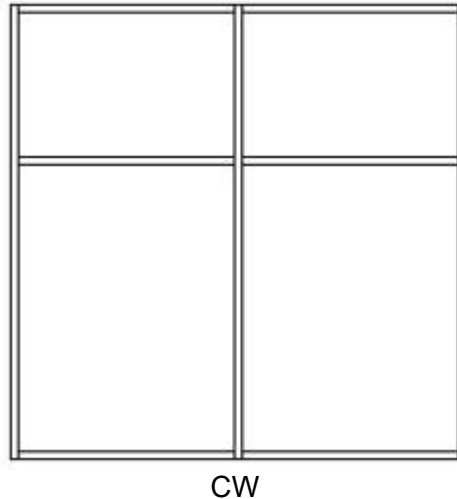

INSTALLATION MANUAL – 120min. CURTAINWALL OPENINGS



SYSTEM DESCRIPTION

- Extruded and filled aluminum curtainwall framing, tested and approved by UL/Intertek
- Fire-rated safety glazing

REQUIRED TOOLS

- Power drill
- Heavy-duty glass handling tools
- Rubber mallet
- Knife
- Tape measure
- Level

REQUIRED MATERIALS (NOT PROVIDED BY ALUFLAM)

- Mineral wool insulating material
- For exterior applications, Dow 791 and CRL Clear 33S Silicone Sealant or equivalents suitable for metal finish & substrate conditions
- UL Listed Fire Caulk Sealant (such as 3M Fire Barrier Sealant 1000NS, Dow 790 or equivalent) for finishing perimeter caulk joint
- 1/4" x 3" / 4" zinc-coated flat head sheet metal screws / concrete screws for substrate anchoring (or anchors determined by Engineering Analysis)

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GENERAL INSTALLATION NOTES

1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If forklifts are used, be especially careful about striking the boxes when lifting or moving.
2. Store in a dry, out of the way area. If rain exposure, condensation or any water contact is likely, then all packaging material should be removed. Wet packaging materials will discolor and may stain aluminum finishes and paints.
3. All materials should be checked for quantity and quality upon receipt. Aluflam must be contacted immediately of any discrepancies in shipment. Check to make sure that you have the required supplies and tools necessary for the installation.
4. Carefully check the openings and surrounding construction that will receive your material. Remember, if the construction is not per the construction documents, it is your responsibility to notify the general contractor in writing. Any discrepancies must be brought to the general contractor's attention before you proceed with the installation.
5. Collect your shop drawings, materials, packing list, and this installation manual. Carefully review parts location, the sequence of installation, when you glaze it, and how you seal it. Installation instructions are of a general nature and may not address every condition you will encounter. The shop drawings were prepared specifically for the project.
6. Any material substitutions must be of equal or greater quality. Consult Aluflam prior to substituting any material to ensure that the products' fire ratings are not violated.
7. Remember to isolate, in an approved manner, all aluminum from uncured masonry or other incompatible materials.
8. System-to-structure fasteners are not supplied by Aluflam. Fasteners called out on shop drawings are to indicate minimum sizes.
9. If any questions arise concerning Aluflam products or their installation, contact Aluflam for clarification before proceeding.
10. Aluflam product installation is frequently completed before drywall, flooring and other products. Take the extra time to wrap and protect the installed material.
11. Cutting tolerances are $\pm 1/32"$, unless otherwise specified.
12. Concrete, mortar, plaster, muriatic acid and other alkaline and acid based construction and cleaning materials may be very harmful to frame finishes and should be removed with water and mild soap immediately or permanent damage or staining of the finishes may occur. A spot test is recommended before any cleaning agent is used, and abrasive type cleaners must never be used.
13. Frames are never to be used as ladders, step stools, scaffolds or scaffold supports.

14. All work must start from, and be referenced to benchmarks, offset lines and/or column centerlines established by the architectural drawings and the general contractor.
15. All frames must be installed plumb, square, level and true, and in accordance with approved shop drawings.
16. Glass and glazing building codes governing the design and use of products vary widely. Aluflam North America, LLC does not control the selection of the products, product configurations, operating hardware and function, or glazing materials, and Aluflam assumes no responsibility for these design considerations. It is the responsibility of the design professional, owner, architect, specifier, general contractor, and the installer to make these selections in strict accordance with all applicable codes.
17. The exterior curtainwall frame system is designed so that any moisture that penetrates the exterior plane drains down the vertical profiles and out at the sill. The horizontal mullions are notched and fit between the vertical mullions. This allows for any moisture that enters the system to move across the horizontal members and then down the vertical members.
18. Weatherproofing performance requirements shall be determined by the design professional, owner, architect, specifier, general contractor and or installer. All parties should develop an approach that satisfies the performance requirements of the project. Weatherproofing the frames shall be the responsibility of the installer. It is recommended to perform field water tests on initial mock-up installation(s) to confirm performance and adjust as necessary before installing the rest of the frames and glass.

INSTALLATION

STEP 1 DETERMINE FRAME REFERENCE POINT

Establish the frame reference lines or the exterior/interior plane of the frames to be installed using either bench marks, offset lines, or column centerlines provided by the general contractor and referenced on the shop drawings. Use the established reference points to determine the installation points for each frame opening at the head, and jambs.

STEP 2 UNPACK FRAME

- a. Remove loose components, such as pressure plates, intumescent strips, gaskets, covers, fasteners, etc, and set aside in a well protected area.
- b. Carefully lift frame out of packaging. At this point, the frame joints are unprotected. Handle the frame with extreme care to avoid separation of corner joints.

STEP 3 MULTIPLE FRAMES

- a. In the case of attached, multiple frame sections – assemble the frame sections into larger units prior to installing into the wall opening.
- b. Lay out all frames to be attached on a smooth, dry surface. Ensure that frames are well protected from abrasion and impact. Strips of wood are very suitable for this purpose.
- c. Install aluminum angle brackets on vertical frames at pre-drilled locations with factory supplied screws. - (#10 zinc-coated pan head sheet metal screws) See figure 1-2

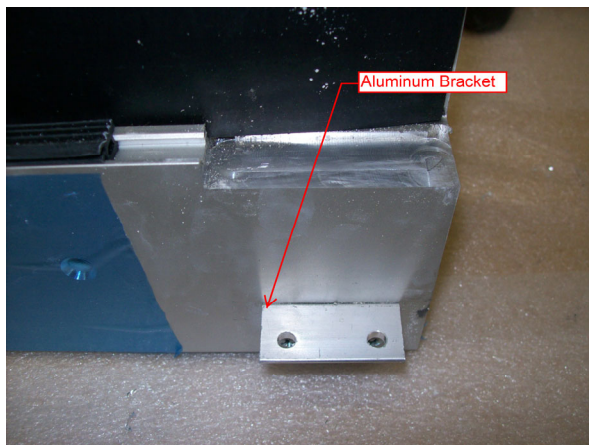


Figure 1

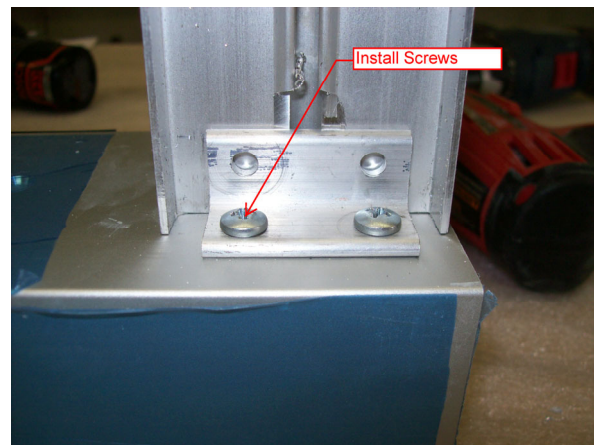


Figure 2

- d. Attach horizontal frame sections to vertical frames by drilling 2 each. 5/32 holes. See figure 3. Install factory supplied screws. - (#8 zinc-coated flat head sheet metal screws.) See figure 4.

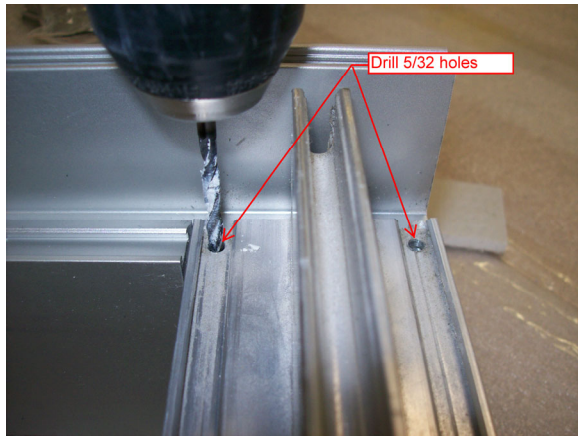


Figure 3

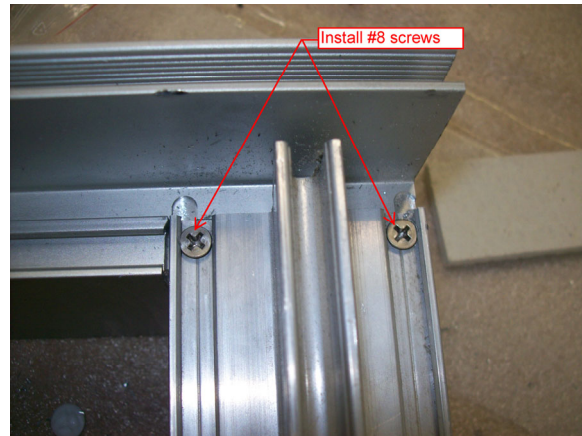


Figure 4

Note: On the perimeter frames, factory installed Promatec strips must be removed in order to install the screws into vertical frames. After drilling 5/32 holes and installing 2 each. #8 screws, the Promatec strip must be re-attached. See figure 5.

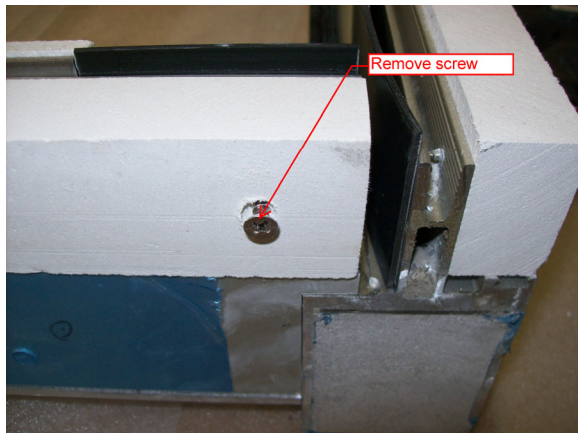


Figure 5

- e. Carefully turn over the assembly and secure the system by drilling 2 each. 5/32 holes through the aluminum bracket and install factory supplied screws (#10 zinc-coated pan head sheet metal screws)
- f. Snap on covers.

Note: For larger openings that cannot be assembled and installed in one piece, it is recommended to first install the vertical frame sections. Then attach the horizontal frame sections to the vertical frames as described above.

NOTE: For exterior applications, follow instructions below:

Apply Dow 791 Silicone Sealant or equivalent, to surfaces as shown in Figure 7 and 8 below:

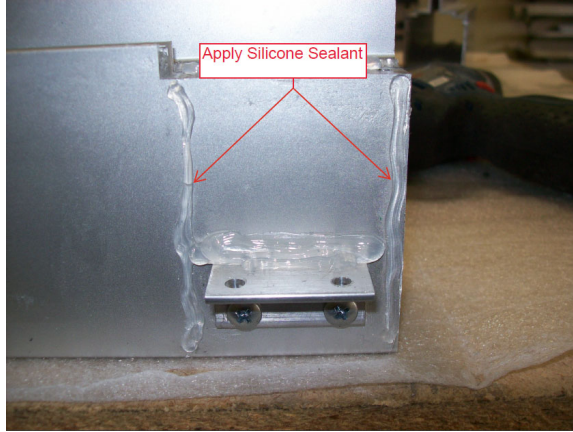


Figure 7



Figure 8

Slide horizontal members as shown in Figure 9-10. Secure joints as described above.



Figure 9



Figure 10

Tool/wipe off excess silicone as needed.

Cut vertical and horizontal gaskets to length. Apply Dow 791 Silicone Sealant or equivalent, in corner where the gaskets connect as shown below in Figure 11 and 12.



Figure 11

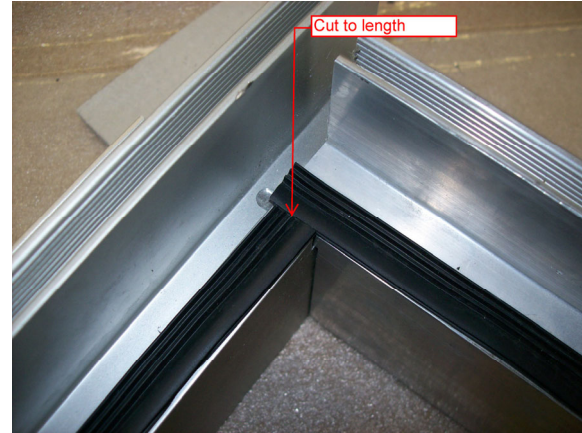


Figure 12

STEP 4 INSTALLATION OF FRAME

- a. Install the frame plumb, square, level and true.
- b. Measure the size of the frame and ensure that it meets the dimensions referenced on the shop drawing.
- c. Anchor the frame to surrounding fire-rated structure using structurally sound anchoring method. (Perimeter bolting, bolted to steel channels, etc.). To prevent twisting of vertical mullion and separation of horizontal to vertical joints, install solid blocking between surrounding condition substrate and frame adjacent to all perimeter anchor locations prior to securing anchors tightly.

Note: System-to-structure fasteners are not supplied by Aluflam. Fasteners called out on shop drawings are to indicate minimum sizes.

- a. For exterior applications, add Clear Silicone into pre-drilled anchor holes before securing anchors. After securing anchors, clean/wipe off excess silicone.
- d. Ensure that frame dimensions have not changed.

STEP 5 PREPARE FOR GLAZING

- a. Inspect the factory installed gaskets in the frame opening and make sure they haven't shifted during installation.
- b. Make sure intumescent band does **not** cover the stainless steel glazing bridges. If needed, cut the band. See Figure 13.
- c. Place setting blocks on top of stainless steel glazing bridges. See Figure 14. Make sure that setting blocks do not protrude past the thickness of the glass, once installed.

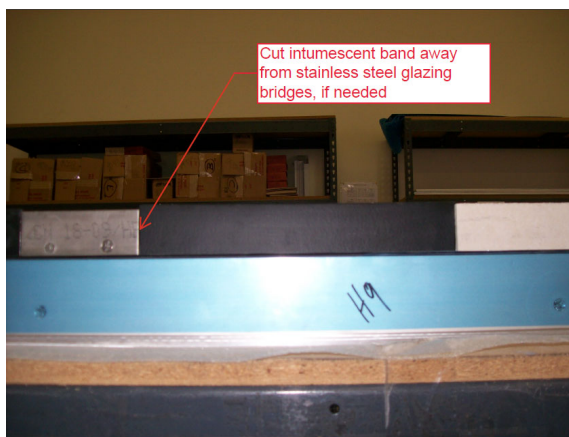


Figure 13



Figure 14

STEP 6 GLAZING

The Contraflam glass products that are used in Aluflam frame systems are heavy and fragile. Make sure that proper tools and lifting capacity is available prior to opening glass crate.

Avoid impact with any metal objects and avoid setting the glass down directly onto floor. Use wood strips or other suitable material for setting down the glass section prior to installation.

For full instructions on handling and installing glass, please refer to Vetrotech Saint-Gobain's installation instructions.

- a) Center the glass in the frame opening and carefully set the unit down onto the setting blocks.
- b) While supporting glass in place, attach pressure plates at pre-drilled locations with factory supplied screws. - 6.2mm (1/4") pan head sheet metal screws.
 - a. For exterior applications, add silicone to fill gap between vertical and horizontal pressure plates. See Figure 15

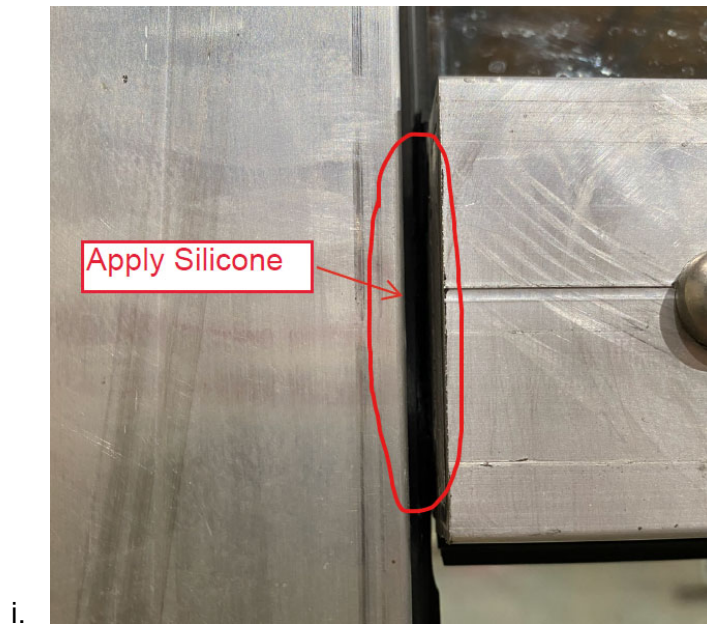


Figure 15

c) Snap on covers.

- a. For exterior applications, apply clear silicone at corners where gaskets meet and fill gap between vertical and horizontal snap on covers. Clean/wipe off excess. See Figure 16

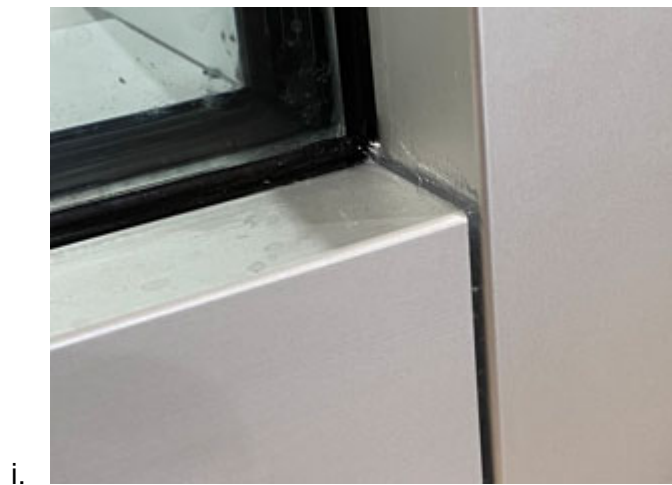


Figure 16

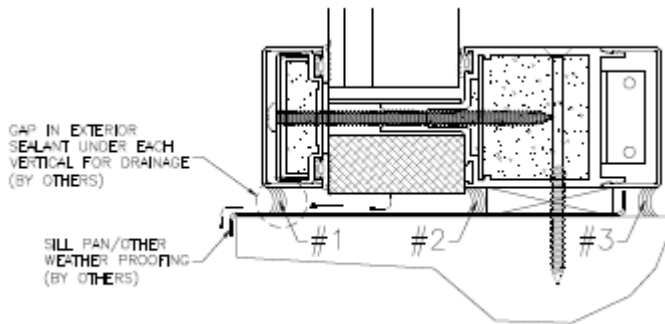
NOTE: For exterior applications, follow instructions below:

For exterior installation, it is critical that the fire glass portion of the IGU is facing the interior, temperature-controlled space. IGU Glass units should be labeled with a "THIS SIDE IN" sticker from the Vetrotech (Glass) factory, but if not, when viewed from the edge of the glass unit, you should be able to distinguish the thicker fire glass portion separated by a spacer from the thinner Low-E outboard lite. Also, the fire glass portion will have a certification label which should be facing the interior.

In addition, if there is a breather tube for an IGU airspace, make sure to crimp the tube prior to installation to prevent moisture from getting into the airspace.

**STEP 7
FINISHING**

- a. Fill gaps around frame with mineral wool insulating material. Pack as tightly as possible.
- b. Finish gaps by applying a continuous bead of UL Listed Fire caulking at locations #2 and #3 below. Use 3M Fire Barrier Sealant 1000NS or equivalent other UL Listed sealant. Seal #1 only should have gaps under the vertical caps and pressure plates to allow for drainage.



- c. Clean glass units using mild glass cleaner. For further information, refer to Vetrotech's glass cleaning and maintenance instructions.