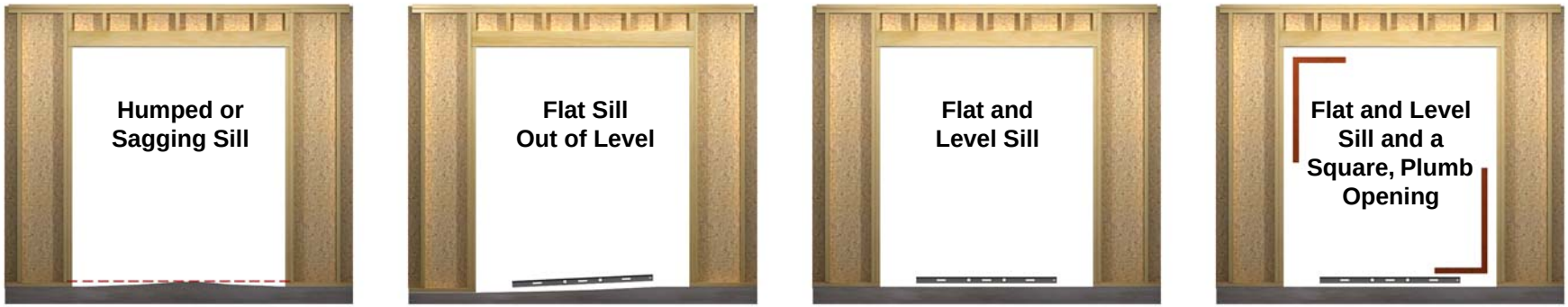
Marvin Door

General Installation Instructions



BAD **BAD** **GOOD** **BEST**

(Need to correct sill condition prior to door installation)

1. **The key to proper operation is squaring the door frame in relation to the sill.**
2. A GOOD INSTALLATION has a **FLAT** sill that is also **LEVEL**.
3. The BEST INSTALLATION requires a **FLAT** and **LEVEL** sill and a **SQUARE** and **PLUMB** opening.

Correcting an out of square opening requires shimming beneath the sill and/or at the corners. These instructions assume an opening is constructed for the BEST installation with a flat and level sill and a square opening.

These instructions are applicable for the following wood and clad products:

Ultimate Inswing French Door	**Ultimate Outswing French Door**	**Ultimate Inswing French Door Transom**
Ultimate Sliding French Door	**Sliding Patio Door**	**Ultimate Inswing French Door Direct Glaze Transom**
2 1/4" Inswing French Door	**2 1/4" Outswing French Door**	**1 3/4 and 2 1/4" Commercial Door**

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 door 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 E2112-07, “Standard Practice for Installation of Exterior Windows, Doors and Skylights,” for installation suggestions. The same information for ASTM E2112 can be found on the ASTM website, www.astm.org. 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).

MARVIN Windows and Doors
Built around you.

Table of Contents

Before You Begin....3
Hazard Notations....3
Installer and Builder Information....3
Aftermarket Products....3
Tools and Supplies Needed....3
Checklist for Installers....4
Rough and Masonry Opening Requirements....5
Rough Opening Preparation....6
Preparing the Unit for Installation....7
Installing the Door....8
Installing the Door (continued)....9
Securing the Sill....10
Flashing Installation - Air Barrier....11
Flashing the Installation - Building Paper....12
Final Sealing Procedures....13
Technical Installation Specifications....14

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

CAUTION

Do not direct mull sidelites to your Marvin door. Contact your Marvin distributor or dealer for additional information. Marvin Windows and Doors recommends special care be taken when mulling a transom(s) above the door. Transom installation may require additional support that allows unaffected door operation. Contact your Marvin distributor or dealer for additional information.

WARNING

Always practice safety! Wear the appropriate eye, ear and hand protection, especially when working with power tools. This door is glazed with safety glass (tempered or laminated) and if broken must be replaced with safety glass. This is in accordance with state and federal laws.

IMPORTANT

JAMB EXTENSIONS - If your unit was ordered with optional jamb extensions over 3", they will be shipped loose. Field applied jamb extensions should be applied BEFORE the unit is installed into the rough or masonry opening.

Before You Begin

Hazard Notations

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

Caution	Warning	Seek Assistance	Tips/Hints
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

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 Specifications section for technical specifications regarding the installation of this product. These installation specifications as well as the details in this section must be followed to achieve proper installation and performance.
- 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.
- Contact your Marvin dealer if you have any questions regarding product and materials used in manufacturing or questions on replacement parts.

Aftermarket Products

Alterations to Marvin window and door 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.

Before purchasing or applying any product that may affect the installation or performance of Marvin products 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.

Tools and Supplies Needed

Tools Needed:	
Safety glasses	#2 Phillips screwdriver
Putty knife	Utility knife
Pry bar	Level
Square	Hammer
Drill	Tape measure
Supplies Needed:	
Low expansion foam insulation	Construction adhesive
Flashing	Shims
Sealant	Rags/paper towel
#10 x 3" screws	Fiberglass insulation
#8x 3" and #8 x 2" flat head screw	Weather resistive barrier

Suggested Checklist for Installers

Before you Begin	✓
Carefully read and follow all installation instructions and building codes.	
Before installation inspect unit for any hidden damages or missing components and contact your Marvin representative if any damage is discovered or components missing.	
Installation	
Proper applicant of sealant under threshold, consisting of a 3/8" bead of sealant at the interior and exterior of the door opening as well as at the end of the sill. One additional 3/8" bead 2 1/4" from the interior bead in a slight wiggle pattern.	
Plumb, level and square unit into rough opening to ensure proper operation and performance.	
Proper installation of shims, presence of shims, proper locations behind hinges, at strikes, header and jambs.	
Check for proper reveal; adjust shims and screws as needed to get an even/consistent reveal between panels and around perimeter of panels.	
Check weather strip compression to the panel before installing long screws (adjust as needed) and check again after long screws are installed to ensure compression. Use a sheet of paper to check compression- paper should be held in place by the compression of the weather strip once you release it.	
Check for torn or short weather strip on the sill, head, jambs, part stops and stiles. Use a putty knife to raise the part stop if it has slid down during installation.	
Completion	
Check for operation of handles, thumb turns and locks to ensure that they operate smoothly and that the locks engage securely.	
Check that the drains are clear interior and exterior and that the weeps are not blocked on the exterior.	
Adjust hinges, rollers and keeper as needed to ensure proper operation and performance.	

Rough and Masonry Opening Requirements

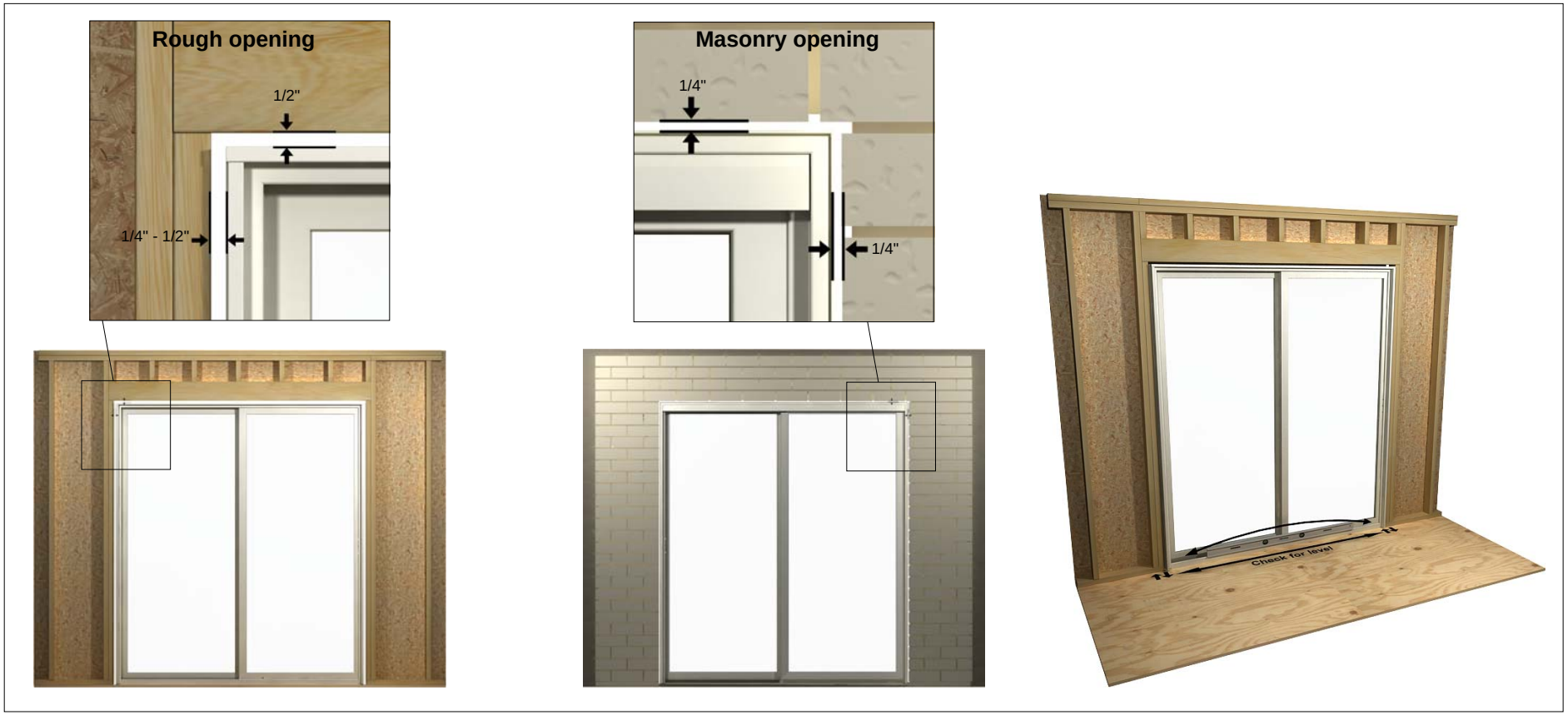


Figure 1 Typical rough and masonry openings.

IMPORTANT

These steps are crucial to obtain a trouble-free installation. If these conditions are not met, the installer must take corrective actions to alter the opening(s) before proceeding. For typical wood frame construction it is also essential that the wall sheathing be a solid surface to ensure that the unit can be secured firmly to the wall.

1. See the Technical Installation Specifications for rough and masonry opening gaps. When framing the rough opening, care should be taken to ensure the sill plate is level and the opening is square, straight and plumb.
2. Check the bottom surface of the opening to ensure it is flat, level, and free from debris. Proper operation of the door requires a sill that is flat and level.

NOTE: For doors not on grade and in standard wood frame construction with brick veneer, make sure there is at least 1/2" (13) *between the bottom of door sill (or eventual placement of the door) and the top row of brick to avoid "brick bind".*

Rough Opening Preparation

The following section demonstrates best practice for a rough opening preparation for both air barrier and building paper scenarios. Refer to ASTM E2112-07 for the other situations not covered in this document.

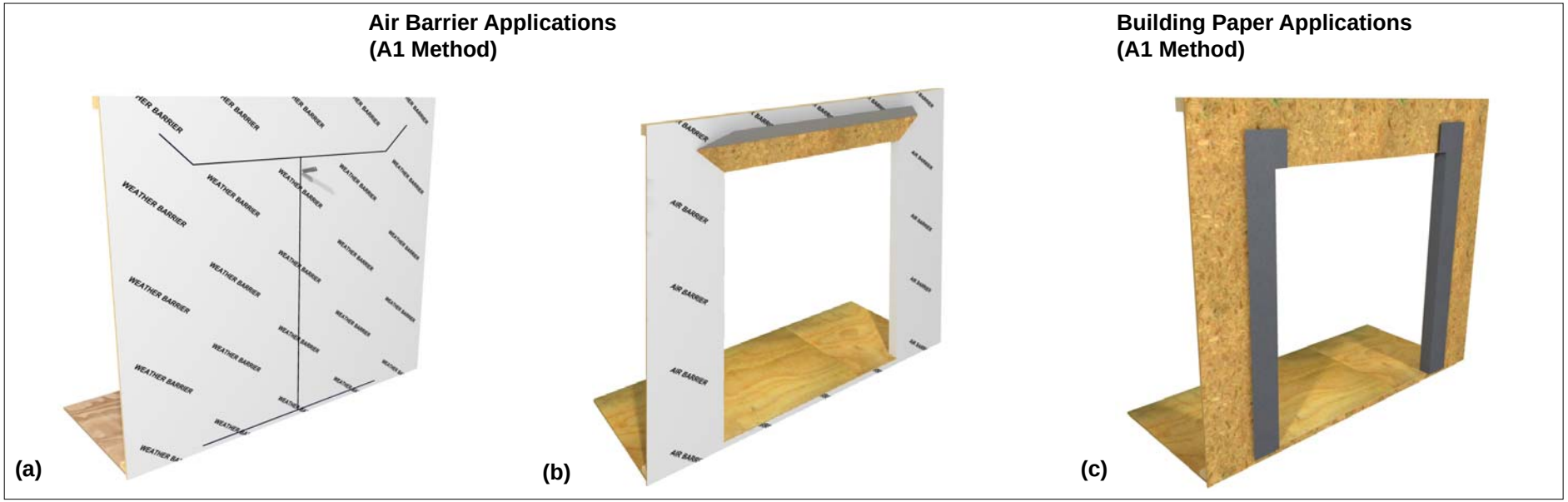


Figure 2 Rough Opening Preparation for construction methods using a continuous air barrier system or building paper.

Air Barrier Applications

1. When trimming away the air barrier at openings, first cut horizontally across the entire width of the rough opening at the head jamb and sill. Then cut vertically in the center of the opening from sill to head jamb. Finally cut the head jamb corners diagonally away from the opening. The complete cut should be in a “I” fashion. **DO NOT cut air barrier diagonally from corner to corner in an “X” fashion**. See figure 2a.

2. Wrap barrier at the sides to the interior and tack in place. Do not tack barrier at head jamb. Fold the head jamb flap up and tack in place or tuck beneath. This will allow the top flap to fit over the head jamb flashing after installation of the door. See figure 2b.

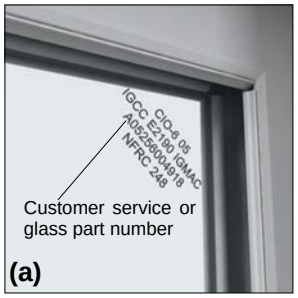
Building Paper Applications

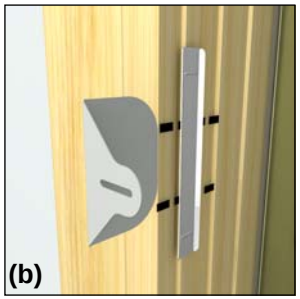
1. Cut two 13″ (330) pieces of Grade “D” building paper 8 1/2″ (216) longer than the rough opening height. (Adjust material width for wall thickness. Add 9″ (229) to the wall thickness to determine width.)

2. Position the pieces in place overlapping the rough opening by as much as the jamb depth. The wrap should extend above the rough opening by 8 1/2″ (216). Tack in place around the edge of the rough opening. Use a utility knife to cut the paper even at the head jamb. Fold to the interior and tack in place. See figure 2c.

Preparing the Unit for Installation

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.





Jamb Alignment Bracket

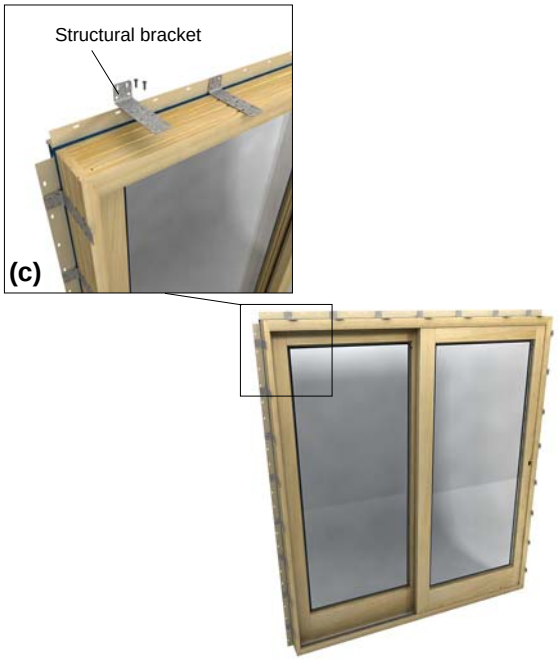


Figure 3 Preparing the unit for installation.

NOTE: Inspect the door for any damage or missing parts. Contact your Marvin representative if there are any problems. If possible, provide the original order number and description of door.

1. Remove the protective packaging from the unit and dispose/recycle properly. Inspect unit for any hidden damage and report immediately to your sales representative. Provide the customer service number or glass part number etched on one of the top corners of the glass. Seefigure 3a.

2. **For Clad Units:** Position the factory applied nailing fin in the upright position. FOR UNITS WITH VINYL NAILING FINS DO NOT APPLY NAILING FIN CORNER GASKETS AT THIS TIME.

*NOTE: **ON UNITS WITH FLAT CASING**: Units with flat casing must be installed using masonry clips or screw through jamb.*

IMPORTANT

Marvin highly recommends the use of jamb adjustment brackets attached to your door. View the instructions online Marvin Door Alignment System or included as a supplement with your instructions before installing your door. See figure 3b.

3. If you are installing your door with structural brackets or masonry clips, apply to the door frame once you are ready to place it in the opening permanently. Follow the instructions included with the brackets. See figure 3c.

CAUTION

Some brackets are sharp. Wear gloves and use care when moving the door if brackets are installed.

Installing the Door

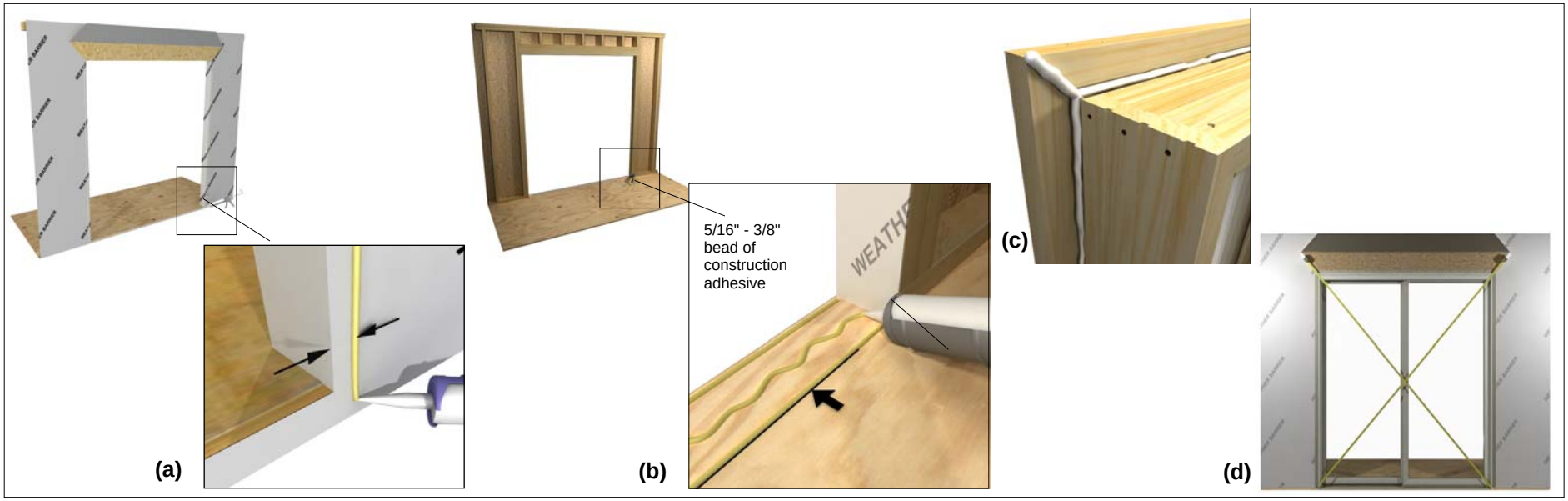


Figure 4 Installing the door.

Seek Assistance

It is highly recommended that you get help from another person/persons when installing the door. These doors are heavy and it will be hard to position or install with just one person.

NOTE: If field applying interior jamb extension or mulling transom units, refer to appropriate instructions (as needed) at this time.

1. After the rough opening has been prepped (using either the air barrier or building paper methods), apply a continuous bead of sealant[1] 3/4" (19) from the top and sides of the door opening. See figure 4a.
2. Apply a 3/8" (10) bead of adhesive[1] on the subfloor at the interior and exterior edges of the door opening, then lay another bead approximately 2 1/4" (57) from the interior bead in a slight wiggle pattern. See figure 4b. Adhesive beads should contact the interior and exterior flat portions of the sill as well as the center rib.
3. Tip the door into the opening and center it. For clad units, temporarily nail the upper corners of the nailing fin with a 2" (51) roofing nail. Do not drive the nail all the way in.

NOTE: If wood door unit has exterior casing, apply sealant at the back (interior side) where casing contacts jambs and head jamb and also at top corners where head and side casings join. See figure 4c.

4. Before the adhesive is allowed to set up, ensure the jambs are straight and plumb (interior/exterior and left/right). See figure 4d. The sill must be level and straight. Check diagonal measurements for the entire frame. Adjust as necessary by applying shims to the corners 6" (152) from the sill and head jamb.

For steps on how to permanently secure the unit, refer to the supplemental instruction included with this door.

IMPORTANT

To meet advertised Structural Design Pressure Ratings, doors must be installed with either masonry clips, jamb screws or structural brackets spaced a maximum of 6" (152) from corners and 12" (305) on center.

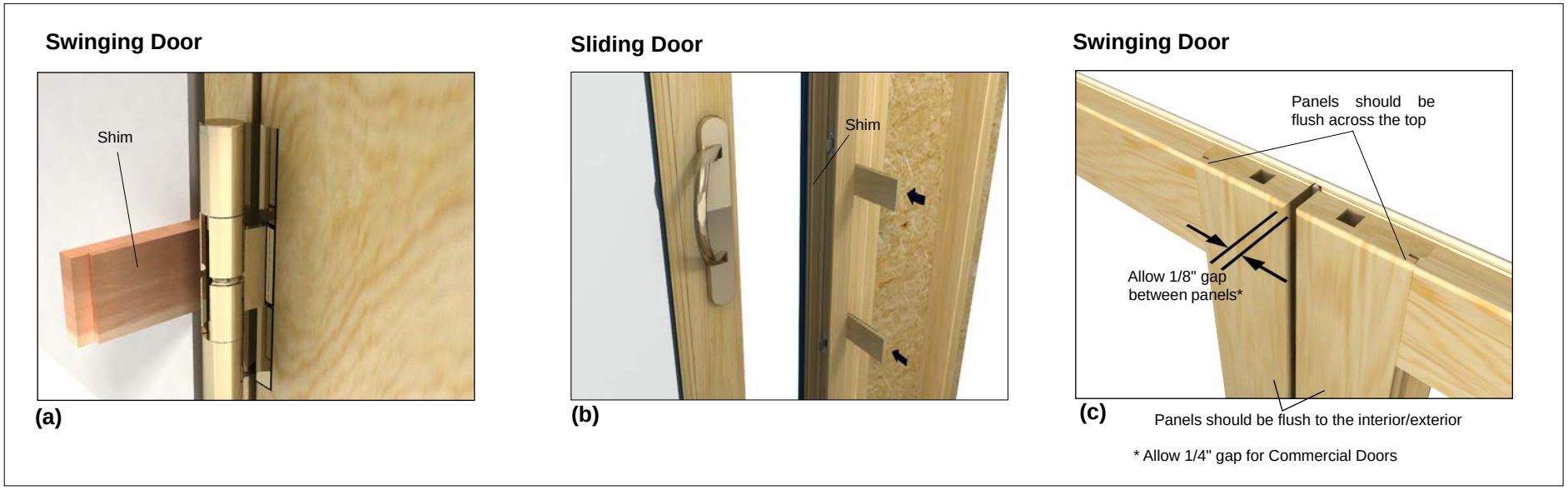


Figure 5 Installing the door.

5. **For Swinging Doors:** Place a shim at each hinge and on each side of jamb and head jamb strike plates. Place additional shims a maximum of 12" (305) apart. Be careful not to bow the jambs. See figure 5a.
   For Sliding Doors: Place shims at or near keepers or jamb strike. Place additional shims a maximum of 12" (305) apart. Be careful not to bow the jambs. See figure 5b.

6. For clad units, finish fastening nailing fin if applicable. For wood units finish fastening the brick mould casing if applicable.

NOTE: Proper shimming is extremely important. Under shimming can cause the unit to sag out of square, over shimming will result in bowed jambs and/or head jamb. Both conditions can contribute to improper operation of the door panels.

Tip

For Swinging Doors: If one panel is further to the exterior than the other (or on a single operating panel door the panel does not align parallel to head jamb) check sides of frame for plumb. If correct and the panel(s) still do not align, move the top of one or both sides of the frame slightly in or out.
On a multiple panel unit check to make sure top corners of the panel locking stiles are aligned and flush with each other. On a single operating panel unit check to make sure the margin along panel top and head jamb are even. See figure 5c. If one panel is higher/lower move the top of the frame horizontally until the panels align.

Securing the Sill

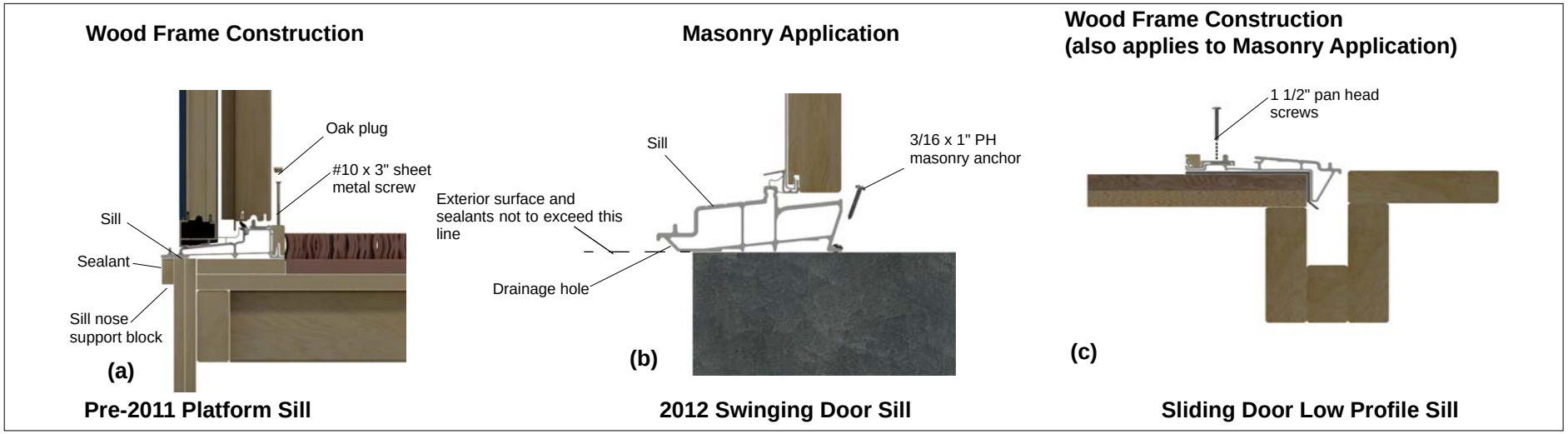


Figure 6 Securing the door.

NOTE: For instructions on how to secure the Commercial Door sill, refer to the Commercial Door supplemental instruction (part number 19972180).

1. For sliding and swinging pre-2011 sills, figure 6(a): Install a sill nose support block under the sill. Fabricate from treated lumber and attach to underside of the sill with construction adhesive. Nail the block to the sheathing to hold it in place. Apply generous amount of sealant along the underside of the sill as shown.

- Securing the pre-2011 sill: At the center of the Oak sill pre-drill a 3/16" hole, without penetrating the subfloor, vertically through the oak sill liner and sill. Secure the oak sill liner to the subfloor with a #10 x 3" sheet metal screw. For masonry applications, pre-drill a 3/16" x 3 1/2" deep hole through oak liner and into concrete. Fasten with a 3/16" x 3" concrete anchor.

NOTE: Sill nose support is not necessary for the 2011 or low profile sill.

- Securing the 2012 Swinging Door sill, figure 6(b): Secure the sill to the subfloor with #8 x 1" pan head screws through the pre-drilled holes in the sill lip. In masonry applications, pre-drill 3/16" x 1" deep holes through the pre-drilled holes in the sill lip and into the concrete. Fasten with #8 x 1" pan head concrete anchors.

- **OPTIONAL:** Secure the low profile sill by applying 1/2" x 3/8" foam tape to the bottom and fastening with 1 1/2" pan head screws. Center the screws in the slot. See figure 6c.

IMPORTANT

For StormPlus IZ3 units, refer to the provided StormPlus installation instructions (part number 19970071 or visit www.marvin.com) for proper placement of additional screws.

IMPORTANT

Do not seal drain holes. Make sure drain holes are kept clear of dirt and debris

Flashing Installation - Air Barrier

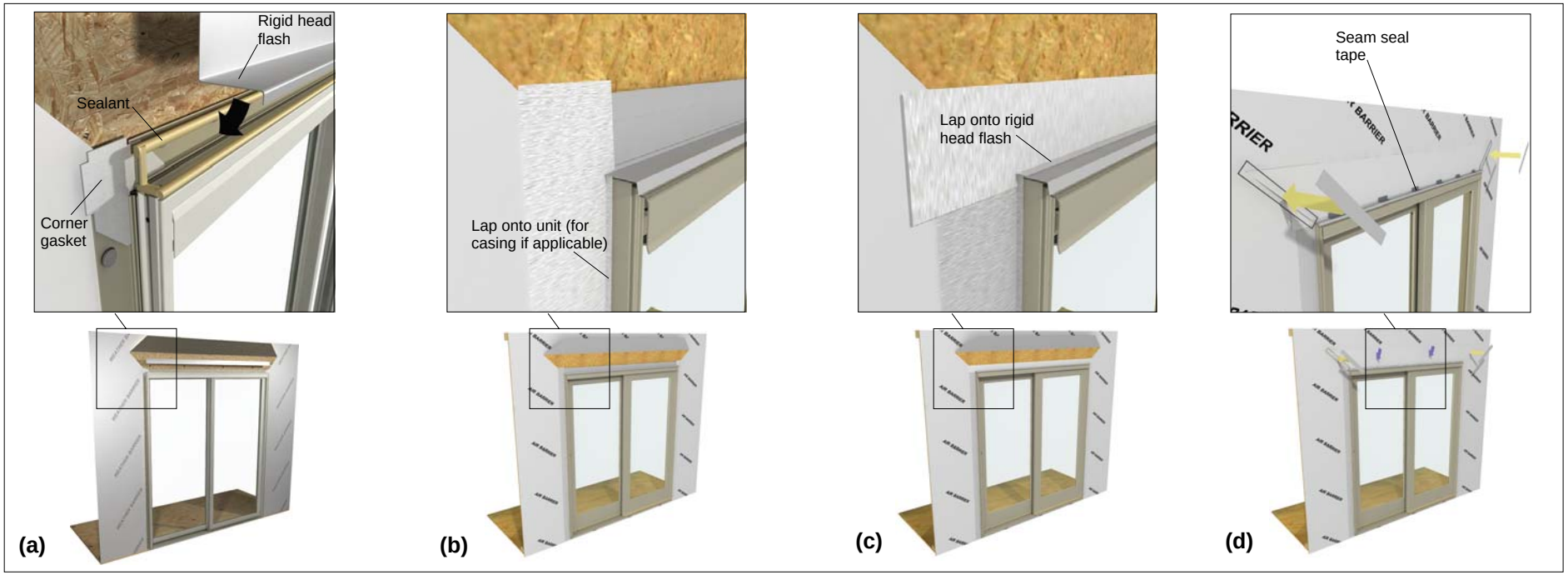


Figure 7 Flashing the installation. (Sliding door shown but applies to swinging door as well.)

IMPORTANT

Nailing fin is not designed to be a weatherproof flashing.

NOTE: For units with an integral nail fin / rigid head flash proceed to step 3.

1. **For clad units (if applicable):** Apply nailing fin corner gaskets to each corner of the nailing fin. Follow instructions on back of gasket.

2. **For all units:** Install a rigid head flash at the head jamb. Be sure to apply a bead of sealant along the back sides of both vertical and horizontal surfaces of the cap that come in contact with the door, door casing, and/or sheathing. See figure 7a.

3. Lap vertical strips of flashing onto the unit or casing and out over the weather resistive barrier. Make small cuts at the head jamb to allow the flashing to fold back onto the exterior. See figure 7b.

4. Install a layer of flashing over the vertical leg of the rigid head flash and lapped onto the horizontal leg. The flashing should extend past the jamb flashing installed earlier. See figure 7c.

5. Fold the head jamb air barrier down over the head jamb flashing. Apply seam seal tape over the diagonal cut in the air barrier. Make sure the tape laps onto the unit or casing. Cut 3" (76) strips of tape and install every 12" (305) along the head jamb. Tape and seal any seams and fasteners directly above the unit. See figure 7d.

Flashing the Installation - Building Paper

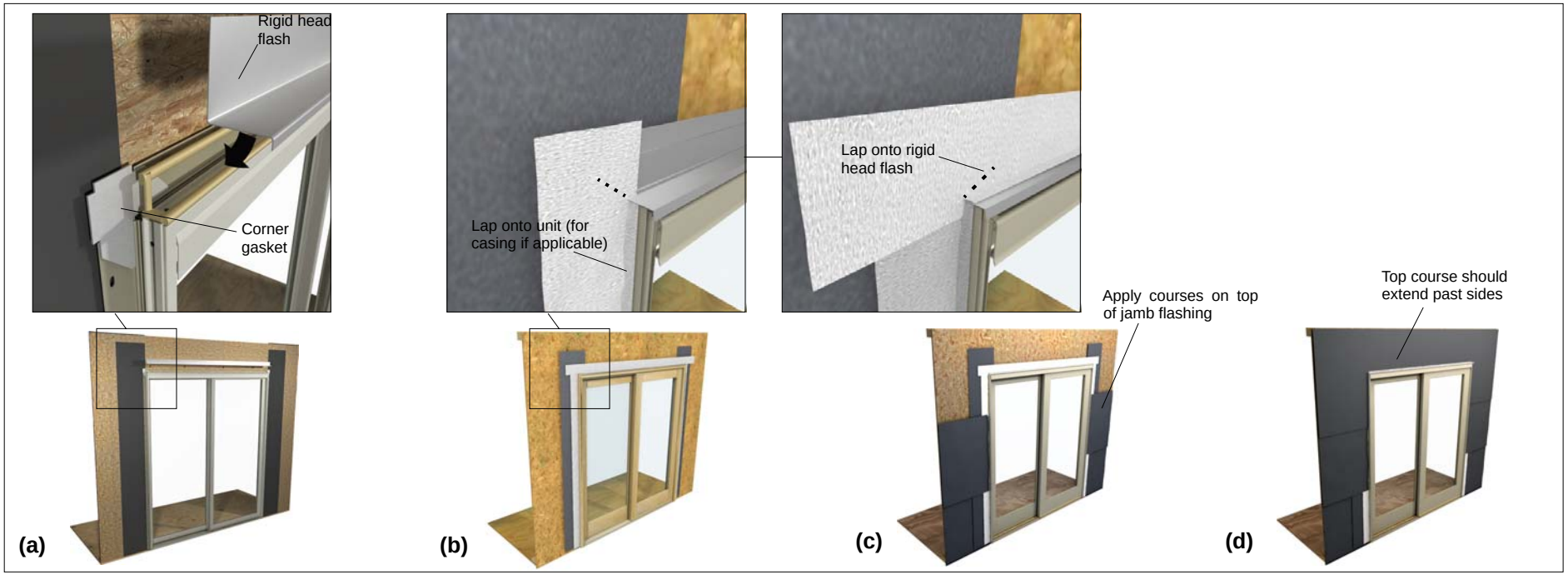


Figure 8 Flashing the installation (Sliding door shown but applies to swinging door as well.)

1. **For clad units (if applicable):** Apply nailing fin corner gaskets to each corner of the nailing fin. Follow instructions on back of gasket.

IMPORTANT

Nailing fin is not designed to be a weatherproof flashing.

NOTE: For units with an integral nail fin / rigid head flash proceed to step 3.

2. For all units: Install a rigid head flash at the head jamb. Be sure to apply a bead of sealant along the back sides of both vertical and horizontal surfaces of the cap that come in contact with the door, door casing, and/or sheathing. See figure 8a.

3. Lap vertical strips of flashing onto the unit or casing and out over the weather resistive barrier. Make small cuts at the head jamb to allow the flashing to fold back onto the exterior. See figure 8b.

4. Install a layer of flashing over the vertical leg of the rigid head flash and lapped onto the horizontal leg. The flashing should extend past the jamb flashing installed earlier. See figure 8c.

5. Install double ply layers of building paper starting at the bottom. One continuous course should extend over the head jamb flashing and beyond the side pieces (installed prior to door installation). See figure 8d.

Final Sealing Procedures

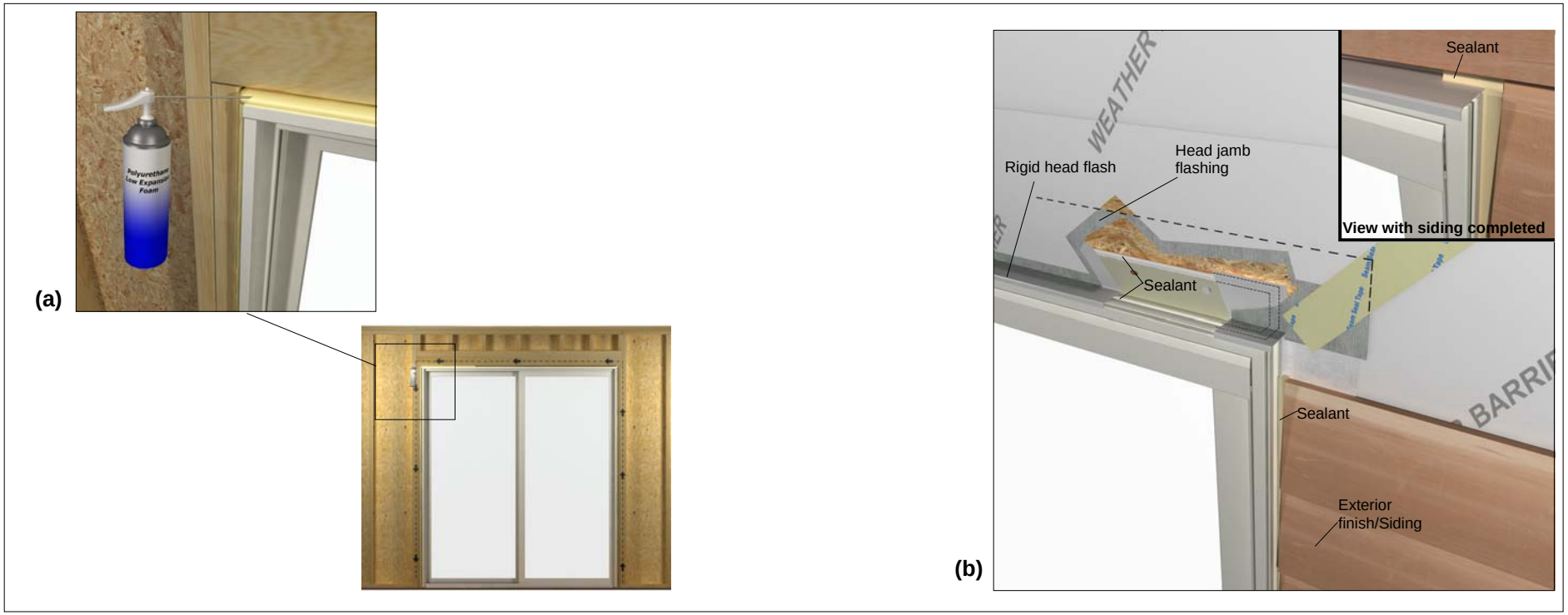


Figure 9 Sealing the installation.

1. From the interior apply a 1" - 2" (25-151) thick bead of low expansion foam insulation on the back side of the exterior casing. See figure 11. **Don't apply too much as it is possible to bow the jambs.**

NOTE: Instead of low expansion foam, you can loosely pack fiberglass insulation between the window and framing.

2. To integrate the unit with the structure's interior air barrier, apply a bead of sealant between the jamb and interior finish prior to trim installation. See figure 9. The installation is now ready for interior trim application.

3. After exterior finish or siding is installed, apply sealant[1] around the exterior perimeter of the unit frame or casing. As needed, insert backing material between the frame or casing and the structure to provide a proper sealant joint. Sealant depth must be equal to width between unit and exterior finish material (brick and masonry apply). Always refer to the manufacturer's recommendations for proper surface preparation and application. See figure 9a and figure 9b.

IMPORTANT

Using improper sealant could result in sealant failure causing air and water infiltration.

4. Trim all shim material even with the interior of structure.

Technical Installation Specifications

The following details are specified for proper installation and performance of the Marvin Door.

- Rough Opening Width: 1/4"-1" (6-25) wider than door frame outside measurement.
- Rough Opening Height: 1/4"-1/2" (6-13) higher than door frame outside measurement.
- Masonry Opening Width: 1/4"-1/2" (6-13) wider than door frame outside measurement.
- Masonry Opening Height: 1/8"-1/4" (3-6) higher than door frame outside measurement.
- Properly flash and/or seal all doors at the exterior perimeter.
- Sealants used for installation must be Grade NS Class 25 per ASTM C920 and compatible with the building exterior, door exterior surface, and flashing/ water management materials.
- Construction adhesive must be APA rated AFG-01 SPEC.
- 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 door unit.
- The following materials were used to develop these instructions:

  Weather Resistant Barriers: DuPont™ Tyvek® HomeWrap or Grade D building paper.

  Flashing Materials: DuPont™ FlexWrap or DuPont™ Straight Flash, DuPont™ Tyvek® Tape.

  Sealant: OSI® Quad Pro-Series®; solvent release butyl rubber sealant or DAP DynaFlex230™.
- Optional foams used for installation must be low expansion only. Foam and foam application must comply with ASTM E2112-01, SEC 5.9.2.
- Fasteners penetrating chemically treated lumber must be a minimum of 0.90 oz/ft2 zinc hot dipped galvanized or stainless steel type 304 or 316.
- Shim 4"-6" (102-152) from each corner, and at every point of attachment.