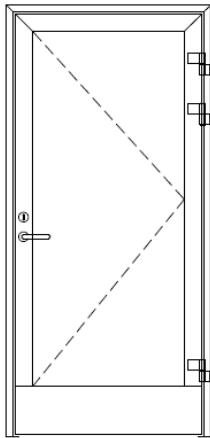
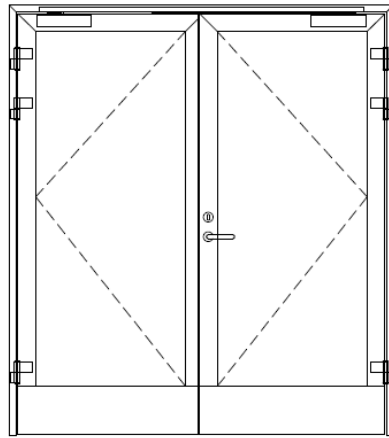


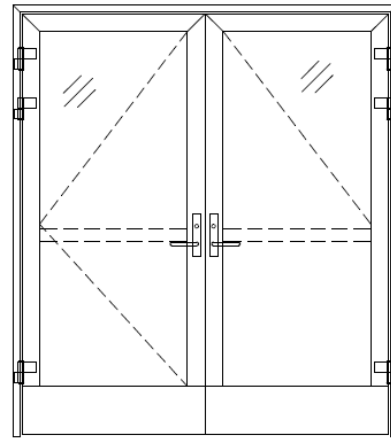
INSTALLATION MANUAL – STOREFRONT DOORS



SD



DD-AF (Active/Fixed)



DD-AA (Active/Active)

SYSTEM DESCRIPTION

- Extruded and filled aluminum framing, tested and approved by UL
- 3-3/8" frame depth
- Clear, fire-rated safety glazing
- Door hardware per shop drawing

REQUIRED TOOLS

- | | |
|-----------------------------------|---------------------------|
| - 1/2" open wrench | - Metric allen wrench set |
| - Power drill with 3/16" drills | - Knife |
| - Heavy-duty glass handling tools | - Tape measure |
| - Non-metal hand wedges | - Level |
| - Gasket roller | - Rubber mallet |
| - C-clamps | |

REQUIRED MATERIALS (NOT PROVIDED BY ALUFLAM)

- Mineral wool insulating material
- UL Listed Fire Caulk Sealant (such as 3M Fire Barrier Sealant 1000NS or equivalent, i.e. DOW 790)
- 1/4" x 3" / 4" zinc-coated flat head sheet metal screws / concrete screws (or anchors determined by Engineering Analysis) for substrate anchoring.

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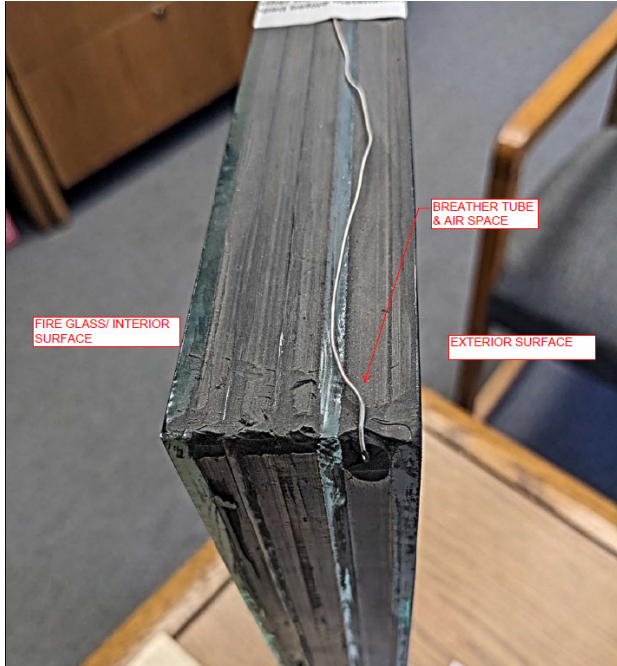
GENERAL INSTALLATION NOTES

1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If fork lifts 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. Aluflam framing products are prefinished and prefabricated and must be protected against damage.
13. Concrete, mortar, plaster, muriatic acid and other alkaline and acid based construction and cleaning materials may be very harmful to door 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.

14. Doors are never to be used as ladders, step stools, scaffolds or scaffold supports.
15. 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.
16. All doors and frames must be installed plumb, square, level and true, and in accordance with approved shop drawings.
17. 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.

NOTE:

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 “THIS SIDE IN” sticker from the Vetrotech (Glass) factory but if it is not, look for the breather tube placed in the airspace. This will be closer to the exterior surface of the glass and the Low-E outboard lite and should be put toward the exterior. See example photo below.



In addition, the breather tube, which is in place to regulate pressure in the air space during shipping, must also be cut, folded over and crimped prior to installation, to prevent moisture from getting into the airspace.



INSTALLATION

STEP 1

DETERMINE DOOR FRAME REFERENCE POINT

Establish the door frame reference lines or the exterior/interior plane of the doors 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 door frame opening at the head, and jambs.

STEP 2

UNPACK DOORS AND FRAME

The Aluflam door systems are packaged for freight with the doors installed in the frame.

- a. Without removing the door frames from the freight container, carefully open door leaf 90° and remove from the hinges by sliding leaf toward top of frame.
- b. Set the door leaf aside in a well protected area, especially assuring that protruding trim hardware is well protected.
- c. Remove other loose materials, such as glazing beads, intumescent strips, seals, etc, and set aside in a well protected area.
- d. 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.

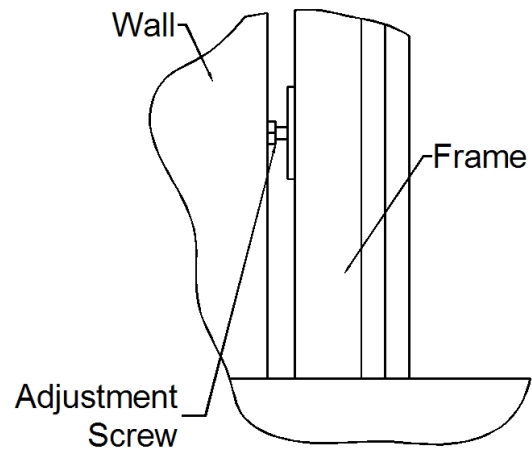
STEP 3

MULTIPLE FRAMES

- a. In the case of attached, multiple frames – assemble the frames prior to installing into the wall opening. See Figure: Typical Frame-to-Frame Joint Detail.
- 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. Insert frame splines (2 per joint) into narrow groove on outside edge of frame to be joined. Splines may be lubricated with liquid soap for ease of insertion. Assure that frames line up length-wise and secure using c-clamps.
- d. Anchor joints through factory pre-drilled holes with Aluflam provided ¼" x 3-1/4" long concrete anchors. If installing into a surrounding curtainwall opening (sidelites/transom), it is recommended to pre-drill pilot anchor locations into surrounding framing using the factory pre-drilled frame holes as guides. Use 3/16" drill bit. This is not necessary if installing to adjacent Storefront framing, only curtainwall.

STEP 4 INSTALLATION OF FRAME

- a. Detach wood/metal strip connected to lower end of frame.
- b. Install the frame plumb, square, level and true.
- c. Gradually and evenly back out all adjustment screws with $\frac{1}{2}$ " open wrench (see detail). Be careful to not cause frame distortion due to excessive adjustment.
- d. Measure the size of the frame and ensure that it meets the dimensions referenced on the shop drawing.
- e. Drill anchor locations into surrounding structure using the factory pre-drilled frame holes as guides. Use $\frac{3}{16}$ " drill.
- f. Insert solid and tightly fitting, non-combustible blocking/shims between frame and surrounding structure to prevent frame from twisting when anchors are installed.
- g. Anchor the frame to the wall opening at all pre-drilled anchor locations.
- h. Ensure that frame dimensions have not changed.



STEP 5 INSTALLATION OF DOOR LEAF

- a. Install door leaf by aligning the hinges and lowering the leaf into position
- b. Assure that the door leaf swings freely and that it opens and closes without interference.

STEP 6 PREPARE FOR GLAZING

Aluflam doors require "Corner Blocking" for proper operation.

- a. Inspect the factory installed intumescent glazing tape in the frame opening and make sure it hasn't shifted during installation.
- b. Place setting block on top of steel angle bracket at location 1.

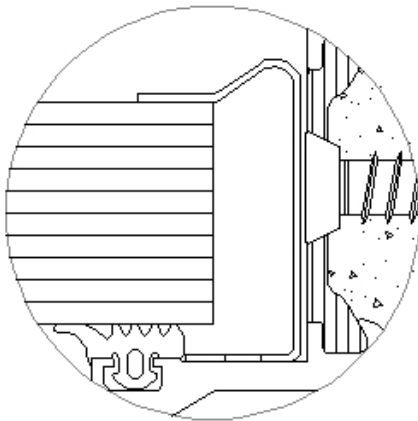
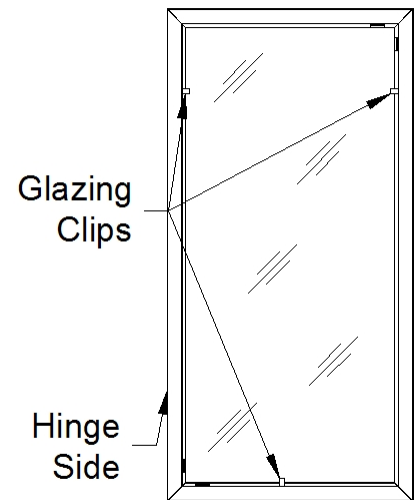
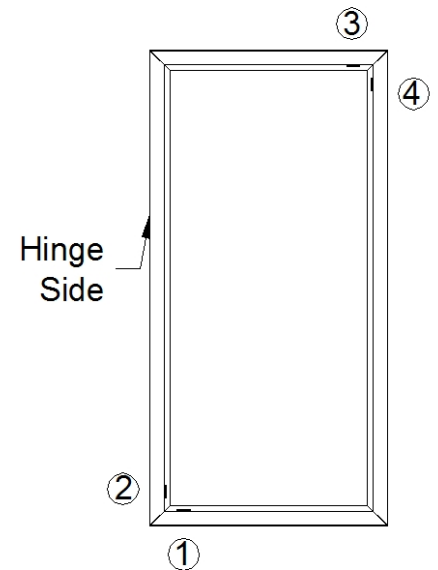
STEP 7 GLAZING

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

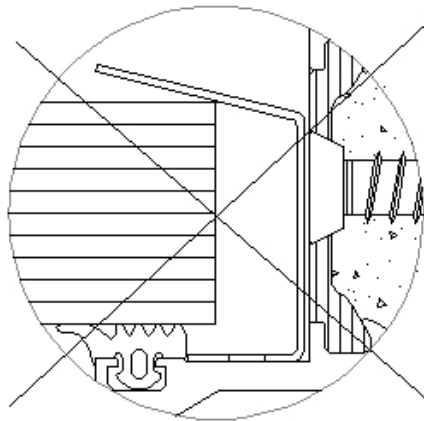
Avoid impact with any metal objects and avoid setting the glass down directly onto floor. Use wood strips or other suitable material for setting down the glass section prior to installation.

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

- Center the glass in the door leaf and carefully set the unit down onto the setting block at location 1.
- Install setting blocks between glass unit and steel angle brackets at locations 2, 3, and 4. If necessary, use non-metallic prybar to slightly shift glass position.
- While supporting glass in place, secure it by manually bending stainless steel glazing clips in three locations (see figure).
- Proper corner blocking of the glass is key to the performance of the door. Carefully operate door leaf to assure that it opens and closes freely. If necessary, adjust door clearances by adjusting blocking of glass units and/or adjusting the hinges (see separate hinge instructions).
- Permanently fix the glass unit by bending remaining stainless steel glazing clips. Once clips are bent over, use a piece of wood or something soft and a rubber mallet and gently tap at the pre-bent end of the stainless clip, parallel to the surface of the glass, toward the frame perimeter, this will bend the clip further in and create a small "Hump" in it. It should be able to be pushed far enough toward the frame to not interfere with the wedge gasket. These clips do not need to be tight against the glass, they are there in the case of a fire on the glazing side and the stops melt away, they hold the glass in place. See illustration below. **(DO NOT USE METAL TOOLS)**
- Snap in glazing beads on all four sides of leaf. If necessary, use mallet or other non-metal tool to force glazing beads into place.
- Install glazing gaskets.



YES



NO

STEP 8 HARDWARE

Attach door closers and other remaining hardware per shop drawing and hardware installation instructions. Unique hardware conditions related to Aluflam frame system are outlined below:

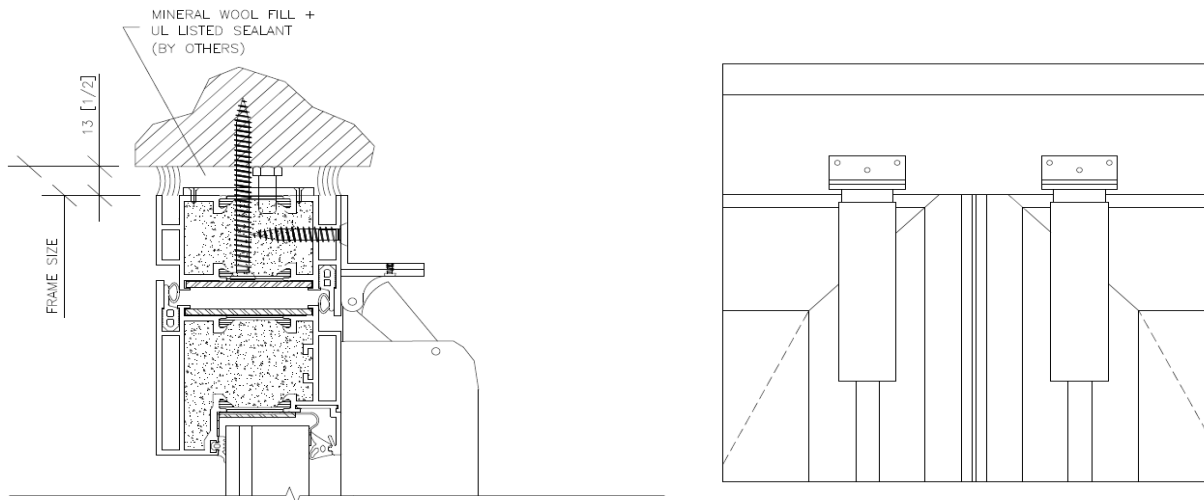
- a. Dorma TS93 closers are our standard and most commonly used. For in-swing doors or specifically requested PULL side closer mounting, follow instructions provided with closer. Most commonly though, on out-swing doors, closers are prepped for mounting on the PUSH side of the doors. This will be a 180-degree inverse of what those instructions say. For example, the drop plate has arrows on it, per standard manufacturer installation instructions, they point up. For Aluflam standard PUSH side mount, they will point down. All other adjustments etc. are per manufacturer provided instruction. Contact Tech Support for any product specific questions or issues; contact number is on provided documentation and listed below in Step 10.
- b. For single or active/fixed pairs of doors with rim panic devices, or active/active pairs with Von Duprin SVR panics, Aluflam provides custom strike mounting plates or angles. These WILL NOT come with the devices from the manufacturer but will be in the frame crate in separate generic cardboard box, generally with other accessories like setting blocks, gaskets etc. Example photos below of these mounting plates/angles:

RIM PANIC STRIKE MOUNTING PLATE

(Part #s vary for each manufacturer, refer to Aluflam Shop drawings for specific part #)



VON DUPRIN SVR PANIC STRIKE MOUNTING ANGLE



- c. For doors that are fitted/prepped for electrified hardware, i.e. electrified latches on panics or electric strikes, these electric components come with about 8-10" of wire and will be out on the door frames at the noted locations on our shop drawings calling out "wire access" and any wires will need to be run to them from the power supplies. Our frames are filled with a cement composite insulating material, so no wires/raceways can be run inside the frames. Wires can be run in different ways and they can be typically run in perimeter caulk joints where possible, before sealing up, or between frame to frame connections or through small holes drilled straight through

and into glazing pockets. Inside the glazing pockets is probably easiest, if perimeter caulk joints are not possible, and can be done after the frames are installed, if wires from the electrical components are pulled into the sidelite/transom frames as they are being put together. You can be creative and small holes, drilled perpendicularly, into glass pockets of adjacent sidelites or transoms, are fine.

- d. On Single and Active/Fixed doors with mortise locks and lever setup, the levers are attached to the door and operate with a 2-piece split/swivel steel spindle. This spindle needs to be installed into the door a certain way for proper operation. It must be inserted from the PUSH side, with the split first, ahead of the “pin”, and the pin pushed tight against the lock body. This should put the split in the correct place between the inner gears of the lock. If equipped with an Accurate 8656 mortise lock the toggle on the face of the lock, should lock the Secure Side handle when flipped. The other lever should always release the latch. Also, don't have the spindle pieces tightened up against each other, it will bind up and break the small threaded insert over time. The [2] pieces need to be at least a couple turns apart when inserted in the door and it should still operate properly. See provided additional installation instruction in Appendix A at the end of this document for photographic aid.
- e. The Auto floor seals (door bottoms) are fully retracted and tightened up in the factory during frame packing so they do not extend/activate or get damaged in shipping. Leave in this condition during installation and then extend/adjust the “plunger” as a last adjustment while finishing installation. These are adjustable up and down. See photo below. This is the end of the floor seal that will be toward the hinge side of the door. The white circular piece in the middle of it is the “plunger”, that hits up against a plate that is installed on the door frame, down toward the bottom, when the door is closed. This will drop the seal when pressed. Inside that center hole is a hex head adjustment screw, that will move it in and out and to a position where it will engage the plate and push down the seal. This will control how far up or down the seal will extend.



- f. The installed Dr Hahn Pivot hinges are adjustable vertically and horizontally. General adjustment direction is listed here but see supplemental instructions provided in the packet, from the manufacturer for full instructions.
 - i. When installing the doors & adjusting the pivots, the first thing is to obviously make sure the frame is square and plumb and not racked at all. Dimensions in the clear opening should be the same straight across the top and bottom as well as on the diagonal. Also, one other thing to verify; the glass must be blocked properly in the glazing pocket of the door otherwise this too could cause sagging/operational issues (see sections 6 & 7 above noting proper glass blocking.) These need to be done properly, otherwise no amount of pivot adjustment will fix sagging or out of square frames.
 - ii. The hinges are adjustable vertically and horizontally but must be “locked” after adjustment otherwise the weight/action of the door will cause them to sag. Not retightening the locking screws is typically the most frequent cause of doors sagging. There should be an 8mm (5/16”) gap between door and frame all around, including the bottom and a 2-3mm gap (approx. 1/16”-1/8”) between the leaves if they are pairs.
 - iii. A couple other recommendations from the pivot manufacturer that are not noted or called out in their instructions, that have been learned that may also help:
 - The door should be shimmed up in the needed position from underneath, taking the weight off the pivots before making horizontal adjustments. If you’re trying to adjust with the weight of the door on it, it could break the inner aluminum bushing that wraps the pin. If this breaks, the adjustments will no longer work, and the insides will need to be replaced. Once it’s shimmed, make the adjustments with the weight off the pivot, re-tighten the locking screws and then try removing the shims.
 - Don’t unscrew the locking screws more than 1/2 to 1 turn
 - The weight of the doors should be carried on the lowest pivot. There are vertical adjustments in the lower portion of the pivot so if the lowest ones can be tightened right up to the pin, then go and loosen the ones above a bit, that will be achieved.

STEP 9

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. Use 3M Fire Barrier Sealant 1000NS or other equivalent UL Listed sealant (i.e. DOW 790).
- c. Clean glass units using mild glass cleaner. For further information, refer to Vetrotech’s glass cleaning and maintenance instructions.

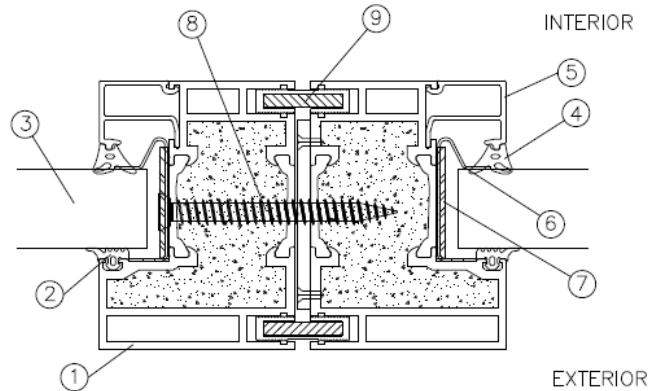
STEP 10

ADJUSTMENTS AND TECHNICAL SUPPORT

For adjustments to hinges, door closers, and other hardware – please refer to the manuals from the hardware manufacturers. General Hinge adjustment instructions are above and also provided in the packet in the frame crate by Aluflam. For closers, and panic devices, documentation from the manufacturers will be in the boxes for that hardware. For Technical Support for our standard Hardware (Dorma) and other most common manufacturer provided (Von Duprin/Allegion), especially regarding installation, setup or operation of Electric Function hardware, contact the Tech Support for these manufacturers directly:

- Dorma Tech Support # is 800.523.8483
- Von Duprin/Allegion Tech support #s are 877.671.7011 or 800.999.0408 (Press #2 at first menu prompt for Tech Support, then listen to menu for help on specific types of hardware, i.e. #3 for Electric strikes and Panics)

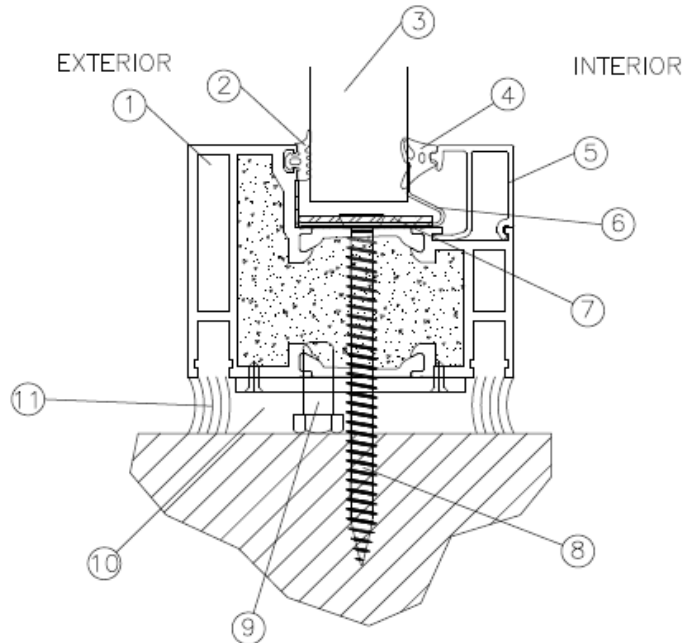
TYPICAL FRAME-TO-FRAME JOINT DETAIL **ALUFLAM STOREFRONT FRAME ASSEMBLY**



NOTES:

1. 2-7/16" x 3-3/8" (62 x 85mm) Aluflam Frame – Factory Assembled
2. Exterior Glazing Gasket – Factory installed by Aluflam
3. Fire Rated Glazing – Furnished by Aluflam (manufactured by Vetrotech)
4. Interior Wedge Gasket – Furnished by Aluflam
5. Glazing Stop – Furnished by Aluflam
6. Glazing Clip – Factory Installed by Aluflam, see Step 7e for bending instructions
7. Intumescent Glazing tape – Factory installed by Aluflam
8. 1/4" x 3-1/4" Steel Concrete screw – Furnished by Aluflam
9. Aluminum/PVC Wrapped Spline Connection bars – Furnished by Aluflam.

TYPICAL PERIMETER DETAIL **ALUFLAM STOREFRONT FRAME ASSEMBLY**



NOTES:

1. 2-7/16" x 3-3/8" (62 x 85mm) Aluflam Frame – Factory Assembled
2. Exterior Glazing Gasket – Factory installed by Aluflam
3. Fire Rated Glazing – Furnished by Aluflam (manufactured by Vetrotech)
4. Interior Wedge Gasket – Furnished by Aluflam
5. Glazing Stop – Furnished by Aluflam
6. Glazing Clip – Factory Installed by Aluflam, see Step 7e for bending instructions
7. Intumescent Glazing tape – Factory installed by Aluflam
8. 1/4" x 4"+ Steel Anchor screw (concrete/sheet metal) – Not by Aluflam
9. Adjustment bolts, around frame perimeter, used like shims – Factory Installed by Aluflam.
10. Mineral Wool Fill, well packed – Not by Aluflam
11. UL Listed Sealant – Not by Aluflam