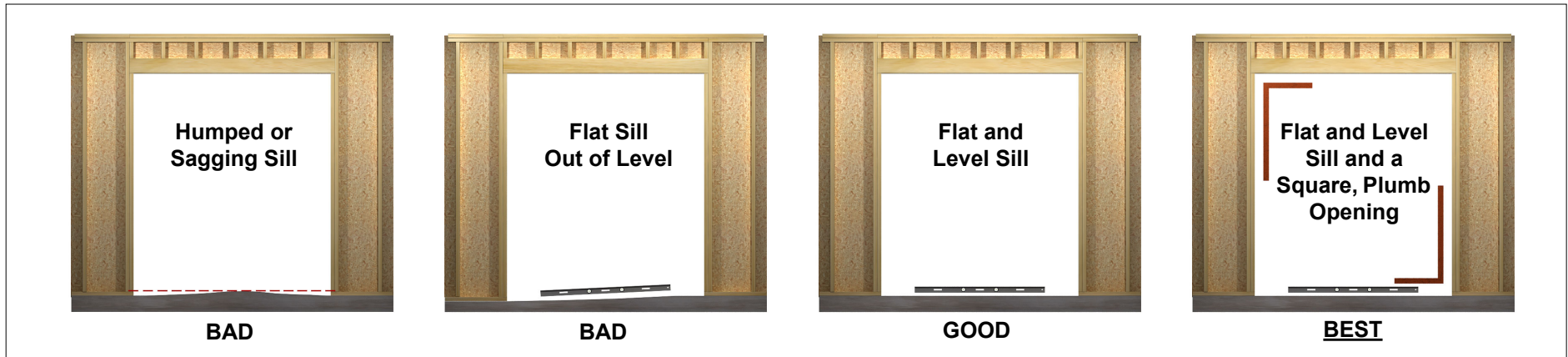


Essential, Elevate, and Infinity Doors

General Installation Instructions



(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

These instructions are applicable for the following products:

Elevate Sliding French Door
Essential Sliding French Door
Infinity Sliding French Door
Infinity Inswing French Door

Elevate Inswing French Door
Essential Inswing French Door
Infinity Sliding Patio Door

DATE USAGE: 4/25/16 to Present

ABSTRACT: Please read these instructions in their entirety before beginning to install your door product. These installation instructions demonstrate the installation of a 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 “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).



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.

IMPORTANT

Contact your Marvin or Infinity dealer if you have any questions regarding product and materials used in manufacturing or questions on replacement parts.



Seek Assistance

It is highly recommend that you get help from another person(s) when installing the door. Doors are heavy and it will be hard to position or install with just one person.



CAUTION

Do not direct mull side lites to your Essential/Elevate/Infinity door. Essential, Elevate, and Infinity 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 or Infinity dealer for additional information.



WARNING

This product can expose you to chemicals including titanium oxide, which is known to the state of California to cause cancer. For more information, go to: www.P65Warnings.ca.gov.



WARNING

This product can expose you to chemicals including methanol, which is known to the state of California to cause birth defects or other reproductive harm. For more information, go to: www.P65Warnings.ca.gov.







WARNING

Drilling, sawing, sanding or machining wood products can expose you to 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. For more information go to: www.P65Warnings.ca.gov/wood.

Before You Begin

Hazard Notations, Tips and Hints

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

After Market Products

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

- Before purchasing or applying any product that may affect the installation or performance of Marvin or Infinity products contact the manufacturer of after market product/glazings that are not supplied by Marvin or Infinity 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.

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 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.

Suggested Checklist for Installers

<u>Before you Begin</u>	X
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 or Infinity representative if any damage is discovered or components missing.	
<u>Installation</u>	
Proper application 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.	
<u>Completion</u>	
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.	

Tools and Supplies Needed

TOOLS:



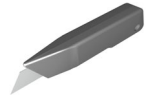
Safety Glasses



#2 Phillips Screwdriver



Putty Knife



Utility Knife



Level



Pry Bar



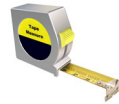
Square



Hammer



Drill



Tape Measure

SUPPLIES:



Flashing



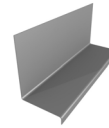
Shims



Sealant¹



Rags/Paper Towels



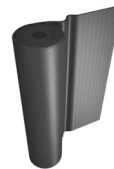
Drip cap



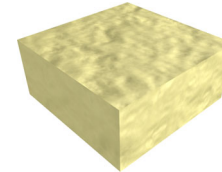
Low expansion foam insulation¹



2" Galvanized roofing nails



Weather resistive barrier



Fiberglass insulation

1. See Technical Specification for details on adhesives, sealants, fasteners, and low expansion foam insulations.

Rough and Masonry Opening Requirements

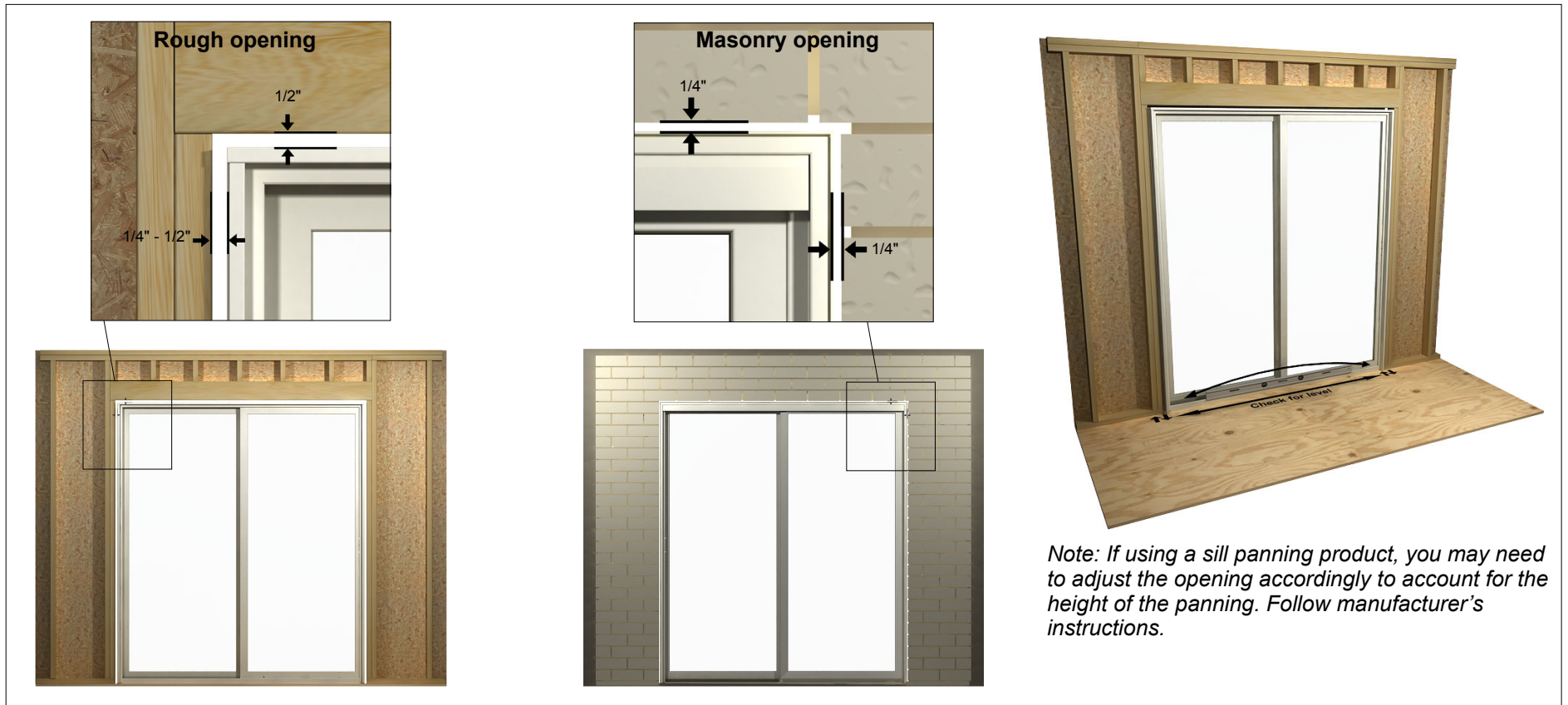


Figure 1 Typical rough and masonry openings.

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 Figure 1 and 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 weather barrier and building paper scenarios. Refer to ASTM E2112 for the other situations not covered in this document.

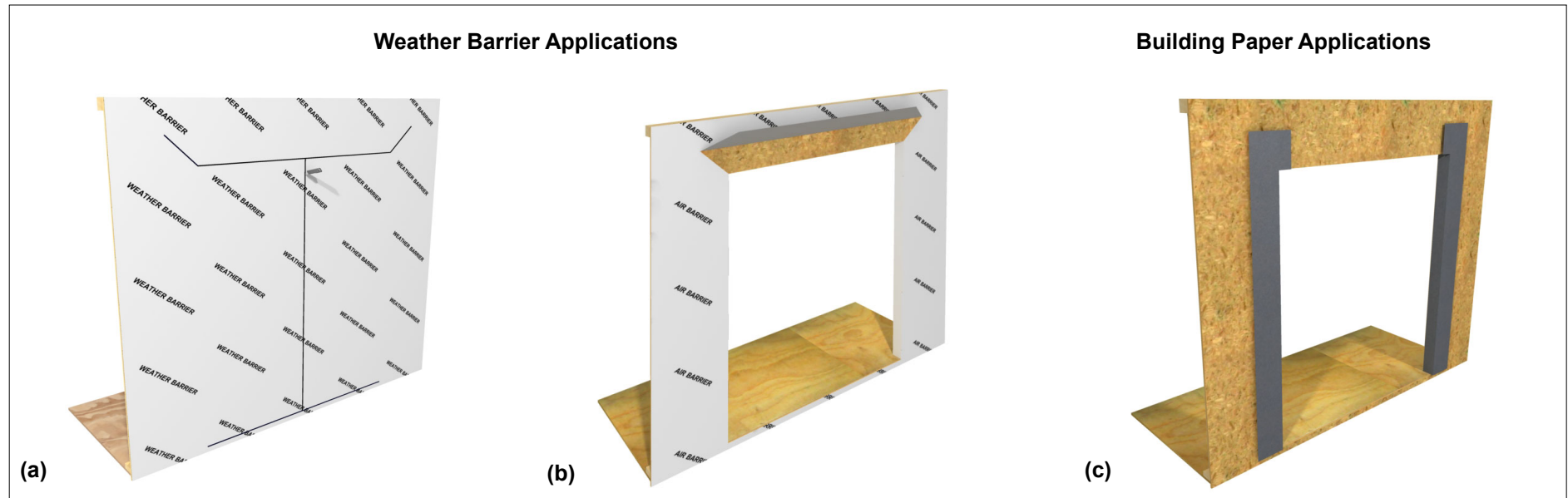


Figure 2 Rough Opening Preparation for construction methods using a continuous weather barrier system or building paper.

Weather Barrier Applications

1. When trimming away the weather 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. See figure 2a. **DO NOT cut weather barrier diagonally from corner to corner in an “X” fashion.**
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 tape temporarily 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

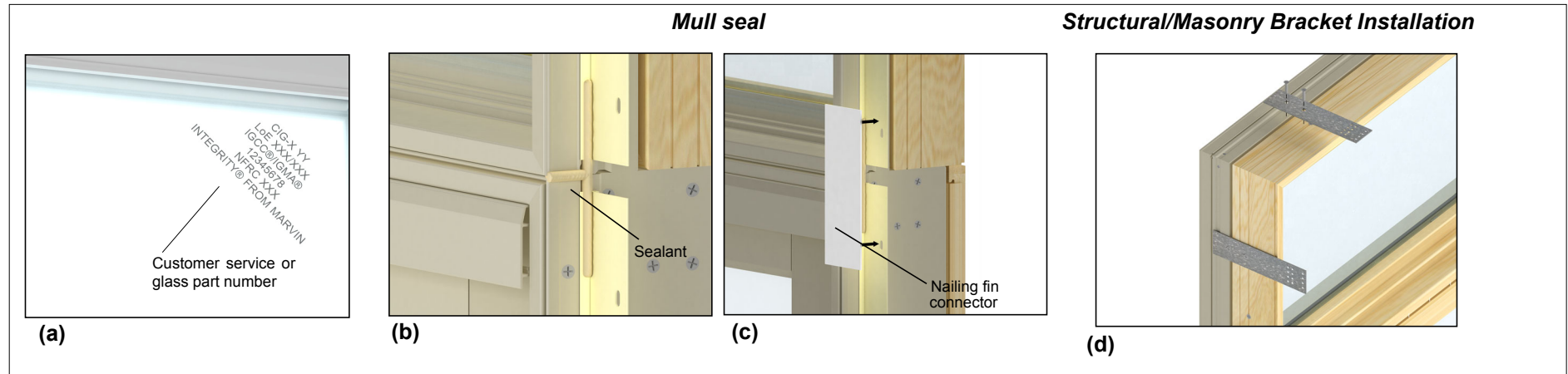


Figure 3 Preparing the unit for installation.

NOTE: Inspect the door for any damage or missing parts. Contact your Marvin or Infinity 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 damage and report immediately to your sales representative. Provide the order number, customer service number, or glass part number etched on one of the top corners of the glass. See figure 3a.



CAUTION

Keep swinging doors *locked*. Unlocked swinging doors can open during installation causing damage to the door unit or personal injury.

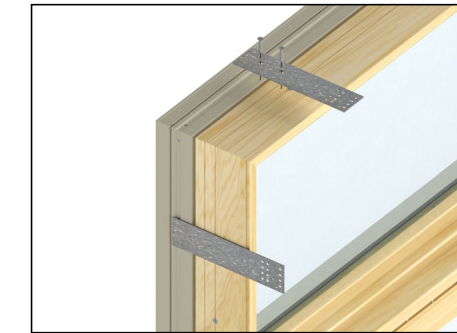
2. Position the factory applied nailing fin in the upright position. **DO NOT APPLY NAILING FIN CORNER GASKET AT THIS TIME.**

3. On all units *factory* or *field* mulled, mullion joints must be sealed prior to installation. Apply sealant at all mullions from the frame exterior edge to the drip cap/nailing fin kerf and across the kerf over the recessed mulling pin as shown in figure 3b. Apply nailing fin connectors at mullions by removing the paper backing from the connector and pressing into place. See figure 3c.

4. If you are installing your door with structural/masonry brackets, apply them to the unit by following the instructions included with the brackets. (Structural/Masonry Brackets Part #11708423.) See figure 3d. **Certified mull installations with structural brackets are also covered in these instructions.**

5. If you are installing an IZ3 door with nailing fin, add nailing fin clips by following the HP/IZ3 unit preparation section in the appendix of your product specific instructions.

Structural/Masonry Bracket Installation



(d)

6. For all HP and IZ3 units space the sill installation clips as specified in the product specific instructions.

7. For certified mull with nail fin installation, see the Certified Mull Anchoring instructions (Part # 19915787) that are included in the certified mull installation kit for further anchoring instructions.

IMPORTANT

To meet advertised structural performance grade ratings, doors with structural/masonry brackets, or IZ3 doors with nailing fin clips must be placed according to the product specific instructions.



CAUTION

Brackets and clips can have sharp edges. Wear gloves and use care when moving the door if brackets are installed.

Installation - Positioning the Door in the Opening

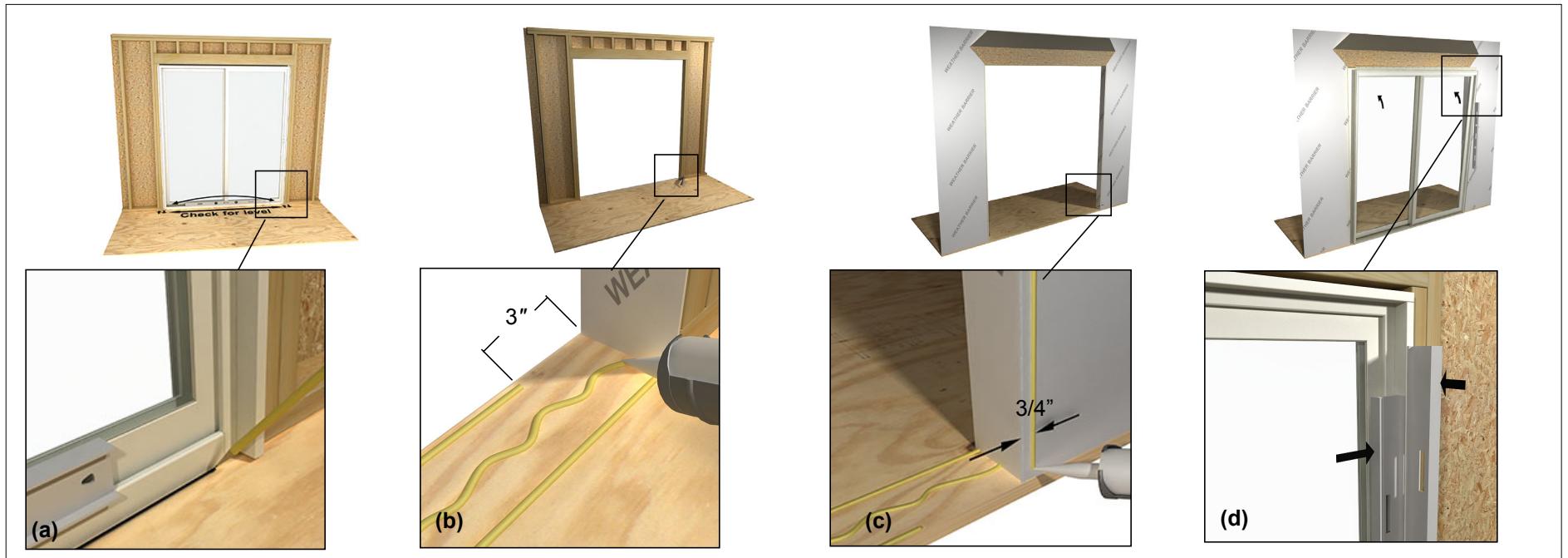


Figure 4 Preparing the unit for installation.

1. Move the door into position and center in the opening. Make sure the door fits in the opening properly and check to make sure the sill is level. If out of level, check for any objects between the sill and opening that may have caused this condition. If the door fits properly in the opening and the sill is flat and level, mark the subfloor near the interior sill of the unit. See figure 4a.

NOTE: On HP/IZ3 products that include sill installation clips, slide clips into the correct position per your product specific instructions. Door may need to be tipped towards the exterior slightly to do this.

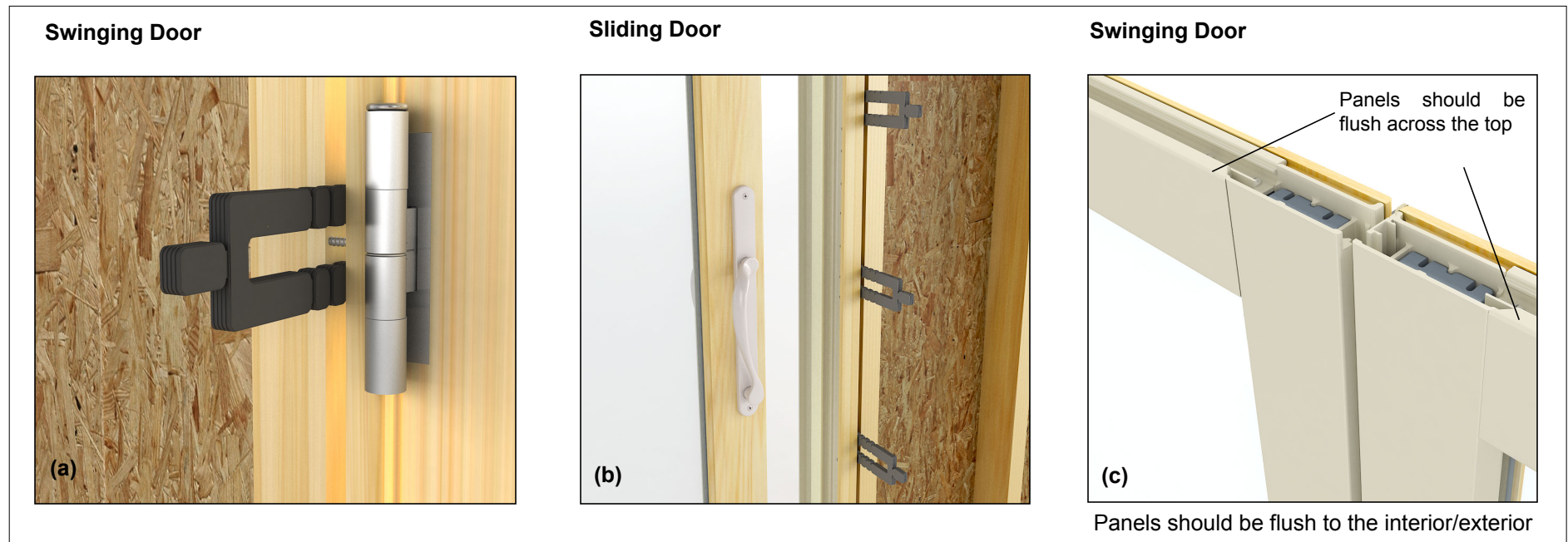
2. Remove the door from the opening and apply a $3/8$ " (10) diameter continuous bead of sealant along the exterior edge of the line marked in the previous step. Make sure interior bead runs all the way to both sides of the opening. Apply a second discontinuous bead along the exterior edge of the door opening making sure to stop bead 3" (76) from both sides of the rough opening. Then lay another bead down the center in a slight wobble pattern. See figure 4b.
3. Apply a continuous bead of sealant around the top and sides of the opening $3/4$ " (19) from the edge. See figure 4c.
4. Tip the door back into the opening and center, making sure to maintain proper rough opening

clearances. Temporarily fasten the unit in the opening in a top corner with a fastener. Before the sealant is allowed to set up, ensure the jambs are straight, true, plumb (interior/exterior, left/right). See figure 4d. The sill must be level and straight. Check diagonal measurements for the entire frame. Adjust as necessary to achieve square by applying shims to the corners 6" (152) from the sill and head jamb.

IMPORTANT

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

Installation - Shimming and Fastening



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

1. **For Swinging Doors:** Place shims within 1" (25) of each installation screw location. Place additional shims a maximum of 15" (381) apart. Be careful not to bow the jambs. See figure 5a.
2. **For Sliding Doors:** Place shims at or near keepers or jamb strike. Place additional shims within 1" of each installation screw location and a maximum of 15" (381) apart. Be careful not to bow the jambs. See figure 5b.

3. Ensure jambs and head jamb are not bowed. Add shims and/or installation screws per product-specific instructions as necessary and adjust to achieve straight frame members. Finish fastening nailing fin or structural/masonry brackets as applicable. To fasten nailing fin, use 2" (51) roofing nails around the perimeter of the unit spaced a maximum of 6" (152) from corners and 7" (178) on center.

NOTE: To meet advertised structural design pressure ratings door must be permanently secured using all applicable installation screws and nailing fin fasteners. For steps on how to permanently secure the unit, refer to the product-specific instructions included with the door.



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.

Flashing Installation - Weather Barrier

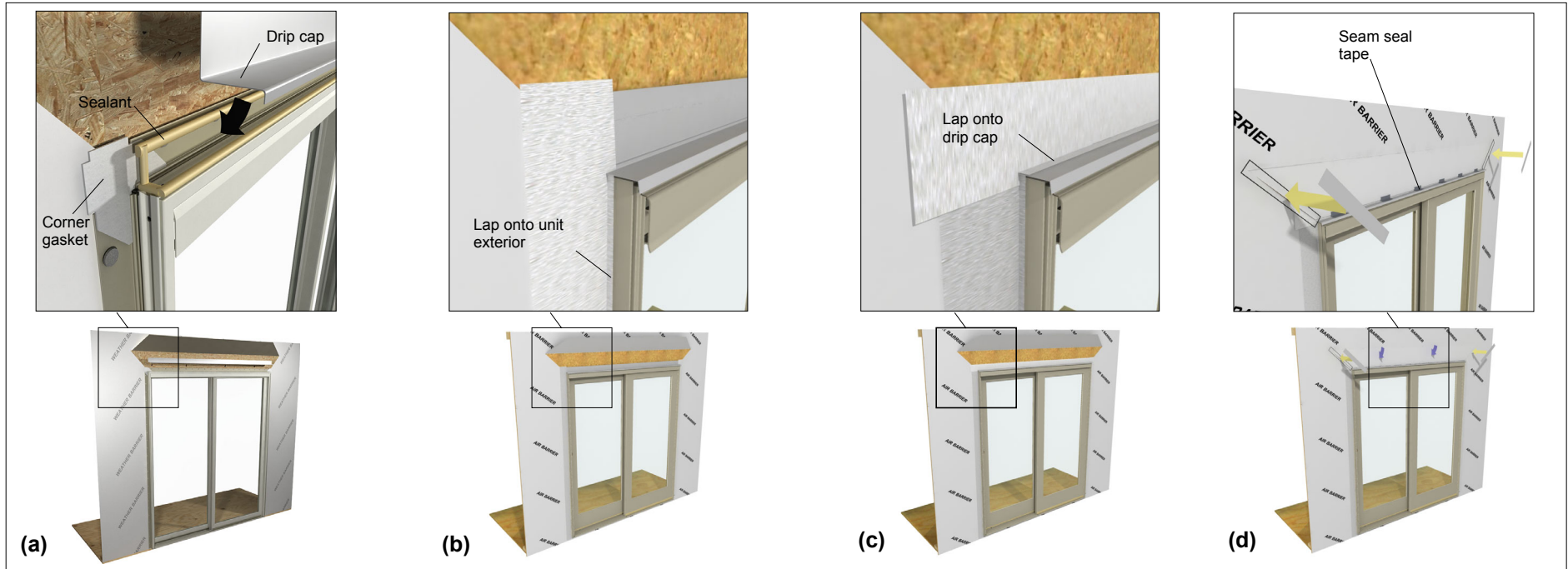


Figure 6

IMPORTANT

Nailing fin is not designed to be a weatherproof flashing.

1. Apply nailing fin corner gaskets to each corner of the nailing fin. Follow instructions on back of gasket. See figure 6a.

NOTE: For units with a rigid head flash integrated with the nailing fin, proceed to step 3.

2. Install a drip cap 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 6a.

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 6b.

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 by a minimum of 2" (51). See figure 6c.

5. Fold the head jamb weather barrier down over the head jamb flashing. Apply seam seal tape over the diagonal cut in the weather 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 6d.

Flashing the Installation - Building Paper

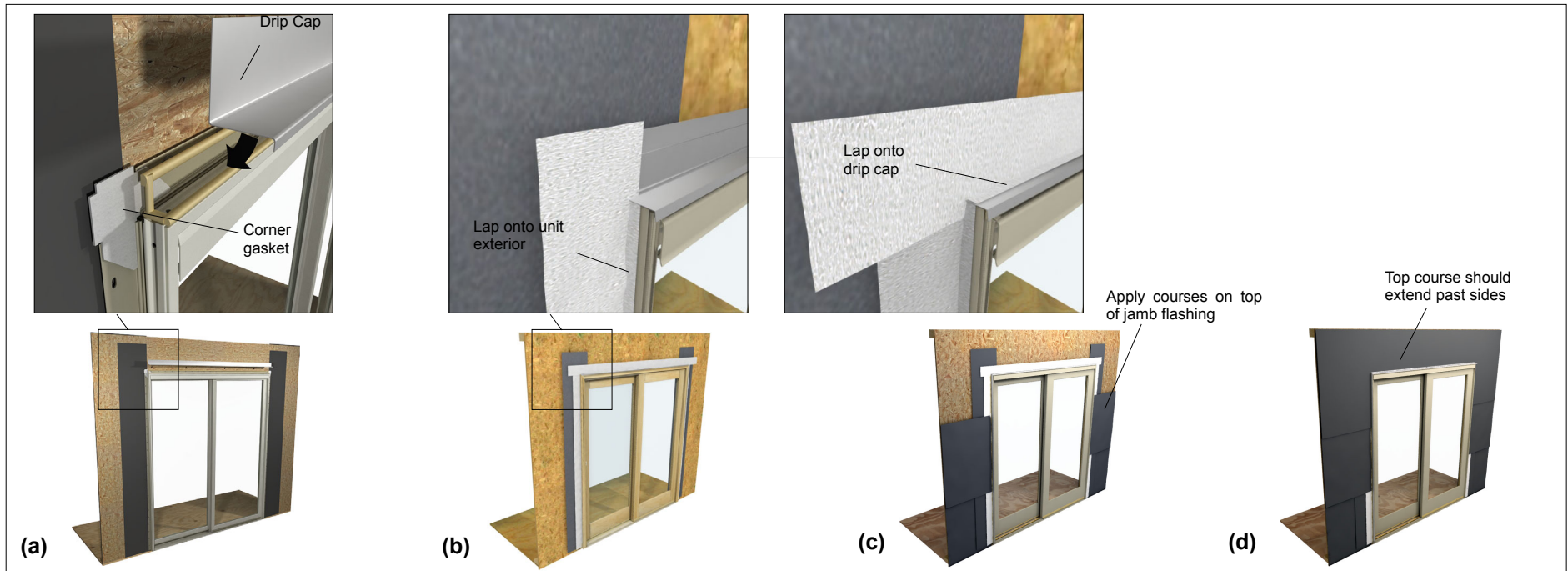


Figure 7

IMPORTANT

Nailing fin is not designed to be a weather proof flashing.

1. Apply nailing fin corner gaskets to each corner of the nailing fin. Follow instructions on back of gasket. See figure 7a.

NOTE: For units with a rigid head flash integrated with the nailing fin, proceed to step 3.

2. Install a drip cap 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 by a minimum of 2" (51). See figure 7c.

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 7d.

Insulating and Sealing the Installation

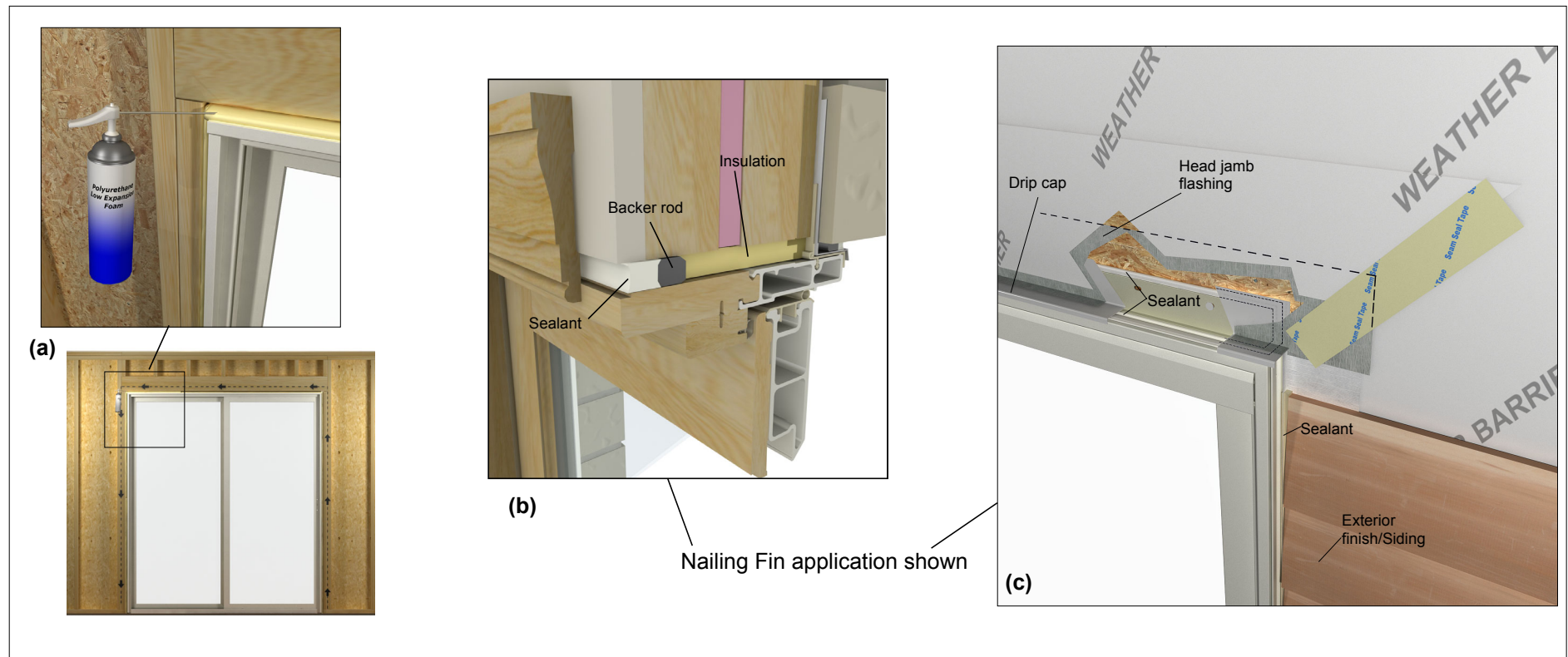


Figure 8 Sealing the installation.

1. From the interior apply a 1"- 2" (25-51) thick bead of low expansion foam insulation on the back side of the nailing fin (or backer rod in masonry applications). See figure 8a and 8b. **Do not 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 backer rod followed by a bead of sealant between the jamb and

interior finish prior to trim installation. See figure 8b. The installation is now ready for interior trim application.

3. Once the exterior finish such as siding or brick veneer is installed, apply bead of sealant around the exterior perimeter of the unit frame or casing leaving 1"- 2"(25-51) gaps at both ends of the head jamb. As needed, insert backing material between the frame or casing and the exterior finish material to provide a proper sealant joint. Sealant depth must be equal to width between the unit and exterior finish material (brick and masonry apply).

Always refer to the manufacturer's recommendations for proper surface preparation and application. See figure 8c.

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 Essential, Marvin Elevate, and Infinity Door.

- Rough Opening Width: 1/2"-1" (13-25) 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.
- Flashing materials must comply with ASTM E2112 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.
- 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.