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

Tool Requirements: Tape measure, Level, Shims, Nails, Screws, Sealant, Caulk Gun, Backer Rod, 5/32 Allen Wrench, 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 door framing, finish and surrounding materials.
- The size of all sealant beads must meet or exceed the sealant manufacturer’s minimum size requirements.
- Some exterior wall finishes require additional sealing between the perimeter of the door 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, and compatible with the door framing, finish and surrounding materials.

Anchor Instruction

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. 12 screws shall be used. When direct mounted or mounted with spacer to block/concrete, 1/4" concrete screws shall be used. Proper material shall be used between all dissimilar materials (block/concrete & aluminum).

Substrate	Anchor Type	Embedment (In.)	Edge Distance (In.)	Head / Sill O. C. Distance (In.)	Jamb O. C. Distance (In.)	Corner Distance (In.)	Concentrated Area (Qty.)
Wood	# 12 Wood Anchor	1.5	0.75	14	16	6	6
Concreted / Masonry	3/16" ITW Tapcon	1.25	2.5	14	16	6	6

Table I: Recommended Frame Anchor for 15 PSF

II. Structure Verification

1. Sillpan Substitution

- a. 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.

2. Opening Verification

- a. 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 1/4" in height.
- b. Remove the door(s) from the packaging and lay it in front of the opening. Check width and height dimensions.
- c. Remove key from temporary location on lock jamb (outside).
- d. Verify the opening is plumb and level.

3. Pre-Fit and Leveling

- a. Place sillpan into the opening and determine any leveling that must be done prior to installation.
- b. 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.
- c. 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.

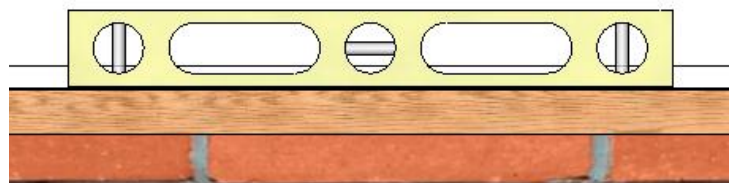
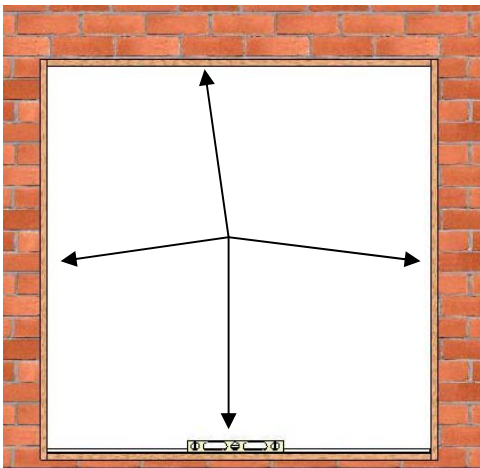


Figure 1: Use level to determine if the opening is plumb and level

III. Sillpan¹ Installation (Skip if ADA Sill)

- 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).

- b. With bottom side of sillpan 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.

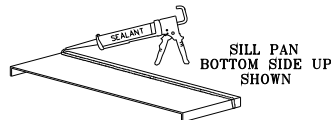


Figure 2

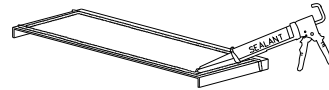


Figure 3

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

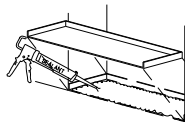


Figure 4

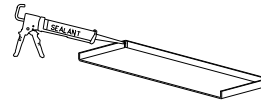
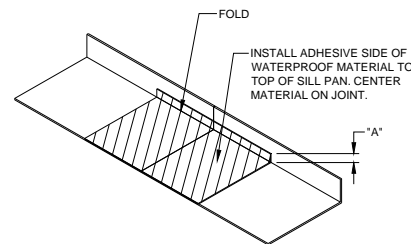
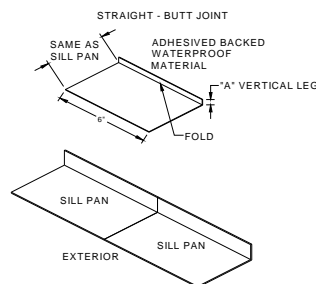


Figure 5

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

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).

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, $A = 1/4"$. *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.*



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.

¹ Sillpan refers to a factory provided aluminum pan (or equivalent).

IV. Frame Installation

Fleetwood recommends countersink all frame anchors

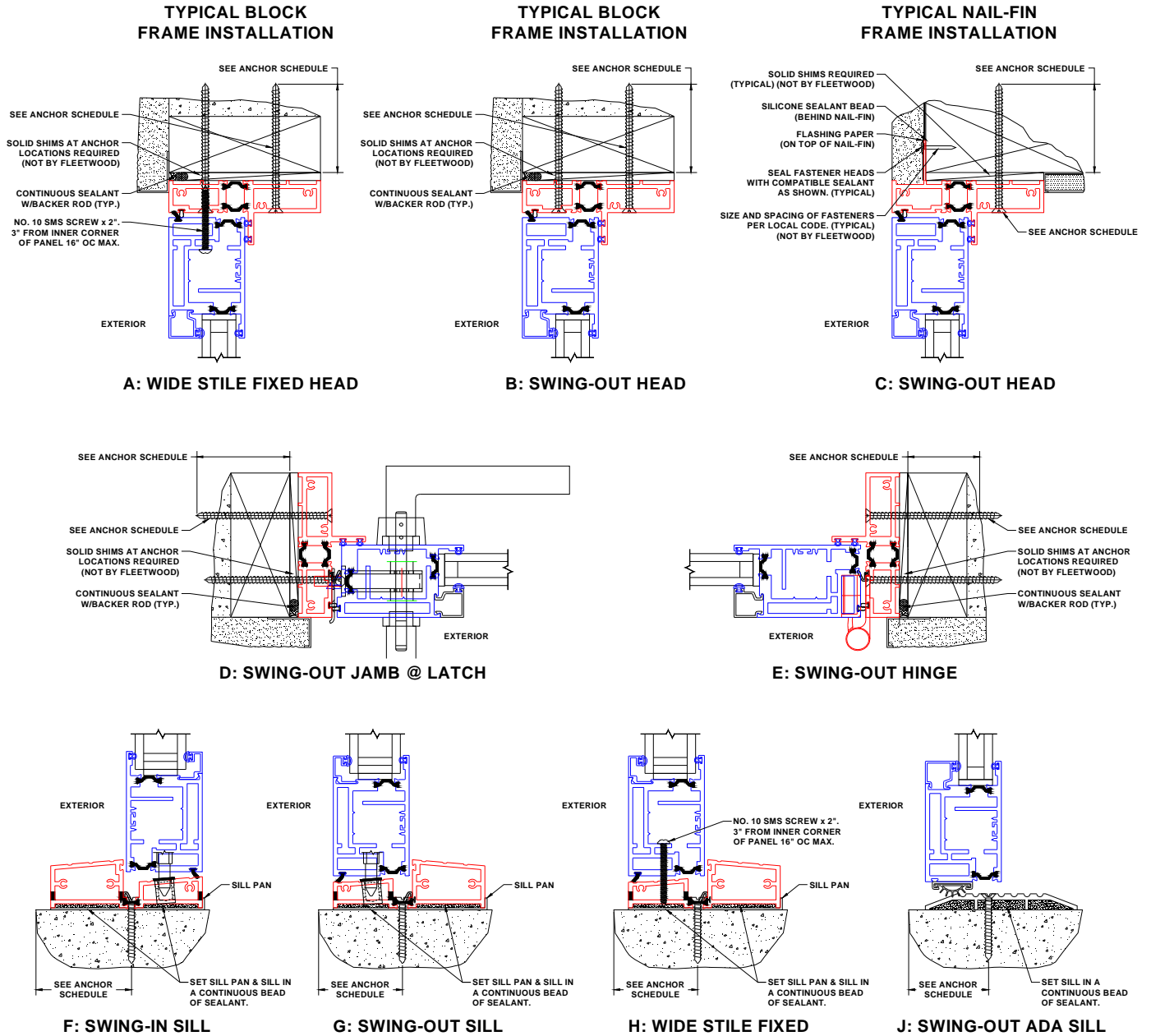


Figure 6: Anchor Location and Sealant Installation

Nail-fin Frames

Note: Glass from transom and sidelight should be removed before continuing. Glass will be re-installed after frame installation.

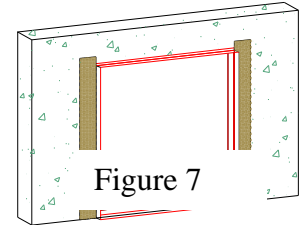
1. Check the measurements of the opening and make sure that the door frame you have will fit the opening.
2. The flashing referred to in this document is Moistop paper flashing but may refer to other code compliant flashing material that conforms to Federal Specification UU-B-790a, Type 1, Grade A, Style 4. When using Moistop paper, the strips of 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 door frame jamb and sill join. Sealant must cover the entire joint (from the flange to the inside leg of the door) and extend 1 1/2" up the jamb and along the sill.
4. Apply compatible sealant to the underside of the frame sill, and the screw holes in the sill. Apply the sealant as far to the outside of the opening as possible.
5. Immediately prior to installing the frame, apply a continuous 1/2" bead of compatible sealant to the backside (interior) of the mounting flange (nail-fin) at the jambs and head.
6. Insert the door into the opening and set the sill in a full bed of sealant (See Fig. 6). 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)
7. Anchor Location, Sealant and Wall Condition

Frame installation anchors furnished by installer, not by Fleetwood. Stainless steel screws are recommended. (See Recommended Frame Anchor Schedule). Fleetwood recommends countersink for all frame anchors.

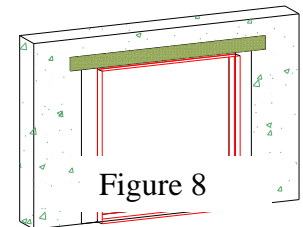
 - a. Secure the jamb to the trimmer with the screws provided (#8 x 2" stainless steel counter sink head). Seal all fastener heads during installation with sealant.
 - b. If required for design pressure, fasten head, jambs, sill with screws in Table I for details.
8. The installer is responsible for the 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.

9. 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.

A. Once satisfied that the door 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 door. Also, apply sealant at corners of the frame, the full length of the seam where mounting flanges (nail-fins) meet.

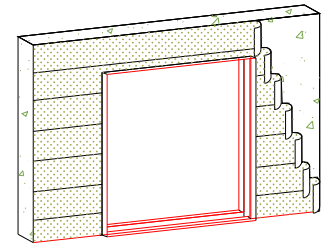


B. At each jamb, embed the flashing paper into the sealant on the mounting flange and fasten into place. The flashing paper should be cut sufficiently long enough to extend at least 3 in. past the weep-screed or diado flashing and at last 6 inches above the head of the door. (See Fig. 7)



C. Finally, at the door 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. 8)

D. Weather resistant building paper should be applied in a weatherboard fashion to complete the installation.



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.

Block Frames

Note: Glass from transom and sidelight should be removed before continuing. Glass will be re-installed after frame installation.

1. Prepare the opening to accept the door frame ensuring that the door frame will fit the opening.
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 door frame jamb and sill join. Sealant must cover the entire joint (from the flange to the inside leg of the door) and extend 1 1/2" up the jamb and along the sill.
3. Apply compatible sealant to the underside of the frame sill, and the screw holes in the sill. Apply the sealant as far to the outside of the opening as possible.
4. Insert the door into the opening and set the sill in a full bed of sealant (See Fig. 7). 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, Sealant and Wall Condition**
Frame installation anchors furnished by installer, not by Fleetwood. Stainless steel screws are recommended (See Anchor Schedule). Fleetwood recommend 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.
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.

V. Glazing Instructions and Panel Mounting Instructions.

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 the glazing process.
2. Fixed -Wide Stile:
 - Fasten inner panel to outer frame with # 10 x 2" fasteners provided (see Fig. 6A, 6H).
 - Apply a 3" bead of compatible sealant from each corner on inner flange of panel frame.
 - Install glass setting blocks (total 6 pcs per panel) at ¼ points into each jamb, head and sill for all four corners (see Fig. 10).
 - Install glass to panel frame then install glass stops (see Fig. 10).
3. Door: Install panel(s)
 - Apply a 3" bead of compatible sealant from each corner on inner flange of panel frame.
 - Install glass setting blocks (total 4 pcs per panel) at ¼ points into jamb, head and sill for hinged lower corner and opposite upper corner.
 - Install glass to vent then install glass stops (see Fig. 11).
 - Install the door panels to outer frame (see Fig. 11).
 - See Appendix A page 10 for hardware adjustment.
 - When TDL bars exist and additional protection from water is needed, apply a cap bead of sealant to horizontal TDL bars.

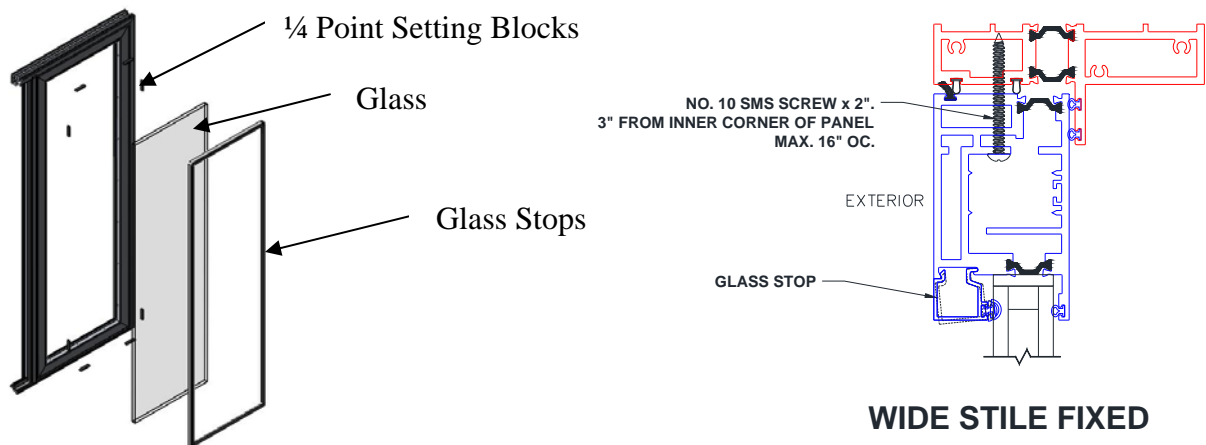


Figure 10: Panel Glazing Illustration-Wide Stile Frame Shown

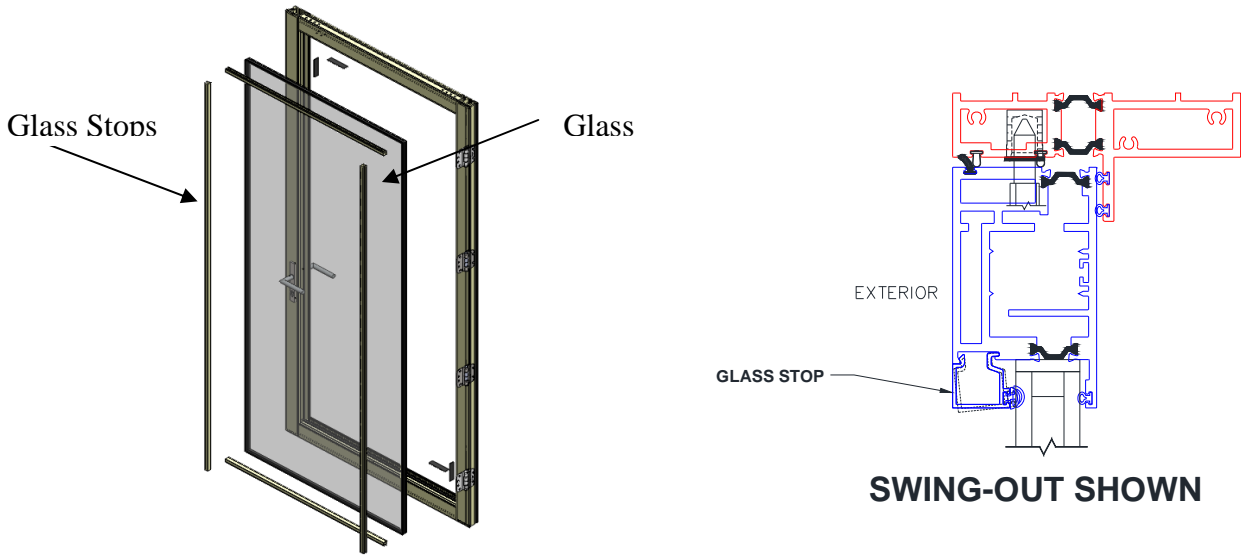


Figure 11: Panel Glazing Illustration

4. Inside Glaze (Side Lite & Transom)

- Apply a continuous bead of sealant before and/or after glazing. (Figure 12).

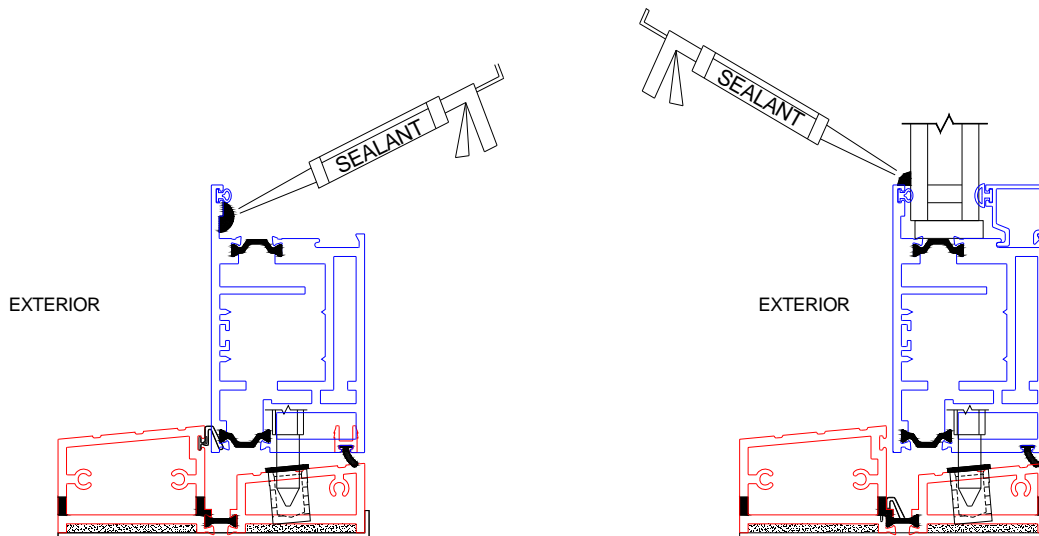


Figure 12

Appendix A: Hinge Adjustment

No power tools, Hand tools only.

Required Tools: 5/32 Hex-L Key

1. It is recommended that lateral and height adjustments be performed with the door in the opened position.
2. Adjust the door as instructed below.
3. Close the panel(s) to check the gaps and make more adjustment if needed.

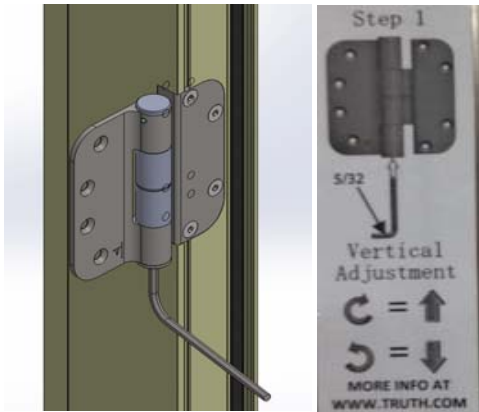


Figure 12: Vertical Hinge Adjustment
The maximum torque: 32 in-lbs (512 in-ounces)

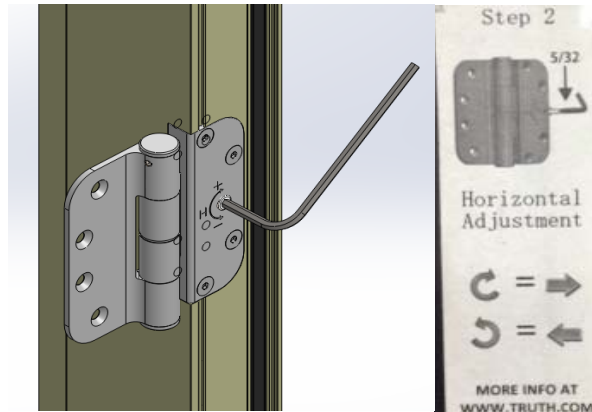


Figure 13: Horizontal Hinge Adjustment
The maximum torque: 12 in-lbs (192 in-ounces)

Note: If hinge replacement is necessary, back up plates (inside frame) have been permanently attached. Hinges can be removed and remounted.

Appendix B: Stucco Surround Application (Optional)

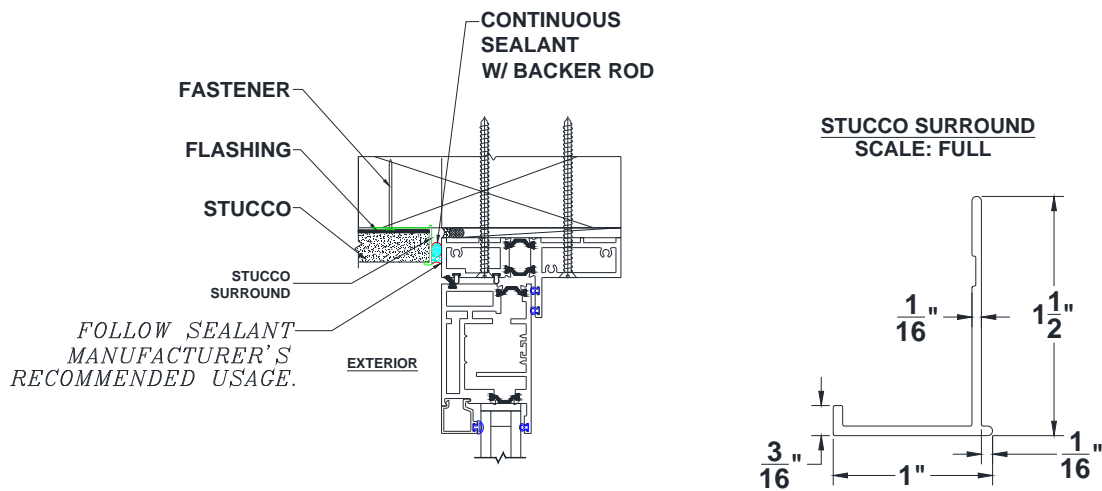


Figure 14: Stucco Surround Detail and Extrusion

Appendix C: Panel Squaring

Corner Key Nut

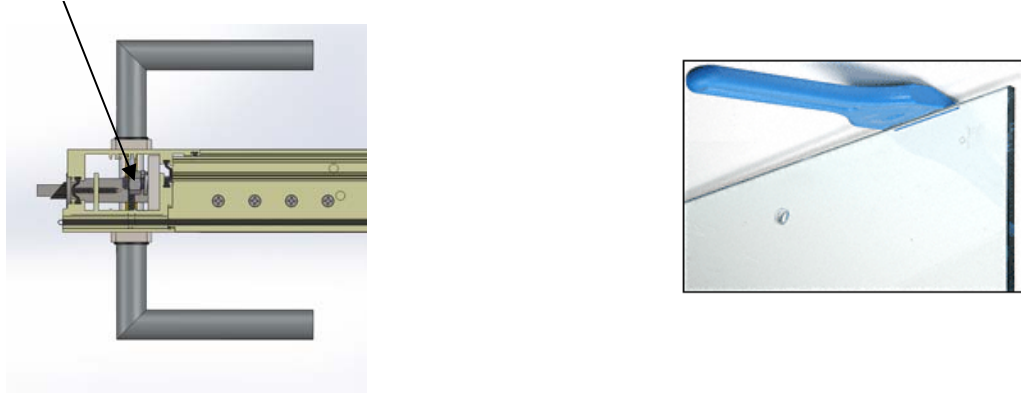


Figure 15: Corner Key Nut Detail

Instructions

Required Tools: 9/16" wrench, pliers, tape measure, shim, plate glass lifting tool.

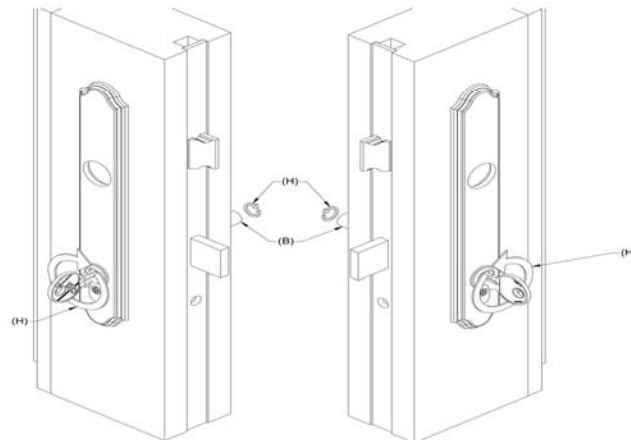
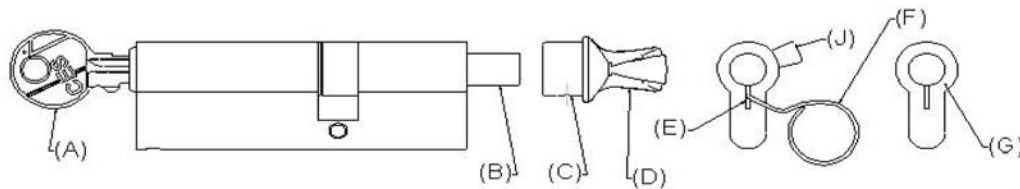
1. If panel hits the sill due to the weight of glass/panel.
 - a. Make sure the frame is squared before any adjustment to panel.
 - b. Adjust the hinges to bring the upper corner toward the hinge jamb, and the lower corner away from the hinge jamb. See "Appendix A: Hinge adjustment".
 - c. If the problem is solved, stop here.
 - d. Lay panel on table and check distance of both diagonals. If they are not the same, the panel is not square.
 - e. Remove thermal barrier (T shape bar).
 - f. Loosen nuts at 4 corners (2 turns), use plate glass lifting tool and add additional shim(s) to the top of the panel opposite of the hinge, between the glass and vent top rail.
 - g. Check diagonal distances, gap of panel to frame.
 - h. Tighten corner key nuts.

2. If panel hits the head.
 - a. Make adjustment while panel is hanging on frame.
 - b. Adjust the hinges to bring the upper corner toward the hinge jamb, the lower corner away from the hinge jamb.
 - c. If the problem is solved, stop here.
 - d. Remove silicon/ foam at the end (top) of vertical stile.
 - e. Loosen nuts at 2 top corners (2 turns), use plate glass lifting tool and remove/replace with thinner shim(s) to the top of the panel opposite of the hinge, between the glass and vent top rail.
 - f. Check diagonal distances, gap of panel to frame.
 - g. Tighten corner key nuts.

Appendix D: Cylinder Installation/Removal*

1. Loosen setscrew (C) on knob using the Allen wrench provided.
2. Remove knob (D) from body of cylinder (B).
3. The drive tab (J) must be aligned with the cylinder to install the cylinder into the lock mechanism. If the tab cannot be rotated to this position, push the pin (E) down with the ring wrench (F) included to disengage the stops and turn the cylinder shaft (B) until the drive tab (J) is aligned with the cylinder (G).
4. Holding in this position, insert the cylinder body into door so the tab on the cylinder is inside of the lock.
5. Rotate the shaft (B) that the thumb turn attaches to so that the top of the post moves toward the edge of the door or insert the key (A) into the cylinder and rotate so the top of the key moves towards the edge of the door (H). This will extend the deadbolt. If the post or key is rotated the wrong direction, it will rotate approximately 120 degrees and lock up where it cannot be rotated in either direction. If this happens, push the pin (E) down with the ring wrench (F) included to disengage the stops and turn the key (A) in the opposite direction until the deadbolt extends.
6. Fix knob (D) horizontally on cylinder shaft (B) with setscrew hole (C) downwards.
7. Tighten setscrew (C). Install cylinder screw.

TO REMOVE CYLINDER: Loosen and remove cylinder screw and repeat steps 1-4 above.



*www.us.hoppe.com