INSTALLATION INSTRUCTIONS

SERIES BW8000

BLAST RESISTANT SINGLE HUNG WINDOW BLOCK OR FIN FRAME



NOTE:

The Tested Anchor Trim for the BW Series Windows will result in an overall depth greater than 6" (152.4).



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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.

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.*

The rapidly changing technology within the architectural aluminum products industry demands that 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.

GENERAL INSTALLATION NOTES

Recommended guidelines for all installations:

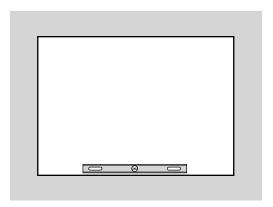
- 1. REVIEW CONTRACT DOCUMENTS. Check shop drawings, installation instructions, architectural drawings and shipping lists to become thoroughly familiar with the project. The shop drawings take precedence and include specific details for the project. Note any field verified notes on the shop drawings prior to installing. The installation instructions are of a general nature and cover most conditions. NOTE: Calculations and dimensions on shop drawings take precedence over installation instructions.
- 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. FIELD WELDING. All field welding must be adequately shielded to avoid any splatter on glass or aluminum. Results will be unsightly and/or structurally unsound. Advise general contractor and other trades accordingly. All field welds of steel anchors must receive touch-up paint (zinc chromate) to avoid rust.
- 5. 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.
- 6. 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.
- 7. SEALANTS. Sealants must be compatible with all materials with which they have contact with (full or incidental), including other sealant surfaces. It is the sole responsibility of the glass company to consult the sealant manufacturer for recommendations regarding 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.
- 8. 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.
- 9. 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. U.S. Aluminum exercises no control over the use or application of its products, glazing materials, and operating hardware, and assumes no responsibility thereof.
- 10. 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.
- 11. RACK OR WATER TEST. As soon as a representative amount of the wall has been glazed (500 square feet or 46.5 m²) a rack or water test should be conducted in accordance with AAMA 502-08 specifications to check the installation. On all jobs the rack or water test should be repeated every 500 square feet (46.5 m²) during the glazing operation.
- 12. COORDINATION WITH OTHER TRADES. Coordinate with the general contractor any sequence with other trades which offset curtain wall installation (i.e. fire proofing, back-up walls, partitions, ceilings, mechanical ducts, converters, etc.).
- 13. 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.

14. JOB SITE ESSENTIALS. See page 16.

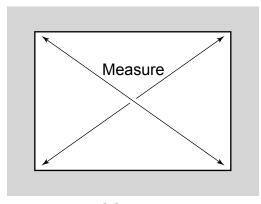
SITE PREPARATION

BEFORE INSTALLATION

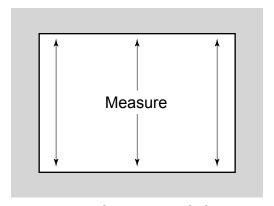
- 1. Review and measure the opening.
- 2. Verify rough window opening size 1/2" (12.7) clearance in both width and height to the window. Verify framing is plumb, straight, and true around window opening. Measure opening at each end and at center vertically and horizontally. Make corrections to openings as required. Measure opening diagonally to check squareness. Chip concrete high points to flush and rounded corners to square.



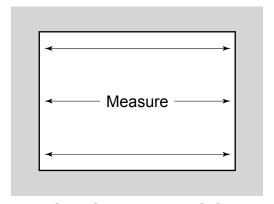
LEVEL



SQUARE

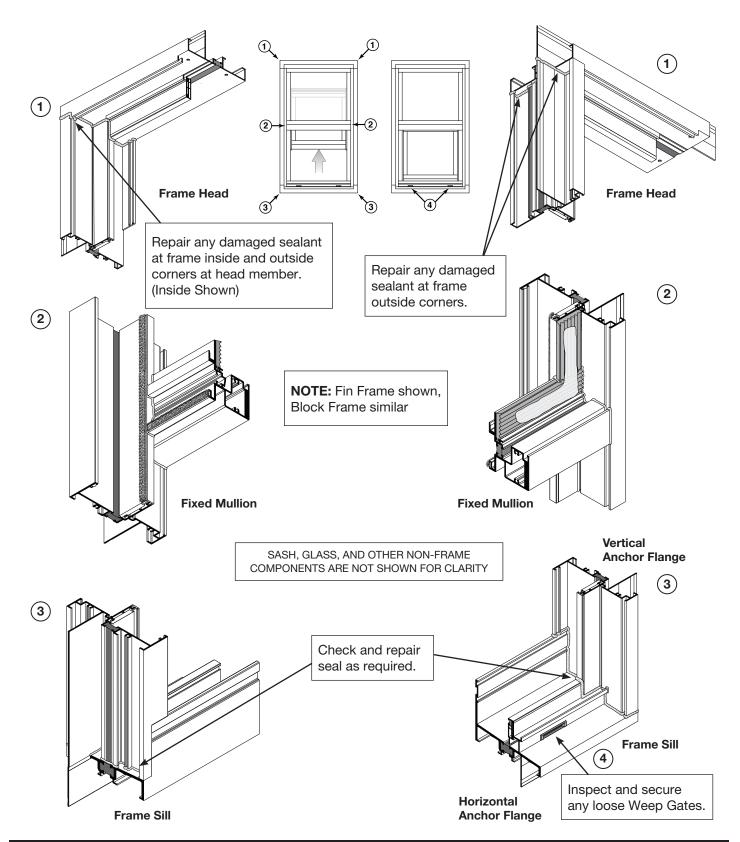


VERTICAL DIMENSION



HORIZONTAL DIMENSION

3. Visually inspect all frames upon receipt. Inspect frame corners for any sealant damages and re-apply **CRL RTV408 Silicone Sealant** where required. Check sealant at outside frame corners ①. Raise window sash and inspect seals at inside corners ② at jamb/sill intersection. Check and repair joint between vertical and horizontal anchor flanges ③ if applicable. Inspect baffles and Weep Gates ④ to assure they have not been jarred loose during shipment.



ERL US ALUMINUM

1. Subsill for Block Frame Window

Cut Subsill to length: = Total frame width plus 1/4" (6.4). EC450 Fabricate Weep Holes: Drill 3/8" (9.5) Dia. at two per window unit. End Dam Attach End Dams: Seal contact surfaces and attach screw at each end. ST173 #8 x 1/2" FH SMS 3/8' Drill through Two per (9.5)3/8" (9.5) Dia. Apply Cat. No. 95C both walls window unit Silicone Sealant at contact area

2. Stock length Components

Cut Stock Length to length: = Window frame height minus 1/4" (6.4) with Subsill

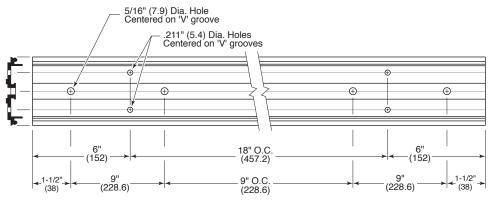
= Window frame height without Subsill

Cut Pressure Bar to length: = Window frame height minus 2" (50.8)

Cut Snap Cover: = Field cut to size.

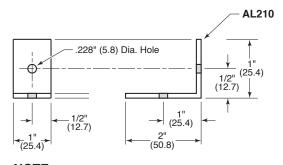
Fabricate Pressure Bar: Drill 5/16" (7.9) Dia. Holes centered on bar 9" (228.6) O.C.

Drill two rows of clearance holes for screw and spacing for attachment to window frames as shown in approved shop drawings. Lace bulb vinyl into two tracks (If not pre-laced). Attach end dam to top of mullion. Seal contact edges.

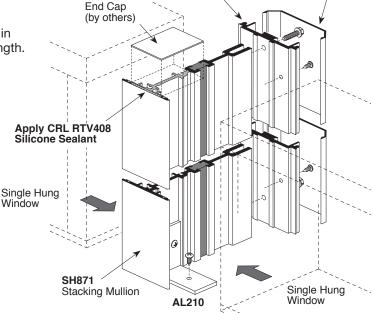


Mullion Anchor Clip Angle Fab for attachment screws:
 Drill clearance holes for attachment screw types shown in approved shop drawings at center of leg's width and length.

 NOTE: Screw diameters may vary, coordinate fabrication accordingly.



NOTE: Please see calculations for fastener size.



SH872

Pressure Bar

NOT TO SCALE

FT400

SH873

Pressure Bar Cap

NOTE: Consult Sealant Manufacturer for

Proper Cleaning and Priming Recommendations

Subsill Shown

4. Anchor Trim (Optional) for Block Frame Window

Cut Horizontal Anchor Trim: = Total frame width minus 4" (101.6).

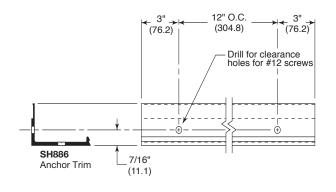
Cut Horizontal Trim Cover: = Field cut to frame opening width.

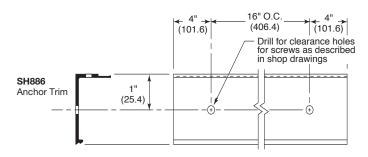
Cut Vertical Anchor Trim: = Total frame height minus 4" (101.6) Field cut cover.

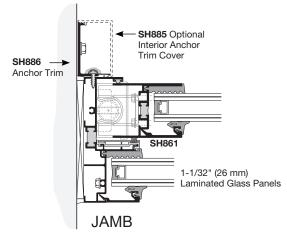
Cut Vertical Trim Cover: = Field cut cover to size. (Runs between horizontal trim covers)

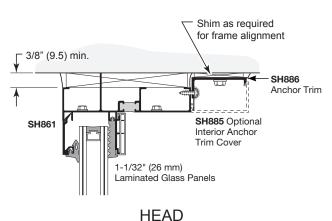
Fab Frame Attachment Holes: Drill for #12 FH screw (Trim to frame).

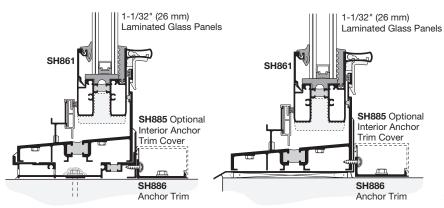
Fab Anchor Holes: Drill for 1/4" (6.4) FH screw or as shown in shop drawings.

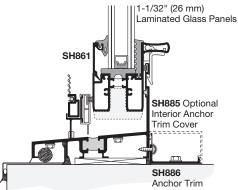












SILL with EXTRUDED SUBSILL

SILL with FULL DEPTH PAN FLASHING

SILL with SHALLOW DEPTH PAN FLASHING (Punched openings only)

NOTE: SH886 Anchor Trim is required for Blast Resistant installations.

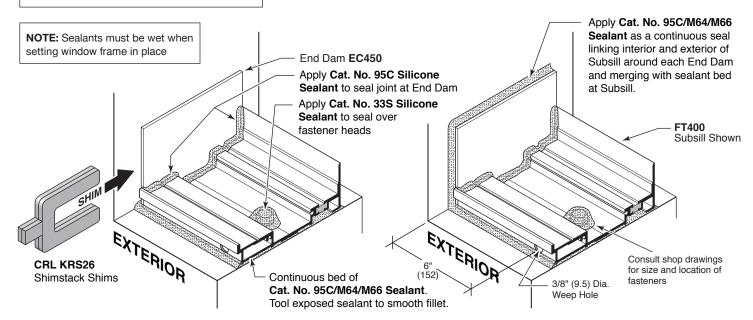
ERL USALUMINUM

SUBSILL (OPTIONAL) FOR BLOCK FRAME WINDOW INSTALLATION:

NOTE: Window MUST be level and square to function properly.

- 1. Set Subsill in full bed of Cat. No. 95C/M64/M66 Sealant, centered in opening. Shim as required to level.
- 2. Anchor Subsill into position using fastener type as indicated in approved shop drawings.
- 3. Use Cat. No. 95C Silicone Sealant to seal around End Dam merging with sealant bed at Subsill and tool smooth.

NOTE: Consult Sealant Manufacturer for Proper Cleaning and Priming Recommendations



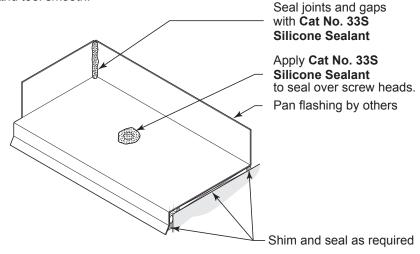
NOTE: If extruded Subsill is not used, it is recommended that a pan flashing be used. Pan flashing design and installation method is not determined by or warranted by U.S. Aluminum. Refer to approved project shop drawings for scope and intent of pan flashing requirements.

PAN FLASHING FOR FIN FRAME WINDOW INSTALLATION:

NOTE: Window MUST be level and square to function properly.

- 1. Set flashing in full bed of Cat. No. 95C/M64/M66 Sealant, centered in opening.
- 2. Anchor Subsill into position using fastener type as indicated in approved shop drawings.

3. Seal any joints or gaps and tool smooth.

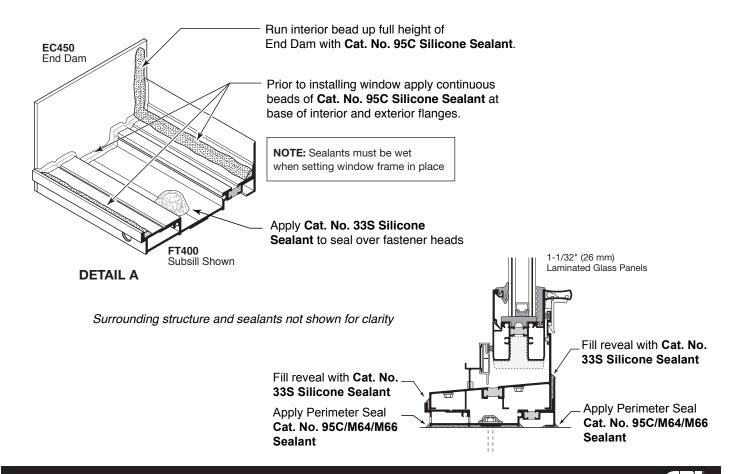




PUNCHED OPENINGS FOR BLOCK FRAME WINDOW:

- 1. When using extruded Subsill, apply a continuous bead of **Cat. No. 95C Silicone Sealant** at base of interior vertical legs of Subsill as shown below. Sealant should be wet when window units are set into place. Perimeter seals must form a water tight barrier between window unit and building structure. **See Detail A.**
- 2. Place window unit into opening, shimming at jambs to plumb.
- 3. Anchor the Head and Jamb to substrate using method shown in shop drawings. When anchoring through Head, Jamb or Sill members, shims must be located at anchor points. Seal screw heads with **Cat. No. 33S Silicone Sealant**.
- 4. When anchoring frame members with an interior Anchor Trim, **Cat. No. SH886**, an interior perimeter seal must be applied prior to installing the trim. Refer to page 07. Shim Anchor Trim as required to align with window as shown in shop drawings and secure to substrate with fasteners. Seal screw heads with **Cat. No. 33S Silicone Sealant**.
- Install optional Cat. No. SH885 Anchor Trim Cover. Cut cover to length as required and snap over Anchor Trim Cat. No. SH886.
- Add Backer Rod, if needed, to exterior perimeter around Head, Jambs, and Sill. Apply Cat. No. 95C/M64/M66 Sealant to perimeter.
- Apply sealant to interior and exterior reveals at Subsill and Window Frame Joint as shown, using Cat. No. 33S Silicone Sealant.

NOTE: Consult Sealant Manufacturer for Proper Cleaning and Priming Recommendations



MULTI-WINDOW OPENINGS FOR BLOCK FRAME WINDOW:

- 1. When using extruded Subsill, apply continuous bead of Cat No. 95C Silicone Sealant at base of interior and exterior vertical legs of Subsill as shown in punched opening section. Sealant should be wet when window units are set into place.
- 2. Starting at one end, place first window unit into opening, shimming at jamb to plumb.
- 3. Anchor jamb to substrate using method shown in shop drawings. When anchoring through head, jamb or sill members, shims must be located at anchor points. Seal screw heads with Cat. No. 33S Silicone Sealant. When anchoring with interior anchor trim, interior perimeter seals must be applied prior to anchor trim. Shim trim angle as required to align with window as shown in shop drawings and anchor to substrate with required fasteners. NOTE: When using the internal anchor trim at head and sill (without Subsill), it is to be installed after all units are in place within opening and runs continuous. See Step 9 below.
- 4. Insert Mullion onto open jamb. With Mullion pressed firmly against frame jamb, match drill for appropriate screw types and attach bottom angle clips to Mullion and Subsill, Pan Flashing or building structure. Refer to approved shop drawing for screw types.
- 5. Match drill and attach top angle clip to Mullion flush with end just below Mullion End Plate. Shim between top clip and structure. Secure with screws as shown in approved shop drawings. Use caution not to damage End Dam sealant.
- 6. Install next window unit positioning against Mullion. Attach to Mullion and sill structure as described above in previous steps.
- 7. Continue steps until all units are in place and last unit is secured at wall jamb in same manner as first window unit.
- 8. Apply Cat. No. 95C/M64/M66 Sealant to interior perimeter seal at head prior to installing Head Anchor Trim. Also see note at Step 3 above.
- 9. Position Anchor Trim Angle at head and/or sill interior. Shim as required to align with window as shown in shop drawings and anchor to substrate with required fasteners.
- 10. Screw attach Anchor Trim to window frame. See shop drawings for fastener types and spacing. Seal screw heads with Cat. No. 33S Silicone Sealant.
- 11. Install Anchor Trim Covers. Cut covers to length as required and snap over Anchor Trim.
- 12. Apply Cat. No. 95C/M64/M66 Sealant to exterior perimeter at head and jambs. Merge jamb sealant with sealant at End Dam at Subsill.
- 13. Apply remaining interior perimeter seals to jambs.

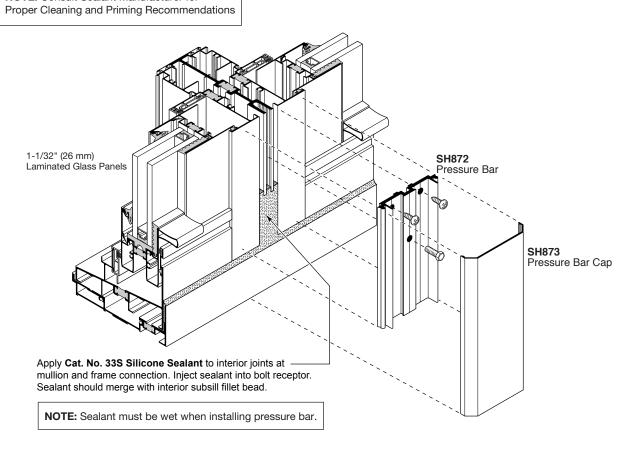
NOTE: All perimeter screw heads that penetrate frame members must be sealed with Cat. No. 33S Silicone Sealant.



MULTI-WINDOW OPENINGS:

14. Pay close attention to sealing area where Pressure Bar traps window frame sill member. Apply bed of Cat. No. 33S Silicone Sealant at bottom of Pressure Bar where it contacts with sill's interior vertical leg. Perimeter seals will be critical and must form a water tight condition between window units.

NOTE: Consult Sealant Manufacturer for



- Center Pressure Bar vertically on exposed window jambs.
 Attach Pressure Bar to Mullion with Cat. No. MS222 1/4 20 x 1" HWH Screw.
- 16. Connect Mullion assembly and window frame jambs together with screws indicated in shop drawings.
- 17. Fill interior and exterior reveals where window frame and Mullion join as shown using CRL RTV408 Silicone Sealant.
- 18. Snap interior Mullion Cap onto Pressure Bar. Use caution to avoid denting cap.

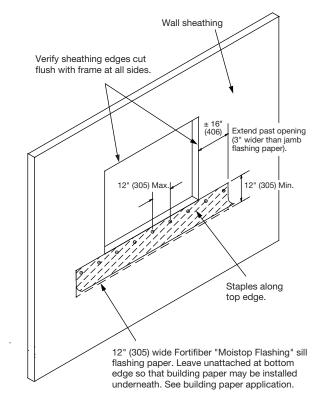
INTERIOR ANCHOR TRIM (OPTIONAL)

- 1. Apply interior perimeter seals prior to installing optional Cat. No. SH886 Anchor Trim and Cat. No. SH885 Anchor Trim Cover.
- 2. Position **Cat. No. SH886** Anchor Trim Angle around frame perimeter. Shim as required to align with frame. Attach to substrate with fasteners as shown in shop drawings.
- Screw window frame to Anchor Trim, Cat. No. SH886. See shop drawings for fastener types and spacing. Apply Cat. No. 33S Silicone Sealant to seal screw heads.
- 4. Install Anchor Trim Snap Covers. Field cut covers to length as required and snap over Anchor Trim. **NOTE:** Horizontal covers run through and vertical covers run between.

NOTE: If optional interior Anchor Trim is used, it must be installed prior to installing Mullion Pressure Bar and Cap.

FLASHING FOR FIN FRAME WINDOW INSTALLATION

Step 1: (Methods A and B)



NOTE: Corrosion-resistant staples may be stainless steel or copper with 3/8" (9.5) leg for window flashing.

INSTALLATION INSTRUCTIONS

ERECTION: Add 1/2" (12.7) to height and width of opening for clearance. All window frames shall be set by others in a level, plumb, and square condition without distortion.

Do not let twin and triple units sag in center of sill during installation. Install shims at corners and center of sill before setting window in opening.

Panels must be installed without forcing, springing or bowing. Close and lock operating sash of window to prevent damage.

Units shall be properly caulked to prevent water leakage around the frame.

Fasteners must be driven straight into wall, not at an angle. Power nailers are not recommended since tool is sometimes held at an angle causing bowed frames.

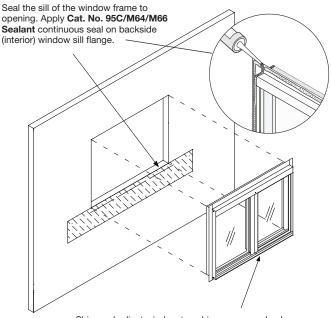
After installation, the General Contractor shall be responsible for protecting the units during the balance of construction. Upon completion of construction, the General Contractor shall be responsible for cleaning the aluminum and glass without the use of abrasive agents.

CLEANING INSTRUCTIONS: Use household glass cleaner and/or a mild detergent. Steel wool, abrasive cleaner or wire brushes are harmful to the glass and finish of the aluminum. Semiannual cleaning of the wool pile weatherstrip and weep holes in sill will assure proper insulation and drainage.

CAUTION: Spraying with petroleum base material may result in INSULATING GLASS failure and will void glass warranty.

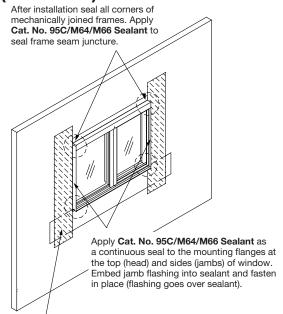
FLASHING FOR FIN FRAME WINDOW INSTALLATION

Step 2: (Method A)



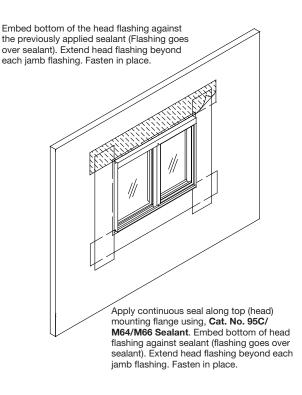
Shim and adjust window to achieve square, plumb, and level condition use corrosion resistant fasteners. Fasten within 10" (254) and no closer than 5" (127) in each direction from every corner. Secure window around frame opening with equivalent of five fasteners at 15" (381) O.C. maximum.

Step 3: (Method A)

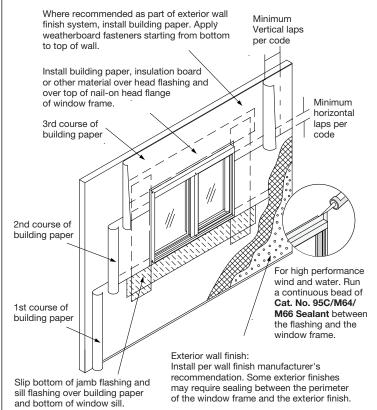


Extend jamb flashing beyond sill flashing and above where the flashing will intersect.

Step 4: (Method A)

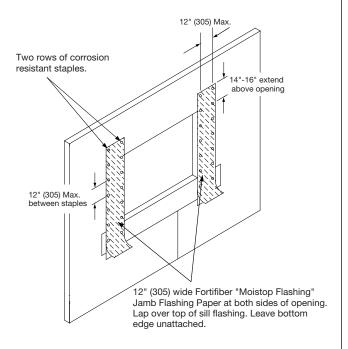


Step 5: (Method A)

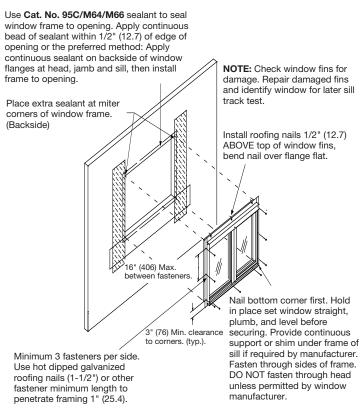


FLASHING FOR FIN FRAME WINDOW INSTALLATION

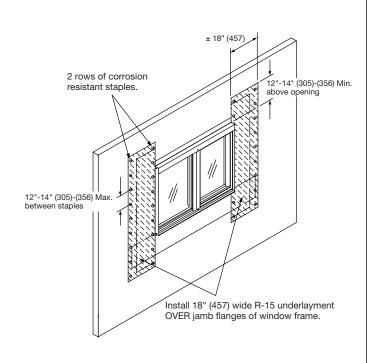
Step 2: (Method B)



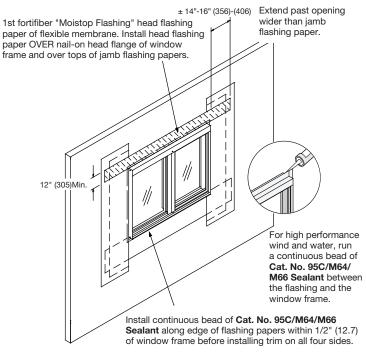
Step 3: (Method B)



Step 4: (Method B)



Step 5: (Method B)



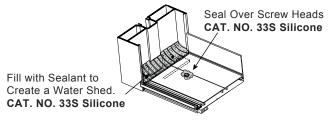


GUIDE TO SEALANTS

WATERPROOFING

CRL 33S ACETIC CURE SILICONE

NOTE: Not for use near insulating glass units with butyl sealant.



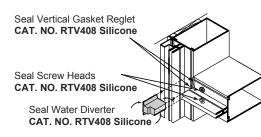
Sill to Subsill, End Dams, Screw Heads, and Threshold to Door Frame Sealing.



CRL RTV408 NEUTRAL CURE SILICONE

NOTE: I.G. butyl contact OK.

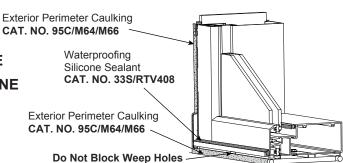




Small Joints, End Joints and Buttered Surfaces, Water Diverters and Reglet Fills.

PERIMETER

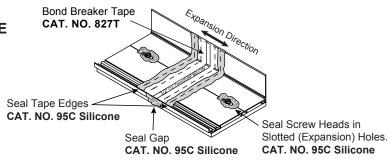
- CRL 95C NEUTRAL CURE SILICONE
- CRL M64 (SMOOTH) MODIFIED POLYURETHANE
- CRL M66 (TEXTURED) MODIFIED POLYURETHANE



Perimeter Seals, Expansion Joints, Sill and Threshold Beds, Concrete, Wood, and Steel Openings.

EXPANSION

• CRL 95C NEUTRAL CURE SILICONE



Expansion Joints.

STRUCTURAL

ALL STRUCTURAL SEALANTS REQUIRE TESTING AND APPROVAL.

Glass-to-Glass or Glass-to-Metal.





JOB SITE ESSENTIALS

Helpful Tools and Supplies for Installing CRL U.S. Aluminum Entrances, Storefronts, Windows, and Curtain Wall Systems



CRL Dry Lubricant for Tracks and Rollers CAT. NO. SP295



CRL RTV408 Neutral Cure Silicone



1/2" x 1/2" x 2" Neoprene Setting Blocks for Glass Panel Installation CAT. NO. SB565



Plastic Cleaner and Polish for Removing Fingerprints and Fine Scratches CAT. NO. CRL10



10" 144-Tooth Carbide Blade for Cutting Delicate Aluminum Profiles. Also available in 12" CAT. NO. CSB10X144ATX



1/16" Rigid Plastic Bearing Shimstrips for Placing and Leveling the Extrusions CAT. NO. PBS06



Unibit 3 Piece Step Drill Set Drills Sheet Metal and Thin Aluminum without Distortion CAT. NO. UB123



Aerosol Glass Cleaner CAT. NO. 1973



18:1 Ratio Caulking Gun CAT. NO. WG41004XT



CRL Digital Laser Level Tool CAT. NO. 406065



Metric Long-Arm and Ball End 9-Piece Allen Wrench Set CAT. NO. 13609



Makita® 18 Volt Cordless Lithium Ion Combo Hammer Drill for Mounting to Concrete CAT. NO. LXPH03

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