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I. Tools / Materials, Sealant Requirements & Anchor Instruction.

Tools Requirements: Tape measure, Level, Shims, Nails, Screws, Sealant, caulk gun, Backer Rod, Scissors or utility knife, drill bit, drive bit and powered drill.

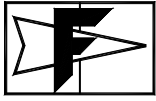
Sealant Requirements

- The sealant referred to within this document for seals associated with the assembly of the product should conform to **AAMA 800-92**. It is recommended that all other sealants should also conform to **AAMA 802-92** but may be a sealant recommended and approved by the sealant manufacturer that is compatible with the framing, finish and surrounding materials.
- The size of all sealant beads must meet or exceed the sealant manufacturers' minimum size requirements.
- 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 Instruction

Important Note: For Impact / HVHZ: See *Kona 3800 Installation Instructions-Anchor Schedule* for anchor schedule.

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).



II. Structure Verification & Sill Pan Installation

1. Opening Verification

- Check the measurement 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 door(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 sill pan into the opening and determine any leveling that must be done prior to installation.
- Shim as necessary to stabilize the entire depth and length of the sill pan. 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.

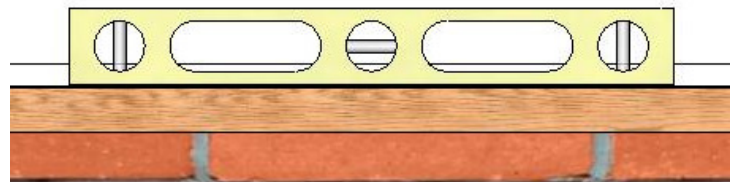
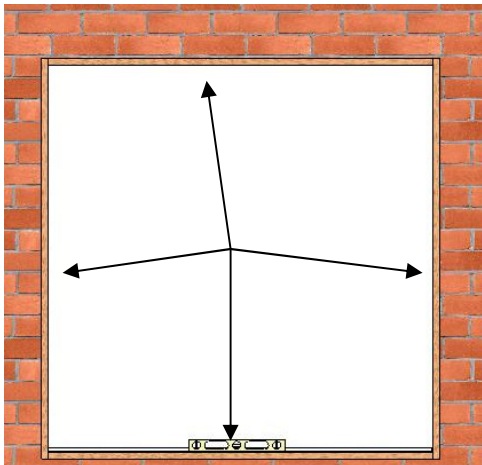
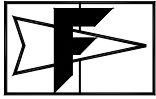
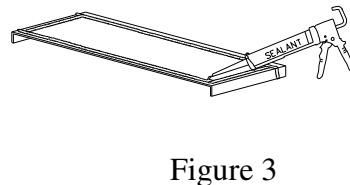
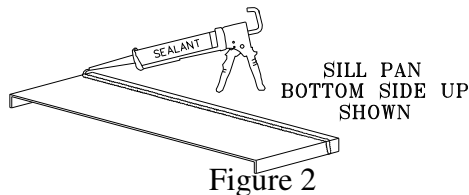


Figure 1: Use level to determine if the opening is plumb and level

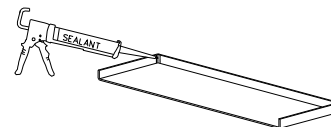
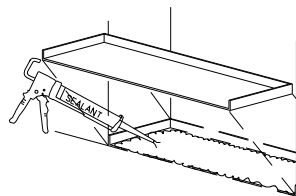


III. Sill Pan Installation

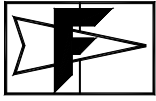
- a. Apply bituminous paint to raw masonry or concrete at the sill to eliminate electrolytic and chemical reactions. We recommend a PVC liner be placed to ensure separation of the metal frame with the substrate.
In balcony situations flash the sill with aluminum or galvanized break metal (Sill pan is provided)
- b. With bottom side of sill pan up, apply a 3/8" bead of compatible sealant 1/2" in from interior leg (see figure 2). Also apply sealant beads near the sides and across the front as shown in figure 3



- c. Secure the sill pan to the floor with glue. Position sill pan as necessary to allow for proper installation of frame assembly as shown in figure 4.



- d. Apply sealant up each vertical leg (in corners) of the sill pan as shown in figure 5.



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

1. Install sill pans per product installation instructions. *Caution: Apply a compatible sealant to the underside of the sill pan 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.*

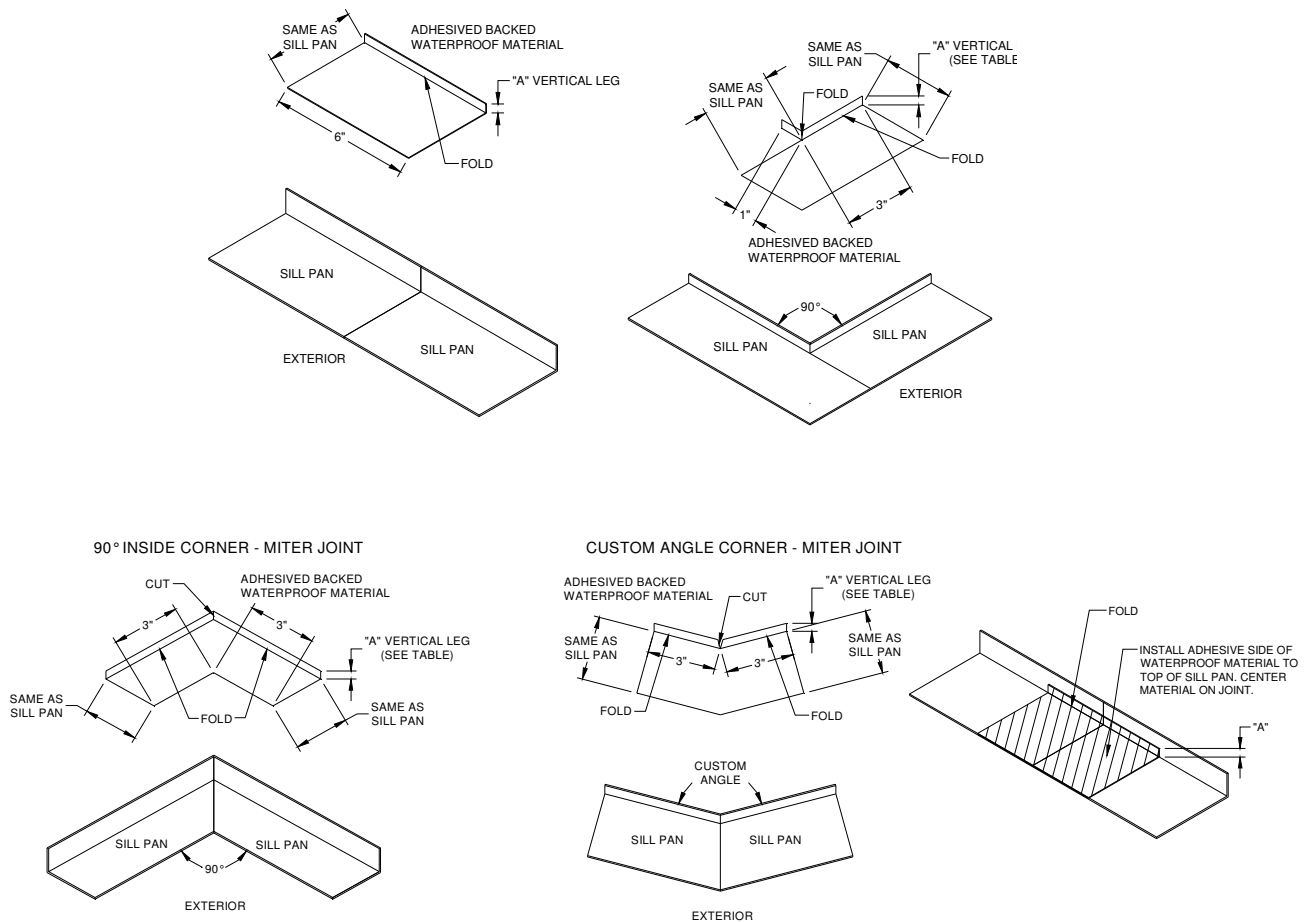
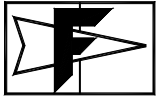


Figure 6: Showing multiple pieces sill pans jointing.

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



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

Note: When factory assembled, joints are welded to increase structural strength.

Important Note:

Failure to assembly the frame according to the installation instructions, nullifies warranties related to this product.

1. Remove precut glass stops from the frame, making sure to note the location from which each has been removed. Each stop is hand cut for a specific location of the frame and must be returned to the same location after glazing process.
2. Apply a compatible sealant to the corners of the frame. Assemble the frame with screws provided (Fig. 7).

Non-intersecting TDL bars
(Fig. 7).

Install each full length (vertical or horizontal) TDL bar, using # 10 into pre-drilled holes.

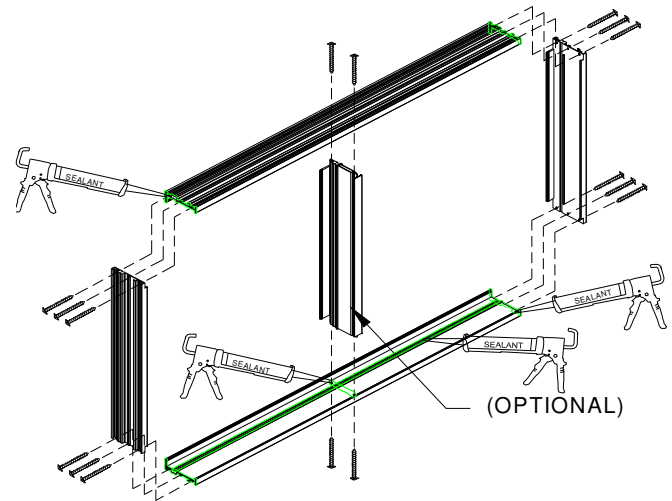


Figure 7: Assemble Frames and Sealant

Intersecting TDL Bars, Non-Impact / not HVHZ (Fig. 8a.)

Counter sink all TDL fasteners.

- a. Insert vertical TDL bar (#1) with installed mullion key into machined slot on one horizontal TDL
- b. Insert vertical mullion key into cavity of second vertical TDL and fasten with screw # 8 x 1/2 flat head screws provided (Fig. 8a).
- c. Apply a compatible sealant to the slot, screw heads, TDL ends.
- d. Fasten top & bottom frames to vertical TDL (Fig. 8a).
- e. Fasten side frames to horizontal TDL (Fig. 8a).

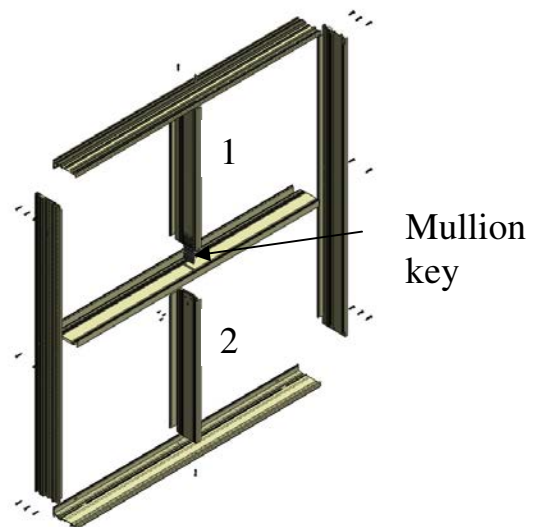
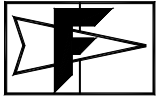


Figure 8a: Assemble Frames with Multiple TDL Bars and Sealant not for HVHZ



Intersecting TDL Bars, Impact / HVHZ

Counter sink all TDL reinforcement fasteners

- f. Insert horizontal reinforcement bar (2.0" x .25) into cavity of one horizontal TDL and fasten with screw # 8 x 5/8 flat head screws provided (step 1, Fig. 8b).
- g. Insert vertical reinforcement bar (1.5" x .25) into cavity of upper vertical TDL and fasten with screw # 8 x 5/8 flat head screws provided (step 2, Fig. 8b).
- h. Apply a compatible sealant to the slot and vertical reinforcement bar (step 3, Fig. 8b).
- i. Insert upper vertical reinforcement bar assembly through the slot of horizontal TDL then insert into cavity of lower vertical TDL and fastening with screw # 8 x 5/8 flat head screws provided (step 4, Fig. 8b).
- j. Fasten top & bottom frames to vertical TDL (Fig. 8b).
- k. Fasten side frames to horizontal TDL (Fig. 8b).

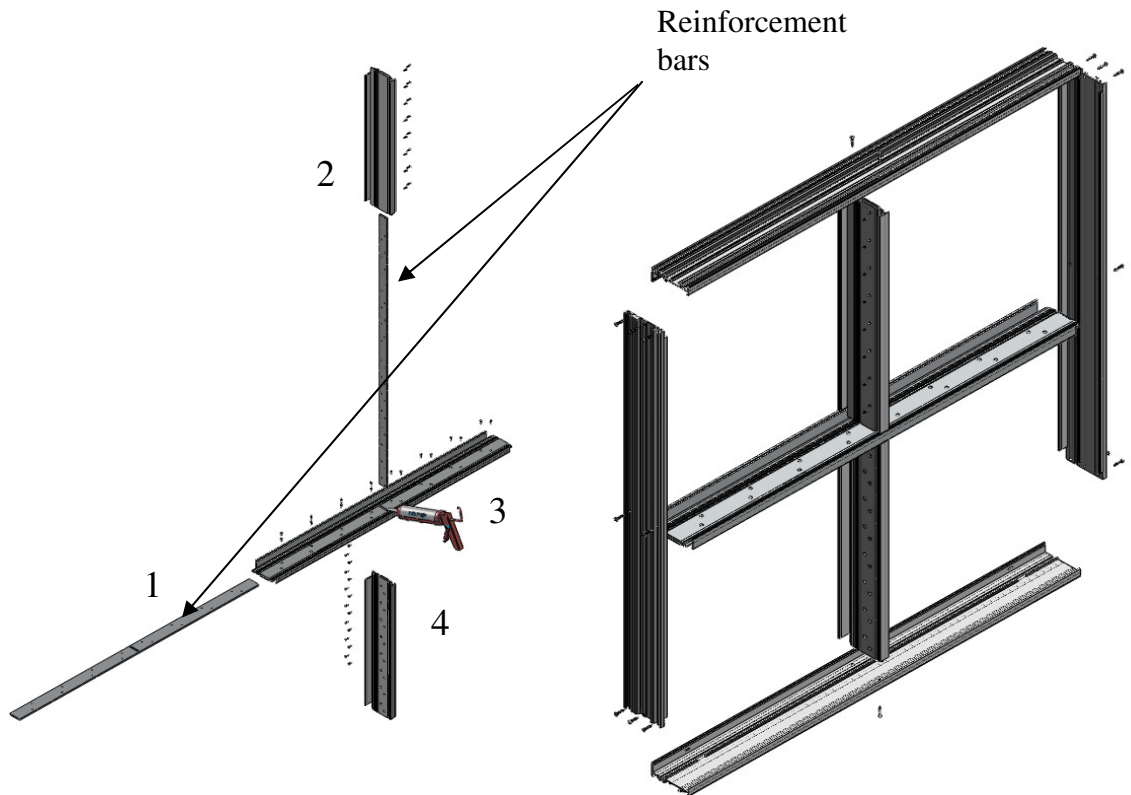
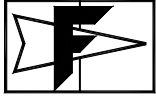


Figure 8b: Assemble Frames with Multiple TDL Bars and Sealant for HVHZ

3. After the frame is assembled, seal inside of all four corners, join and above the thermal break (See Fig, 10) with a thin attractive bead of self leveling compatible sealant



V. Frame Installation

Nail-fin Frames

Important Note: For Impact / HVHZ: See *Kona 3800 Installation Instructions-Anchor Schedule* for anchor schedule with different substrates.

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. 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.
3. Seal frame and vent joints completely with compatible sealant.
IMPORTANT: 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. (See fig. 9).
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. (See fig. 10). 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

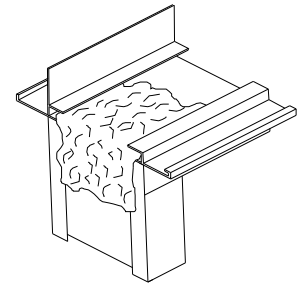


Figure 9

Frame installation anchors furnished by installer, not by Fleetwood. Stainless steel screws are recommended. (See Installation Instructions-Anchor Schedule)

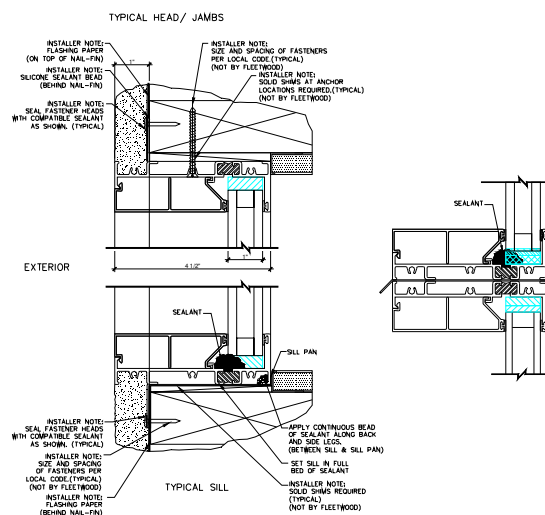
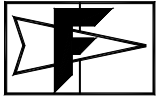


Figure 10: Typical Nail-Fin with Sealant Shown (Exterior Glazed)



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.

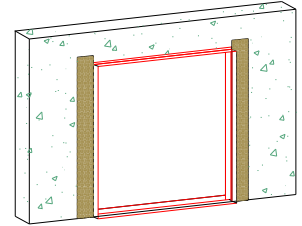


Figure 11

- A. 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. Also, apply sealant at corners of the frame, the full length of the seam where mounting flanges (nail-fins) meet.
- B. At each jamb, embed the flashing paper into the sealant on the mounting flange and fasten into place. The flashing paper should be cut sufficiently long enough to extend at least 3 in. past the weep-screed or diado flashing and at last 6 inches above the head of the door. (See fig. 11)

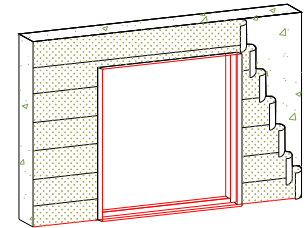


Figure 12

- C. 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 in. (See fig. 12)
- D. Weather resistant building paper should be applied in a weatherboard fashion to complete the installation. (See fig. 13)
- E. 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 is responsible to ensure that the weather barrier is continuous by effectively sealing the material to the door frame.

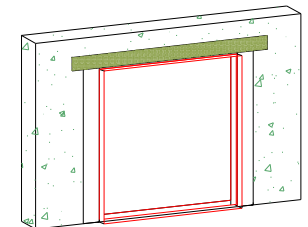
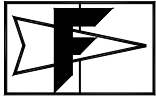


Figure 13

7. 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, Figure10).



Block Frames

Important Note: For Impact / HVHZ: See *Kona 3800 Installation Instructions-Anchor Schedule* for anchor schedule with different substrates.

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. **IMPORTANT:** 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. (See Fig. 14).
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. (See Fig. 15). 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)

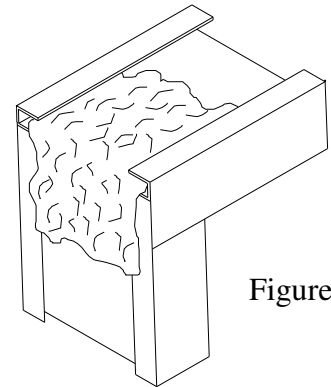


Figure 14

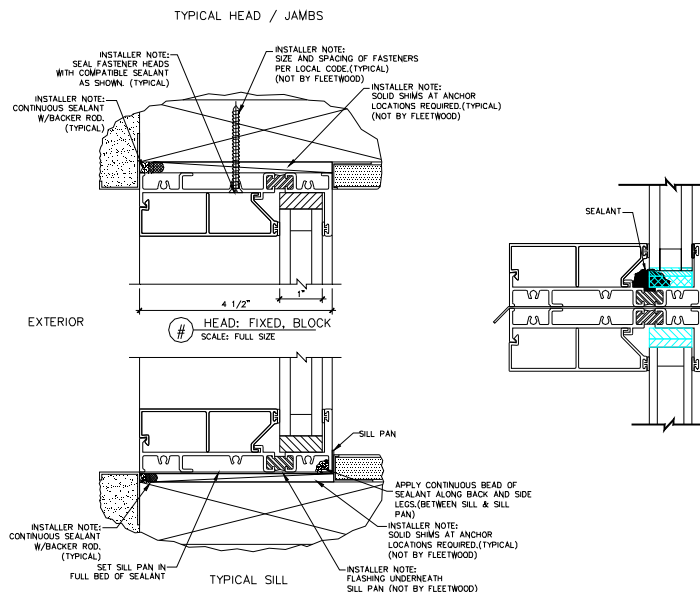
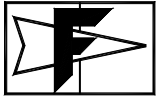


Figure 15: Standard Sill with Sealant Shown (Exterior Glazed)

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 recommend 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).

Stucco Surround Application (Optional)

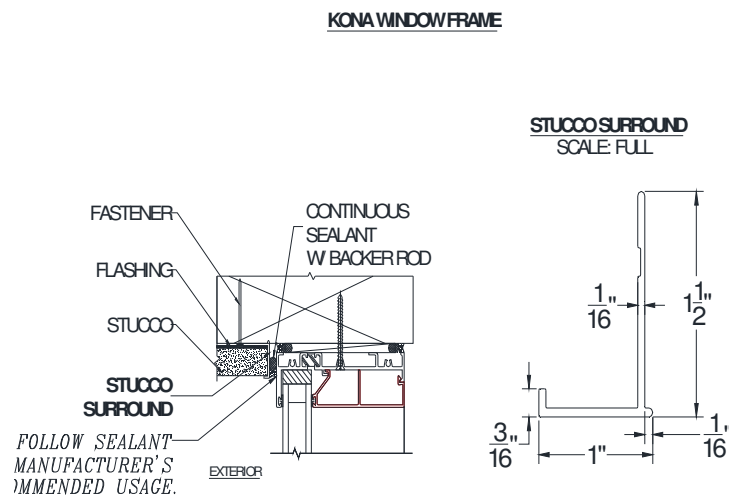
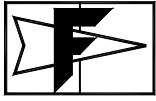


Figure 16: Stucco Surround Detail and Extrusion



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

Note: Glass stops must be removed before continuing.

1. Dry Glazing Procedure.

- Insert two setting blocks into the sill at the quarter points (see Fig. 17)
- Insert glass setting block per jamb at 2" above the sill.
- All four corners must caulked (see Fig. 18) then set glass into opening.
- Insert edge blocks into each jamb at 2" above the sill and into the head at glazing center (see Fig. 18).
- Finish assembly by inserting the two horizontal glass stops then install the two vertical glass stops.

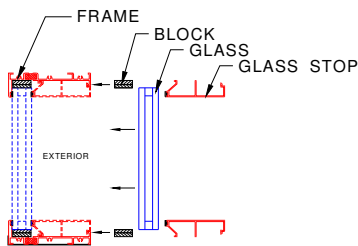


Figure 17

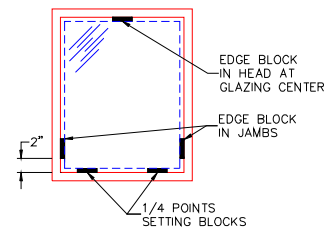
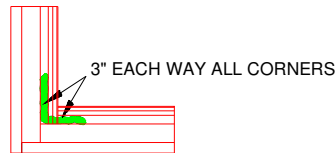


Figure 18

2. Alternate Glazing Procedure or FBC (Florida Building Code).

- Before glazing, apply a continuous bead of sealant to the exterior leg of the frame as shown in Fig. 19.
- After glazing, apply a continuous bead of sealant to the exterior frame and glass as shown in Fig. 20.

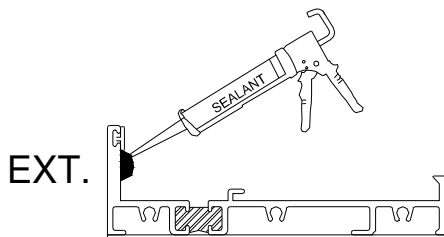


Figure 19

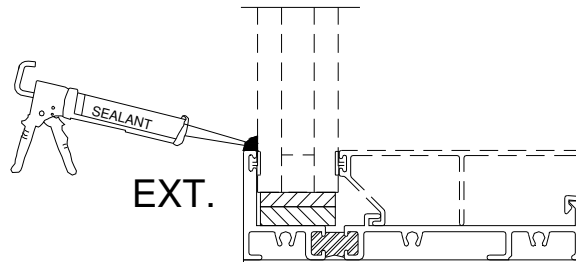


Figure 20