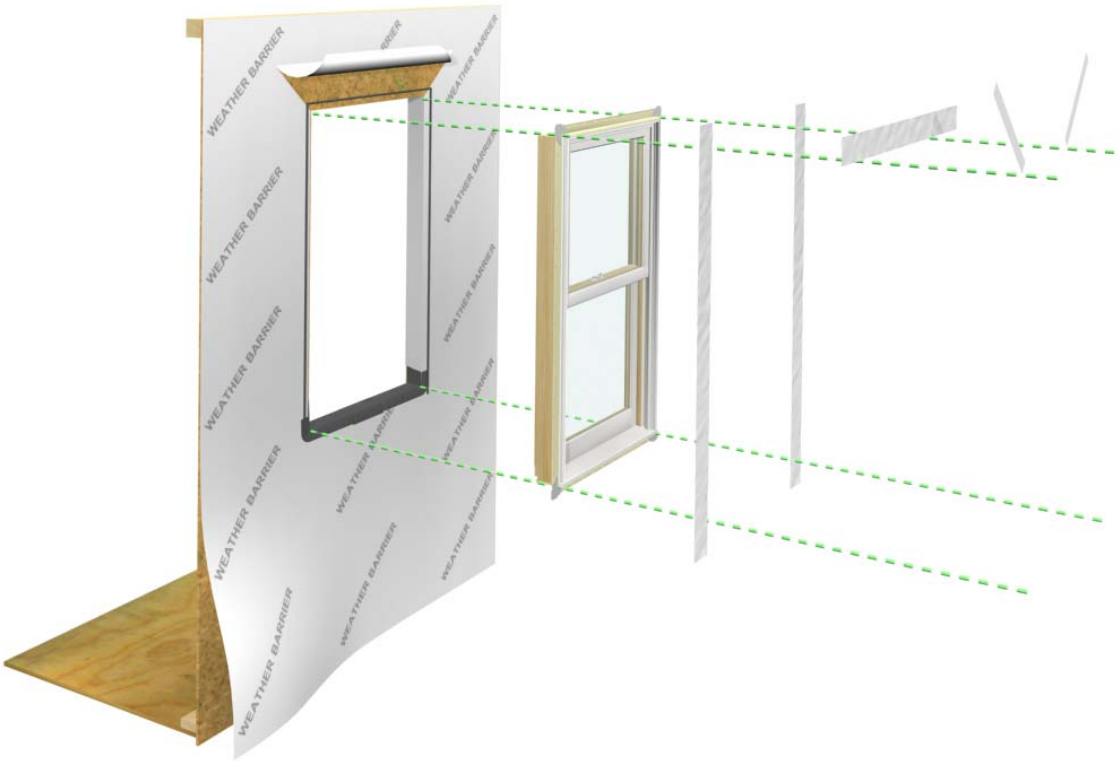
Clad Window Installation

Standard Wood Frame Construction



These instructions are applicable for the following aluminum clad window products:

Clad Ultimate Casement Family	**Clad Round Top**
Clad Tilt-Turn/Inswing Casement/Hopper	**Clad Polygon**
Clad Ultimate Double Hung Family	**Clad Glider**

ABSTRACT: Please read these instructions in their entirety before beginning to install your Marvin window product. These installation instructions demonstrate the installation of a Marvin aluminum clad window in new wood frame construction using an industry approved water management system. For installation using other construction methods, such as remodeling, replacement, and recessed openings refer to “ASTM E2112-01, Standard Practice for Installation of Exterior Windows, Doors and Skylights,” for installation suggestions. Information for ASTM E2112 can be found on the ASTM website, www.astm.org.

For product specific issues, service instructions and other field service guides, refer to the Marvin Service Manual, visit our website at www.marvin.com, or contact your Marvin representative.

Regional standard practices, environmental conditions, and codes may vary and supersede the procedures contained within. The responsibility for compliance is yours: the installer, inspector, and owner(s).

The procedures within these instructions are consistent with those used in testing to achieve the advertised DP rating.

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MARVIN Windows and Doors
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Before You Begin

Installer and Builder Information

- Always provide a copy of these instructions for the current or future building owner.
- Plan sizing of rough opening and clearance from exterior finishing systems to allow for normal materials shrinkage or shifting (e.g. wood structure with brick veneer; allow adequate clearance at sill). Failure to do so can void the Marvin warranty coverage.
- Refer to the Technical Installation Requirements section for technical specifications regarding the installation of this product. These installation requirements as well as the details in this section must be followed to achieve the advertised design pressure (DP) rating of this product.
- It is the responsibility of the builder, installer and subcontractors to protect the interior and exterior of windows or doors from contact with harsh chemical washes, construction material contamination and moisture. Damage to glazing, hardware, weather strip and cladding/wood can occur. Protect with painters tape and/or protective sheathing as required. Follow all guidelines regarding material use, preparation, personal safety and disposal.
- Refer to the enclosed painting and staining instructions on the last page for exterior and interior finish instructions.
- Contact your Marvin supplier if you have any questions regarding product and materials used in manufacturing or questions on replacement parts.

After Market Products

Alterations to Marvin products including window films, insulating or reflective interior window treatments or additional glazings can cause excessive heat buildup and/or condensation. They may lead to premature failures not covered under warranty by Marvin Windows and Doors.

Before purchasing or applying any product that may affect the installation or performance of Marvin windows contact the manufacturer of after market product/glazings that are not supplied by Marvin and request written product use, associated warranties and damage coverage. Provide this information and warranties to the end user and/or building owner for future reference.

Hazard Notations

Please familiarize yourself with the following hazard notations used throughout this instruction.

Caution	Warning	Seek Assistance	Tips/Hints	IZ3
Mistakes or misuse could cause damage to the window or result in faulty installation and unit performance.	Mistakes or misuse could result in personal injury and/ or severe damage to unit, equipment, and/or structure.	Help from another individual is necessary to perform this task safely and correctly.	Information on alternative procedures, definitions, helpful hints	Indicates fastening requirements for Impact units.

WARNING

Drilling, sawing, sanding or machining wood products generates wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. California Health and Safety Code Section 25249.6.

You Will Need to Supply	
Safety glasses	Hearing protection
Level	Square
Hammer	Wood shims
Insulation	Tape measure
Perimeter sealant	2" Roofing nails
Sill pan flashing	
Backing material (foam backing rod)	
Flashing materials	
Weather resistive barrier	

Standard Parts Shipped

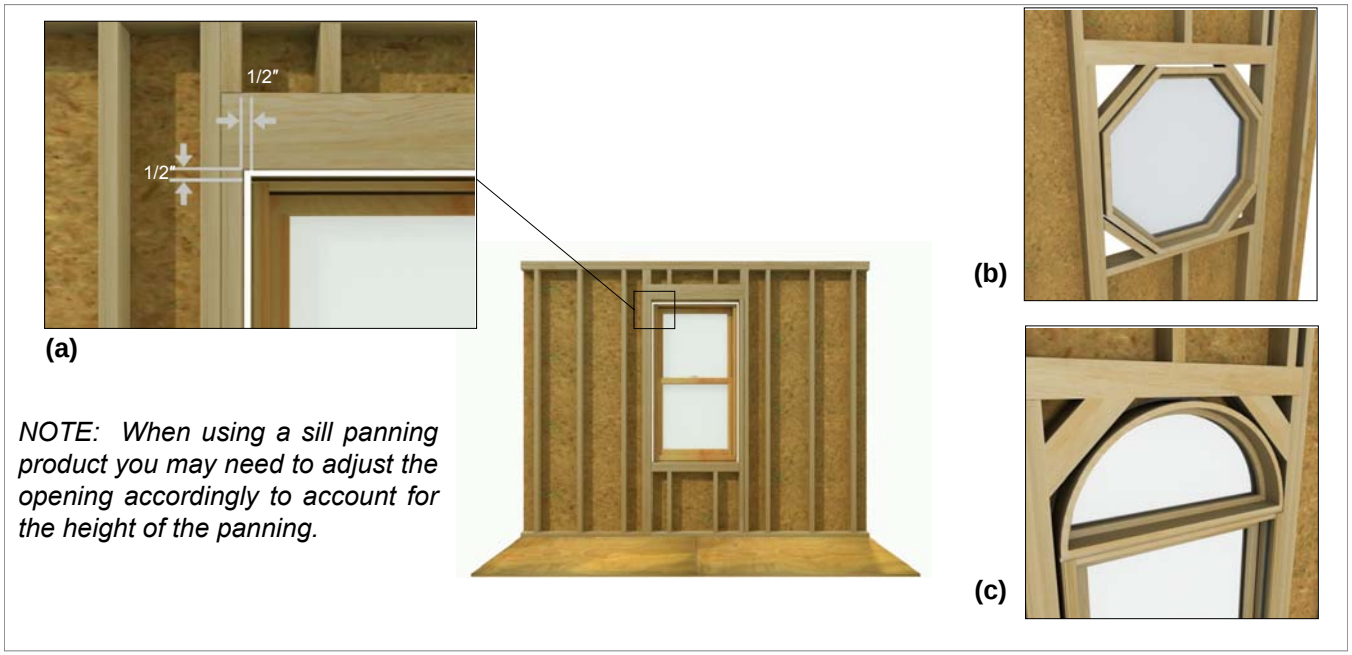
Units are sent with hardware and four (4) nailing fin corner gaskets. Follow installation instructions included with part if applicable.

NOTE: Numbers listed in parentheses ( ) are metric equivalents in millimeters rounded to the nearest whole number.

WARNING

Always practice safety! Wear the appropriate eye, ear and hand protection, especially when working with power tools.

Step 1: Rough and Masonry Opening Requirements



NOTE: When using a sill panning product you may need to adjust the opening accordingly to account for the height of the panning.

Figure 1 Typical rough opening.

1. ***Rough openings (RO)*** should be 1″ (25) wider than the outside measurement of the frame and 1/2″ (13) higher. (When framing rough opening, care should be taken to ensure the sill plate is level and the opening is square, straight and plumb.) See figure 1a.

2. On shapes such as polygons, round tops, and octagons, make sure there is proper bracing. See figure 1b and figure 1c.

CAUTION

If the previous conditions are not met, the installer must take corrective actions to alter the opening(s) before proceeding. It is also essential that the sheathing behind the wall be a solid surface to ensure that the unit can be secured firmly to the wall.

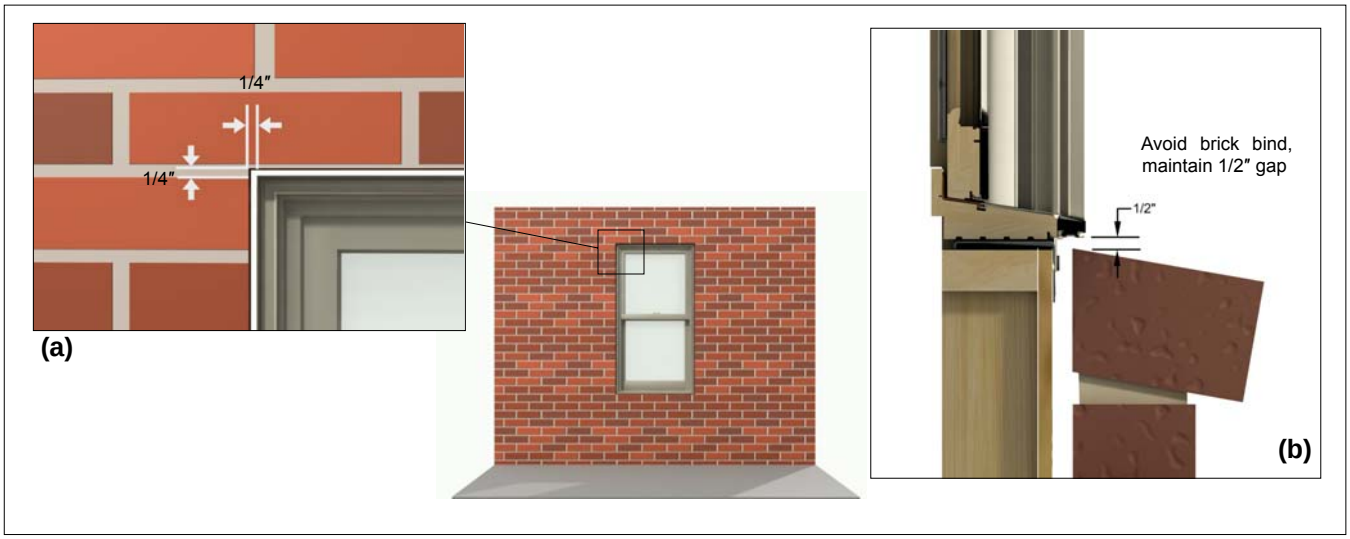


Figure 2 Typical masonry opening.

3. **Masonry openings (MO)** should be 1/2″ (13) wider than the outside measurement of the frame and casing and 1/4″ (6) higher than the outside measurement of the frame or casing. See figure 2a.

NOTE: On standard wood frame construction with brick veneer, make sure there is at least 1/2″ (13) between bottom of window sill (or eventual placement of the window) and the top row of brick to avoid "brick bind". See figure 2b.

Step 2: Rough Opening Preparation

The method shown below is Method A1 using a TYPE III flash pan. For step by step instructions on how to prepare an opening using this method, refer to www.marvin.com/ROprep for instructions titled "Window Rough Opening Prep and Flashing Method A1-Membrane Drainage System". Refer to ASTM E2112-07 for other rough opening preparations that are more appropriate for your situation.

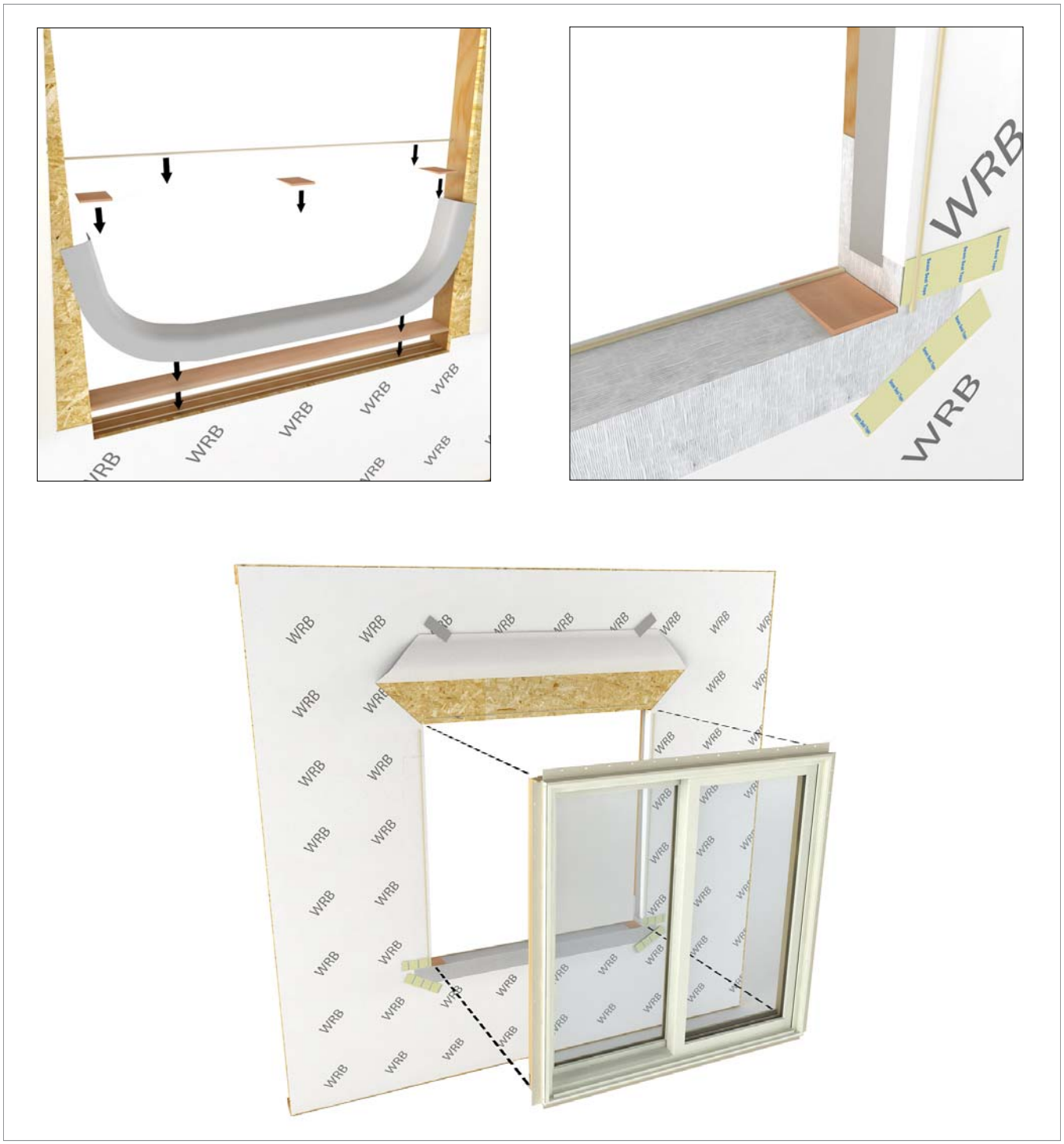


Figure 3

Step 3: Preparing the Unit for Installation

1. Remove the protective packaging from the unit and dispose/recycle properly. Inspect unit for any hidden damage and report immediately to your Marvin representative. Provide the customer service number etched on one of the top corners of the glass. See figure 5.

IMPORTANT

Remove the vinyl shipping blocks from jambs or shipping tube assembly on Ultimate Double Hung units once ***installation is complete***.

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2. If you are installing a window with installation brackets or structural masonry clips, fasten to the window now (if not installed at the factory). Follow the instructions provided with the brackets. See figure 6.

NOTE: ***ON UNITS WITH FLAT CASING:*** *units with flat casing must be installed using installation brackets, masonry clips or screw through jamb.*
For more details on structural fastening, refer to the structural installation instructions found online at www.marvin.com ***or contact your Marvin representative.***

NOTE: ***ON SPACE MULL ASSEMBLIES:*** *space mull assemblies must be anchored with either #8 sheet metal screws or structural masonry brackets within 4"* (102) *of each side of the space mull on both ends of the mull. When using screws, make sure there is at least 1 1/4"* (32) *penetration into the framing material.*

3. Apply jamb extension before installing the window in the rough or masonry opening. Follow instructions provided with the jamb extension.

NOTE: ***ON UNITS WITH OPTIONAL ALUMINUM NAIL FIN:*** *manually fold out nail fin until it is perpendicular with the frame. Take care during handling and installation not to damage the corner gasket. After unit is secured in the opening fold supplied drip cap to "L" shape as shown and install per unit flashing instructions.*

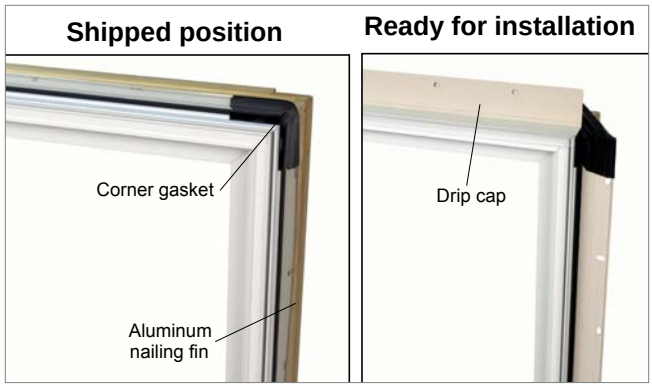

Figure 4 Aluminum nail fin.

Figure 5 Etching on glass contains customer service number.

Figure 6 Apply brackets/clips to units with flat casing (if applicable).

IMPORTANT

STOOL HEIGHT: On **Ultimate Casement** units, the 8° and 14° frame bevel option max stool height is 3/4" (19). For the flat frame option the max stool height is 15/16" (24). It may be necessary to shim under the unit to reduce the stool height. This will decrease the *Inside Opening Height* measurement for the replacement unit. This specification is required for proper operation of the crank handle. Field application of stool material will need to follow these guidelines for proper clearance and operation of the crank handle.

Step 4: Installing the Window

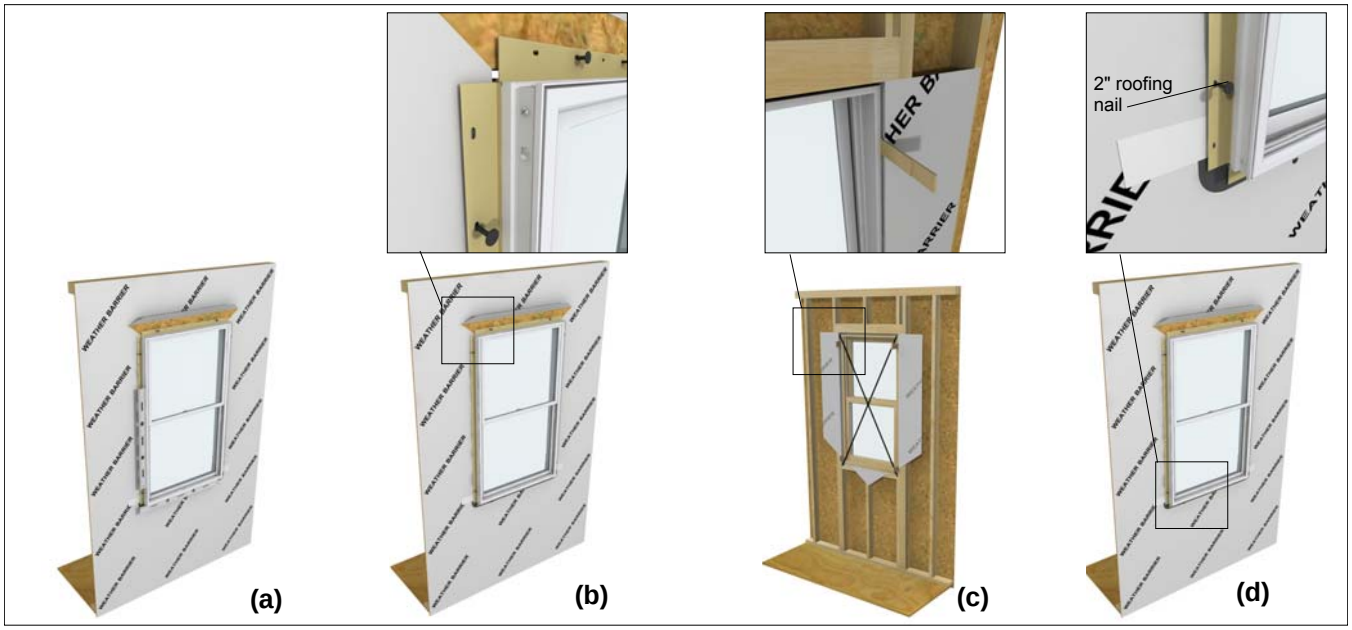

Figure 7 Positioning the window in the opening.

Seek Assistance

Some large windows and/or assemblies are very heavy. Avoid injury by getting help to lift and position the window into the rough opening.

NOTE: For Round Top operator supplemental installation and squaring methods, proceed to the last section of this instruction.

1. Center the window in the opening. Level at the sill and plumb the frame (interior/exterior). Shim under the jambs to bring to level if necessary. See figure 7a.

2. Once level, tack the jamb nailing fin with 2″ (51) roofing nails within 4″ (102) from the head jamb (or fasten top brackets if applicable, follow instructions sent with brackets. See figure 7b.

CAUTION

Proper shimming is extremely important. Under-shimming or over-shimming will result in bowed jambs and or head jamb. Both conditions can contribute to improper window operation.

3. From the interior, square the frame in the opening by installing shims between the jambs and framing 4″-6″ (102-152) from the head jamb and sill. Measure the diagonals and adjust shims until the unit is square in the opening. See figure 7c.

4. Now tack the lower corners of the nailing fin and recheck for square. If necessary remove the nails and adjust shims until the unit is square. See figure 7d.

5. Shim 4″-6″ (102-152) from the bottom corners.

ATTENTION

For units installed with masonry clips or installation brackets.

Bend bracket around framing member and attach with the #8 x 1 5/8″ screws. Angle screws approximately 15 degrees away from the window. Always shim above or below brackets. See figure 8.

NOTE: Depending on construction method or wall type, you may need to modify the clip/bracket to fit the opening. Fastening holes should be no more than 1/4" from the bend in the bracket. If necessary , drill two 5/32" (3) *holes in the bracket.*

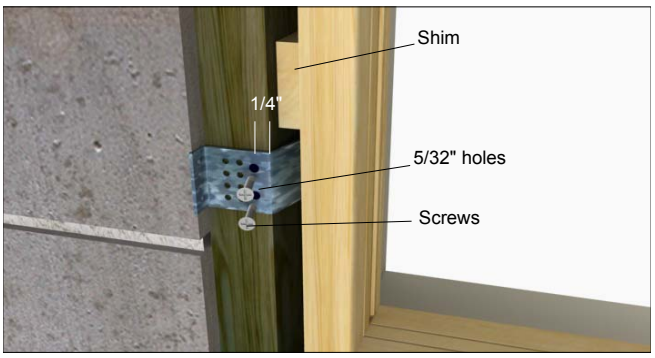

Figure 8 Attaching window with masonry clips or installation brackets.

Step 4: Installing the Window (cont.)

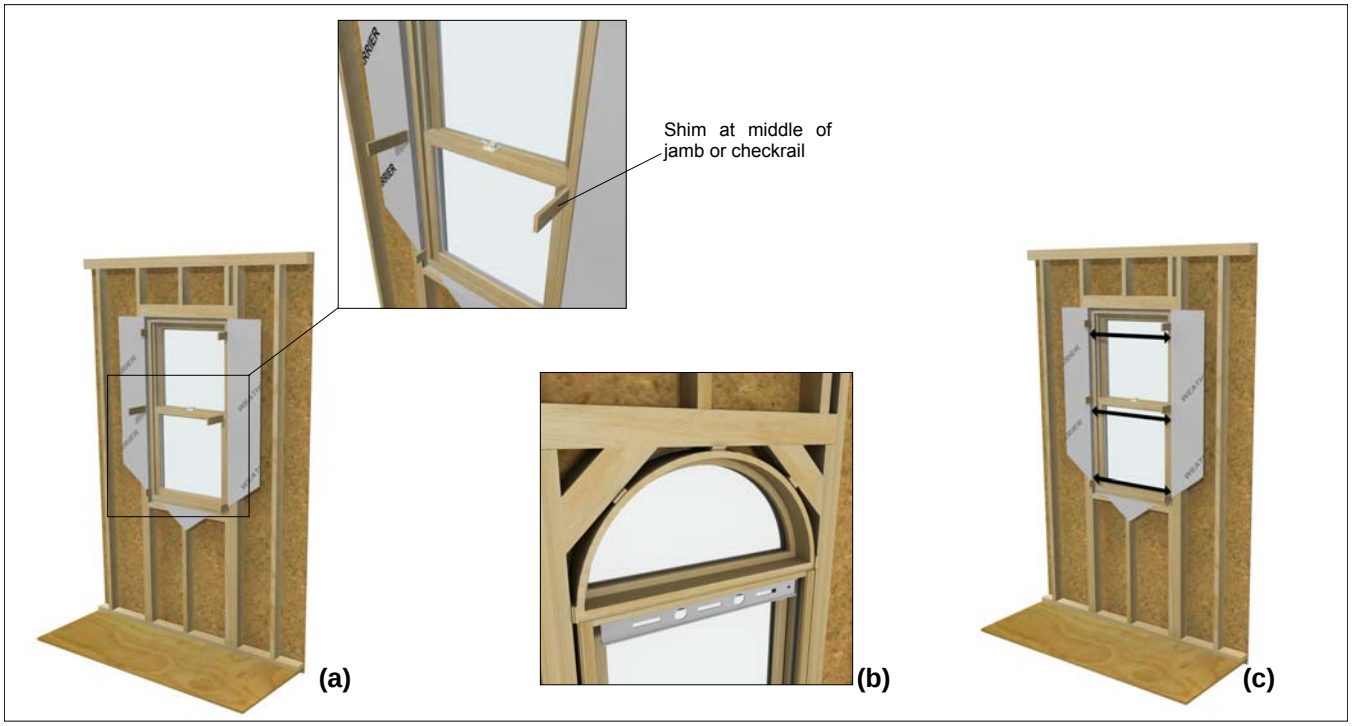

Figure 9 Shimming and squaring the window.

6. Recheck the diagonals one more time to make sure the unit is square in the opening. If square install additional shims at 15″ intervals on center and at each lock point. Always shim at checkrails and meeting stiles. See figure 9a.

NOTE: Note: For units installed with installation screws through the framing members, be sure to shim at each fastening location to avoid bowing/distorting jambs.

7. On round tops and other non-rectangular shapes, make sure to shim at bracing locations. See figure 9b.

8. Measure at head jamb, center of unit, and sill to make sure all dimensions are equal. If they are not, you will have to adjust the shims accordingly. See figure 9c.

9. Once the unit is square and plumb in the opening, operate the sash (on operable units) to make sure it is operating properly. If not, you may have to make some adjustments to the shims.

Tip

On operating units, one way to make sure that the unit is installed square is to check the reveal (gap) between the operating sash and the frame. An even reveal around the entire sash generally means a squarely installed unit and will ensure smooth operation.

10. Complete fastening of the nailing fin around the perimeter of the unit with 2″ roofing nails 2″ from each corner and spaced every 6″-8″ (152-203) on center.

11. **Interior and mullion trim:** Install mullion trim after interior trim or casing is applied. On Ultimate Double Hung units, be sure to use nails and staples that are no longer than 3/4″ (19). Place fasteners at least 1″ (25) from the edge of interior jamb liner.

Step 5: Flashing the Installation - Air Barrier Applications

Figure 10 Sealing the Installation in air barrier applications.

1. Flash the installation in a weather board fashion. For step by step instructions refer to marvin.com/ROprep for instructions titled "Window Rough Opening Prep and Flashing Method A1-Membrane Drainage System".

Step 6: Insulating and Sealing the Installation

1. We recommend two possible ways of insulating the RO cavity. Both follow the principle that stopping air intrusion will aid in managing water intrusion into the RO. The first method uses a combination of one bead of low expansion/low compression/closed cell foam at the exterior plane of the RO in conjunction with loose fill fiberglass insulation. The second method uses two beads of low expansion foam (one at the exterior plane of the RO and another at the interior plane of the RO).

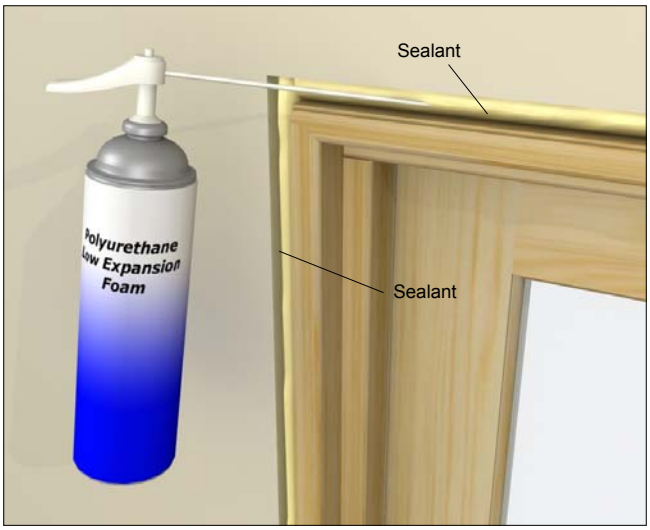

Figure 11 Apply low expansion foam between frame and rough opening.

Step 7: Final Installation Procedures

1. **For ALL applications:**
   Once the exterior finish such as siding or brick veneer is installed, apply bead of sealant between the finish and the frame exterior or casing along the sides. Apply additional beads approximately 1″-2″ (25-51) at the ends on top of the drip cap. Use a backer rod when necessary.

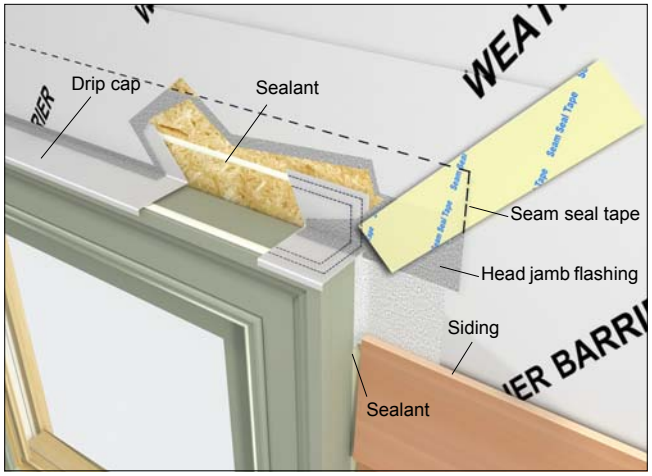

Figure 12 Apply perimeter sealant between window and exterior finish.

CAUTION

Perimeter sealant must be Grade NS Class 25 per ASTM C920 and compatible with the window product and the finished exterior(s) of the building. Using improper sealant could result in sealant failure causing air and water infiltration.

Technical Installation Specifications

The following details are specified for proper installation and for the unit to meet the advertised design pressure (DP) rating.

- Rough Opening Width: 1/4″-1″ (6-25) wider than window/door frame outside measurement.
- Rough Opening Height: 1/4″-1/2″ (6-13) higher than window/door frame outside measurement.
- Masonry Opening Width: 1/4″-1/2″ (6-13) wider than window/door frame outside measurement.
- Masonry Opening Height: 1/8″-1/4″ (3-6) higher than window/door frame outside measurement.

Architectural Detail Manual Specifications:

- Rough Opening: Width 1″ (25); Height 1/2″ (13).
- Masonry Opening: Width 1/2″ (13); Height 1/4″ (6).

- A sloped sill pan integrated with the weather resistive barrier. The panning must drain water to the exterior of the cladding OR the exterior surface of a concealed weather resistive barrier.

CAUTION

Be aware that the use of sill pans and other barriers will decrease the rough opening height clearance. Adjust opening dimensions accordingly.

- The panning system used in these instructions is one component in a structure's overall water management system. It should be used in conjunction with an appropriate drainage plane compatible with the exterior cladding.
- Flashing materials must comply with ASTM E2112-01, section 5.13 and be compatible with all materials used in installation including panning systems, air barriers and building papers, sheathing, and the window unit.
  Flashing material must not contain asphalt and must be compatible with flexible PVC (vinyl).
- Fasten units installed with nailing fin to the sheathing with 2″ (51) galvanized roofing nails spaced no more than 4″ (102) from each corner and spaced no more than 8″ (203) on center around the entire perimeter.
- Properly flash and/or seal all windows at the exterior perimeter.
- Sealants used for installation must be Grade NS Class 25 per ASTM C920 and compatible with the building exterior, window exterior surface, and flashing/water management materials.
- Optional foams used for installation must be low expansion only. Foam and foam application must comply with ASTM E2112-01, SEC 5.9.2.
- For units with flat casing install with installation brackets, structural masonry brackets, or jamb screws.
- Shim 4″-6″ (102-152) from each corner on jambs and head jambs. Install additional shims at 15″ (381) on center and at all locking points. Always shim at the checkrails and meeting stiles.
- Do not use chemically treated products for shim material.
- Fasteners penetrating chemically treated lumber must be a minimum of 0.90 oz/ft^2 zinc hot dipped galvanized or stainless steel type 304 or 316.
- The window frame must not come into direct contact with chemically treated wood products.