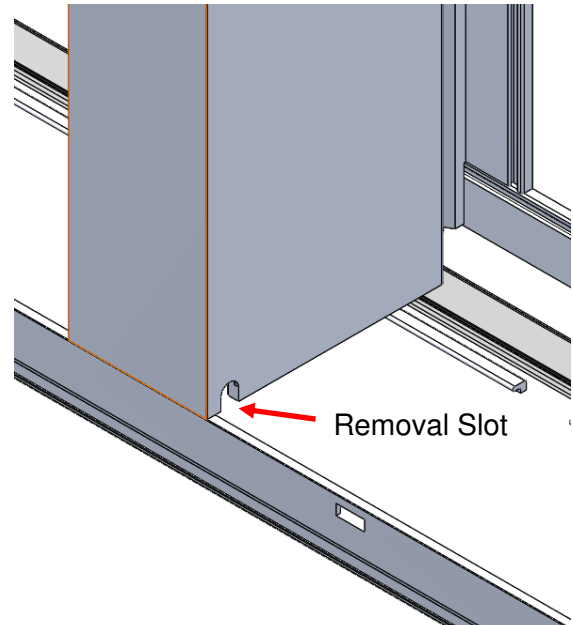


Figure C1:
Glazing Anchor Cover Removal

Intersecting TDL's

1. Repeat steps 1-6 along full length Glazing Anchor Cover.
2. After removing the full length cover, insert a pry bar between Glazing Anchor and Glazing Anchor Cover to gently remove.

Appendix D: Jamb Mullion Installation

1. Place the Jamb Mullion between frames as shown (Figure D1, D2).
2. On GTF products it will be necessary to remove the glass stops, and depending on glass size, possibly the glass to install fasteners.
3. Pre-drill through frame and into Jamb Mullion. Install fastener through frame and into Jamb Mullion, size and spacing of fasteners per local code.
4. Seal all fastener heads with compatible sealant.
5. Reinstall glass (as necessary) and glass stops.
6. Apply sealant full length of exterior vertical seams leaving a 1/2" gap at the bottom for weepage.
7. To ensure water does not run into the mulled units insert backer rod and cover with compatible sealant.
8. Place flashing over top of units as shown for additional moisture protection. Flashing not provided by Fleetwood.

Note: When used with thermally broken products may impact energy performance (such as frost, heat, condensation, etc.).

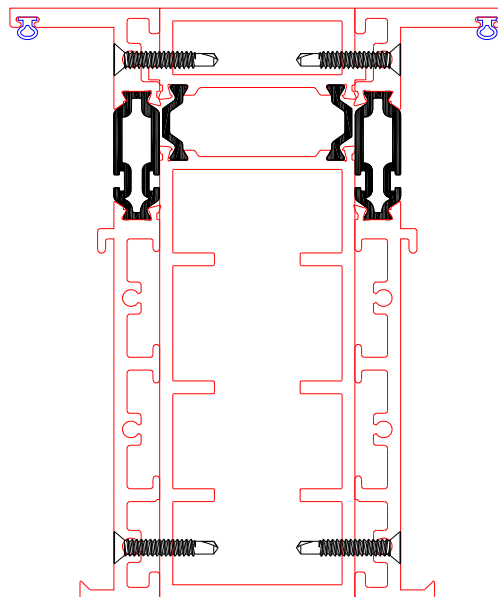


Figure D1:
4800-T Jamb Mullied to 4800-T