

TruStile Wood Entry Door Knock Down Assembly Instructions

TRÜSTILE®
A MARVIN® BRAND



TruStile Wood Entry Door Abstract

ABSTRACT: Please read these instructions in their entirety before beginning to install your TruStile Wood Entry Door product. These installation instructions demonstrate the installation of a TruStile 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).

These instructions are applicable for the following products: TruStile Wood Entry Door

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WARNING!

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



WARNING!

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.



WARNING!

Older homes may contain lead-based paint, which may be disturbed when replacing doors or performing renovations. Consult state or local authorities for safe handling, disposal, or abatement requirements. For information, go to www.epa.gov/lead.

Important

Please consult with local authorities to properly dispose and/or recycle all packaging, materials, and waste.

Installer and Builder Information

- Always provide a copy of these instructions for the current homeowner.
- 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 the sill). Failure to do so can void the TruStile warranty coverage.
- Refer to the Technical Installation Specifications section for technical specifications regarding the installation of this product. These installation requirements as well as the details in the section must be followed to achieve the advertised design pressure (DP) rating of this product.
- It is the responsibility of the builder, installer, and sub-contractors to protect the interior and exterior of 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 for exterior and interior finish instructions.
- Contact your TruStile supplier if you have any questions regarding product and materials used in manufacturing or questions on replacement parts.
- Please refer to the PDF version of this instruction for further information regarding best practices installer and builder information, code, and other legal requirements. The PDF version is the official document of record.

After Market Products

Alterations to TruStile products including door films, insulating or reflective interior door treatments or additional glazings can cause excessive heat buildup and/or condensation. They may lead to premature failures not covered under warranty by TruStile. Before purchasing or applying any product that may affect the installation or performance of TruStile doors, contact the manufacturer of after-market product/glazings that are not supplied by TruStile 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

- Safety glasses
- Putty knife
- Pry bar
- Square
- #2 Phillips screwdriver
- Utility knife
- Level
- Hammer
- Tape Measure
- Low expansion foam insulation
- Flashing
- Sealant
- #8 x 3" flat head screws
- #8 X 3" trim head screw
- Cross Braces
- Shims
- Rags/paper towel
- Fiberglass insulation
- Weather resistant barrier

Frame Assembly Overview



1	Head Jamb
2	Side Jamb
3	Mull Post / Uni-Frame*
4	Sill**

* Mull Post and Uni-Frame process is the same.

** Depending on type of sill ordered, screw locations may vary. Sill extension does not come on every door. Exterior casing also available but not shown.

Important

IMPORTANT: TruStile Entry Doors strongly recommends that all components be finished prior to assembly.

Suggested Checklist for Installers

BEFORE YOU BEGIN	
Carefully read and follow all installation instructions and codes.	
Before installation inspect unit for any hidden damages or missing components and contact your TruStile representative if any damage is discovered or components missing.	
INSTALLATION	
Proper application of sealant under threshold, consisting of a 3/8" bead at the interior and discontinuous bead at the exterior of the door opening. A bead that runs from the interior to exterior about 1/2" away from the ends of the RO. 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 and stiles.	
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 as needed to ensure proper operation and performance.	

Best Installation Requirements



The key to proper operation is squaring the frame in relation to the sill.

A GOOD installation has a FLAT sill that is also LEVEL.

The BEST INSTALLATION requires a FLAT and LEVEL sill and a SQUARE and PLUMB opening.

Important

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.

Rough and Masonry Opening Requirements

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. Rough openings (RO) should be $\frac{1}{2}$ " (13) higher and 1" (25) wider than the outside measurement of the frame ($\frac{1}{2}$ " on each side of the frame). See Figure 1.

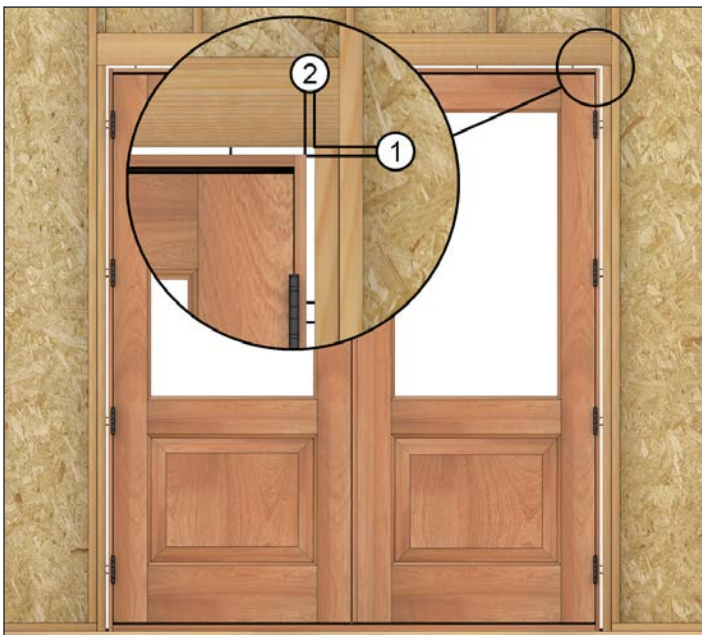


Figure 1 Rough Opening Clearance

1	1/2" RO Height
2	1/2" RO Width (one each side)

2. Masonry openings (MO) should be $\frac{1}{4}$ " (6) higher and $\frac{1}{2}$ " (13) wider than the outside measurement of the frame ($\frac{1}{4}$ " on each side of the frame) or casing. See Figure 2.

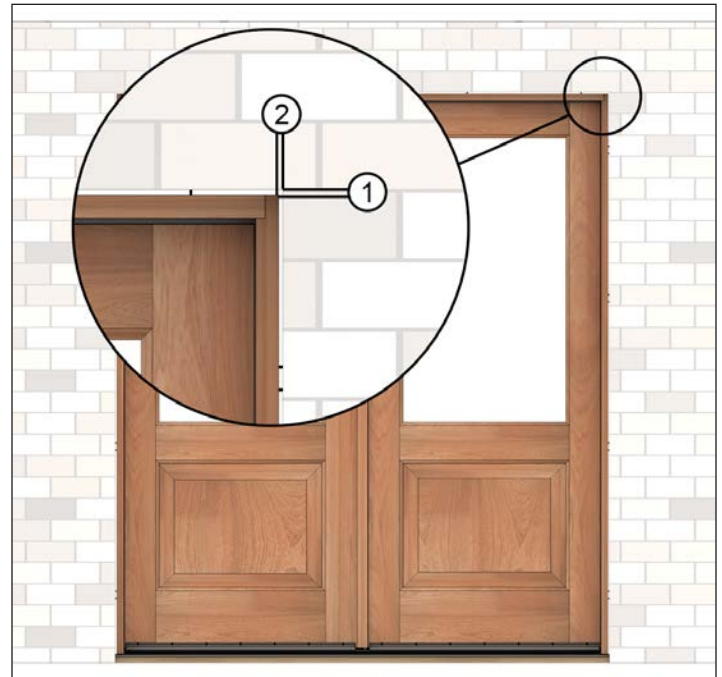


Figure 2 Rough Masonry Clearance

1	1/4" MO Height
2	1/4" MO Width (one each side)

3. 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. See Figure 3.



Figure 3 Start with a clean flat sill.

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

Frame Assembly

1. Remove packaging and check to see that no parts are missing or damaged.

Important

ATTENTION: Prior to assembly, all doors must have a top quality finish applied to exterior and interior wood surfaces including top, bottom, and side edges of panel.

2. Lay head jamb and side jambs on a flat sturdy surface, exterior or side up. Be sure the surface is not too harsh as to create unnecessary dents and/or damage to the unit while assembling. (Use adequate padding such as clean cardboard, blankets, or carpeting, etc. to protect the finished wood surface.)

3. Using the predrilled holes, apply screws at head jamb and side jamb joints. See figure 1 for size and placement of screws.

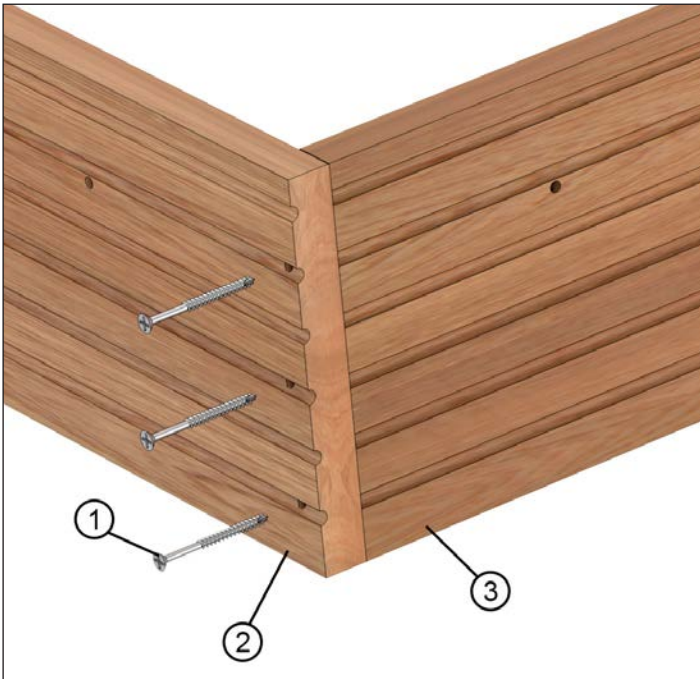


Figure 1

1	2" Flat Head Screws
2	Jamb
3	Head Jamb

4. Fasten uni-frame to head jamb by applying screws through the top of head jamb and into mull post. See figure 2.

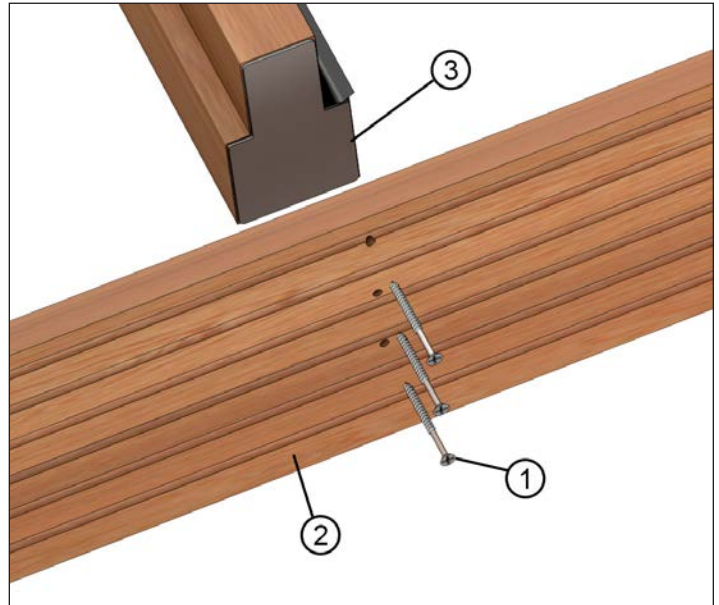


Figure 2

1	2" Flat Head Screws
2	Head Jamb
3	Uni-frame

5. Attach the oak adjustable sill, hydro sill, wood sill, or wood sill with interlock using the predrilled holes. Fasten screws through side jamb and into sill. Apply screws through Jamb into the sill. See figure 3.

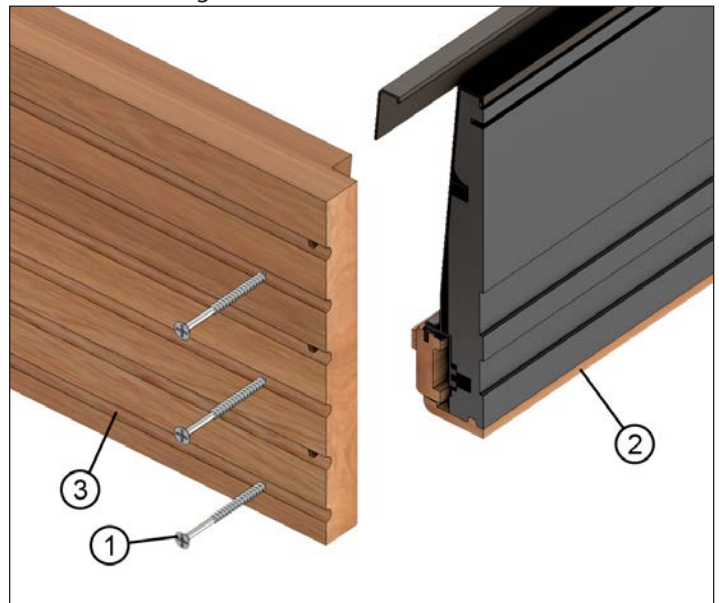


Figure 3

1	2" Flat Head Screws
2	Sill
3	Jamb

6. Assembly ADA sill using the predrilled holes fasten screws through sill and into side jamb. See figure 4.

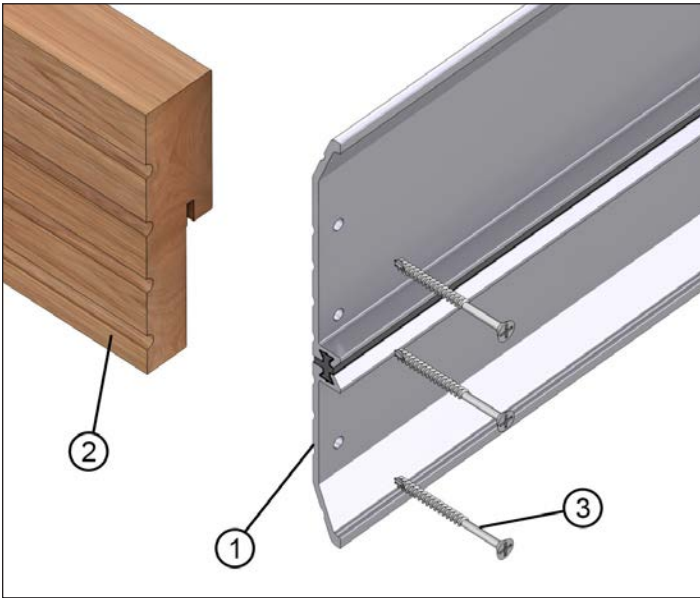


Figure 4

1	ADA Sill
2	Jamb
3	2" Flat Head Screws

7. Fasten uni-frame with screws through the bottom of the sill and into the uniframe through the pre-drilled holes. Screw quantity varies dependent on the sill type and size. See figure 5.

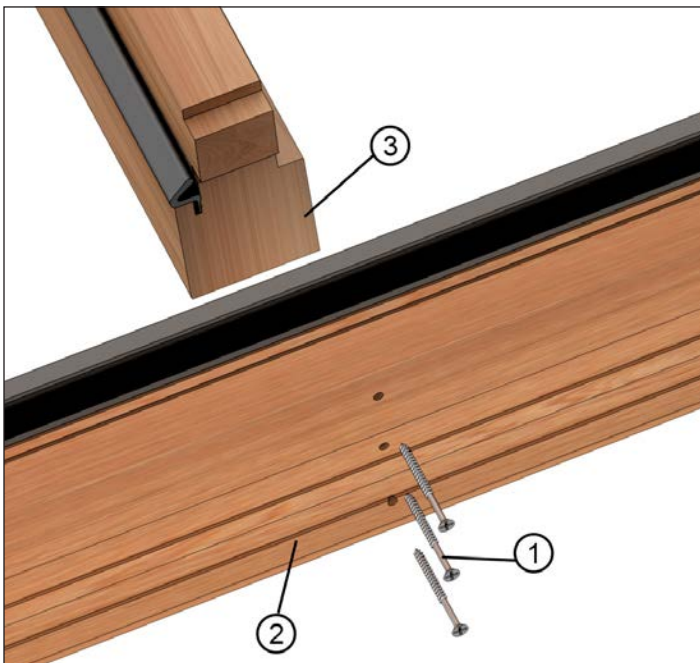


Figure 5

1	2" Flat Head Screws
2	Sill
3	Uni-frame

Important

8. ATTENTION: Check for square. Once square, nail cross braces 1/4" from outside edge into jamb and head jamb on the exterior of the unit. This will help to maintain a square frame during further assembly and installation. See figure 6.

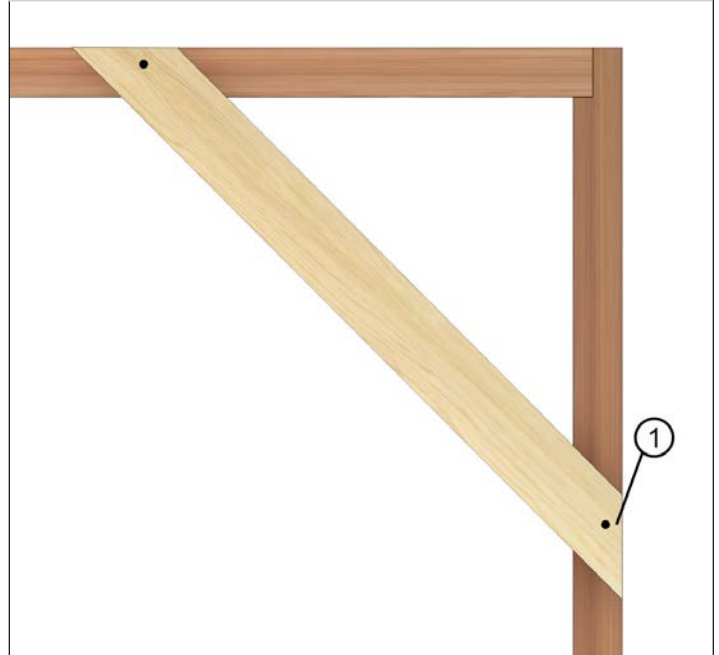


Figure 6

1	1/4"
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9. Carefully flip the entire frame so the interior is now facing up. Check for square again to make sure the frame has not wracked during repositioning.

! CAUTION!

CAUTION: Large door units may be very heavy and awkward to handle. It is important to obtain adequate assistance to avoid injury when handling the unit.

10. Slightly compress the jamb weather strip and apply adhesive corner weather seal pad to the door jamb at the sill on both the hinge side and the strike side. See figure 10.



Figure 7

1	Weather Seal Pad
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11. In order to maintain a consistent reveal for the sidelite, apply spacers next to each predrilled hole. See figure 8.

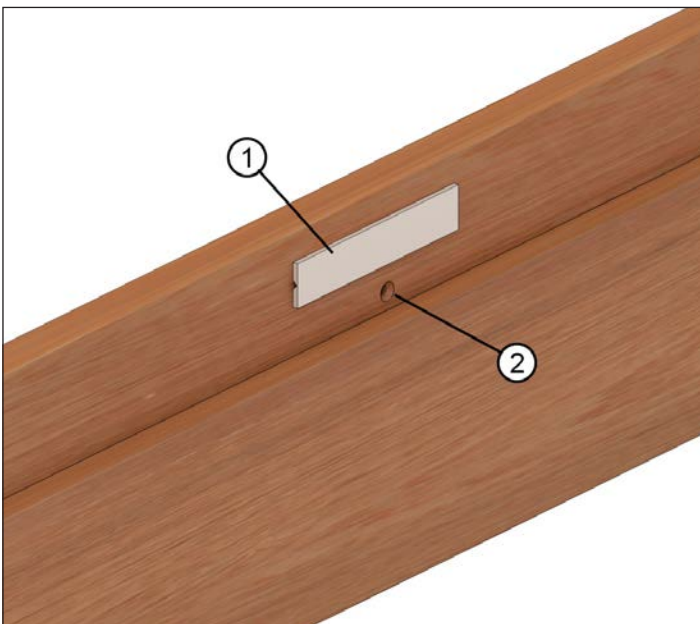


Figure 8

1	Spacer
2	Pre-drilled Hole

12. Predrill the sidelite panel with 1/8" drill bit using the pre-drilled holes in the mull post and jamb as reference points. For standard doors, fasten sidelite into frame using predrilled holes. On jamb side, use 2" flat head screws. On mull post (strike side), use 2 1/4" trim head screws. See figure 17.

! CAUTION!

CAUTION: Use caution when applying the 2 1/2" hinge screws for a 2 1/4" operator with 1 3/4" sidelite configuration. Screws penetrating the exposed surface of the mull post should not be used.

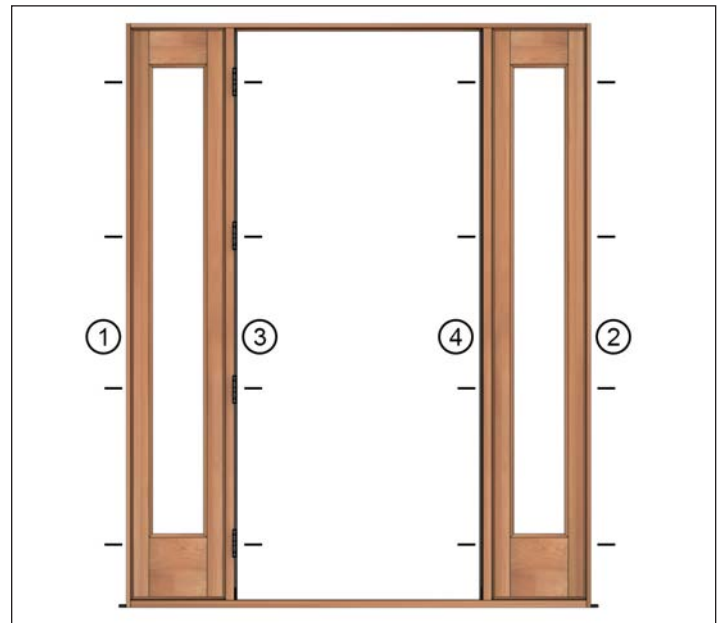


Figure 9

1	2" Flat Head Screws
2	2" Flat Head Screws
3	2" Flat Head Screws (Behind Hinges)
4	2 1/4" Trim Head Screws

Rough Opening Preparation-Method A1 (WRB Before Install)

The following section demonstrates best practice for a rough opening preparation for using a weather resistive barrier. Refer to ASTM E2112 for the other situations not covered in this document.

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 4.



Figure 4

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 5.



Figure 5

Preparing the Door for Installation

Important

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

1. If door has casing applied, apply sealant to the back side of the exterior casing. See figure 6. Apply sealant where the casing meets the door frame and at miter joints.

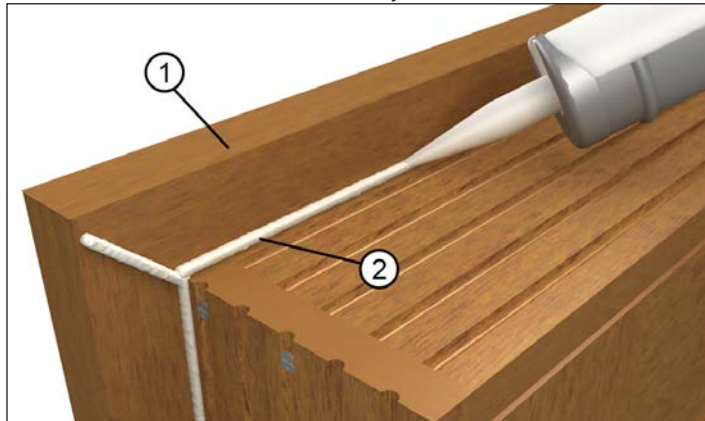


Figure 6

1	Brick Mould Casing
2	Tool Out Sealant

2. Tool out the sealant to ensure a proper seal. See figure 7.

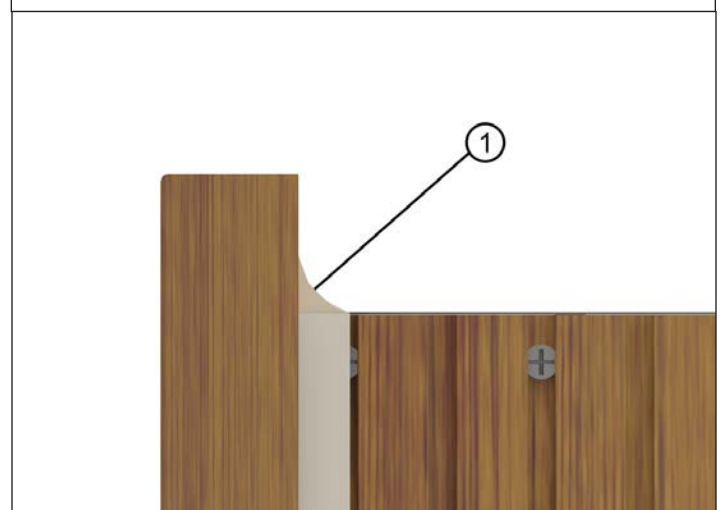


Figure 7

1	Tool Out Sealant
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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.

1. Only if casing is applied, after the rough opening has been prepped (using either the air barrier or building paper methods), apply a continuous bead of sealant 3/4" (19) from the top and sides of the door opening. See Figure 9.

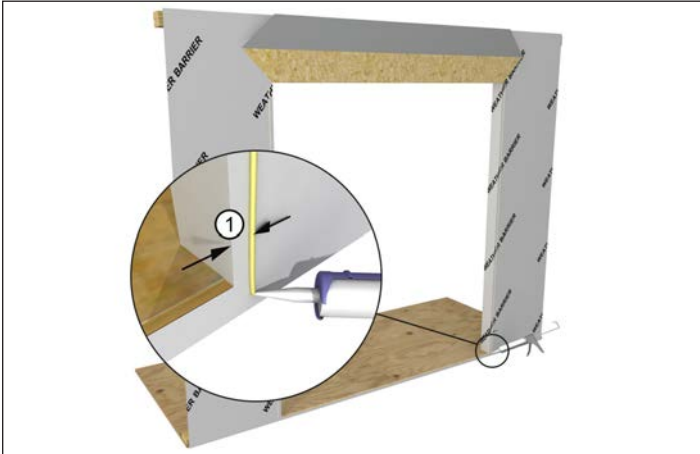


Figure 9

1	3/4" (19)
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2. Apply a 3/8" (10) bead of adhesive on the subfloor at the interior edge of the door opening. Apply a bead of sealant 1/2" (13) from both ends of the rough opening that run interior to exterior. Apply a discontinuous bead at the exterior. Gaps should be about 1-2" (25-51) wide and start 2-4" (51-102) from the ends. Finally, lay another bead approximately 2 1/4" (57) from the interior bead in a slight wobble pattern. Adhesive beads should contact the interior and exterior flat portions of the sill as well as the center rib. See Figure 10.

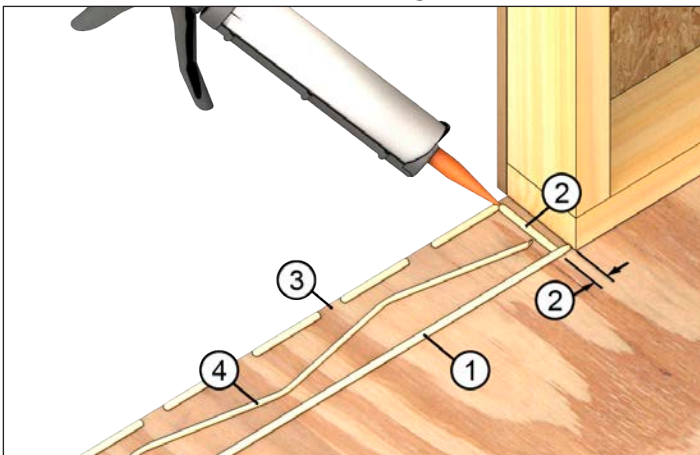


Figure 10

1	Interior bead
2	Interior to exterior bead 1/2" from end of RO
3	1-2" gap in exterior bead
4	Center bead

Installation - Positioning the Door in the Opening

3. With help, 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 also check for any objects between the sill and opening that may have caused this condition. See figure 11.



Figure 11

4. With help, move the door back into position and center in the opening, making sure to maintain proper rough opening clearances. Use a level to check that the door is plumb. See figure 12.



Figure 12

Installation - Fastening the Frame

5. After the unit is centered and plumb in the opening, fasten at the bottom corners approximately 4"-6" (102-152) from the sill. Drive an installation screw through the side jamb and into the R.O. framing, flush with the jamb. See figure 13.

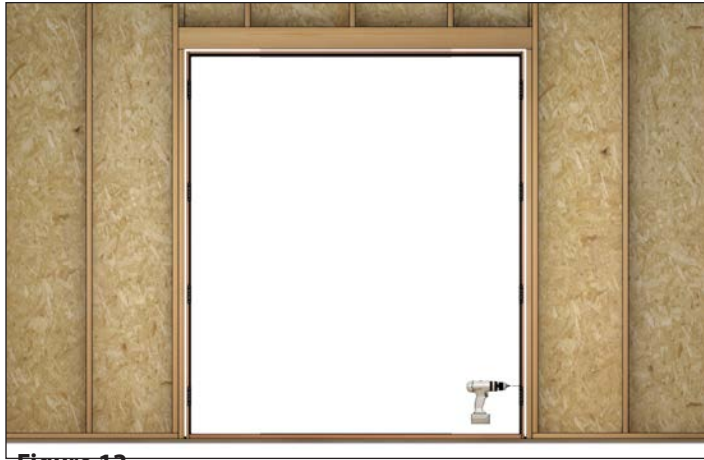


Figure 13

6. On operators, place the screws behind the frame weather strip. On sidelites place the screw so it will penetrate the center of the framing member. Repeat this procedure on the opposite side. See figure 14 (operator) and figure 15 (sidelite) for details on exact screw placement.

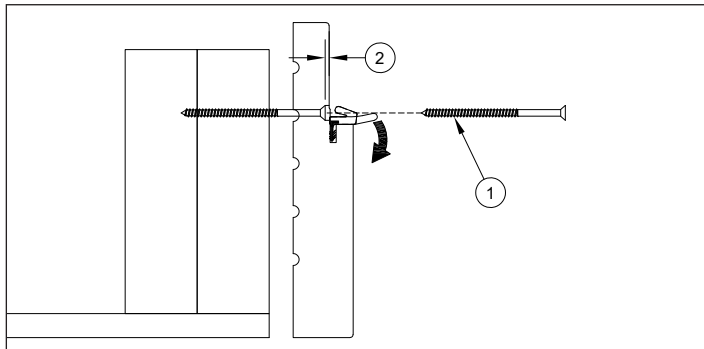


Figure 14

1	#X X X Screw
2	Countersink 1/8"

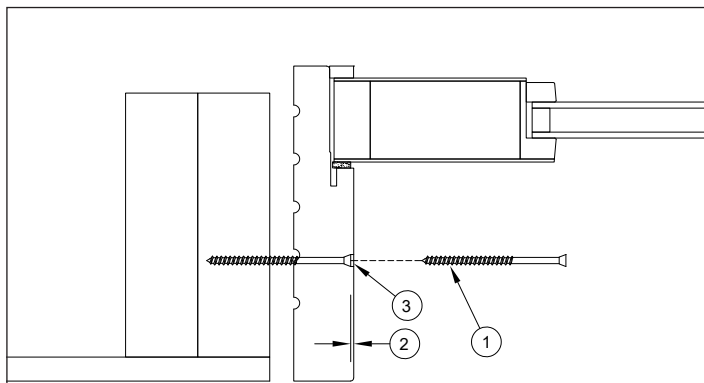


Figure 15

1	#X X X Screw
2	Countersink 1/8"
3	Fill Countersink hole with provided fill stick.

7. With the bottom corners pinned, measure the diagonals of the door from corner to corner. See figure 16.

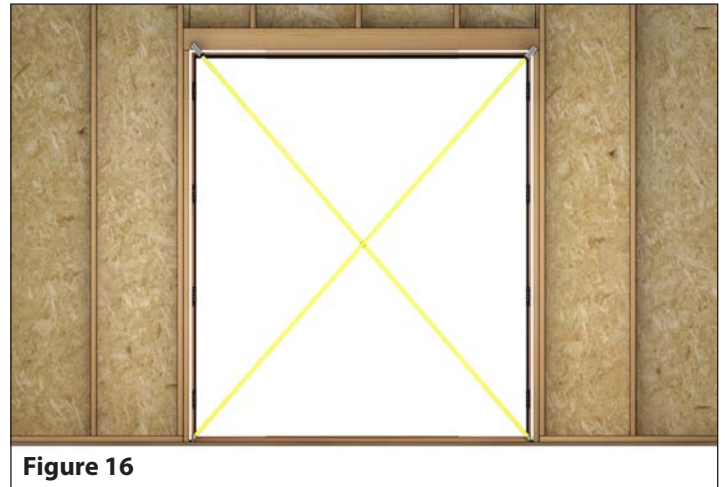


Figure 16

8. When the diagonals are equal, the frame is square in the frame. Adjust the door by moving the top left or right to achieve squareness. See figure 17.



Figure 17

9. After the unit is square and level, drive screws through the side jamb and into the framing approximately 4"-6" (102-152) from the top corners. See figure 18.



Figure 18

1	4" - 6"
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Installation - Adjusting for Operation

1. Check the panel(s) for proper alignment. You may need to adjust one or more screws. Panels should be flush and align along the head jamb. There should also be an even reveal between the panel and frame. See figure 19.

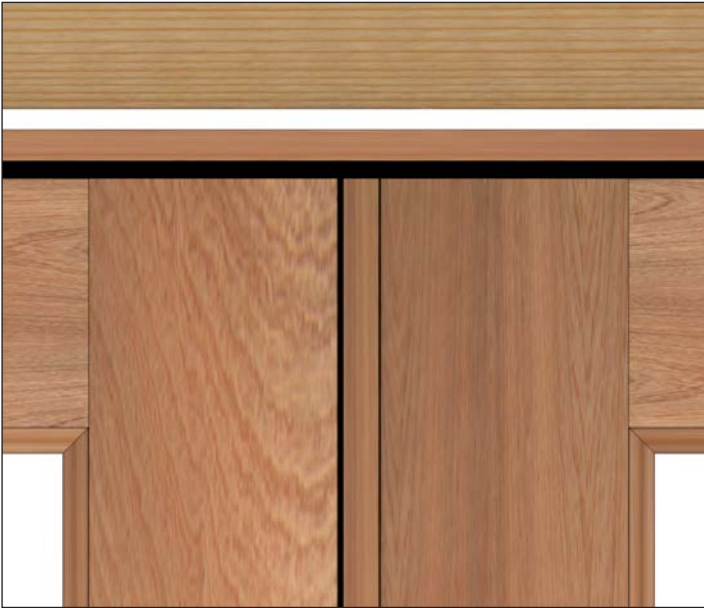


Figure 19



Installation Tip

On double and single operator panel units, 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 the panel top and head jamb are even. If one panel is higher/lower (on multiple panels) or the operating panel margin is not even between the panel and head jamb (on single panel units) move the top of the frame left or right until the panel(s) align. See illustration 20.



Figure 20



Installation Tip

If one panel is further to the exterior than the other (or on a single panel door, the panel does not make even contact with the strike jamb weather strip) check sides of frame for plumb. See figure 21.



Figure 21



Installation Tip

If correct and the panel(s) still do not align, move the top or bottom of one or both sides of the frame slightly in or out. Back the screw out and re-fasten. You may need to place a shim behind exterior casing. See figure 22.

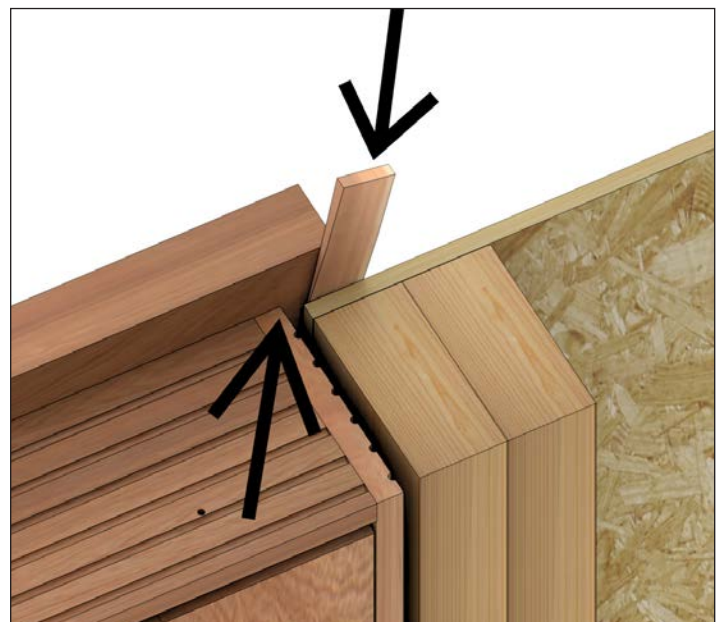


Figure 22

2. Replace the one center screws on hinges with one #12 X 2 1/2" screws. See figure 22.



Figure 22

1	One #12 X 2 1/2" screws.
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3. Fasten with trimhead screws between the hinges and at strike location. On non hinged jambs fasten every 15-20" (381-508). See illustration 23.



Figure 23

Installation - Fastening Strikes and Shimming

1. When fastening is complete, install shims above every fastener. See figure 24.



Figure 24

2. Once shimming is complete drive the frame screws until countersunk approximately 1/8" (3). See figure 25.

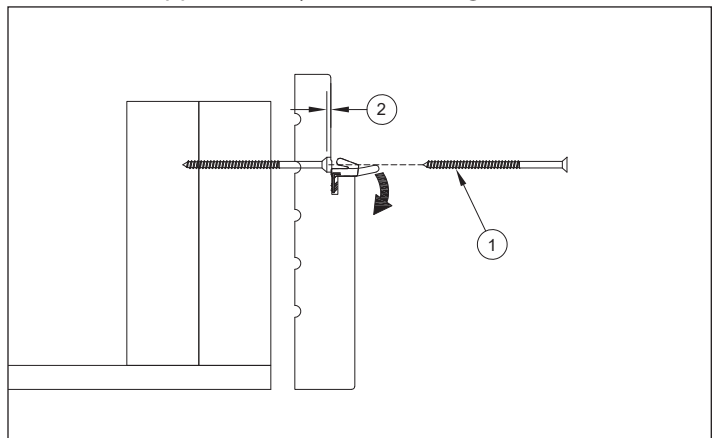


Figure 25

1	Countersink 1/8"
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When installation is complete, fill screw holes with putty stick supplied in the touch up kit. (If your door was ordered with TruStile's factory finish.)

3. The door is now ready for strike plates and handle sets.

4. On pair doors, using the shoot bolt as a guide for center, drill a 3/4" hole in the sill. On Adjustable sill and hydro sill, Mortise strike in to wood liner. On ADA and Interlock Sills, directly apply strike to sill. See figure 26



Figure 26

4. Open and close the door and check for proper panel alignment and squareness one last time. When complete, score and break the shims off flush with interior. See figure 27 and 28.



Figure 27

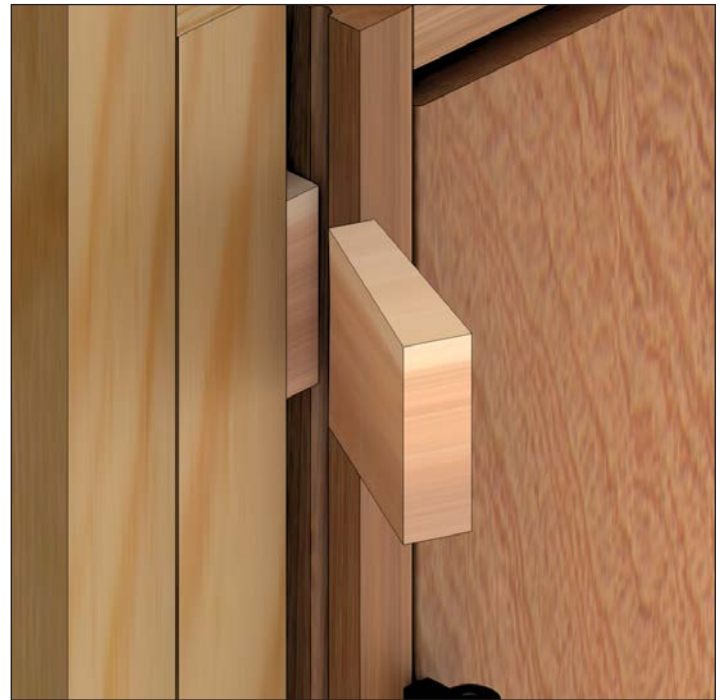


Figure 28

5. Peel the adhesive back from the corner seal wedge and place on the bottom of each operating jamb. See figure 29.



Figure 29

1	Corner Seal Wedge
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Flashing the Installation-Method A1 (Flashing After Installation)



Installation Tip

Illustrations detail those used in air barrier applications but also pertain to those used for construction scenarios that use building paper.

1. 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 30.

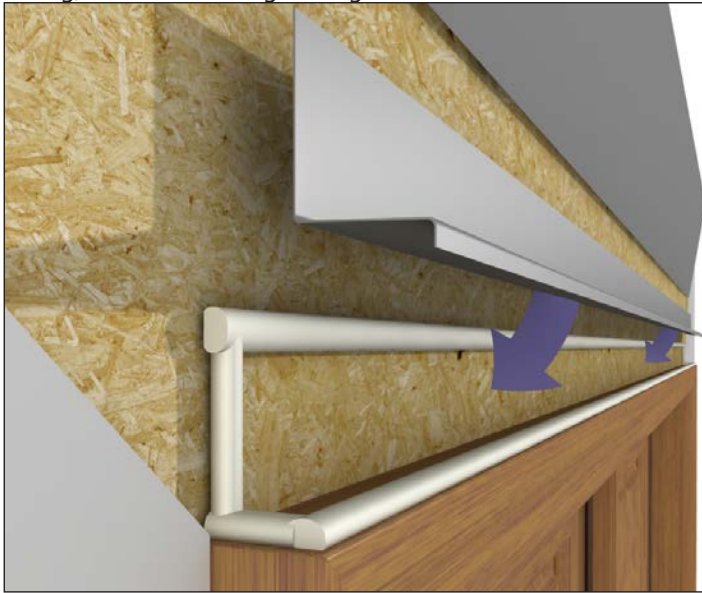


Figure 30

1	Drip Cap
2	Sealant

2. Lap vertical strips of flashing onto the unit 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 31.



Figure 31

1	Flashing
2	Casing Edge

3. Install a layer of flashing over the vertical leg of the drip cap and lapped onto the horizontal leg. The flashing should extend past the jamb flashing installed earlier. See figure 32.



Figure 32

1	Lap flashing onto drip cap
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4. 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 33.

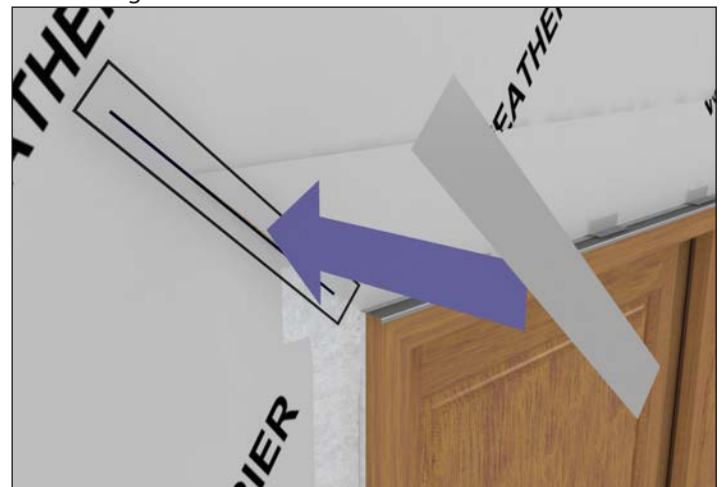


Figure 33

1	Seam Seal Tape
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