

INSTALLATION INSTRUCTIONS

CRL ALUMINUM BULLET RESISTANT ENTRANCE DOORS AND FRAMES



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HANDLING, STORAGE, AND PROTECTION OF ALUMINUM

The following precautions are recommended to protect the material against damage. Following these precautions will help ensure early acceptance of your products and workmanship.

- A. HANDLE CAREFULLY.**
All aluminum materials at job site must be stored in a safe place, well removed from possible damage by other trades. Cardboard wrapped or paper interleaved materials must be kept dry.
- B. CHECK ARRIVING MATERIALS.**
Check for quantity counts and keep records of where various materials are stored. Check for damages during shipping.
- C. KEEP MATERIALS AWAY FROM WATER, MUD, AND SPRAY.**
Prevent cement plaster or other materials from damaging the finish.
- D. PROTECT THE MATERIALS AFTER ERECTION.**
Protect erected frame with polyethylene or canvas splatter screen. Cement, plaster, terrazzo, other alkaline solutions, and acid based materials used to clean masonry are harmful to the finish. *If any of these materials come in contact with the aluminum, immediately remove with water and mild soap.*

IMPORTANT: READ THIS MANUAL THOROUGHLY BEFORE BEGINNING INSTALLATION.

The rapidly changing technology within the architectural aluminum products industry demands that C.R. Laurence / U.S. Aluminum reserve the right to revise, discontinue, or change any product line, specification, or electronic media without prior written notice.

NOTE: Dimensions in parentheses () are millimeters unless otherwise noted.

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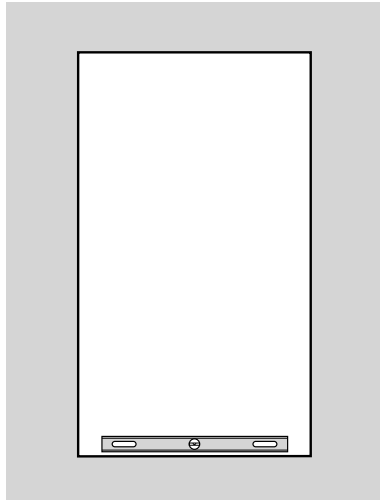
GENERAL INSTALLATION NOTES

Recommended Guidelines for All Installations:

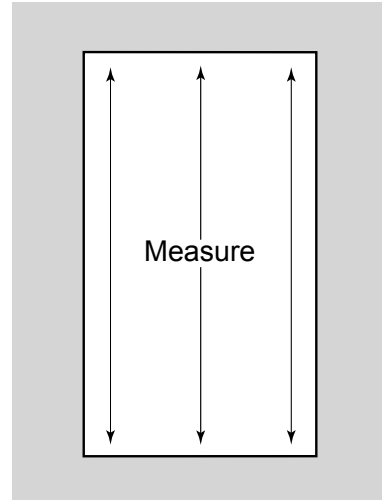
1. **REVIEW CONTRACT DOCUMENTS.** Check shop drawings, installation instructions, architectural drawings, and shipping lists to become thoroughly familiar with the project. The shop drawings take precedence and include specific details for the project. Note any **field verified** notes on the shop drawings prior to installing. The installation instructions are of a general nature and cover most conditions.
2. **INSTALLATION.** All materials are to be installed plumb, level, and true.
3. **BENCH MARKS.** All work should start from bench marks and/or column lines as established by the architectural drawings and the general contractor with guaranteed accuracy. Working from these datum points and lines determine:
 - a) The plane of the wall in reference to offset lines provided on each floor.
 - b) The finish floor lines in reference to bench marks on the outer building columns.
 - c) Mullion spacing from both ends of masonry opening to prevent dimensional build-up of daylight opening.
4. **SURROUNDING CONDITIONS.** Make certain that construction which will receive your materials is in accordance with the contract documents. If not, notify the general contractor in writing and resolve differences before proceeding with work.
5. **ISOLATION OF ALUMINUM.** Aluminum to be placed in direct contact with uncured masonry or incompatible materials should be isolated with a heavy coat of zinc chromate or bituminous paint. (CRL Cat. No. BC5GL or BC17A)
6. **SEALANTS.** Sealants must be compatible with all materials with which they have contact, including other sealant surfaces. Consult with sealant manufacturer for recommendations relative to joint size, shelf life, compatibility, cleaning/priming, tooling, adhesion, etc. It is the responsibility of the **Glazing Contractor** to submit a statement from the sealant manufacturer indicating that glass and glazing materials have been tested for compatibility and adhesion with glazing sealants, and interpreting test results relative to material performance, including recommendations for primers and substrate preparation required to obtain adhesion. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication must be established. This is required on every project.
7. **FASTENING.** Within the body of these instructions "fastening" means any method of securing one part to another or to adjacent materials. Only those fasteners used within the system are specified in these instructions. Due to the varying perimeter conditions and performance requirements, perimeter and anchor fasteners are not specified in these instructions. For perimeter and anchor fasteners refer to the shop drawings or consult the fastener supplier.
8. **BUILDING CODES.** Due to the diversity in state/provincial local, and federal laws and codes that govern the design and application of architectural products, it is the responsibility of the individual architect, owner, and installer to assure that products selected for use on projects comply with all the applicable building codes and laws. C.R. Laurence exercises no control over the use or application of its products, glazing materials, and operating hardware and assumes no responsibility thereof.
9. **EXPANSION JOINTS.** Expansion joints and perimeter seals shown in these instructions and in the shop drawings are shown at normal size. Actual dimensions may vary due to perimeter conditions and/or difference in metal temperature between the time of fabrication and the time of installation. Gaps between expansion members should be based on temperature at time of installation.
10. **COORDINATION WITH OTHER TRADES.** Coordinate with the general contractor any sequence of the installation that involves other trades in the project (i.e. framing, fire proofing, back-up walls, partitions, ceilings, mechanical ducts, converters, etc.).
11. **CARE AND MAINTENANCE.** Final cleaning of exposed aluminum surfaces should be done in accordance with AAMA 609.1 for anodized aluminum and 610.1 for painted aluminum.

SITE PREPARATION

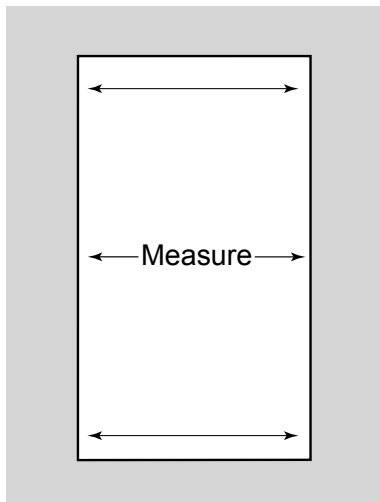
1. The rough opening should be checked for the correct size as determined by tolerances listed in the architectural specifications and the shop drawings. **See DETAIL A.**
2. Verify rough opening size has 1" (25) clearance in width and 3/8" (10) in height to the frame. Verify framing is plumb, straight, and true around rough opening. Measure the opening at each end and at the center, vertically and horizontally. Make corrections to openings as required. Measure opening diagonally to check for square.
Chip away concrete high points to create a clean, smooth, and level surface.
3. Establish the face of the door line at the head, sill, and jambs. This reference is to be arrived at by using the architectural plans, general contractor's reference lines, and shop drawings.



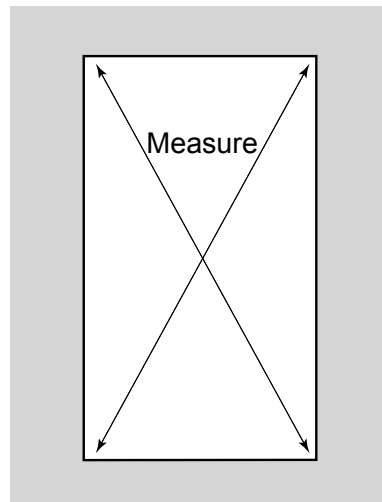
**FLAT, CLEAN, SMOOTH,
LEVEL, and TRUE SURFACE**



VERTICAL DIMENSION



HORIZONTAL DIMENSION



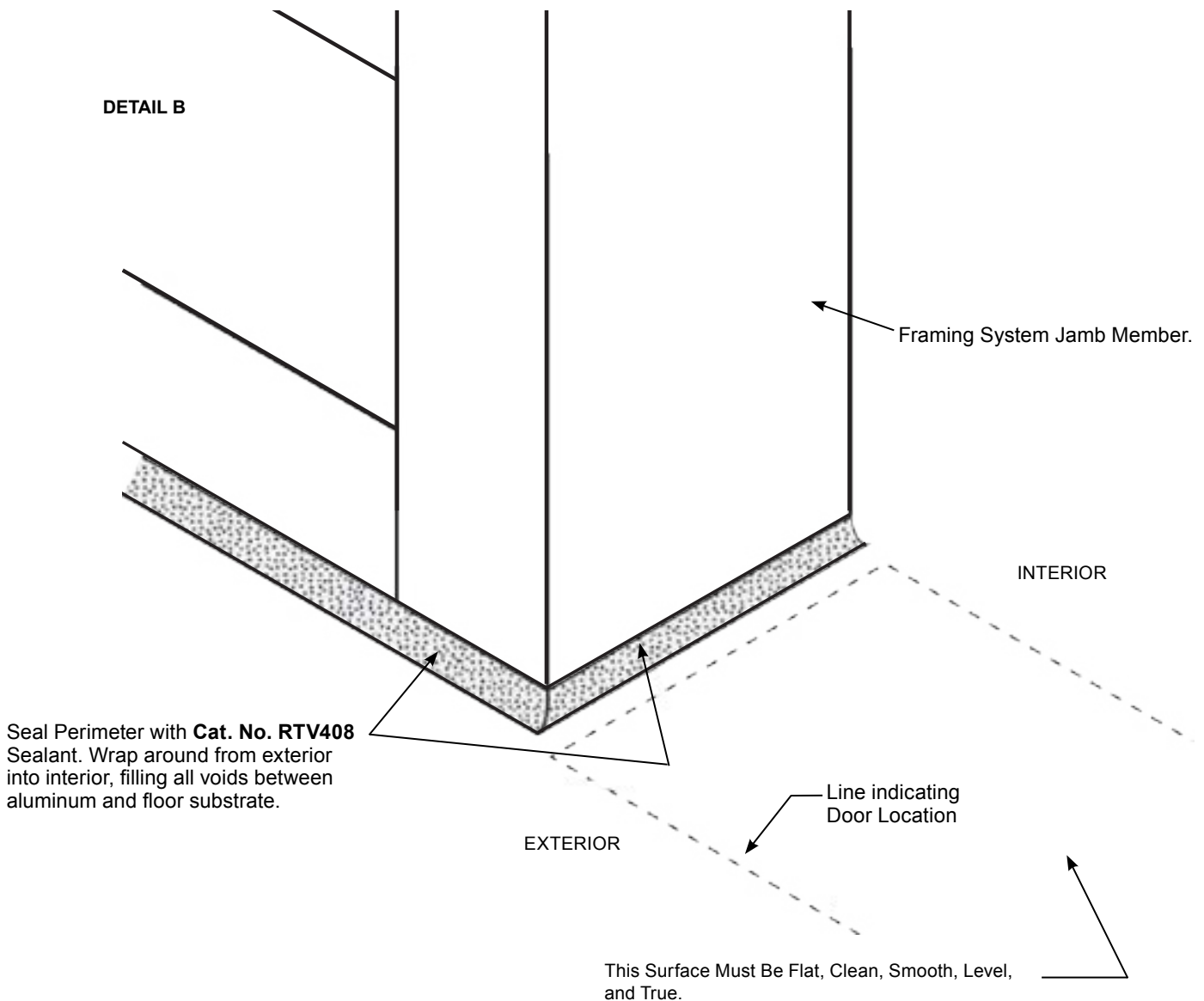
SQUARE

NOTE: For proper door operation and drainage, it must be installed PLUMB and LEVEL on a CLEAN and SMOOTH SURFACE.

FRAME PREPARATION

1. If installing within a framing system, installer must make sure the perimeter sealant of the framing system is properly sealed. The perimeter seal must have full coverage from exterior to interior and be compatible with sealant to be used with door installation, **See DETAIL B.**

NOTE: Some conditions may require sill pan flashing within door and sidelite opening. Consult approved shop drawings for any flashing installation requirements.



2. If the aluminum threshold is to be directly installed on concrete, a Bituminous Coating **Must Be Applied to the bottom surface of the threshold** to protect it from electrolysis and corrosion. Spray protective barrier on a clean and dry surface and **allow to dry** before installation. Bituminous products can be ordered from CRL using **Cat. No. BC5GL** for a 5 gallon bucket, or **Cat. No. BC17A** for an aerosol can.

FRAME INSTALLATION

NOTE: Standard Out-Swing with Threshold shown.

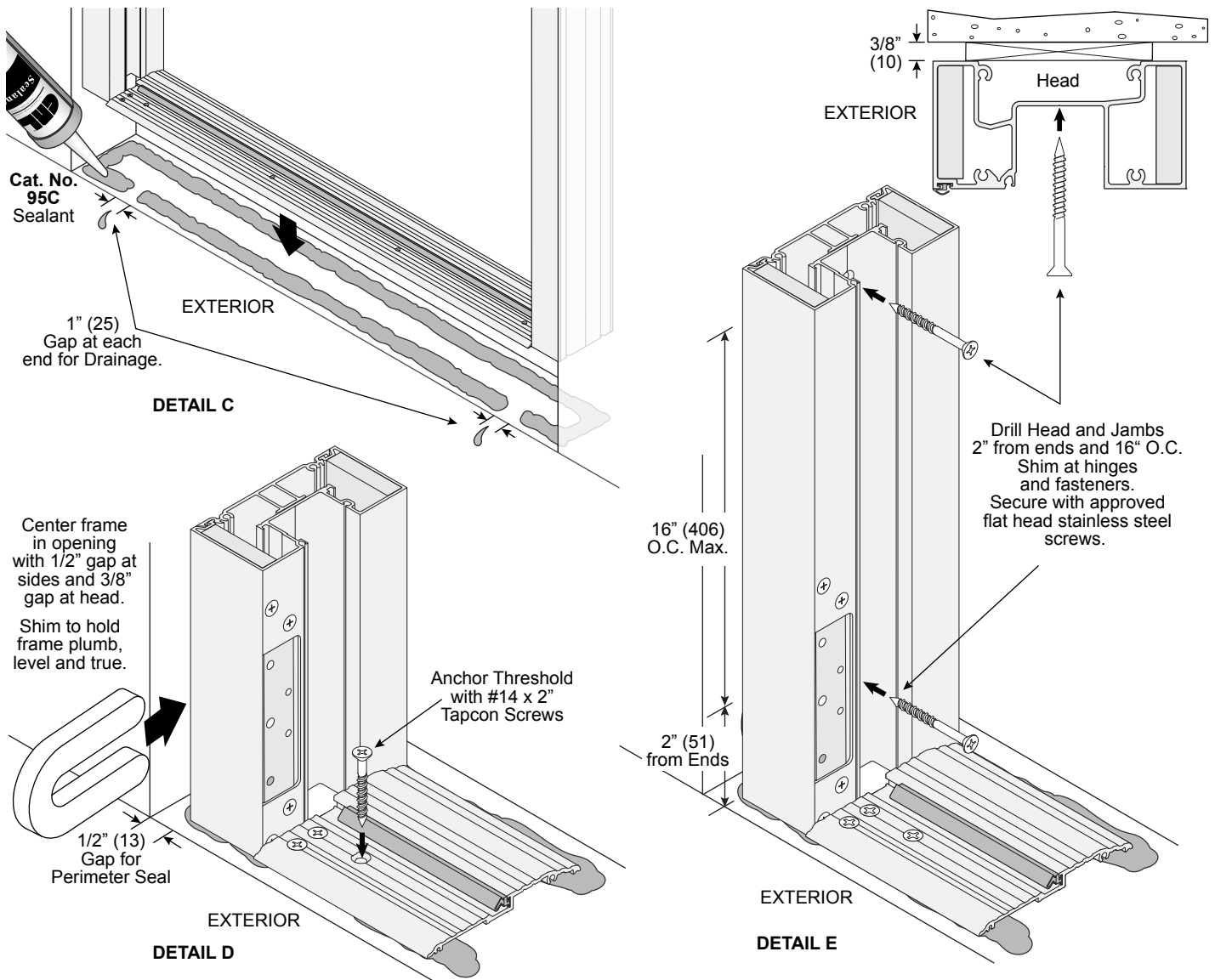
1. Center the frame in rough opening that is plumb, level and true. Shim to hold in place. Allow for 1/2" (13) gap at sides and 3/8" (10) gap at Head for perimeter seal.

NOTE: Refer to Perimeter Anchor Guideline Chart on Page 9 for anchor size and strength recommendations. Consult Shop Drawings and/or a structural engineer to confirm.

2. Using the mounting holes in the threshold as a guide, drill anchor holes in the concrete below.
3. Remove the frame from the opening and clean all debris from the threshold area to properly seal the surface. Install recommended anchors into the concrete (Supplied by others).
4. Apply a perimeter bed of **Cat. No. 95C Sealant** at the threshold, leaving two 1" (25) gaps on the exterior side of the sealant bead for drainage see **DETAIL C**.
5. Place the frame onto the bed of sealant, and anchor at threshold with included #14 x 2" Tapcon screws as shown in **DETAIL D**.

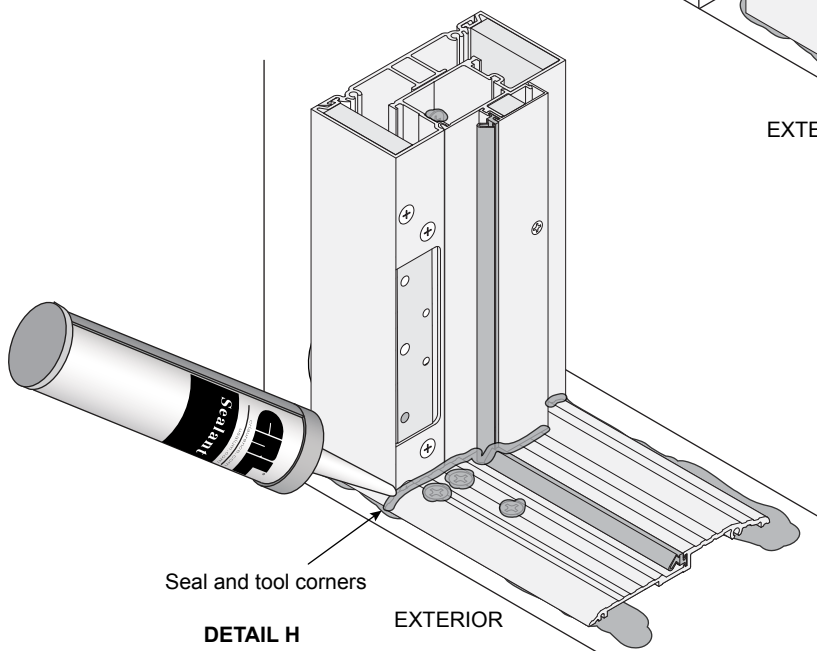
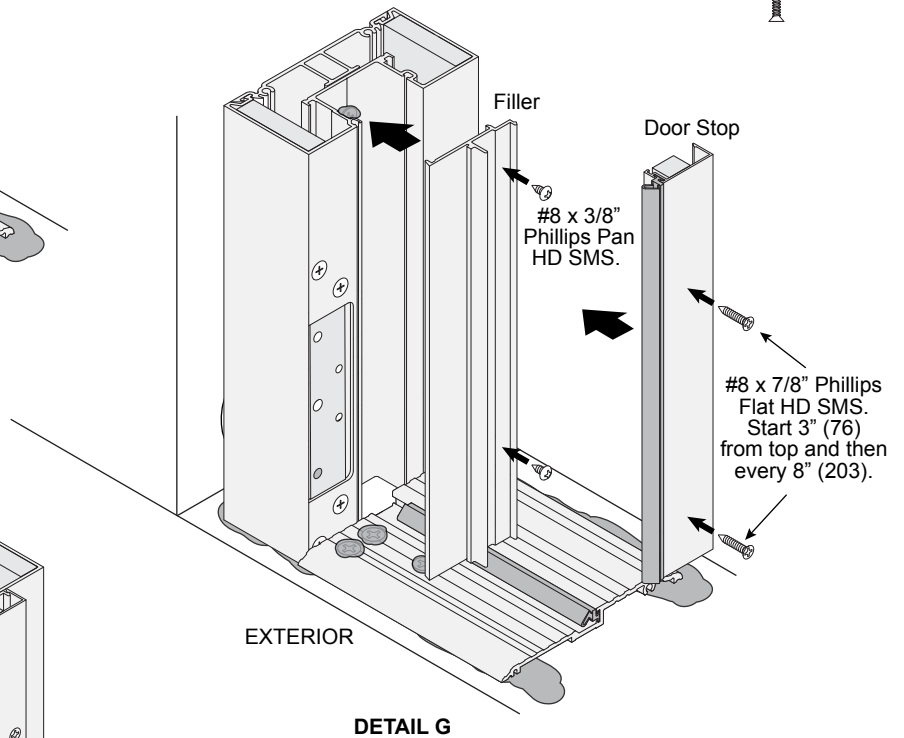
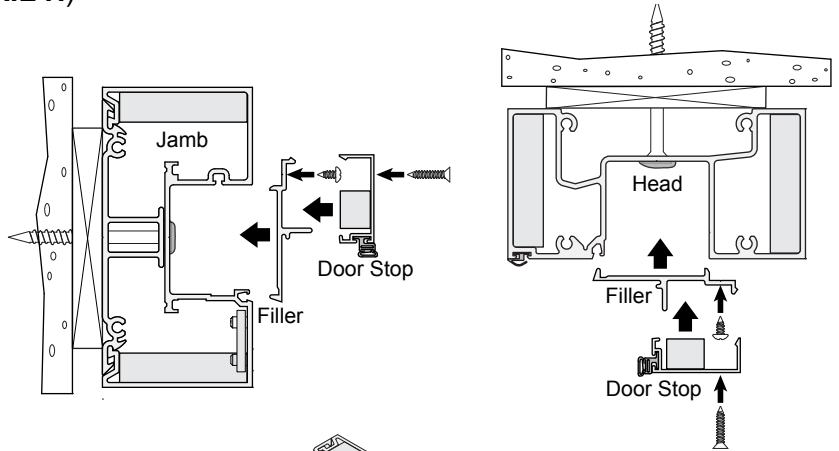
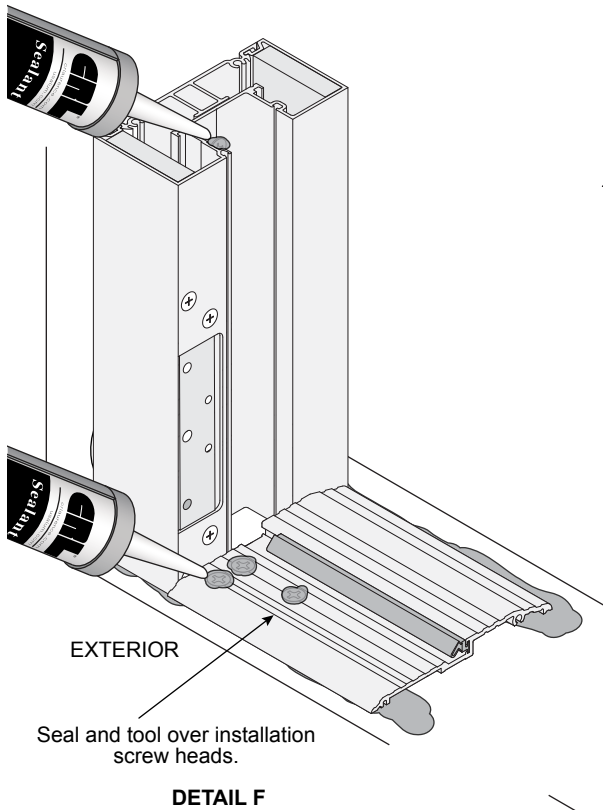
NOTE: Ensure frame is plumb, level and true.

6. Shim frame in opening at each fastener and hinge location. Drill jambs and head 2" (51) from ends and 16" (406) maximum on center. Secure with approved Flat Head, Stainless Steel fasteners. (**DETAIL E**)



FRAME INSTALLATION (CONTINUED)

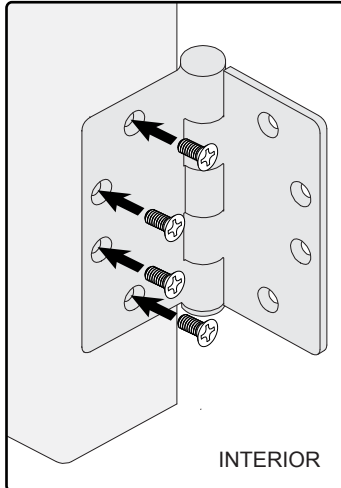
7. Seal and tool over fastener heads. (**DETAIL F**)
8. Install trim plates in head and jambs using included screws. Then install door stops spacing included screws 3" from top and 8" on center. (**DETAIL G**)
9. Seal and tool over fastener heads. (**DETAIL H**)



DOOR INSTALLATION

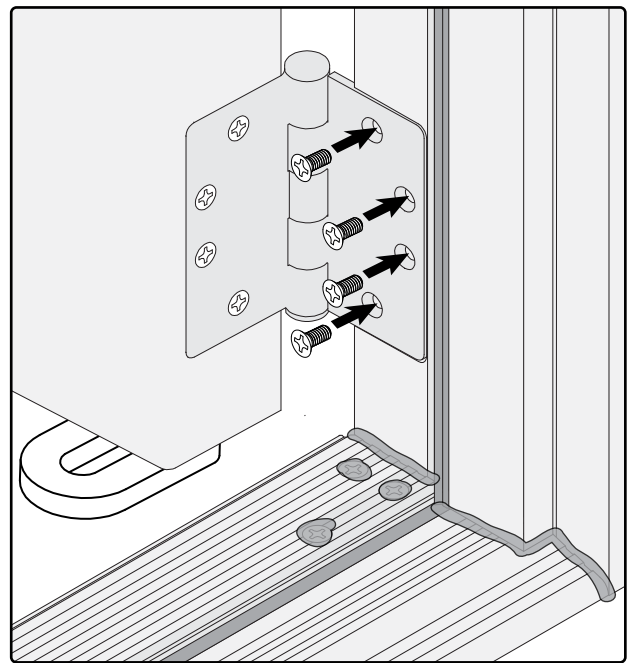
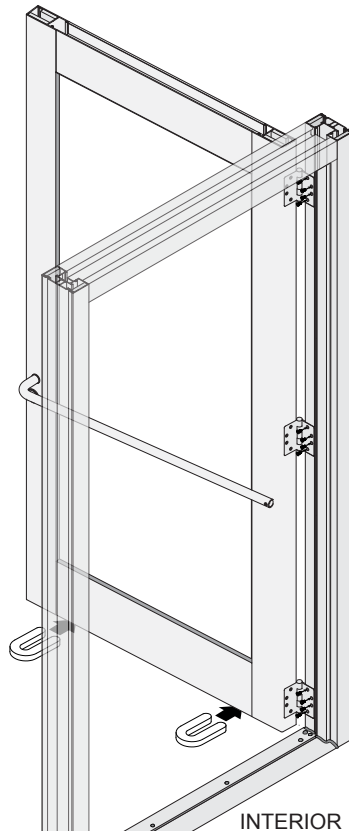
Hung on Butt Hinges

NOTE: Butt Hinges are shipped loose.



Align hinges with cutouts in door jamb. Secure with included screws.

Align other side of hinges with the cutouts in frame.

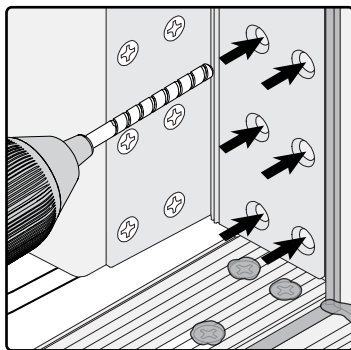


Block door while securing with included screws.

DETAIL I

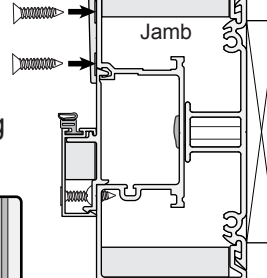
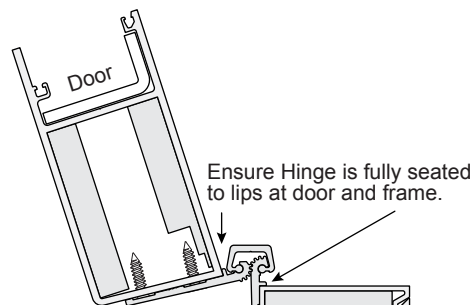
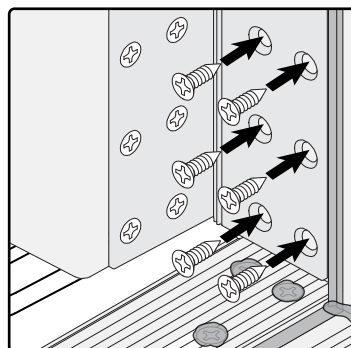
Hung on Geared Hinges

NOTE: Geared Hinges are shipped installed on door.



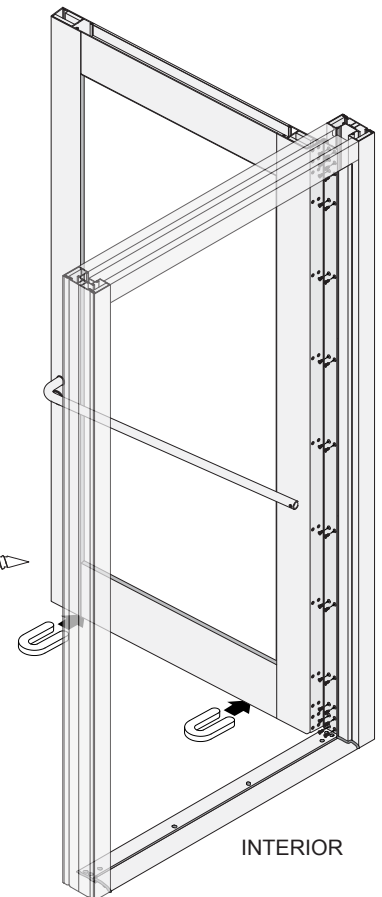
Block door and drill holes in frame for screws.

Block door while securing with included screws.



INTERIOR

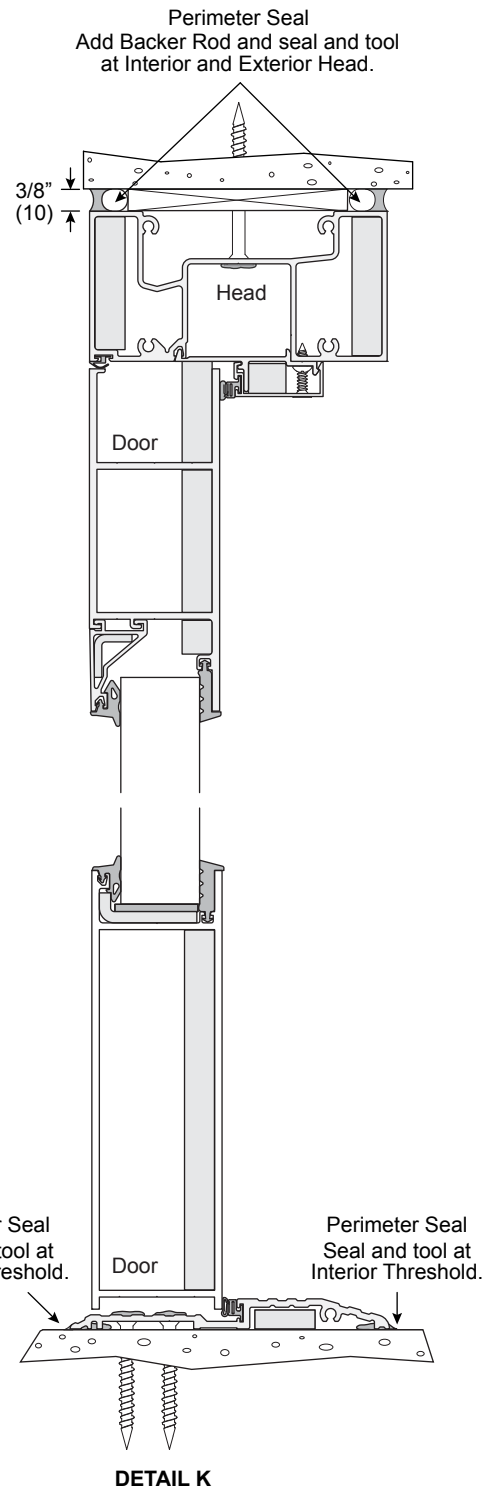
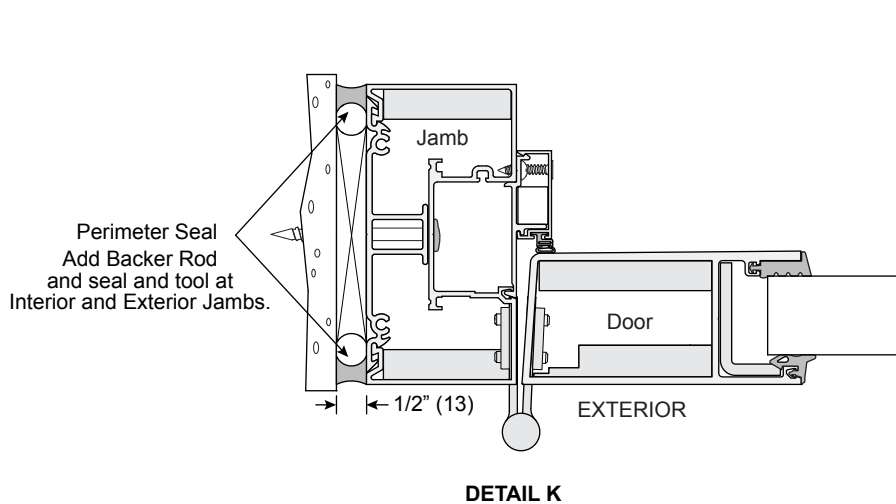
DETAIL J



PERIMETER SEALING

Apply a full perimeter seal to the Interior and Exterior edges of the Frame as shown in **DETAIL K**. Sealant must be compatible with other perimeter sealant of any adjacent framing system. Refer to approved shop drawing for any job specific sealant requirements. Follow sealant manufacturer's guidelines for cleaning, surface preparation, and application.

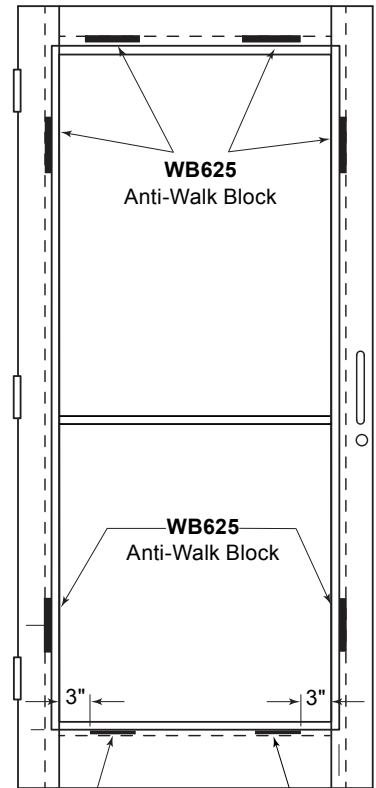
Seal over all installation screw heads on jambs, head, and threshold. Tool sealant for a smooth finish.



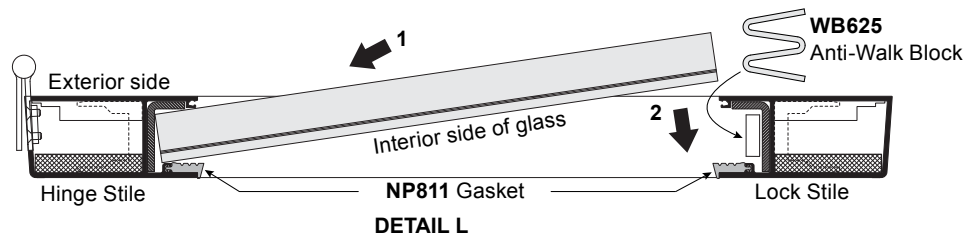
PERIMETER ANCHOR GUIDELINE CHART			
ANCHOR LOCATION	ANCHOR TYPE		
	CONCRETE AND CMU	WOOD	STEEL STUD
HEAD	1/4" x 3" FH Tapcon 1-1/4" (31.8) min. Embedment	1/4" x 3-1/2" FH Tapcon 1-1/2" (31.8) min. Embedment	1/4" x 2-1/2" FH Tech
SILL (SUBSILL)	1/4" x 1-3/4" FH Tapcon 1-3/4" (44.9) min. Embedment		
JAMB	1/4" x 3" FH Tapcon 1-1/4" (31.8) min. Embedment	1/4" x 3-1/2" FH Tapcon 1-1/2" (31.8) min. Embedment	1/4" x 2-1/2" FH Tech
TH811 THRESHOLD	1/4" x 2" Gr.5 FH Tapcon 1-3/4" (44.9) min. Embedment		

DOOR GLAZING

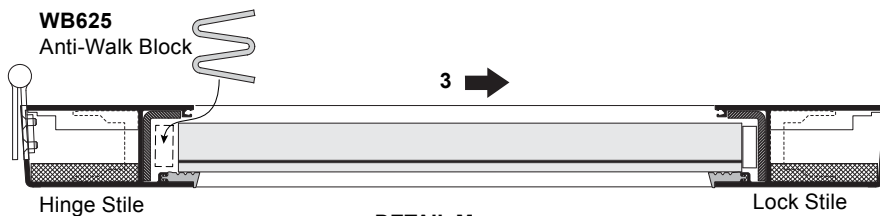
1. Lay the door panel flat with the exterior side up. Clean the glazing pocket of any debris.
2. Install interior gasket, **NP811**, into interior gasket slot. Start with door rails first, then the stiles.
3. Position two Setting Blocks on Bottom Rail at 1/4 points. Refer to **DETAIL O** for Setting Block and Anti-Walking Block placement.
4. Place the laminated glass into the glazing pocket. Position vacuum cups on the exterior side of the glass so that the interior side will face down when placed.
5. With the laminated glass in the right orientation, lift the glass at an angle into the Hinge Stile first, clearing the Bottom Rail, see **DETAIL L**. Straighten out the glass so that it is in-line with the frame. Insert two Anti-Walking Blocks, **WB625**, into the Lock Stile's glazing pocket. Stretch the Anti-Walking blocks flat and insert them into the glazing pocket, see **DETAIL N**.
6. Lift the glass slightly and push it into the Lock Stile. Insert two Anti-Walking Blocks, **WB625**, into Hinge Stile to fill the gap between the Stile and glass, see **DETAIL M**.
7. Place two Anti-Walking Blocks at the Head and install Glass Stop into Top Rail. Finish glazing the panel by installing glazing gasket, **NP825**, into the exterior gasket reglet. Start the gasket in the center of the top rail and work your way around the opening to meet back at the center, see **DETAIL P**. Add 1/4" (6) to the length when cutting the gasket material, to allow for expansion and contraction.



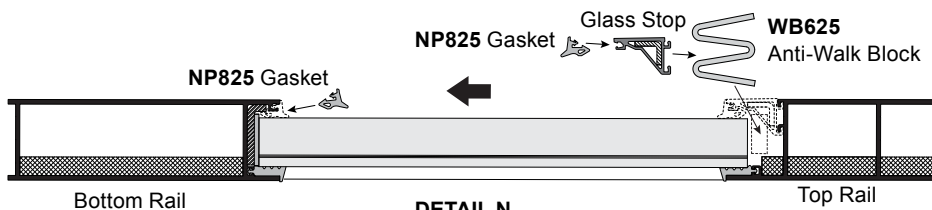
DETAIL O



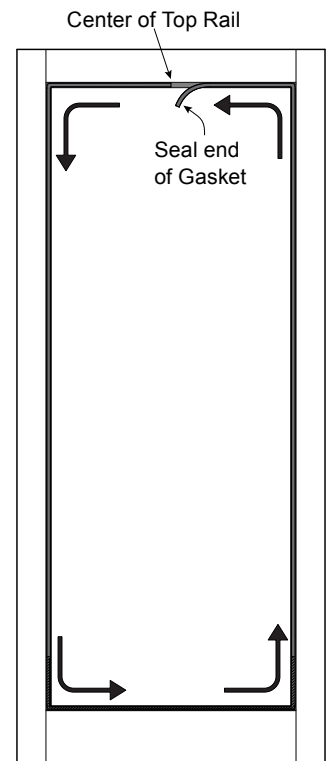
DETAIL L



DETAIL M



DETAIL N



DETAIL P