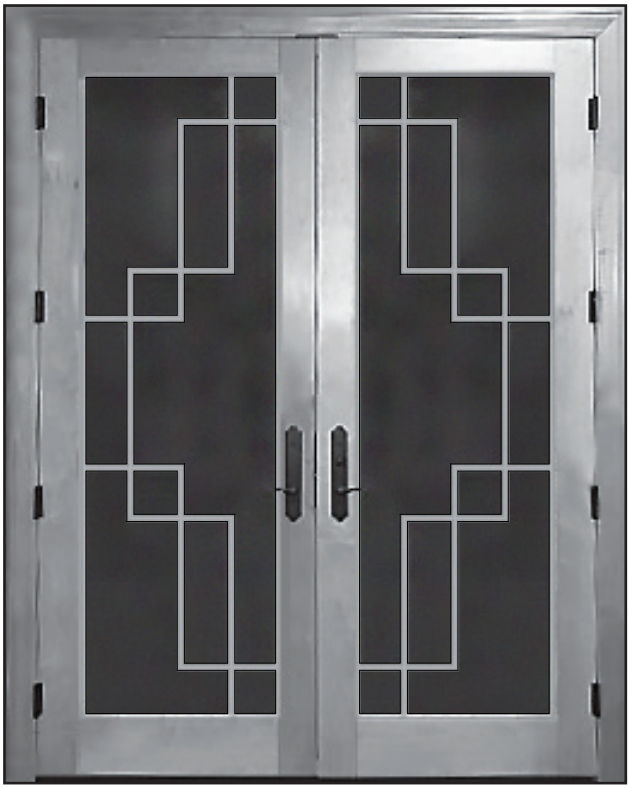
Hinged Patio Door
Standardized Installation Instructions
Aluminum Clad, Vinyl Clad, Fiberglass Clad, and Units With Wood Exterior Casings

Structure With Weather Resistant Barrier Applied Before Door Installation



IMPORTANT: Please read before you begin.

Installer – Please leave this booklet for the homeowner after the install is completed.

⚠⚠ CAUTION - IMPORTANT ⚠⚠

Lead-based paint may be present in older homes, and the removal of windows & doors may cause this paint to be disturbed. In order to minimize exposure to lead-based paint dust, please consult www.epa.gov-/lead for more information.

Part No. 1200964 • Rev. 4 • 12/16 Printed in U.S.A.

Table of Contents and Tool/Material Requirements

Recognize this symbol. This is the Safety-Alert symbol. When you see this symbol be alert to the potential for personal injury or product damage.

DANGER

Falling from window or door opening may result in serious injury or death. DO NOT leave openings unattended when children are present.

DANGER

CUT HAZARD

*Non-safety Glass.
*May cause serious injuries if broken.
*Do not install where tempered safety glass is required.

WARNING

Weight of window and door unit(s) and accessories will vary. Use a reasonable number of people with sufficient strength to lift, carry and install window or door unit(s) and accessories. Always consider site conditions and use appropriate techniques when installing.

DANGER

Screen will not stop children, any one or anything from falling out window or door.

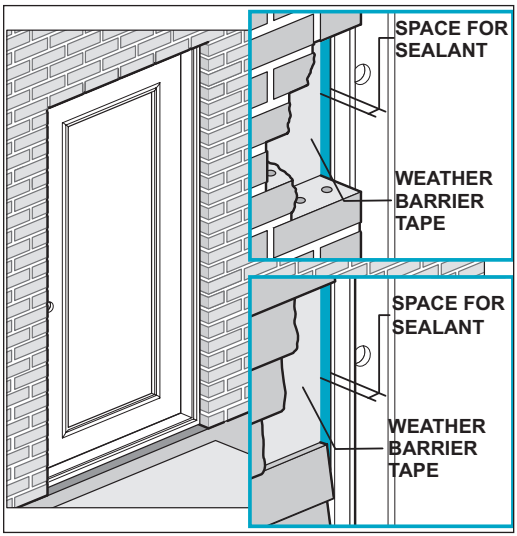
Keep children and objects away from open windows or doors.

Definition: →

Throughout these instructions DPR equals "For Design Pressure Rating". Any procedure so titled must be completed to maintain the rating validity.

Non-DPR is for installations not requiring maintenance of design pressure ratings.

A Special Note About Masonry



The perimeter joint between window exterior and exterior building material must conform to siding manufacturers' recommendations. All masonry, stucco, or synthetic stucco systems require an expansion joint around the window perimeter that must be filled with sealant compatible with the building material and window components.

Expansion joint space should be no less than 3/8" and not greater than 1/2" unless stated otherwise by your siding manufacturer. If there is a conflict, follow siding manufacturer's guidelines.

Failure of this joint will cause structural damage unrelated to window performance.

Door Operation

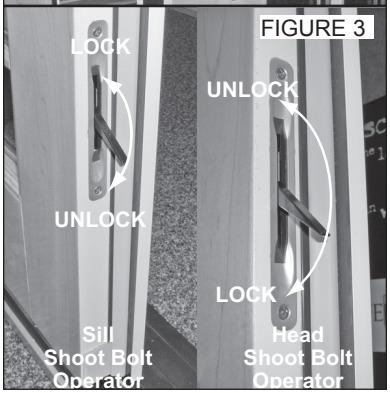
On all doors, except 1-Wide and stationary units, there will be an active insert and an inactive insert. The active insert opens and closes. The inactive insert may operate or be stationary.

The active insert contains the locking hardware **(FIGURE 1)**. The inactive insert has the lock keeper or strike plate **(FIGURE 2)**. The inactive panel may also have a handle for opening the panel but normally the handle does not operate any latching hardware with the exception of optional handle operated shoot bolts. Manual shoot bolts are standard **(FIGURE 3)** and mate with a strike plate at the head **(FIGURE 4)** and with the sill.

A stationary insert, as the name implies, is fixed and does not operate.

FIGURE 1

FIGURE 2



General Information – Hinged Patio Doors

These instructions cover hinged doors in several different arrangements and configurations.

Rough opening (RO) preparation and installation is the same for all units. Unless specifically noted, the instructions should be followed for all door units. In these instructions, the terms insert and panels may be used interchangeably.

Preserving Design Pressure Test Ratings

IMPORTANT: Thoroughly read and follow these instructions. Failure to install as recommended will void any warranty, expressed or implied. **Before installation, check building codes for the area in which the doors are being installed, to ensure proper compliance.** The installation instructions that follow are based on typical frame construction. Specific applications may differ. The door manufacturer recommends that you consult a qualified installation professional. The door manufacturer is not responsible for installation.

IMPORTANT: A number of jurisdictions have adopted building code design pressure requirements that require window and door products be installed in the same way they were installed for laboratory testing. To comply with these requirements, we are pleased to supplement the installation instructions with the following:

Sealant **must** be applied in all DP and Non-DP installations. Additionally, to maintain design pressure ratings, there must be continuous contact with a generous bead of sealant between the **bare** sheathing and the door unit's nailing fin around the door's entire perimeter.

The following additional steps must be taken as appropriate to maintain design pressure ratings.

- Exterior weather resistant barrier (WRB) must be cut and temporarily taped back away from rough openings.
- Sealant applied to the rough opening must be applied directly to the building's sheathing and **NOT** the weather resistant barrier.
- The nailing fin must contact the sealant continuously along the entire perimeter of the unit and must fully contact exterior face of the wall around the door's entire perimeter.
- Exterior weather resistant barrier must be trimmed and reapplied over the nailing fin. It must be sealed to the fin along the entire perimeter with silicone sealant.
- A shim space is required around the sides and head of the door. The shim space cannot exceed 1/4" on all sides (1/2" total for either width or height). If a shim space greater than 1/4" exists on the interior or exterior of the unit, use solid continuous furring material to fill this space until the maximum 1/4" shim allowance is achieved. ***Doors do not require a shim space at the sill.***
- Fastening methods must conform to those used to install test units. See the following page for correct fastener type, application spacing, and additional silicone sealant requirements.

FOR NON-DP INSTALLATIONS:

- A generous continuous sealant bead must be placed between the nailing fin or brickmould so sealant will contact the nailing fin holes when the unit is placed in the rough opening.
- A shim space is required around the sides and head of the door to allow for structure movement, seasonal expansion and contraction, and to provide space for insulation. **The shim space cannot exceed:** 3/8" on the sides (3/4" total for width). 1/2" on the head (1/2" total for height). ***Doors do not require a shim space at the sill.*** Accessories, such as jamb extension, may alter unit width and height. Check rough opening size vs unit size accordingly**.** If a shim space greater than listed above exists on the interior or exterior of the unit, use solid continuous furring material to fill this space until the maximum 3/8" or 1/2" shim allowance is achieved.

FOR ALL INSTALLATIONS:

- Furring material must be solid, continuous, and run the full height and/or width of the rough opening. Furring strip depth must be at least equal to the door's jamb depth. Furring material must be securely fastened to the rough opening framing.

ADDITIONAL NOTES FOR ALL INSTALLATIONS:

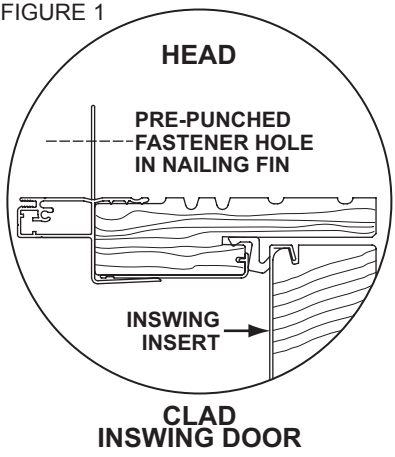
- For any installation that has exposed fasteners, it is recommended to use fasteners made of 300 series stainless steel. Follow your local codes if they specify a different series of stainless steel.
- Certain options, accessories, and warranty considerations require the unit be installed using installation clips. The clip install method has not been tested for design pressure ratings and should not be used where design pressure ratings must be maintained. Contact your customer service representative for additional assistance.

Design Pressure Test Rating – Fastening Method

Unit Description	Fasteners	How to Fasten
Nailing Fin with Pre-Punched Fastener Holes **(FIGURE 1)**.	**Through Nailing Fin –** #8 Steel screws long enough to penetrate framing material by at least 1-5/8”. **Through Center of Sill –** Remove existing screw. Caulk and replace with #8 x 3” stainless steel, Phillips, flat head screw. **Through All Hinges –** Remove top and bottom jamb hinge screws from each hinge and replace with two #10 x 2-1/2” stainless steel, Phillips, flat head screws.	Start a screw 4” in from corner and apply through nailing fin into framing member. Space additional screws every 4” on center, around entire perimeter, staying 4” from each corner.

Design Pressure Test Rating – Nailing Fin Configuration

FIGURE 1

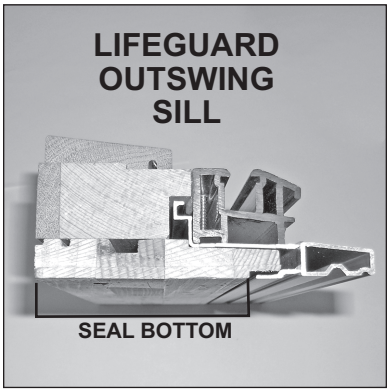


Door Sill Preparation

FIGURE 1

FIGURE 2

FIGURE 3



For maximum longevity and best performance, sills with bare wood on the underneath side should be sealed prior to installation **(FIGURES 1, 2, & 3)**.

Follow guidelines in the ***"Recommended Finishing Instructions"*** starting on Page 34 and apply at least two coats.

⚠ **IMPORTANT: Do not apply paint, varnish, or sealer to any weatherstrip.**

⚠ **IMPORTANT: Allow paint, varnish, or sealer to dry completely before installing unit.**

Composite sills do not require any finish.

Sill Pans

Sill pans were not installed when units were tested and therefore cannot be used in installations that must preserve design pressure ratings.

Sill Pans

Sill pans, either flexible, rigid, commercially made or job site fabricated can be used if the following conditions are followed.

- They must be water tight
- Cannot be penetrated by fasteners
- Must be caulked prior to installation
- Must provide a means for drainage to the exterior so door sill will not sit in water.
- Must be installed to preserve integrity of weather resistant barrier's drainage system.

⚠ **Do not nail or screw through factory applied finish. Breaking exterior finish coating voids warranty. (Does not apply to factory applied primer paint.) To prevent penetrating factory applied finishes, install with interior installation clips. Obtain clip installation instructions, part #1037024. Installation clip method will not meet DP requirements.**

Strike Plate Preparation

FIGURE 1

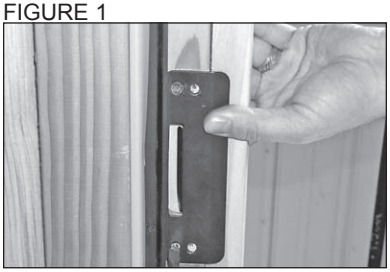


FIGURE 2

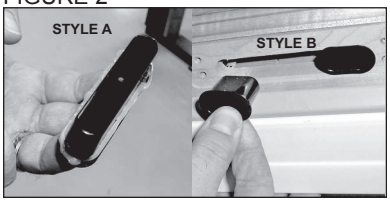


FIGURE 3

FIGURE 4

Before Installing Door Unit

1. Remove strike plate and grommet **(FIGURE 1)**.

Grommets can be either, Style A or Style B, **(FIGURE 2)**. The following instructions apply for both grommet styles.

Install Door Unit

2. Install door unit according to the installation instructions and any applicable supplements.

After Installing Door Unit

3. Use a 5/8" diameter spade or Forstner bit and an electric drill to deepen the grommet rout in either the head or side jamb. Drill at least 1/2" deeper than existing rout **(FIGURE 3)**. Do not drill into or cut weatherstrip.
4. For Style A grommets, continue drilling along length of grommet rout until the 1/2" clearance depth is achieved for the full length **(FIGURE 4)**. For Style B grommets, drill out only the area directly behind the grommet. Use a sharp chisel to clean edges of rout. Check new depth to see that 1/2" deeper clearance is achieved.
5. Test fit grommet to modified hole. Make adjustments to get a good fit. Then apply a 1/4" continuous silicone bead around the grommet flange **(FIGURE 5)**.

FIGURE 5

Strike Plate Preparation

FIGURE 6

FIGURE 7

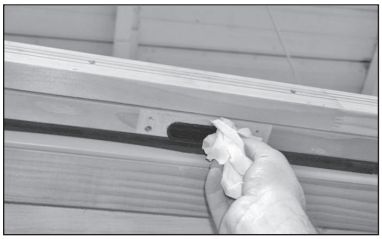


FIGURE 8

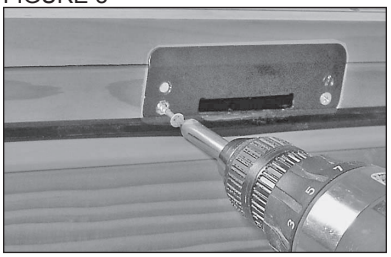
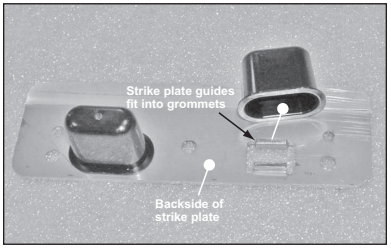


FIGURE 9



After Installing Door Unit (cont.)

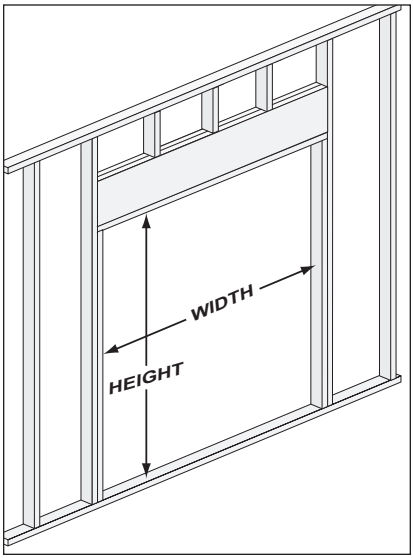
6. Reinstall grommet into jamb. Be sure grommet lip slips under flap of weather strip **(FIGURE 6)**.
7. Clean excess sealant from around edge of grommet with a clean rag dampnened with denatured alcohol **(FIGURE 7)**. Be careful that sealant does not get on any wood that will be stained and finished.
8. Position strike plate over grommet and screw back in place **(FIGURE 8)**.
9. On Style B grommets, be sure strike plate guides fit into the grommet cavity **(FIGURE 9)**.

Rough Opening Preparation

IMPORTANT: When accessories such as jamb extension have been ordered, apply according to separate directions BEFORE you install the unit OR prep the rough opening.

WARNING Wear gloves, safety glasses, goggles or eye-shields as appropriate. Read installation instructions completely before beginning procedure.

FIGURE 1



IMPORTANT: High-quality, exterior, neutral-cure, clear silicone sealant (compatible with wood, vinyl, aluminum, fiberglass, and the exterior face of the wall) is to be used for all the procedures in the following instructions which call for caulking or sealant.

IMPORTANT: Perform the following BEFORE starting installation. Make sure you have:

- **The correct door type (inswing, outswing, French, etc.)**
- **The correct size door (Width and Height) for your rough opening (FIGURE 1).**
- **A rough opening that is 3/8" wider on all sides (3/4" total for width). OR**
- **A rough opening that is 1/2" taller (1/2" total for height).**

IMPORTANT: If unit is to meet design pressure ratings, a maximum 1/4" shim space is allowed around the perimeter. A shim space greater than 1/4" could result in lower product performance and may be considered non-compliant with certain building codes.

NOTE: Doors do not require 1/4" shim space at the sill.

- **Accessories, such as jamb extension, may alter unit width and height. Check rough opening size vs unit size accordingly.**
- **If using a sill pan, be sure rough opening dimensions will accommodate both the door unit and the sill pan. Sill pans were not used during DP testing and therefore cannot be used where DP rating validity must be maintained.**
- **Perform a complete unit inspection checking for shipping damage, broken glass, or other physical damage. Fix whatever is wrong before installation or start appropriate claim procedures.**
- **When accessories such as jamb extension have been ordered, apply according to the directions BEFORE you install the unit OR prep the rough opening.**
- **If using a purchased sill pan, follow sill pan manufacturer's installation instructions.**

Rough Opening Preparation (cont.)

FIGURE 2

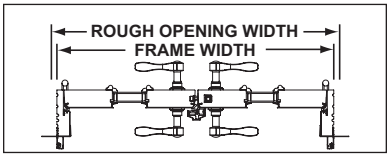


FIGURE 3

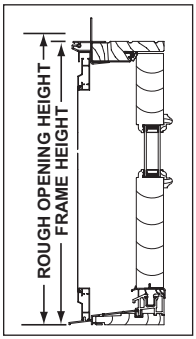


FIGURE 4

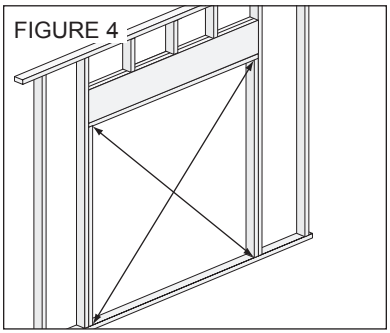
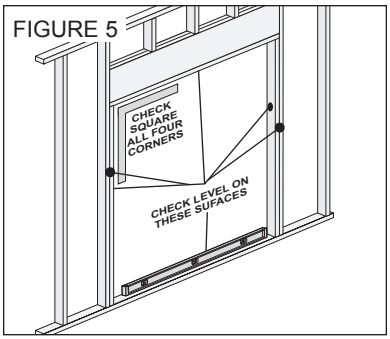


FIGURE 5



If a shim space greater than listed above exists on the interior or exterior, use solid continuous furring material to fill this space until the maximum shim allowance is achieved.

Furring material must be solid, continuous, and run the full height and/or width of the rough opening. Furring material depth must be at least equal to door jamb depth. Furring material must be securely fastened to the rough opening framing.

1. Measure the rough opening to ensure it meets the guidelines listed above. Check the rough opening dimensions against the units actual Frame Height and Frame Width **(FIGURES 2 & 3)** to see that the unit will fit into the rough opening.

NOTE: Accessories, such as jamb extension and sill pans may alter unit width and height. Check rough opening size vs unit size accordingly.

2. Measure the opening diagonally from corner-to-corner **(FIGURE 4)**. The measurements should not differ more than 1/4".

3. Using a long level, check side, head, and sill for plumb and level **(FIGURE 5)**. Use a framing square to check all corners for square.

Make necessary corrections to ensure walls are plumb, straight and not twisted.

Fix any problems before proceeding!

IMPORTANT: To ensure the door panels operate smoothly, make sure the sill is level and straight, the opening is square, and jambs are plumb.

Because of the longer distances spanned with a multi-wide door, it is critical that the rough opening be as perfectly level, plumb, straight, and square as possible.

Rough opening misalignment problems can be transferred to the door units causing adjustment and operation difficulties.

WARNING The door assemblies must be handled upright. Do not carry with panels parallel to the ground.

Instructions applying exclusively to wood brick-mould units have a blue tinted background.

Straighten & Level Subfloor

FIGURE 1

1. For masonry installation we recommend a 2 x 6 sill plate be present. Check sill for level **(FIGURE 1)**.

⚠ WARNING

Improper use of hand and power tools could result in personal injury and/or product damage. Follow equipment manufacturers' instructions for safe operation. Always wear safety glasses.

FIGURE 2

2. To straighten and level the subfloor, identify the areas that are above level and countersink nails in the floor area that will be under the door **(FIGURE 2)**.

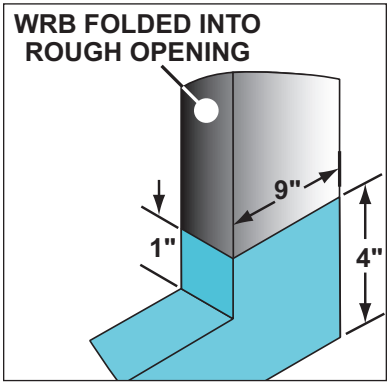
FIGURE 3

3. Check for level as in **(FIGURE 1)**. Plane area that will be under the door until it is straight and level **(FIGURE 3)**.

Sill Preparation – Non-DPR Installation

FIGURE 1

FIGURE 2



1. Cut a piece of weather barrier self-adhering tape 4" wide and as long as the opening width plus 18" **(FIGURE 1)**. Apply to face of exterior wall so 1" extends above the opening and 9" extends beyond each side of the opening. Cut along the corners of rough opening and fold down onto the sill **(FIGURE 2)**.

NOTE: Some tape manufacturer's recommend a primer be applied before using their tape on top of bare wood. Check and follow the tape manufacturer's instructions.

2. Apply a second continuous piece of weather barrier self-adhering tape on the top surface of the rough opening sill. Use a rubber roller to apply barrier to surface **(FIGURE 3)**.

Cut tape the thickness of the wall and 12" longer than the width of the opening. Align flush with interior of the wall **(FIGURE 3)**. Start the piece (approximately 6") up the side of the rough opening and run it to the bottom of the opening, to the other side of the opening, and 6" up the other side **(FIGURE 4)**.

Sill Pans

Sill pans, either flexible, rigid, commercially made or job-site fabricated can be used if the following conditions are followed.

- They must be water tight
- Cannot be penetrated by fasteners
- Must be caulked prior to installation
- Must provide a means for drainage to the exterior so door sill will not sit in water.

FIGURE 3

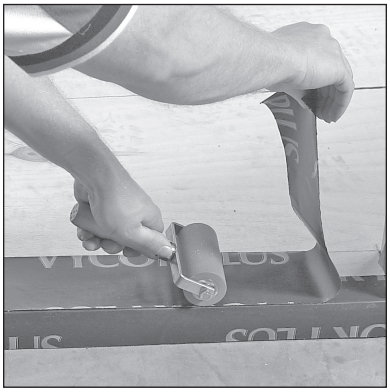
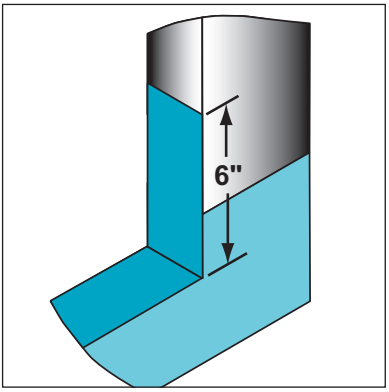
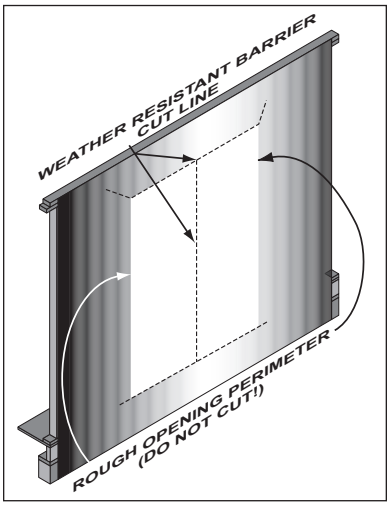


FIGURE 4



Rough Opening Preparation For DPR Installation

FIGURE 1



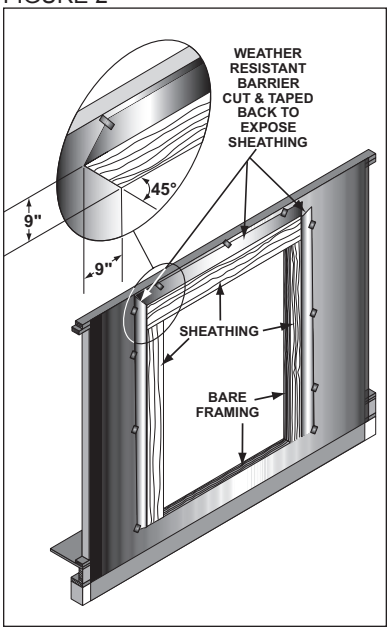
The following instructions are for structures with weather resistant barrier (WRB) applied before the door is installed.

For Non-DP rough opening preparation, turn to Page 10.

1. Cut weather resistant barrier (WRB) as shown in **(FIGURE 1)**. Cut sill straight across and parallel with the sill framing. Cut head (WRB) straight across header framing and at a 45 degree angle at the corners **(FIGURE 2)**.

2. Fold WRB back and tape out of the way **(FIGURE 2)**. Bare sheathing **must** be exposed.

FIGURE 2



Rough Opening Caulking Details For DPR Installation

FIGURE 1

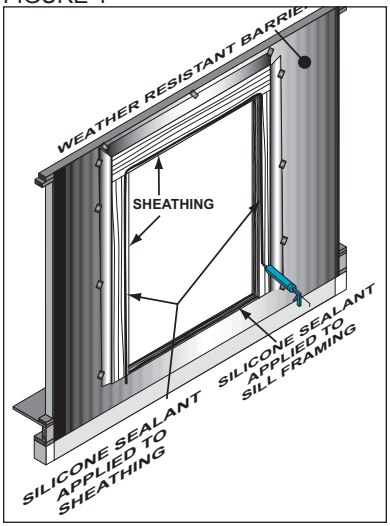
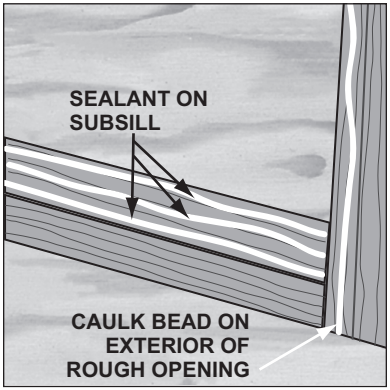


FIGURE 2



⚠ IMPORTANT: Prior to applying sealant, ensure rough opening is square, level, and plumb. Perform any adjustments before applying sealant.

⚠ CAUTION IMPORTANT: High-quality, exterior, neutral-cure, clear, silicone sealant (compatible with door material and exterior face of the wall) is to be used for all procedures in the following instructions which call for caulking or sealant.

⚠ IMPORTANT: Installing sill pans or sill flashing will not allow unit to maintain DP certification ratings. Sill, head, and side sealant must be applied on bare sheathing or wood framing.

All installations require caulking on the sill and on the face of the rough opening **(FIGURE 1)**.

DP installations must have sealant applied directly to the bare sheathing or framing.

Proceed as follows:

1. Apply a continuous, 3/8" bead of silicone sealant to the exterior face of the wall along the head and vertical sides of the rough opening perimeter. Locate sealant so it does not intrude into the rough opening and will also provide a continuous seal between sheathing and nailing fin as well as the door sill **(FIGURE 1)**.

2. Apply continuous, generous silicone beads on the subsill as shown in **(FIGURE 2)**. Beads should be at least 3/8" in diameter.

Rough Opening Preparation For Non-DPR Installation

The following instructions are for structures with weather resistant barrier (WRB) applied before doors are installed.

FIGURE 1

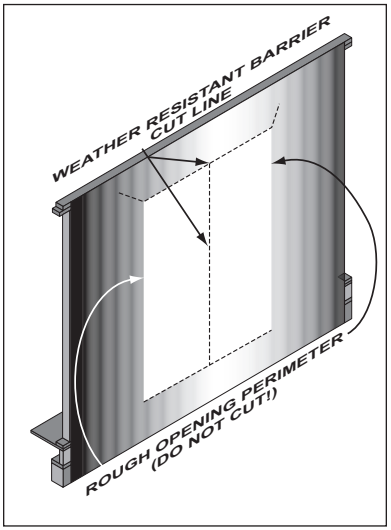


FIGURE 2

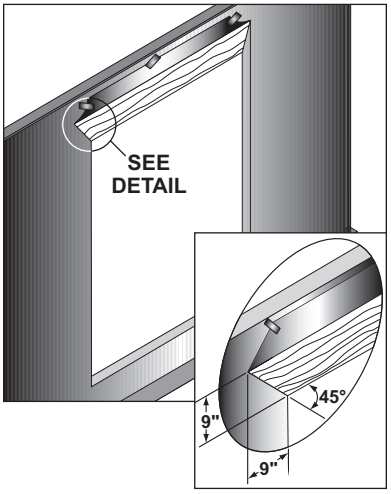
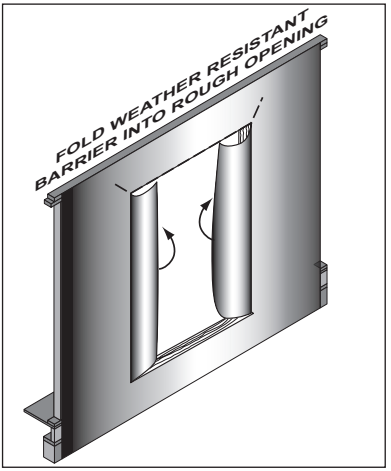


FIGURE 3

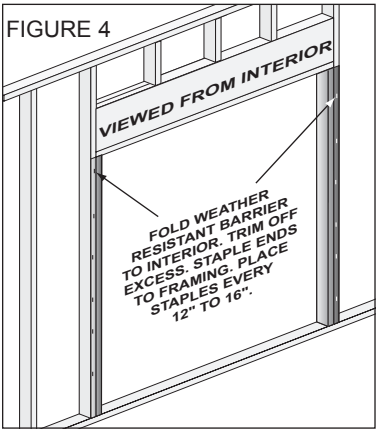


1. Cut weather resistant barrier (WRB) as shown in **(FIGURES 1 & 2)**. Cut sill and head even with and parallel to framing. Cut diagonals in head WRB **(FIGURE 2)**.

2. Lift head WRB up and tape to face of exterior **(FIGURE 2)**. Fold side jamb WRB into the rough opening **(FIGURE 3)**.

3. Secure WRB to interior framing with staples placed every 12" to 16" apart **(FIGURE 4)**. If desired, trim excess before stapling.

FIGURE 4



Apply Weather Barrier Tape – Wood Brickmould Units

FIGURE 1BM

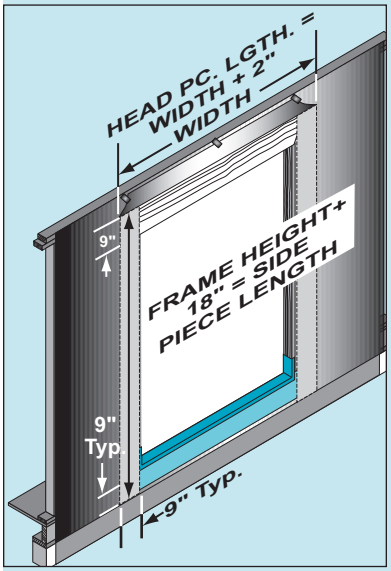
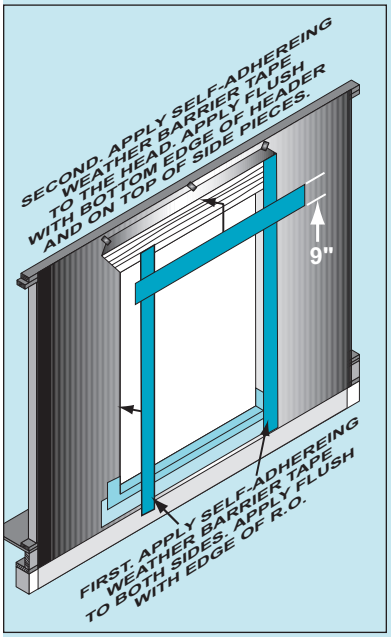


FIGURE 2BM



The following weather barrier tape instructions are for brickmould installations ONLY.

For nailing fin units skip to page 10.

Brickmould unit installation requires weather barrier self-adhering tape be applied before the door is placed into the rough opening.

1. After completing all applicable instructions on Pages 1 through 8, cut two side pieces of high-quality weather barrier self-adhering tape that are 9" wide and 17" taller than the door **(FIGURE 1BM)**.

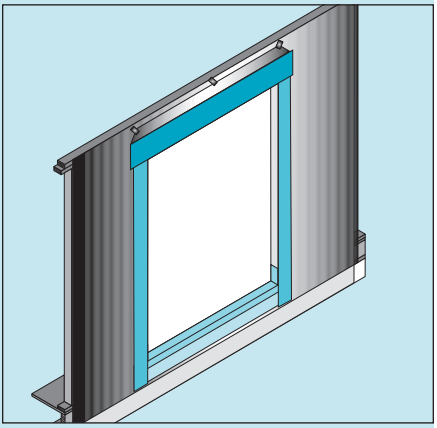
2. Apply side weather barrier tape to the exterior of the wall with the tape's edge flush with the rough opening. Start 8-1/2" above the top of the rough opening and run tape down so that it goes over the sill wrap weather barrier tape. Use a rubber roller to apply.

3. Cut the head piece 9" tall and long enough to span the door and side tapes; plus 2" **(FIGURE 1BM)**.

4. Apply the head piece to the sheathing. Start one end so it overlaps a side piece of weather barrier tape by 1". Work toward opposite side and overlap other side piece by 1". Keep bottom edge of the head weather barrier tape flush with the horizontal edge of the rough opening header **(FIGURE 2BM)**. **(FIGURE 3BM)** Shows completed tape application.

All units continue on next page.

FIGURE 3BM



Shim Information

FIGURE 1

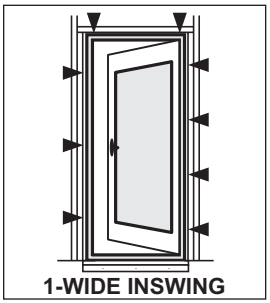


FIGURE 2

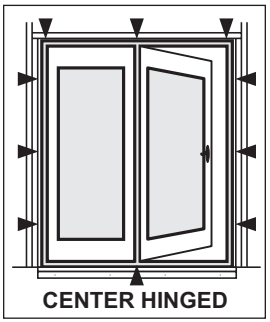
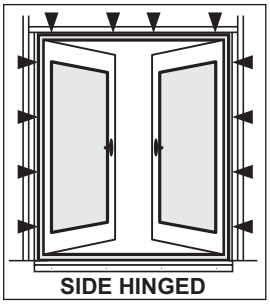


FIGURE 3



As you proceed with the installation, shims will be applied to hold the unit in position, adjust level & square, and provide support behind hardware.

Shim Pointers

- Use solid shims, either wood or composite. **NOTE:** Any shims used under the sill must be vinyl or composite material.
- "Wedge" style shims must be used in pairs and installed so the shim's sides remain parallel between the unit and rough opening.

SHIMS - CORRECT PLACEMENT

- Shims must be applied between the rough opening and door frame in locations shown in **(FIGURES 1, 2 & 3)**.
- Apply solid shimming behind all strike and hinge locations.
- Do not bow jambs with over shimming. Shims must fit snugly.
- Do not place shims where moving parts must pierce the door jamb, such as latch and dead bolt locations.

WARNING

Weight door unit(s) and accessories will vary. Use a reasonable number of people with sufficient strength to lift, carry and install door unit(s) and accessories. Always consider site conditions and use appropriate techniques when installing.

Rough Opening Caulking Details – Non-DPR & Brickmould Units

FIGURE 1

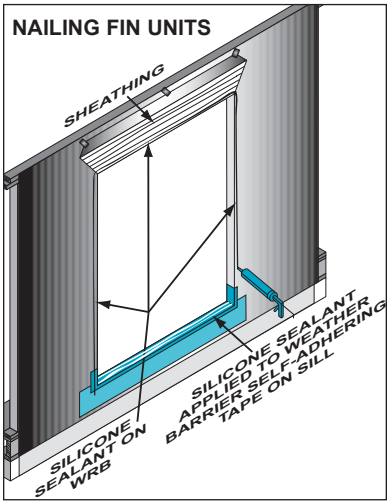
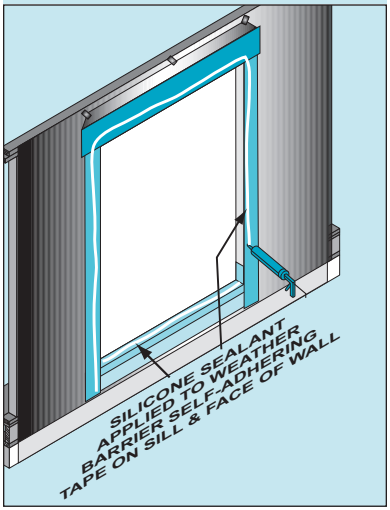


FIGURE 1BM – BRICKMOULD UNITS



IMPORTANT: Prior to applying sealant, ensure rough opening is square, level, and plumb. Perform any adjustments before applying sealant.

CAUTION **IMPORTANT: Check both the weather barrier self-adhering tape and weather resistant barrier manufacturer's instructions to ensure the sealant you use is compatible with their product.**

All installations require caulking on the sill and on the face of the rough opening **(FIGURES 1, 1BM & 3)**.

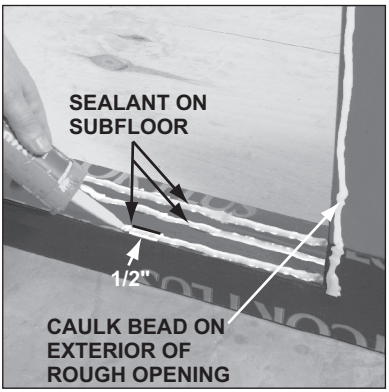
1. Apply a continuous, 3/8" bead of silicone sealant along the head and vertical sides of rough opening perimeter. Locate sealant so it does not intrude into the rough opening and will also provide a continuous seal between the exterior wall and nailing fin or brickmould as well as door sill **(FIGURES 1 & 1BM)**.

2. Apply continuous, 3/8" silicone beads on the sill as shown in **(FIGURE 3)**.

For nailing fin units turn to **Door Installation** on the next page.

For brickmould units turn to **Door Installation** on Page 21.

FIGURE 3 – All Installations



Door Installation – Nailing Fin Units

FIGURE 1

FIGURE 2

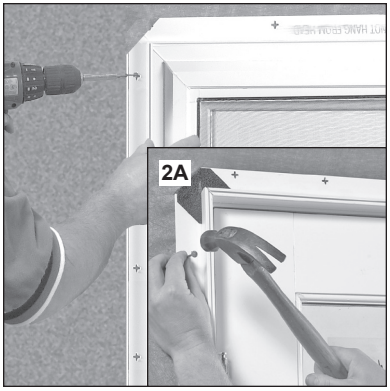


FIGURE 3

For brickmould units turn to Page 21.

⚠ IMPORTANT: Remove all shipping and packing material including handles. Be sure to remove nails holding insert in place. Do not remove shipping blocks that hold panels in place and do not open the door panel(s).

⚠ IMPORTANT: Before proceeding, rough opening and sill must be prepared and caulked as explained on Pages 1-11 (following the instructions that apply to your installation and unit type).

1. Immediately after caulking as instructed, set and center the door in the rough opening **(FIGURE 1)**.

⚠ IMPORTANT: To meet design pressure ratings, a maximum 1/4" shim space is allowed around the perimeter. Unit must be secured with #8 steel screws, long enough to penetrate framing material by at least 1-5/8". See "Design Pressure Test Rating – Fastening Method" chart on Page vi for screw spacing.

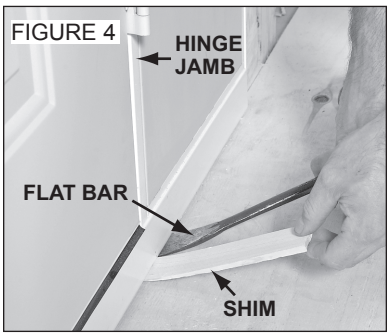
If maintaining design pressure ratings are not a concern, unit may be secured with rust proof roofing nails long enough to penetrate framing members by at least 1-5/8".

2. Secure one side top corner with a fastener **(FIGURES 2 or 2A)**.

3. While holding unit in place, level unit on the interior or exterior across the sill, head, and jambs **(FIGURE 3A-3D)**. To level the unit, place shims directly below the side jambs only. Place a flat bar underneath the sill at the side jamb, lift slightly, slide shim under sill **(FIGURE 4)**.

⚠ IMPORTANT: Sill must be level and have solid support for its full length.

FIGURE 4



Door Installation – Nailing Fin Units (cont.)

FIGURE 5

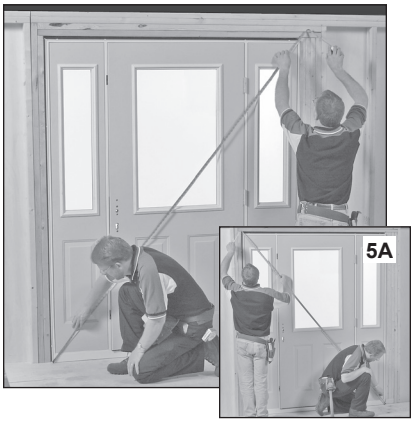


FIGURE 6

4. With door held securely in place, measure diagonally from corner-to-corner in both directions **(FIGURES 5 & 5A)**. Measurements should be exactly the same.

CAUTION **Be sure someone is securely holding door in place from the exterior so the shimming process does not force door out of the rough opening.**

To make adjustments, use a pry bar and slide the bottom of the frame left or right until the diagonal measurements of the entire door assembly are exactly the same **(FIGURES 5 & 5A)**. Once the diagonal measurements are the same, apply shims between the door frame and rough opening to keep the door unit in position.

Apply fasteners through the remaining top and bottom nailing fin **corners only**.

For All Doors

5. If a sill nailing fin is present, use a level and straightedge to straighten the sill. When straight, and level, fasten through all of the pre-punched holes in the sill nailing fin.

6. If there is no sill nailing fin, remove one of the center screws in the threshold.

7. Apply a generous amount of clear, silicone sealant into the screw hole.

8. Refasten sill with a 3" long **(Inswing),** 3-1/2" long **(Outswing)** stainless flat head screw, provided by others. Drive it down into the sub-floor to anchor sill **(FIGURE 6)**.

For ADA sill

9. Repeat Steps 7 & 8 for screws at the outer ends and middle of the sill. Use #8 flat head stainless steel screws long enough to penetrate floor and framing by at least 1-1/4". The appropriate screw type must be used; for example, Tapcon screws into concrete. When finished you will have replaced three screws along the width of the ADA sill; one at each end and one in the middle.

For All Doors

Now that the door frame corners and sill are fastened, proceed to shim and secure the side frames and set an even reveal between the door panels and frame. See following pages for details.

Door Installation – Nailing Fin Units (cont.)

FIGURE 7

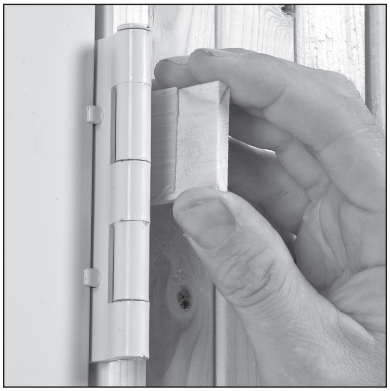


FIGURE 8

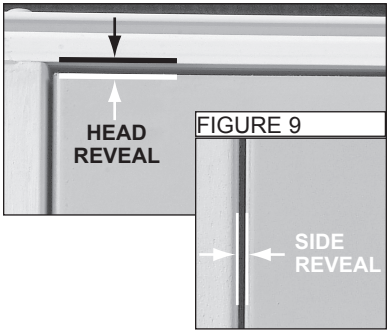


FIGURE 9

Working from the interior

10. Use the longest level possible, a straightedge if needed, or plumb bob, and shims to adjust the hinge side jamb so it is level, plumb, and true.

11. Place solid shims between the rough opening and the side jamb at each hinge **(FIGURE 7)**.

Check The Reveal

The gap (reveal) between the jamb and door panel must be exactly the same around the sides and head of the panel **(FIGURES 8 & 9)**.

Shim as needed to create an even reveal.

12. Fasten hinge side nailing fin to rough opening with fasteners through the pre-punched holes.

13. Check head for level and examine head reveal along door's entire width. Shim as needed to make adjustments.

For **Center Hinged Doors**, place a shim under the astragal **(FIGURE 11)** and adjust until the head jamb reveal is even.

14. Securely fasten head nailing fin with fasteners in each pre-punched hole in the head nailing fin.

15. Check reveal around all panels to see that it has not shifted.

16. If level, square, plumb, true, and reveals are OK; finish securing unit in place with fasteners through all remaining nailing fin pre-punched holes.

FIGURE 10

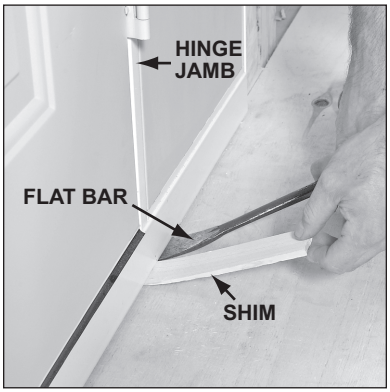


FIGURE 11

Door Installation – Nailing Fin Units (cont.)

FIGURE 12

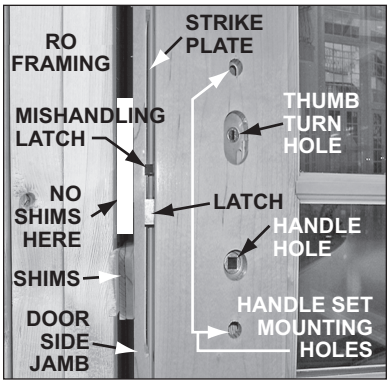
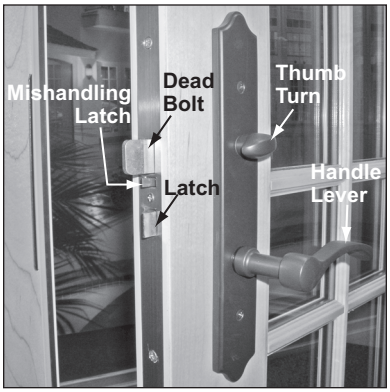


FIGURE 13



Additional Install Details As Applicable

17. Shim behind each side jamb strike plate **(FIGURE 12)**. Shim behind each head strike plate, between head jamb and rough opening.

IMPORTANT: Do not shim where the dead bolt will pass through the side jamb (white rectangle in FIGURE 12). The dead bolt will not lock unless the bolt can extend far enough (FIGURE 13) into the rough opening.

18. If present, remove the shipping blocks and then open the door.

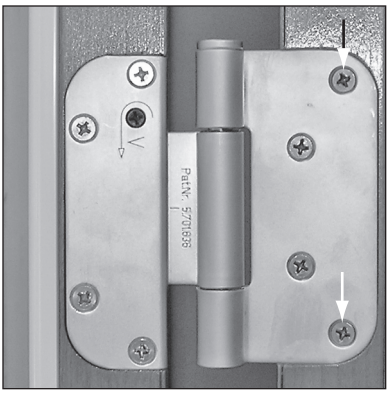
NOTE: The mishandling latch may be held in the depressed position during shipping by means of a shipping clip. If a clip is present, remove clip by carefully prying it out with a screwdriver. The mishandling latch must be free to move in and out for door hardware to function properly.

19. Insert a 2-1/2" long flat head screw (provided), through the open hole of each hinge and into the framing **(FIGURE 14)**.

20. Remove the top and bottom hinge screws **(FIGURE 15)**, from each side jamb hinge leaf (not the door panel hinge leaf), and replace with two #10 x 2-1/2" Phillips flat head stainless steel screws (provided), to anchor the door frame to the rough opening structural members.

FIGURE 14

FIGURE 15



Door Installation – Nailing Fin Units (cont.)

FIGURE 16

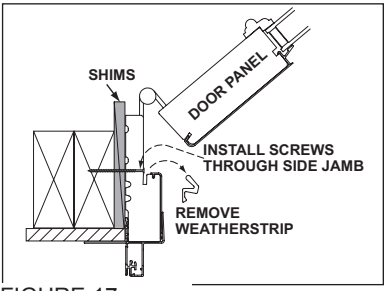


FIGURE 17

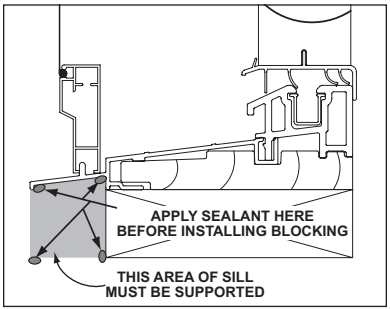


FIGURE 18

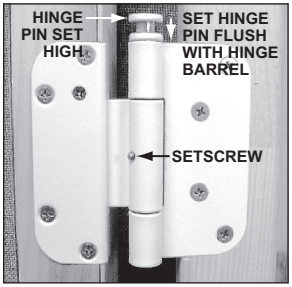
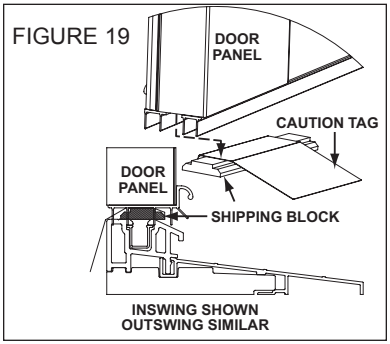


FIGURE 19



IMPORTANT: If the top or bottom 2-1/2" long hinge screws do not penetrate the framing material by at least 1-1/2", remove the hinge side jamb weatherstripping. Add three stainless steel flat head screws through the side jamb into the framing (FIGURE 16). The screws must penetrate the framing by at least 1-1/2". These screws will help anchor the door frame to the rough opening structural members.

To prevent bowing side jambs, shim between the jamb and framing before installing screws. Place screws at head, middle and bottom of hinge side jamb. Reinstall weatherstrip after screws are installed.

Additional Install Details As Applicable

NOTE: Add support blocking under the sill if the sill's exterior edge is not fully supported along its entire length **(FIGURE 17)**.

For best results, paint or varnish blocking before installation. Also apply sealant **(FIGURE 17)** before installing blocking.

IMPORTANT: If unit is mulled it must be supported with shims under each sill mull jamb for proper support.

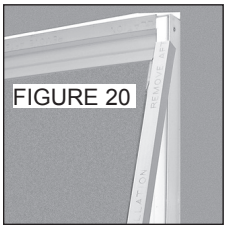
Hinges may have hinge pin set high **(FIGURE 18)**. These hinge pins need to be set flush with the hinge barrel. Use a soft-faced hammer to tap pin down so it seats against the hinge barrel.

NOTE: If the hinge has a set screw **(FIGURE 18)** be sure it is loosened before trying to hammer hinge pin into place. Once hinge pin is properly set, tighten set screw.

Some doors have shipping blocks stapled to the panel's bottom **(FIGURE 19)**. Remove the block and the staple.

Check unit's entire perimeter and remove any other shipping clips. On clad units, remove exterior accessory groove cover **(FIGURE 20)**.

Install the handle set according to the instructions packed with the handle set.



Hinge Adjustment - Reveal

FIGURE 1 – GUIDE HINGE

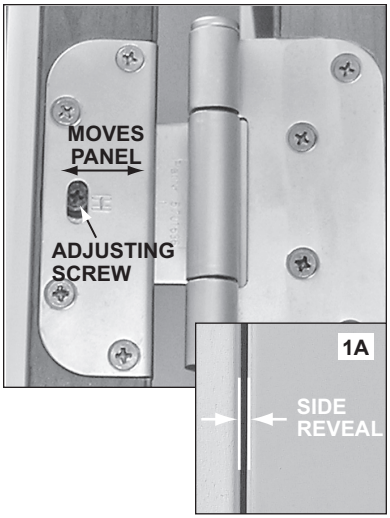


FIGURE 2 – SET HINGE

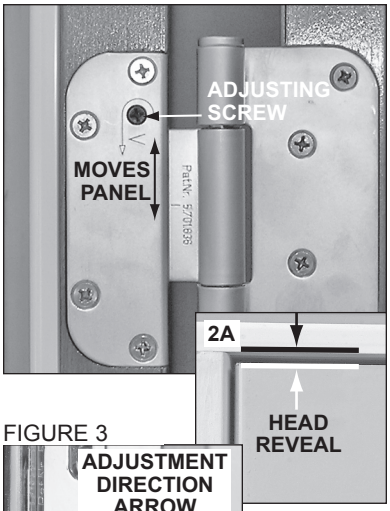


FIGURE 3

Previous shimming and reveal adjustments moved the door frame in relation to the rough opening.

Additional limited adjustment is provided by adjustable hinges which will move the door insert rather than the door frame.

⚠ IMPORTANT: ***For Contemporary Style doors with adjustable hinges, please see Hinged Door Supplement 1291807 for hinge adjustment instructions***

Each insert will have three (3) guide hinges **(FIGURE 1)** to allow horizontal adjustment for side reveal **(FIGURE 1A)**.

The fourth hinge is a set hinge **(FIGURE 2)**. It allows vertical adjustment **(FIGURE 2A)**. It will always be the second hinge down from the top.

After the unit has been installed, the reveal around the head and sides of the door insert (and between the active and inactive inserts on 2-wide doors) needs to be equal for proper door operation. Hinge side gap will be approximately 1/16" to 1/8" and latch side gap will be approximately 1/8" to 3/16".

Use a manual Phillips head screwdriver to adjust the hinges.

⚠ IMPORTANT: DO NOT use powered screwdrivers to adjust hinges.

1. To adjust the guide hinge (horizontal adjustment) **(FIGURE 1)**, turn the adjustment screw clockwise to make the insert move towards the hinge side. Turn the adjustment screw counter clockwise to move the insert towards the latch side. Adjust each of the three guide hinges so that the side reveal is equal **(FIGURE 1A)**.

2. To adjust the set hinge (vertical adjustment) **(FIGURE 2)**, turn the adjustment screw in the direction of the arrow shown on the hinge **(FIGURE 3)** to make the insert move in the direction of the arrow on the hinge.

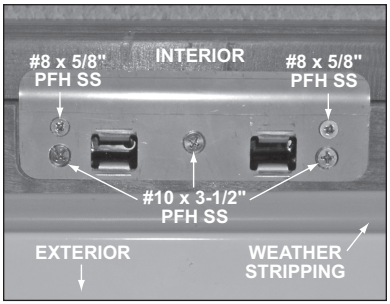
NOTE: Adjustment upward is easier if the weight of the insert is taken off the hinges. This can be done with blocks and/or a pry bar under the insert to temporarily take the weight off the hinges.

Turn opposite of the arrow direction **(FIGURE 3)** to make the insert move in the opposite direction. Adjust the height of the insert so the reveal between the insert and head jamb is equal across the top. This will be approximately 1/8". Check door operation to verify that the door works smoothly.

Make minor adjustments as necessary by repeating the above steps.

Head Strike Plate

FIGURE 1



Turn back to Page 2 and complete Steps 3 through 9 before continuing.

Ensure shims are installed between the head jamb and rough opening, above the head strike plate.

Head strike plate is factory installed with two #8 x 5/8” screws.

Install three #10 x 3-1/2” long screws (supplied) into the holes nearest the weatherstripping in the head jamb strike, through the head jamb and shims, and into the framing to anchor the plate **(FIGURE 1)**.

To maintain smooth operation, periodically lubricate the strike plate and hinges with a silicone lubricant.

Door Installation – Wood Brickmould Units

FIGURE 1BM

FIGURE 2BM

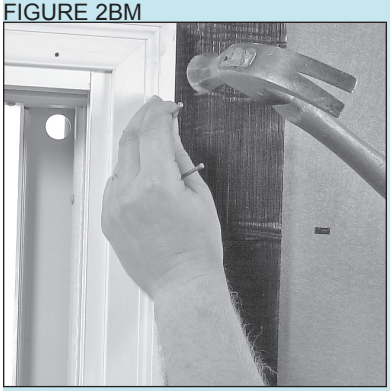
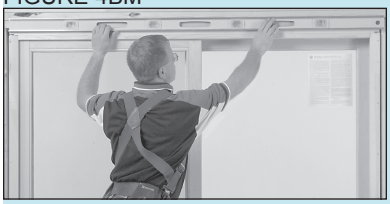


FIGURE 3BM

FIGURE 4BM



⚠ WARNING

Weight of door unit(s) and accessories will vary. Use a reasonable number of people with sufficient strength to lift, carry and install door unit(s) and accessories. Always consider site conditions and use appropriate techniques when installing.

⚠ WARNING

Improper use of hand and power tools could result in personal injury and/or product damage. Follow equipment manufacturers' instructions for safe operation. Always wear safety glasses.

⚠ IMPORTANT: Remove all shipping and packing material including the handles. Be sure to remove nails holding insert in place. Do not remove plastic shipping blocks that hold panels in place and do not open the door panel(s).

⚠ IMPORTANT: Before proceeding, rough opening and sill must be prepared and caulked as explained on Pages 1-11 (following the instructions that apply to your installation and unit type). Silicone sealant must be applied to the rough opening and sub sill as described on Page 11.

1. Immediately after caulking as instructed, set and center the door in the rough opening **(FIGURE 1BM)**.

2. Secure one side top corner with a rust-proof casing nail long enough to penetrate framing material by at least 1-1/2" **(FIGURE 2BM)**.

NOTE: Drilling pilot holes for either screws or nails will help prevent wood brickmould from splitting and cracking.

3. While holding unit in place, level unit on the interior or exterior across the sill, head and jambs **(FIGURES 3BM & 4BM)**. To level the unit, place shims directly below the side jambs only. Place a flat bar underneath the sill at the side jamb, lift slightly, slide shim under sill.

⚠ IMPORTANT: Sill must be level and have solid support for its full length.

Door Installation – Wood Brickmould Units (cont.)

FIGURE 5BM

IMPORTANT: Take diagonal measurements across outside edges of frame.

6. Continue holding unit in place. Square and plumb jambs. Check both side-to-side and inside-to-outside **(FIGURE 5BM)**. Measure from corner-to-corner to check for square **(FIGURES 6BM & 7BM)**.

7. Use a pry bar to slide bottom of unit left or right until diagonal measurements are exactly the same.

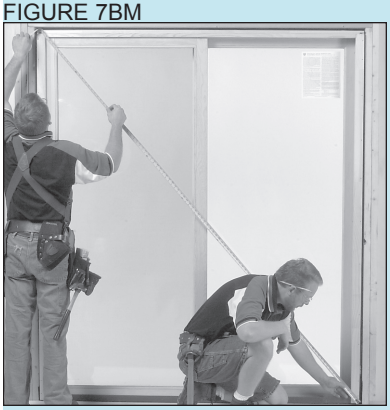
8. Secure other top corner and check again for level, plumb and square.

9. Use shims and a straightedge to straighten the side and top jamb. When straight, fasten through the the wood brickmould spacing fasteners 16" on center around head and sides.

FIGURE 6BM

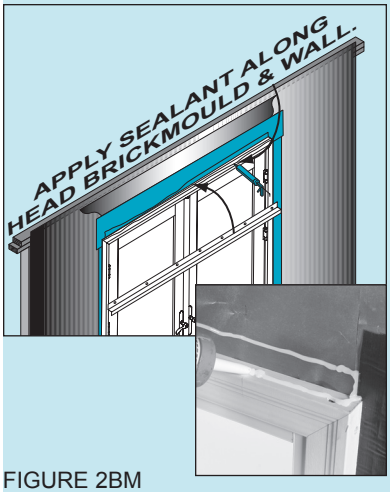
Turn back to Page 13 and complete applicable procedures on Pages 13 through 20. After these procedures are complete, turn to Page 23 and install the drip cap as instructed.

FIGURE 7BM



Drip Cap Installation – Wood Brickmould Units

FIGURE 1BM



1. Measure and cut a drip cap that is as long as the top brickmould.

2. Apply a continuous 1/4" bead of clear silicone sealant to the exterior face of the wall and the top of the brickmould **(FIGURE 1BM)**. Locate caulk bead on the wall above the brickmould so the drip cap vertical leg will seal against the caulk. Caulk must be as long as the drip cap.

3. Place drip cap on top of brickmould **(FIGURE 2BM)** and center its length on the brickmould. Push tightly down against brickmould and into sealant on the wall.

4. Nail drip cap in place with galvanized roofing nails long enough to penetrate framing members by at least 1-1/2" **(FIGURE 2BM)**. Place nails every 12 to 16 inches along drip cap's length.

5. Apply sealant to the underside of the weather resistant barrier (or to drip cap) along all the seams **(FIGURE 3BM)**.

6. Fold weather WRB flap down over the weather barrier tape **(FIGURE 3)**. Use a rubber roller on top of flap to smooth and spread sealant applied in Step 5.

7. Cut two pieces of weather barrier self-adhering tape. Make sealing tape 4" longer than the diagonal seams. Apply tape over the diagonal seams so at least 1" of tape extends beyond the ends and sides of each seam **(FIGURE 4BM)**.

FIGURE 2BM

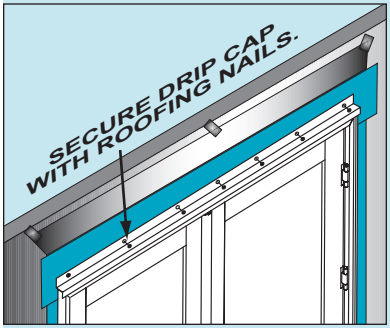
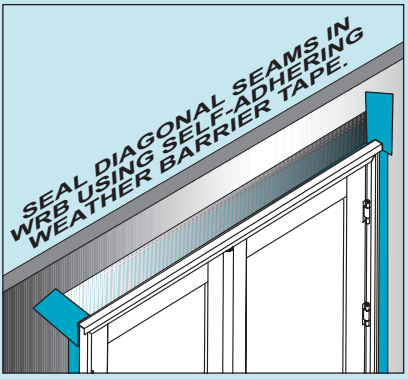


FIGURE 3BM

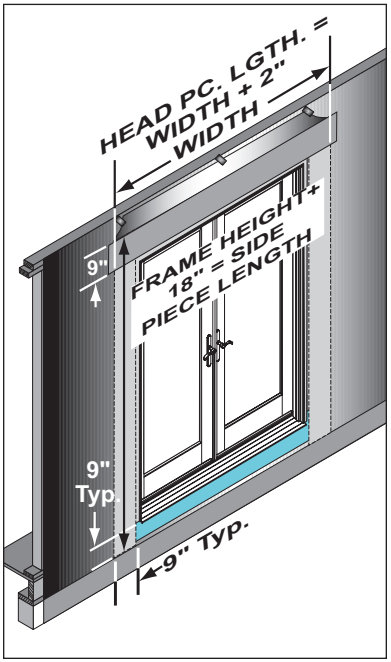
FIGURE 4BM



Weather Barrier Tape Application – Nailing Fin Units DP Installations

FIGURE 1

FIGURE 2



The weather resistant barrier (WRB) that was cut and taped back to allow door installation, must be resealed to the wall and door frame. ***Self-adhering weather barrier tape must be applied to the wall and door nailing fin before resealing the WRB.***

⚠ WARNING Do not cut into nailing fin or frame while trimming weather resistant barrier. Damage may adversely affect structural or water integrity.

1. One section at a time, untape and fold weather resistant barrier over nailing fin and up against door frame. Use a utility knife or scissors and carefully trim WRB alongside the door frame **(FIGURE 1)**. When trimmed, WRB must lay flat against sheathing, overlap the nailing fin, and fit tightly against the door frame. After trimming and dry-fitting, tape WRB back out of the way. Repeat for each section of WRB.

Preparation:

Pre-Cut Tape

1. For the sides, cut two pieces of weather barrier self-adhering tape that are 9" wide and 17" taller than the door **(FIGURE 2)**.

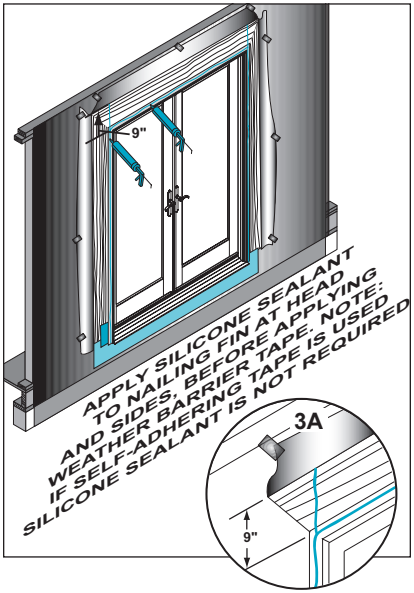
Cut the head piece 9" tall and long enough to span the door, the two side tapes and an extra 2" **(FIGURE 2)**.

Do not apply tape yet. Perform following caulking instructions first.

⚠ IMPORTANT: Check both the self-adhering weather barrier tape and weather resistant barrier manufacturer's instructions to ensure the sealant you use is compatible with their product.

Weather Barrier Tape Application – Nailing Fin DP Installations (cont.)

FIGURE 3



Apply Sealant

1. Apply a generous, continuous bead of silicone sealant on the sides of the nailing fin along the edge where the nailing fin and door frame meet. Start 9" above the door and run the bead to bottom of nailing fin **(FIGURES 3 & 3A)**. Repeat for the other side frame. Also apply sealant along the head nailing fin **(FIGURES 3 & 3A)**.

Tape Application

First – Apply Side Pieces

1. Start at the top, about 8-1/2" above the door **(FIGURES 4, 4A & 4B)**. Apply tape to the face of the wall close to the door frame and work toward the bottom. Tape must cover the entire nailing fin, including the installation holes, the joint between the fin and the building's sheathing and extend out onto the exterior wall. Edge closest to the door must be seated in the sealant applied earlier. Use a rubber roller to get good contact with the wall.

2. Apply the other side piece the same way.

Second – Apply Head Piece

3. Apply top piece of weather barrier self-adhering tape so one end extends 1" beyond a side piece of tape **(FIGURES 5 & 5A)**. Apply top piece across the head nailing fin and over the opposite side piece of tape. Ends of top piece should overlap each side piece by 1". Use a rubber roller to get good contact with the wall surface.

FIGURE 4

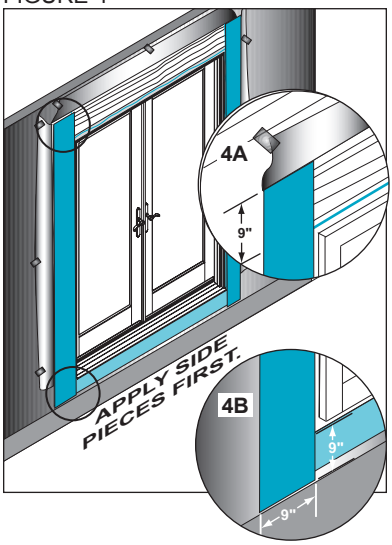
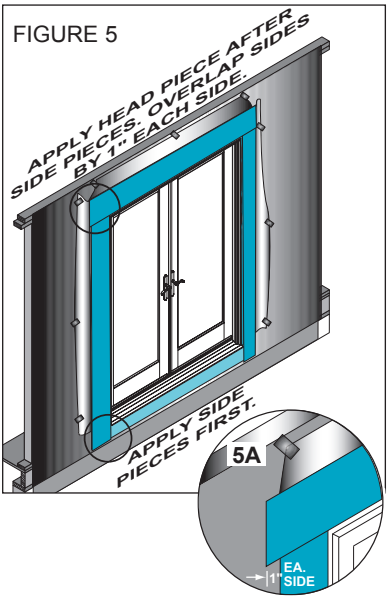
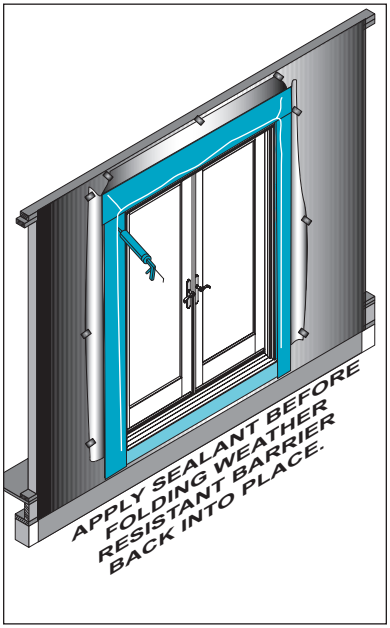


FIGURE 5



Weather Barrier Tape Application – Nailing Fin DP Installations (cont.)

FIGURE 6



Reseal WRB To Door

1. Apply a generous, continuous bead of silicone sealant on all sides of the door where the weather resistant barrier will lay when folded down on top of the self-adhering weather barrier tape **(FIGURE 6)**.

2. Piece by piece, untape and fold down the weather resistant barrier over the weather barrier tape **(FIGURE 7)**. Use a rubber roller, on top of the WRB, to smooth and spread sealant applied earlier.

3. The diagonal seams in the weather resistant barrier must be sealed **(FIGURE 8)**.

Cut and apply self-adhering weather barrier tape as shown in **(FIGURE 8)** to seal the seams. Cut tape big enough to overlap seams by at least 1" on all sides.

FIGURE 7

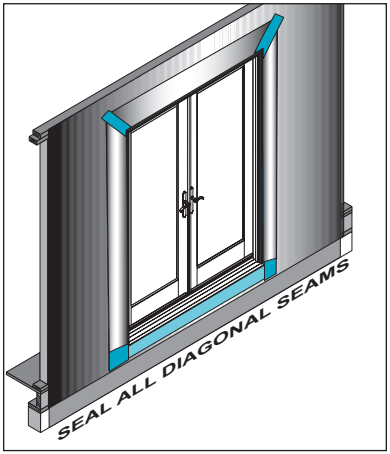
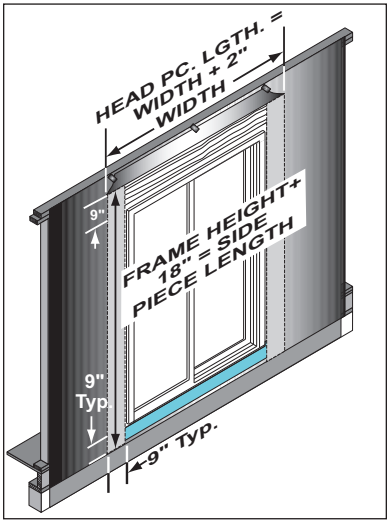


FIGURE 8

Weather Barrier Tape Application – Nailing Fin Units
Non DP Installation

FIGURE 1



The joint between the nailing fin and wall surface must be sealed with strips of self-adhering weather barrier tape.

Preparation

1. For the sides, cut two pieces of weather barrier self-adhering tape that are 9" wide and 17" taller than the door **(FIGURE 1)**.

Cut the head piece 9" tall and long enough to span the door; plus 2" **(FIGURE 1)**.

Do not apply tape yet. Complete caulking instructions that follow.

NOTE: Sealant not required if self adhering weather barrier tape is used.

2. Apply a generous, continuous bead of silicone sealant on the sides of the nailing fin along the edge where the nailing fin and door frame meet. Start 8-1/2" above the door and run the bead to bottom of nailing fin **(FIGURE 2)**. Repeat for the other side frame. Also apply sealant along the head nailing fin **(FIGURE 2)**.

Tape Application

First – Apply Side Pieces

Start at the top, about 8-1/2" above the door **(FIGURES 3, 3A & 3B)**. Apply tape to the face of the wall close to the door frame and work toward the bottom. Tape **must** cover the entire nailing fin, including the installation holes, the joint between the fin and the building's sheathing **and** extend out onto the exterior wall. Edge closest to the door must be seated in the sealant applied in Step 2. Use a rubber roller to get good contact with the wall surface.

FIGURE 2

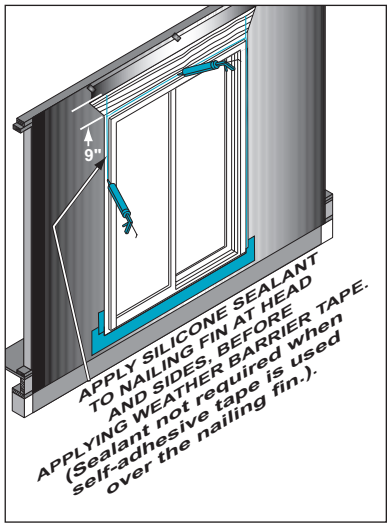
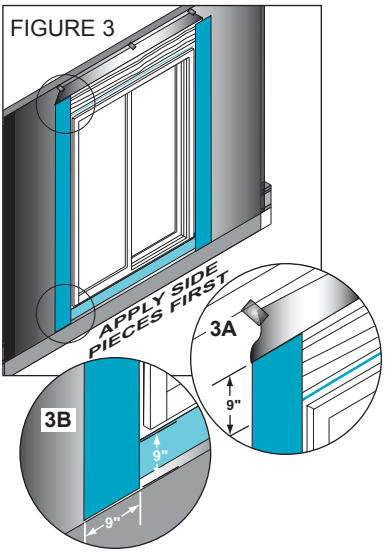


FIGURE 3



Weather Barrier Tape Application – Nailing Fin Non-DP Installation (cont.)

FIGURE 4

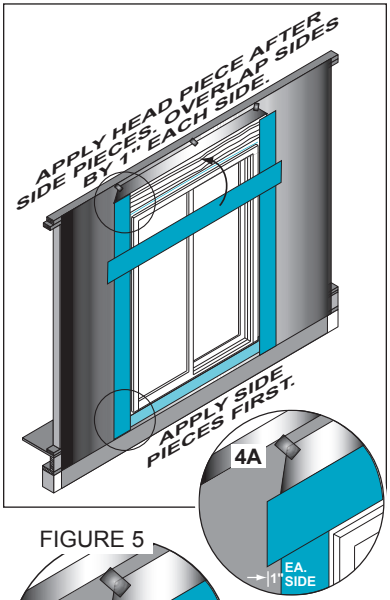
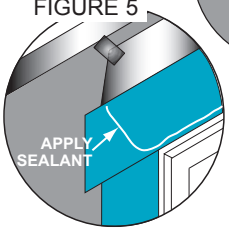


FIGURE 5



Tape Application

Second – Apply Top Piece

1. Apply top piece of weather barrier self-adhering tape so one end extends 1" beyond a side piece of tape **(FIGURES 4 & 4A)**. Apply top piece across the head jamb and over the opposite side piece of tape. Both ends of top piece should overlap side pieces by 1". Use a rubber roller to get good contact with the wall surface.

2. Apply a sealant bead along the top piece of weather barrier self-adhering tape. Place bead where flap of WRB will seat when folded down **(FIGURE 5)**.

3. Untape and fold down the top flap of weather resistant barrier over the top piece of the weather barrier tape **(FIGURE 6)**. Use a rubber roller, on top of flap, to smooth and spread sealant applied earlier.

4. The diagonal seams in the weather resistant barrier must be sealed.

Cut and apply self-adhering weather barrier tape as shown in **(FIGURE 7)** to seal the seams. Cut tape big enough to overlap seam by at least 1" on all sides.

FIGURE 6

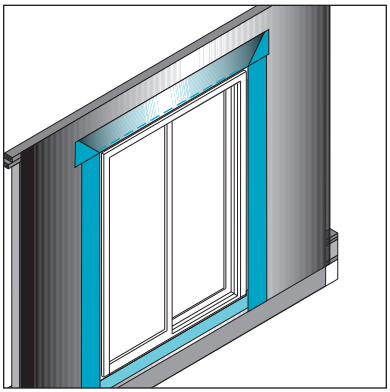


FIGURE 7

Installing Screen Guides, Installing Screen, Removing Screen

FIGURE 1

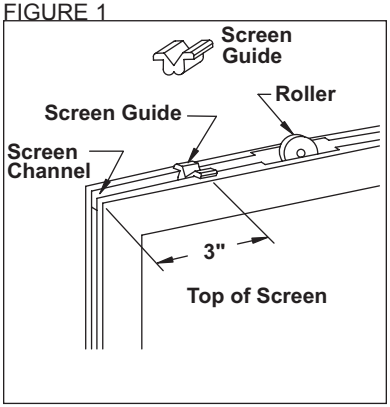


FIGURE 2

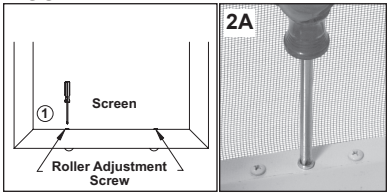
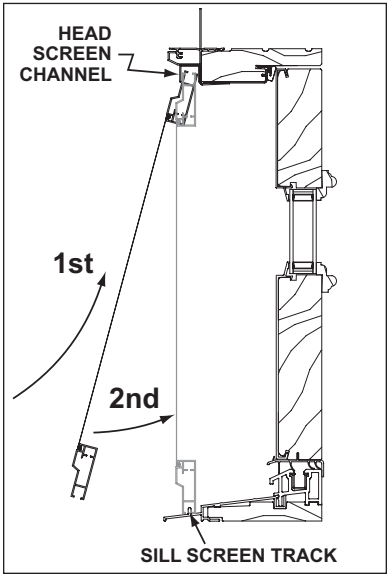


FIGURE 3



Installing Screen Guides

Screen guides are included in the screen keeper package. These are used to stabilize the top of the screen in the screen channel, preventing excessive movement and unwanted noise. If screen is already installed, remove screen (see Removing Screen).

If screen has been shipped separate from your door unit, remove the screen from its packaging.

1. Position guide above top screen channel, about 3" from the end of the screen **(FIGURE 1)**.

2. Press down firmly to snap screen guide into channel.

3. Repeat procedure for other side. Install two screen guides on the top of each screen.

Installing Screen

1. Retract top and bottom screen rollers by turning the screen roller adjustment screws counterclockwise with a Phillips screwdriver **(FIGURE 2 & 2A)**.

2. Standing outside of the building, hold screen with latch handle toward operating side jamb and facing interior. Grasp mid-way up on each side of the screen. Insert top of screen into head screen channel. Swing bottom of screen in until bottom rollers touch sill screen track **(FIGURE 3)**.

3. Lift rollers up onto sill screen track. Roll the screen back and forth to see that rollers have seated on screen track and are operating properly.

4. Perform screen adjustment procedures on next page to ensure smooth operation. Adjust screen rollers so screen rides evenly on sill screen track and sits level in door frame.

Removing Screen

1. Retract top and bottom screen rollers by turning the screen roller adjustment screws counterclockwise with a Phillips screwdriver **(FIGURE 2 & 2A)**.

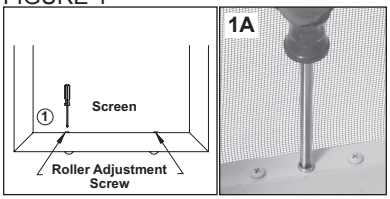
2. Open screen enough to grasp the sides.

3. Lift screen gently until top is fully up into the head frame screen channel **(FIGURE 3)**.

4. While holding screen up into head frame channel, carefully pull screen outward until screen bottom clears bottom channel and top can be slid out of upper channel.

Screen Adjustment

FIGURE 1

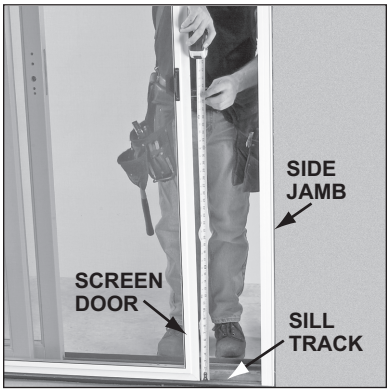


To adjust screen for smooth operation use a Phillips screwdriver on the adjustment screw in each screen roller **(FIGURE 1 & 1A)**. Turn clockwise to extend the roller or turn counterclockwise to retract the roller. There are rollers at each corner, both top and bottom. For best results all rollers should be adjusted.

NOTE: To **raise** screen, *top* rollers need to be *retracted* and *bottom* rollers *extended*. To **lower** screen *top* rollers need to be *extended* and *bottom* rollers retracted.

Install Screen Keeper

FIGURE 1



1. Open screen door approximately 12-18 inches. On the screen door, flip the locking latch so it is in the up position.

2. Place a tape measure on the sill track and measure up to the top of the silver lock tab located on the side jamb of the screen door **(FIGURE 1)**.

Measure up the same distance on the side jamb of the door frame and mark the position **(FIGURE 2)**.

3. Place the top of the keeper 1/8" below the transfer mark on the side jamb **(FIGURE 3)**. Drill 1/16" pilot holes for screws. Fasten with screws provided in the screen keeper package **(FIGURE 3)**.

FIGURE 2

FIGURE 3

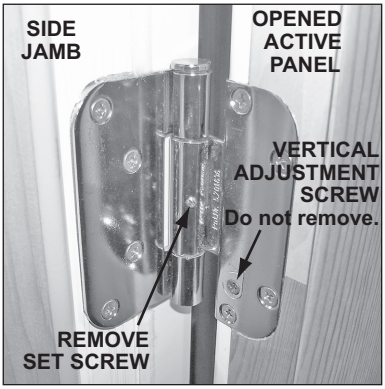
Insert Removal – Hinged Doors

⚠ WARNING

Weight of door inserts will vary. Use a reasonable number of people with sufficient strength to handle door inserts. Always consider site conditions and use appropriate techniques when handling.

FIGURE 1 Outswing Hinged Door Blocked for Removal

FIGURE 2 Outswing Hinge Viewed From Interior



⚠ IMPORTANT: ***For Contemporary Style doors with adjustable hinges, please see Hinged Door Supplement 1291807 for insert removal instructions.***

The active panel in a hinged door can be removed by pulling the hinge pins and taking the panel out of the frame. The following procedure applies to an entry door, a hinged patio door and an operating sidelite.

Removing an inswing or outswing door active panel is similar. Differences will be pointed out.

1. Determine which way the door is going to be removed; toward the interior or exterior. Protect the floor areas with an appropriate covering.

2. Prepare a sturdy, protected surface to lay the panel.

3. Gather tools and adequate number of people to handle door panel.

Tools Needed

• Pry Bar • Phillips Screwdrivers (#1 & #2) • Hammer • Long-Nosed Nail Set or Drift • Wood Support Blocks • Flat-Bladed Screwdriver

The following chart highlights the differences between inswing and outswing hinged door removal.

	Inswing	Outswing
Panel Start Position	Closed	Open
Support for Panel Bottom	Optional	Required
Remove Hinge Set Screw	None	Yes
Have Helper Hold Panel	Yes	Yes
Tap Hinge Pins Up From Bottom	Yes	Yes
Open Door Panel	Yes	Done
Lift Panel Off Hinge Leaves	Yes	Yes

4. **Inswing –** Close door completely and work from the interior.

Or

4. **Outswing –** Open the door about half way.

5. **Outswing –** Support bottom of door with wood blocking **(FIGURE 1)**.

6. **Outswing –** Remove set screw on all hinge barrels **(FIGURE 2)**. Keep for reinstalling.

⚠ IMPORTANT: Do not remove adjustable hinge adjustment screws on either inswing or outswing hinges.

Insert Removal – Hinged Doors (cont.)

FIGURE 3

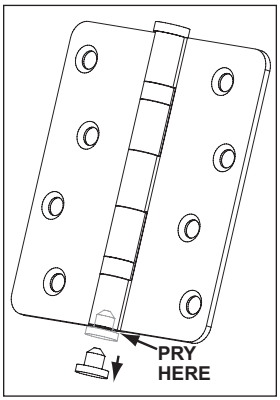
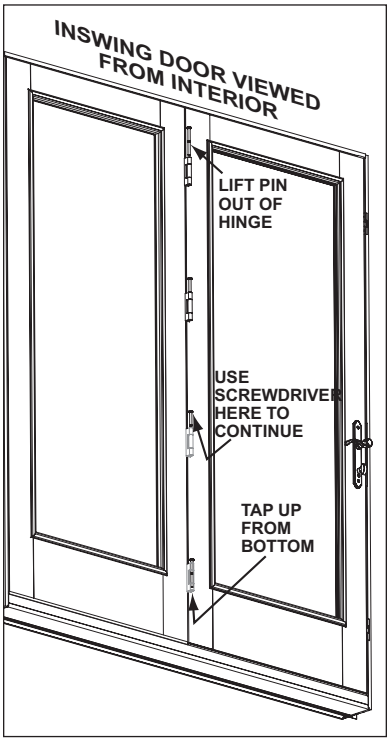


FIGURE 4



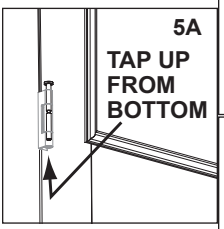
7. **Inswing or outswing –** Examine bottom of hinge barrel. If there is a hinge pin cap, remove the cap to access the hinge pin **(FIGURE 3)**.

⚠ **Doors must be supported to keep them from falling as the hinge pins are removed.**

8. **Inswing or outswing –** Start at the bottom of the door and use a long-nosed punch, nail set, or nail that will fit inside hinge barrel. With a hammer; tap firmly upwards on hinge pin shaft to drive it up out of hinge leaves **(FIGURES 4 & 5A-C)**. Start at the bottom hinge and work upwards removing each hinge pin.

10. **Inswing –** When all the hinge pins are removed, grasp the door handle and carefully open the door and remove the panel by lifting it off the hinge leaves attached to the jamb **(FIGURE 6)**.

10. **Outswing –** When all the hinge pins are removed, lift the door panel off the hinge leaves.



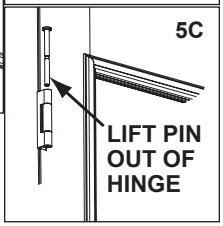
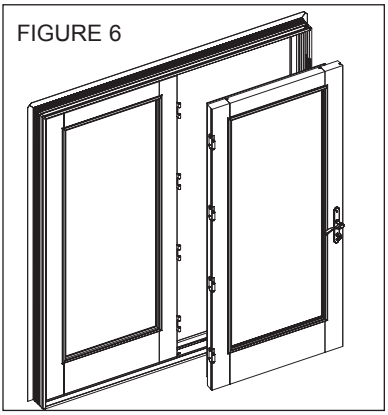
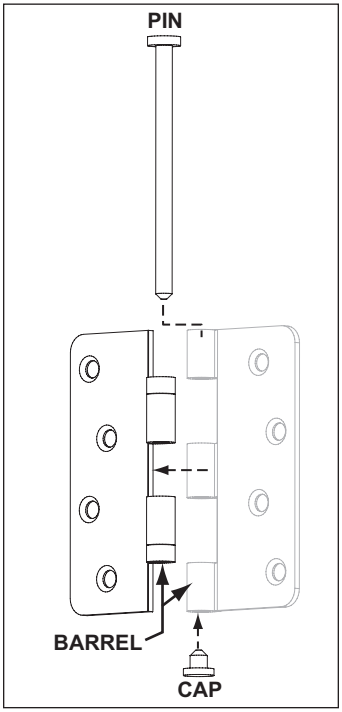


FIGURE 6



Insert Reinstall – Hinged Doors

FIGURE 1



Panel reinstall is the reverse of panel removal.

Follow all protective and safety measures used to remove insert when you reinstall the insert.

1. Arrange panel so bottom sweep is down, hinges on panel face hinge leaves on jamb, and latch faces strike plate.

2. Locate and have the hinge pins readily available for the next steps.

IMPORTANT: Clean hinge pins with soft clean cloth to remove dirt. Spray pins with a light coating of silicone lubricant before reinstalling.

3. Lift insert and place insert hinge barrels into hinge barrels attached to door frame **(FIGURE 1)**.

Do not use excessive force to insert hinge pins. They should "drop in place" with light pressure from a soft-faced hammer.

4. With jamb and insert hinge barrels aligned, install hinge pins into top of hinge barrel . Tap pins in place with a soft-faced hammer. Insert may need to be "jiggled" slightly so pin will drop in place **(FIGURE 2)**. Reinstall all hinge pins.

5. Replace hinge cap.

6. Replace outswing hinge setscrews **(FIGURE 3)**.

FIGURE 2

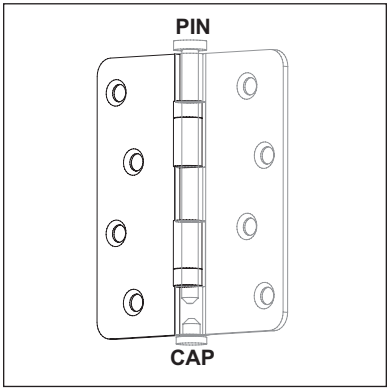
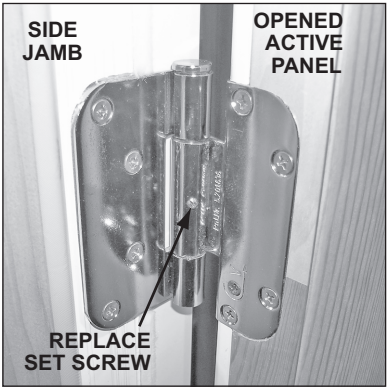


FIGURE 3



Recommended Finishing Instructions

⚠ WARNING

Always follow chemical manufacturers' safety instructions when using chemicals to avoid injury or illness.

Vinyl, aluminum, steel and fiberglass may be cleaned with mild soap and water. Hard to remove stains and mineral deposits may be removed with mineral spirits. Factory-applied painted surfaces can be cleaned with mild household detergents and water.

- **Do NOT** clean any surface with gasoline, diesel fuel, solvent based, or petroleum based products.
- **Do NOT** use abrasive materials or strong acidic solutions against vinyl, aluminum, glass, steel, fiberglass, or factory-applied finishes.
- **Do NOT** scrape or use tools that might damage the surface.
- **Do NOT** paint vinyl or aluminum surfaces.
- **Do NOT** use mastic-type tapes such as Duct Tape®.

NOTE: If masking tape is used on any surface to aid in painting or staining, remove tape as soon as possible after use. Tape must be removed within 24 hours of application.

For long term use, such as stucco applications; use tape that will release, even when exposed to high temperatures for an extended period of time. (Examples include 3M #2080 and #2090 tapes.)

Before Starting

Remove all hardware so finish can be applied more easily.

⚠ IMPORTANT: With hardware removed, seal all raw wood in the hardware routes.

For Bare Wood Surfaces

For best results, we recommend sealing your wood products immediately upon receipt. Avoid storing products or leaving them unfinished for more than 30 days.

1. Remove all construction and adhesive label residue with mineral spirits before finishing.
2. Lightly sand surfaces being finished with 180 grit or finer sandpaper. Be careful not to scratch the glass.
3. After sanding, clean-off sanding dust using lacquer thinner applied to a cloth so the cloth is slightly damp. Let surface dry completely.

-If a painted surface is desired:

- If a wood unit is delivered with factory-applied primer paint, it may be painted without reprimming, providing the finish paint coat is applied within six (6) months of unit installation.
- If a factory-primed wood unit requires repriming contact your customer service representative for help in selecting a primer compatible with the factory applied material.
- Factory-applied Accentials™ color system finishes in standard, designer or custom colors do not require additional painting. For "touch up" paint specifications contact your customer service representative.

1. An unprimed wood unit requires priming. Use high quality acrylic or oil-based primer. Use compatible oil or high quality acrylic finish coats. Refer to the primer and paint manufacturers' instructions.
2. When priming bare wood or repriming, cover all exposed wood surfaces. Priming all exposed surfaces helps prevent end splitting, warping and/or checking.
3. Once primed, apply two (2) coats of paint on all exposed wood surfaces.

-If a stained surface is desired:

⚠ CAUTION If no sealer is applied over stain, the wood will weather very rapidly and defects will occur. Apply at least two (2) coats of sealer.

1. Use only oil-based stain. A gel stain is easier to apply as it does not easily run or drip. The clear top coats may be oil or water-based. Apply at least two top coats of sealer or varnish.

- Stain applied to soft and porous woods such as pine, maple, alder, and fir can result in splotchy or uneven color appearance. Softer areas absorb pigmented stain more readily than harder areas, making the soft spots darker. The uneven absorption is especially prevalent with heavily pigmented darker stains. To determine if your stain choice is heavily pigmented and prone to splotchy application, view the opened and stirred stain container with an indirect light source. If you can see "down into" the stain, it is a lighter pigmented variety. If you cannot see "down into" the stain, it is a heavily pigmented type and will be prone to uneven absorption.
- A pre-stain wood conditioner, applied before staining, will help softer woods absorb stain

Recommended Finishing Instructions (cont.)

more evenly. Apply both wood conditioner and desired stain according to the manufacturers' instructions.

2. Apply one (1) coat of sealer to the stained surface and let dry. Use a high-quality, UV stabilized, exterior sealer.
3. Before applying the next finish coat, make sure the previous coat is completely dry. Then lightly sand previous finish coat with 180 grit or finer sandpaper. Clean off all sanding dust and wipe surfaces with a tack cloth.
4. Apply next coat of desired finish to surface and let dry. Apply only one coat at a time.
5. For any additional coats of finish, repeat steps 3 and 4.

For a clear (natural) finish: Follow Steps 1, 2, and 3 under "Bare Wood" and Steps 2, 3, 4, and 5 under "stained surface".

⚠ IMPORTANT: Apply your choice of sealer (paint or varnish) to all exposed wood components. Do not get sealer on weather strip or into mechanical components.

Door Inserts

All active and removable door inserts, whether sliding or hinged, must be removed from the door frame after installation so they can be properly sealed.

Both clad and wood door units have bare wood on the top and bottom of the inserts. Paint or varnish these areas as you would all of the other exposed exterior wood. Follow procedures outlined in "Recommended Finishing Instructions" on previous page.

⚠ IMPORTANT: Remove insert for finishing. Apply your choice of sealer (paint or varnish) to all exposed wood components. Do not get sealer on weather strip or into mechanical components. Ensure bottom and top of insert are also sealed (FIGURE 1).

⚠ CAUTION Do not get paint, varnish, or sealer in the rollers on the bottom of sliding inserts. Rollers must be kept clean so they will rotate freely.

⚠ CAUTION Keep all sealers off weather strip or bottom sweeps. Do not remove bottom sweep.

⚠ Sealer (paint or varnish) applied to insert MUST BE COMPLETELY DRY before reinstalling insert. If not dry, insert may stick in jamb. Also weather strip may stick and be damaged.

Steel Doors

Non pre-finished steel entry doors have a prime coat that must be painted within 30 days of installation.

Factory-applied finishes in standard, designer or custom colors do not require additional painting. For "touch up" paint specifications contact your customer service representative.

⚠ IMPORTANT: Do not use industrial fast-dry solvent base materials to clean or as a paint thinner. Protect door from contact with acidic brick cleaning solutions.

Steel Exterior

Preparation:

Do not apply paint in direct sunlight or extreme temperatures, either hot or cold.

Door surfaces must be free of dust, dirt, and grease before applying finish paint. Clean with mild detergent and water. Rinse after washing and allow to completely dry.

Painting Instructions:

For best results, use a high-quality oil base exterior semi-gloss enamel paint. A high-quality acrylic exterior latex paint may also be used if a light scuff sanding (with 400 grit sandpaper) is done before painting.

1. Place the door panel on a padded support, being careful not to mar the back side.
2. Remove hardware. If needed, scuff sand and remove sanding dust.
3. Use a high-quality brush or foam pad and apply paint making sure surfaces receive an even coat. Be sure to paint the panel top and edges. Also paint the bare wood in the hardware routes.

Do not paint weather strip or door bottom sweep. Do not remove the bottom sweep.

4. Allow first coat to dry completely. Wet sand with 400 to 600 grit sandpaper.
5. Allow panel to dry and remove sanding dust.
6. Apply second coat of finish paint.

Steel Interior

For best results, use a high-quality oil base interior semi-gloss enamel paint. A high-quality acrylic latex paint may be used with light scuff sanding prior to painting.

Be sure to paint the top of the door panel.

Follow Steps 1 through 6 (above) for painting

Recommended Finishing Instructions (cont.)

steel door exterior. When interior and exterior painting is completed and thoroughly dry, replace hardware.

Fiberglass Doors

A fiberglass door must be painted or stained within 30 days of installation.

Materials:

- Brushes and Cloths: Always use a high quality China brush and lint-free cloth for applying and working stains.
- Stains: Gelled stains are recommended, but highly pigmented non-penetrating oil based stains or artist oils can provide satisfactory results. Follow stain manufacturer's instructions for best results.
- Top Coats: Top coat materials, essential for weather protection, must be a clear high-grade UV stabilized polyurethane designed for exterior use. Top coats are to be applied to stained surfaces only. ***Do not apply top coat to painted surfaces.***

Preparation:

- Do Not Sand! If needed #000 steel wool with very light pressure can be used to smooth surfaces. Clean after the rubdown using a tack cloth.
- Do not apply paint, stain, or topcoat in direct sunlight and extreme temperatures.
- Clean surfaces with a mild detergent and water. Rinse thoroughly and allow to dry before painting or staining.

Staining:

Only textured fiberglass panels can be stained!

1. Place the door panel on a padded support, being careful not to mar the back side.
2. Apply stain with a lint-free cloth, starting in the middle of the panel. Begin with raised panel areas. Apply stain until the desired color is achieved, then brush in grain direction with a clean china bristle brush to feather out the stain so it is even. Remove excess stain from brush with another lint-free cloth.
3. Apply stain and feather it on the rails (horizontal surfaces) and the stiles (vertical surfaces).
4. Stain the edges of the door panel, feathering with long brush strokes for best appearance.
5. Allow stained surfaces 24 hours drying time.

Fiberglass Doors (cont.)

Top Coating:

A minimum of three coats are essential for proper protection. For best results, use clear high-grade UV stabilized polyurethane designed for exterior use. First, apply a light spray coat, then two additional heavy brushed coats. Lightly steel wool and clean with tack cloth between each application of polyurethane topcoat. Be sure to seal the top, bottom, and edges of the door panel.

Do not varnish weatherstrip or door bottom sweep. Do <u>not</u> remove bottom sweep.

Follow the manufacturer's instructions for drying time and finishing procedures.

Re-Applications of Top Coating:

- For best results, apply annual coats of varnish following manufacturer's instructions. Reapplication may be required every year. Direct sunlight and moisture will cause the finish to degrade faster than a finish in an unexposed environment.

Finish Characteristics:

- The finish on a fiberglass door sits on top of the fiberglass. It does not penetrate into the fiberglass. Therefore, the stain can be removed to restain a different shade.
- Avoid using tape or other adhesive materials on the finish, as the finish could be lifted off the surface.
- Interior frame components, of wood, have been coated with a special primer and may be painted or stained following the same procedures described above for door panels.

Door Frames On Fiberglass Doors

- Make sure frame is clean and free of dirt and any debris.
- Remove the jamb weatherstripping by pulling it out of the frame. Remove the head weather stripping in the same manner.
- Paint, or stain and varnish the door frames following the above instructions for painting, staining, and varnishing.
- After the finish coats are completely dry, reinstall the weather strip.

The recommendations are based on our experience with normal applications and finishing techniques. Due to the many variables in finishing materials and techniques, as well as application conditions, the door manufacturer cannot be responsible for the performance of field-applied finishes, individual application techniques, or the performance of any finishes thus applied or their resistance to exposure to the elements.

Products With Synthetic Stucco

Serious concerns have been raised about excessive moisture problems in homes and other buildings that have Exterior Insulation Finish Systems, commonly referred to as EIFS or Synthetic Stucco.

Many experts agree that a certain amount of water or moisture can be expected to enter almost any building exterior system. The building system should allow such water and moisture to escape or “weep” to the exterior, so no damage occurs. However, some EIFS systems may not allow water or moisture that penetrates the wall system to “weep” to the exterior. This can cause excessive moisture to accumulate within the wall system, which can cause serious damage to wall and other building components. It has been reported that so-called “barrier” EIFS systems are particularly prone to this problem.

Moisture problems in any type of building structure can be reduced by proper design and construction with appropriate moisture control considerations, taking into account prevailing climate conditions. Examples of moisture control considerations include flashing and/or sealing of all building exterior penetration points, use of appropriate materials and construction techniques, adherence to applicable building codes, and general attention to proper design and workmanship of the entire building system, including allowances for management of moisture within the wall system.

Determination of proper building design, components and construction, including moisture management, are the responsibility of the design architect, the contractors, and the manufacturer of the exterior wall finish products. Questions and concerns about moisture management issues should be taken up with these professionals. The door manufacturer is not responsible for problems or damages caused by deficiencies in building design, construction or maintenance, failure to install our products properly, or use of our products in systems that do not allow for proper management of moisture within the wall system.

Notes