#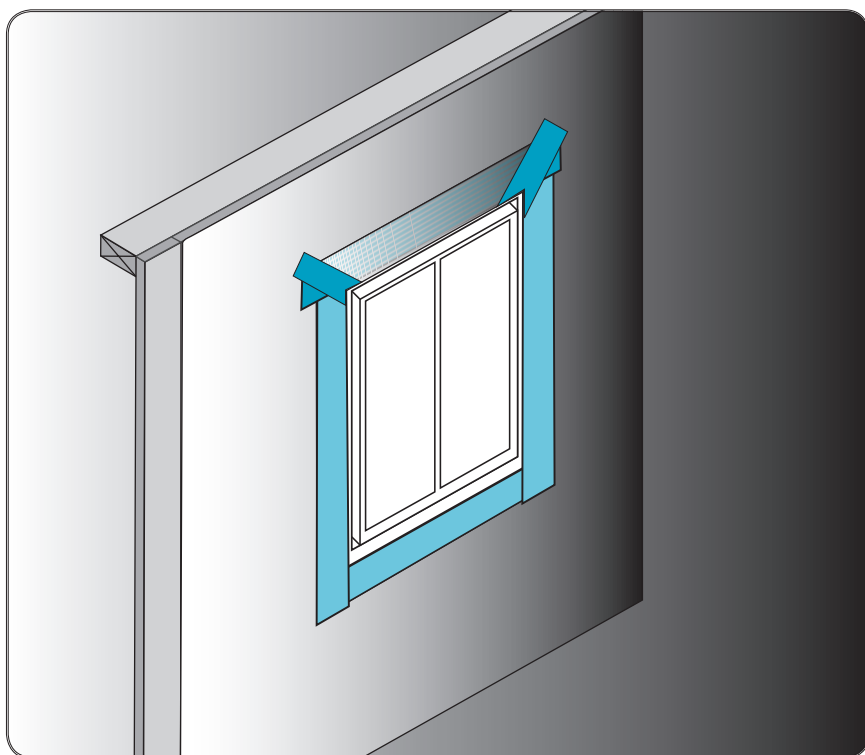 Standardized Window Installation Instructions For Maintaining Design Pressure Ratings For Aluminum or Vinyl Clad & All-Vinyl Window Units With Nailing Fin

Structure With Weather Resistant Barrier Applied Before Window Installation

IMPORTANT: Please read <u>completely</u> before you begin.

Table of Contents & Tool & Material Requirements

⚠ **CAUTION** **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.**

Non Code Compliance

If local laws or building codes do not require installation that maintains design pressure ratings, you may use installation instructions contained in Part No. 1200310 *"Standardized Window Installation Instructions"*.

General Installation and DPR Attainment

⚠️**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 or windows are being installed to ensure proper compliance.** The installation instructions that follow are based on typical frame construction. Specific applications may differ. The window manufacturer recommends that you consult a qualified installation professional. The window 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 installations. Additionally, to maintain design pressure ratings, there must be continuous contact with a generous bead of sealant between the **bare** sheathing and the window unit's nailing fin around the window's entire perimeter.

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

- Exterior weather resistant barrier must be cut and temporarily taped back away from rough openings.
- When sealant is applied to the rough opening it 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 the exterior face of the wall around the window's entire perimeter.
- Exterior weather resistant barrier must be trimmed and reapplied up to the nailing fin. It must be sealed to the fin along the entire perimeter with Self-Adhering Weather Barrier Tape.
- A shim space is required around all sides of the window. 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.
- 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 window jamb depth. Furring material must be securely fastened to the rough opening framing.
- Fastening methods must conform to those used to install test units. See the following page for correct type fastener, application spacing, and additional silicone sealant requirements.

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.

Code Compliance

The instructions in this booklet are designed to ensure your installation will meet the requirement to install units as they were installed for design pressure testing.

Design Pressure Performance – Fastening Method

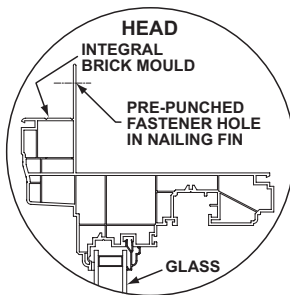| Vinyl, Vinyl Clad Wood Or Aluminum Clad Wood Windows With Pre-Punched Fastener Holes		
Unit Description	**Fastener**	**How to Fasten**
Vinyl Window with Nailing Fin with Pre-Punched Fastener Holes – No Brickmould. See FIGURE 1 on Page v.	#8 Steel screws long enough to penetrate framing material by at least 1-1/2".	Start a screw 4" in from the corner and apply through nailing fin into framing member. Space additional screws every 4" on center, around entire perimeter, staying 4" from each corner.
Vinyl Window with Integral Brickmould with Nailing Fin with Pre-Punched Fastener Holes. See FIGURE 2 on Page v.	#8 Steel screws long enough to penetrate framing material by at least 1-1/2"	
Vinyl Clad Wood Window with Nailing Fin with Pre-Punched Fastener Holes – No Brickmould. See FIGURE 3 on Page v.	#8 Steel screws long enough to penetrate framing material by at least 1-1/2".	Start a screw 4" in from the corner and apply through nailing fin into framing member. Space additional screws every 4" on center, around entire perimeter, staying 4" from each corner.
Aluminum or Vinyl Clad Wood Window with Nailing Fin with Pre-Punched Fastener Holes – No Brickmould. See FIGURE 4 on Page v.	#10 Steel screws long enough to penetrate framing material by at least 1-1/2".	Start a screw 4" in from the 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 Performance – Nailing Fin and Brickmould Configurations
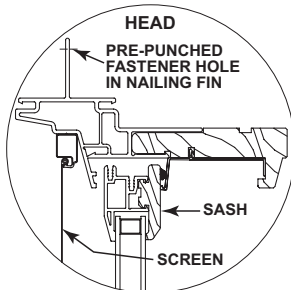
VINYL WINDOW

HEAD

PRE-PUNCHED
FASTENER HOLE
IN NAILING FIN

GLASS
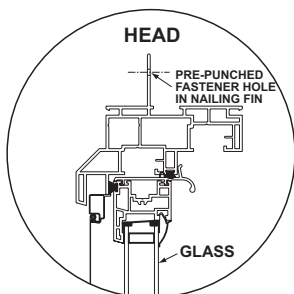
SIDE VIEW
WITH NAILING FIN
FIGURE 1

VINYL WINDOW WITH INTEGRAL BRICKMOULD

HEAD

INTEGRAL
BRICK MOULD

PRE-PUNCHED
FASTENER HOLE
IN NAILING FIN

GLASS

SIDE VIEW
INTEGRAL BRICKMOULD
WITH NAILING FIN – FIGURE 2

VINYL CLAD WOOD WINDOW

HEAD

PRE-PUNCHED
FASTENER HOLE
IN NAILING FIN

SASH

SCREEN

SIDE VIEW
WITH NAILING FIN – NO BRICKMOULD
FIGURE 3

ALUMINUM OR VINYL CLAD WOOD WINDOW

HEAD

PRE-PUNCHED
FASTENER HOLE
IN NAILING FIN

GLASS
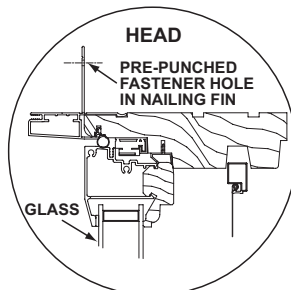
SIDE VIEW
WITH NAILING FIN
FIGURE 4

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

⚠ 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.
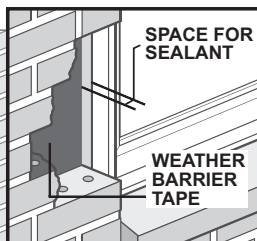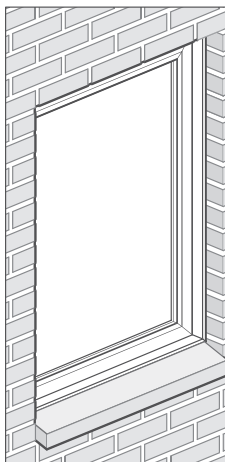
⚠ DANGER

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

⚠ DANGER

Screen will not stop children, any one or anything from falling out window.
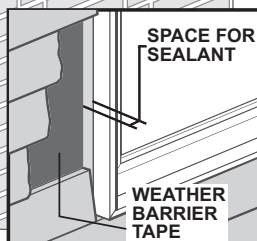
Keep children and objects away from open window.

A Special Note About Masonry

SPACE FOR SEALANT

WEATHER BARRIER TAPE

SPACE FOR SEALANT

WEATHER BARRIER TAPE

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.

Definition: ⟶

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

Weather Resistant Barrier (WRB) is a material used to provide moisture control. Usually applied over sheathing.
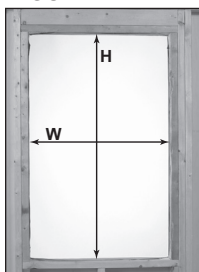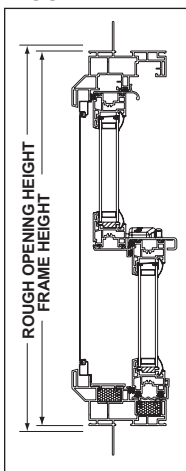
Rough Opening Preparation
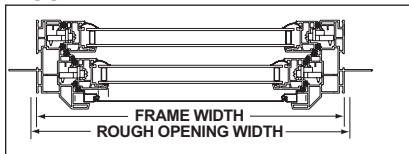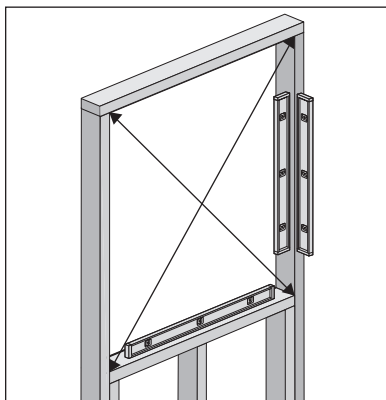
FIGURE 1

FIGURE 2

FIGURE 2A

FRAME WIDTH
ROUGH OPENING WIDTH

FIGURE 3

SAFETY INSTRUCTIONS

Read installation instructions completely before beginning procedure.

⚠ WARNING

Wear gloves, safety glasses, goggles or eye-shields appropriate to procedure.

⚠ **IMPORTANT:** **Perform the following <u>BEFORE</u> starting installation. Make sure you have:**

• **The correct window type (casement, tilt, etc.)**

• **The correct size window (Width and Height) for your rough opening (FIGURE 1).**

• **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 <u>BEFORE</u> you install the unit OR prep the rough opening.**

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

If a shim space greater than 1/4" exists on the interior or exterior, use solid continuous furring material to fill this space until the maximum 1/4" 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 window 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 1, 2, & 2A).**

2. Make sure walls are plumb and not twisted. Check rough opening for squareness by measuring diagonally from corner to corner in both directions. Diagonal measurements cannot differ from each other by more than 1/4" **(FIGURE 3)**.

⚠ **IMPORTANT:** **Fix problems with plumb, level or squareness before proceeding.**

FIGURE 4

CUT WEATHER RESISTANT BARRIER AS SHOWN BY SOLID LINES.

45°

9"

9"

⑤ ① ⑥ ② ③ ④

DASHED LINES SHOW ROUGH OPENING. DO NOT CUT HERE.

WEATHER RESISTANT BARRIER INSTALLED OVER SHEATHING AND FRAMING

Sill Pans

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

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

⚠️ **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.

3. Cut weather resistant barrier (WRB) in sequence as shown by the circled numerals in **(FIGURE 4)**.

4. Fold WRB back and tape out of the way **(FIGURE 5)**. Bare sheathing **must** be exposed.

5. Cut a piece of self-adhering weather barrier tape as deep as the rough opening. Make the tape as long as the rough opening width plus 18" **(FIGURE 6)**.

6. Start application 9" up from the sill on one side, work down to the sill. Proceed across the sill and 9" up the opposite side. Use a rubber roller to apply. Trim any edges that overhang the interior or exterior of the rough opening.

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.
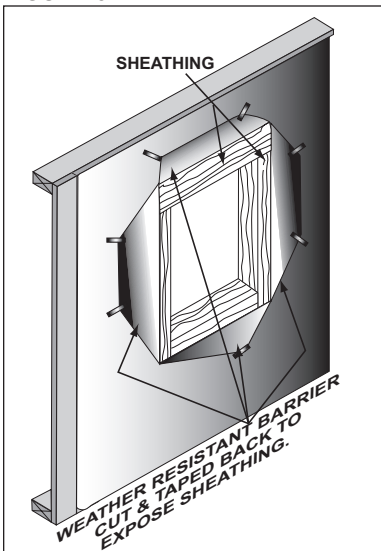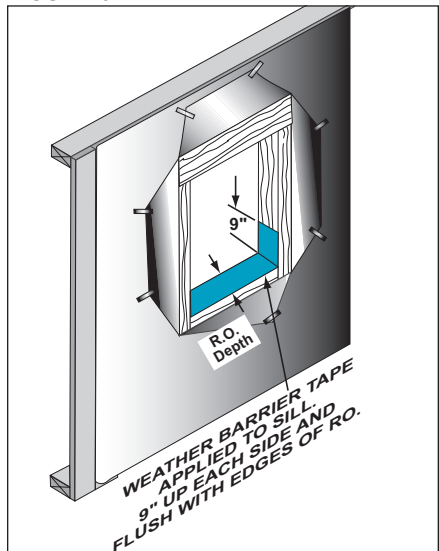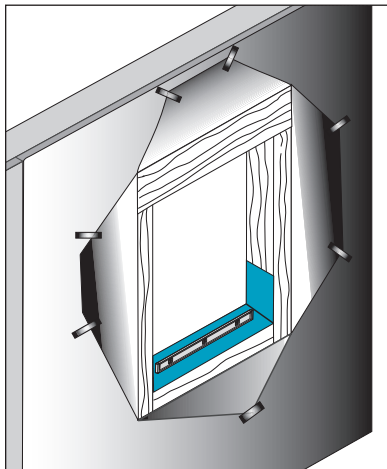
FIGURE 5

SHEATHING

WEATHER RESISTANT BARRIER CUT & TAPED BACK TO EXPOSE SHEATHING.

FIGURE 6

9"

R.O. Depth

WEATHER BARRIER TAPE APPLIED TO SILL. 9" UP EACH SIDE AND FLUSH WITH EDGES OF R.O.

Rough Opening Preparation (cont.)

FIGURE 7

7. Check the rough opening sill for level **(FIGURE 7)**. If sill plate is not level or straight place a 1-1/2" x 4-1/2" shim under the low side. Adjust shim until level is achieved.

NOTE: If level isn't long enough to reach across entire sill use a straightedge with the level.

⚠**IMPORTANT:** **To ensure that the sash operate smoothly, make sure that the sill is level and straight.**

8. Measure the opening diagonally from corner-to-corner **(FIGURE 8)**. The measurements should not differ more than 1/4". Fix problems before continuing.

⚠**IMPORTANT:** **High-quality, exterior, neutral-cure, clear silicone sealant (compatible with wood, vinyl, aluminum 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.**

9. Apply a continuous, generous bead of silicone sealant around entire rough opening perimeter. Locate sealant so it does not intrude into the rough opening and will also provide a continuous seal between the sheathing and nailing **(FIGURE 9)**.
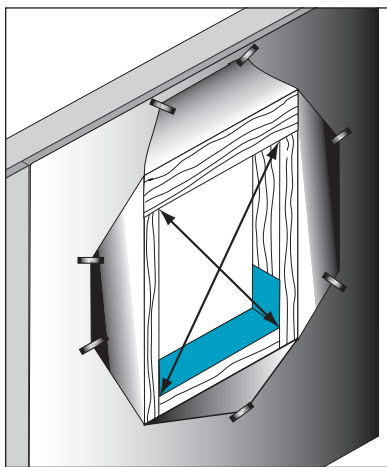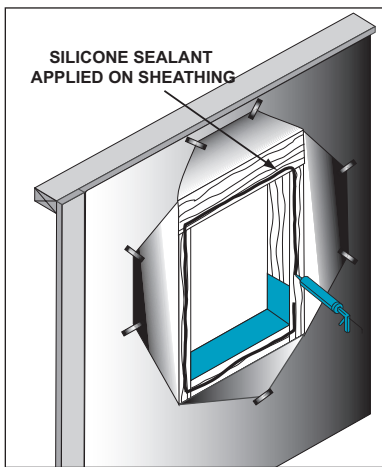
FIGURE 8

FIGURE 9

SILICONE SEALANT
APPLIED ON SHEATHING

Window Installation

FIGURE 1

⚠ **IMPORTANT: When accessories such as jamb extension are going to be installed, apply according to the directions BEFORE you install the unit OR prep the rough opening. Before you begin, make sure sash is closed and locked. Remove all shipping and packing material from the unit.**

1. Immediately after applying caulk around rough opening, lift and center window in the opening from the exterior. Level unit on the interior or exterior across the sill and head. If necessary to level the unit, place shims directly below the side jambs.

⚠ **IMPORTANT: If unit is mulled it must be supported with shims at the sill under each mull joint.**
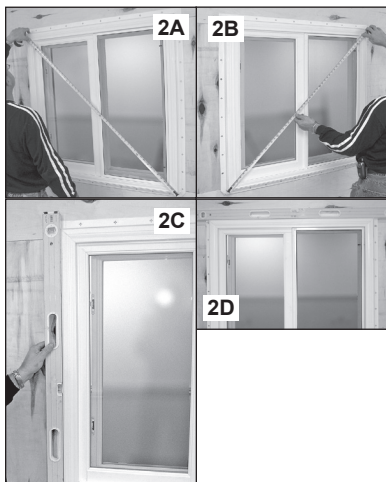
2. Secure one side top corner with a steel screw long enough to penetrate the framing material by at least 1-1/2" **(FIGURE 1)**. See "Design Pressure Performance – Fastening Method" chart on Page iv for screw specifications.

FIGURE 2

2A 2B 2C 2D

⚠ **IMPORTANT: To meet design pressure ratings, a maximum 1/4" shim space is required around the perimeter. Unit must be secured with steel screws, long enough to penetrate framing material by at least 1-1/2". See "Design Pressure Performance – Fastening Method" chart on Page iv for screw specifications and spacing.**

3. While holding unit in place, square and plumb jambs. Check both side-to-side and inside-to-outside. Measure unit from corner-to-corner to check for square **(FIGURES 2A & 2B)**.

To plumb, level and square **(FIGURES 2A – 2D)**, use a pry bar to shift unit and shim from the interior as needed **(FIGURE 3)**.
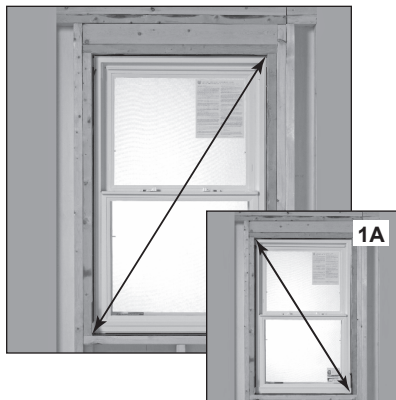
4. Secure opposite top corner. Check again for level, plumb and square. Use shims and a straightedge to straighten the side and top jambs.

FIGURE 3

Square and Straighten the Interior

FIGURE 1

1A

FIGURE 2

ROUGH OPENING

SIDE JAMB

2A

FIGURE 3

Sash is Equal on Both Sides

1/2"

⚠ CAUTION **Ensure the unit is held firmly in place while performing the following steps.**

1. Measure the entire window assembly diagonally in both directions **(FIGURES 1 & 1A)**.

2. Shim the top and bottom ends of the side jamb on the left or right **(FIGURE 2)** to get the diagonal measurements **(FIGURES 1 & 1A)** of the entire window assembly exactly the same.

3. Using a level as a straightedge, shim between the frame and the rough opening to straighten the side jambs and sill **(FIGURES 2 & 2A)**.

⚠**IMPORTANT: Straighten and support mull unit sills with wood shims under the ends of the jambs.**

⚠**IMPORTANT: For sliding and hung windows, perform a sash alignment test.**

Sash Alignment Test

4. Unlock and fully open sash.

5. Close sash until it is open about 1/2".

6. The gap should be equal on both sides **(FIGURE 3)**.

If the gap is unequal the unit requires adjustment. Make adjustments for level and square as outlined in Steps 1, 2, and 3 above and then recheck sash alignment. Make adjustments as necessary to get gap even.

Finish Installation

When unit is straight, level, and true; fasten through the nailing fin around the entire perimeter, spacing screws as prescribed on Page iv.
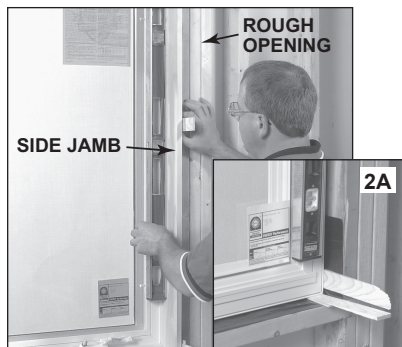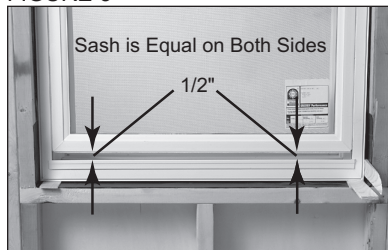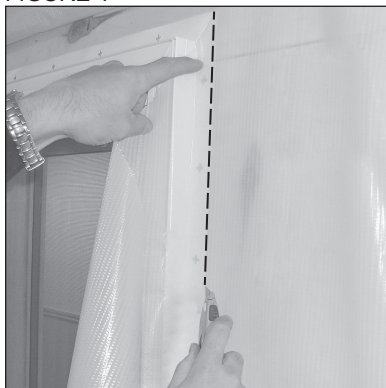
Fasteners must not over-compress the nailing fin.

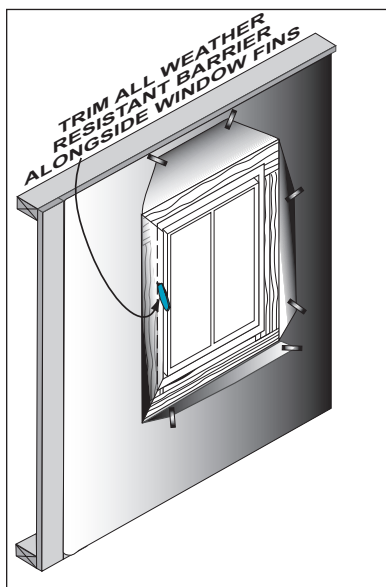## Self-Adhering Weather Barrier Tape Application

FIGURE 1

Trim and reseal WRB to new window after window is installed according to the previous instructions.

1. One section at a time, untape and fold weather resistant barrier over nailing fin and up against window frame. Use a utility knife or scissors and carefully trim WRB alongside the window nailing fin **(FIGURES 1 & 2) on sides and bottom**. When trimmed, WRB must lay flat against sheathing and fit tightly against the window fins. After trimming and dry fitting, tape WRB back out of the way. Repeat for each section of WRB.
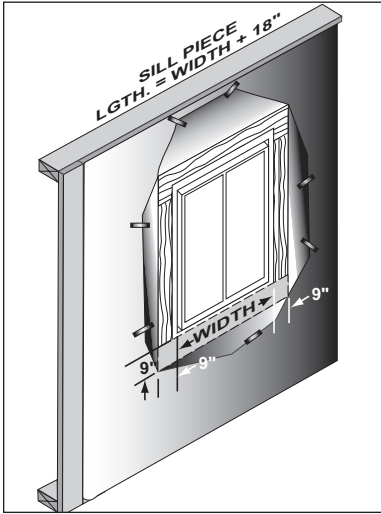
⚠ WARNING **Do not cut into the nailing fin, or window frame while trimming the weather resistant barrier. Damage to the frame or components may adversely affect structural or water integrity.**

FIGURE 2

TRIM ALL WEATHER RESISTANT BARRIER ALONGSIDE WINDOW FINS

FIGURE 3

SILL PIECE
LGTH. = WIDTH + 18"

WIDTH

9"

9"

9"

Preparation – Pre-Cut Tape

1. For the sill, cut a piece of Self-Adhering Weather Barrier Tape that is 9" tall and 18" wider than the window **(FIGURE 3)**.

2. For the sides, cut two pieces of Self-Adhering Weather Barrier Tape that are 9" wide and 17-1/2" taller than the window **(FIGURE 4)**.

3. Cut the head piece 9" tall and long enough to span the window plus 20"
(FIGURE 5).

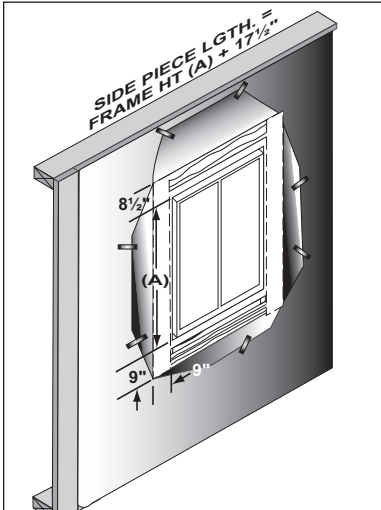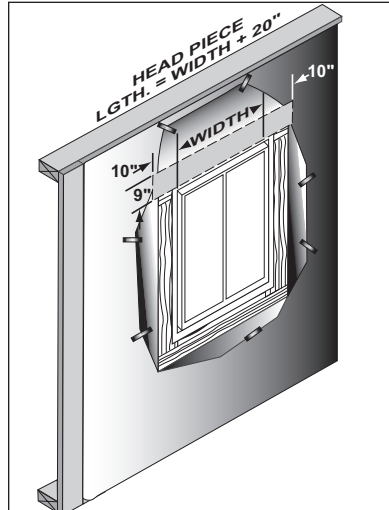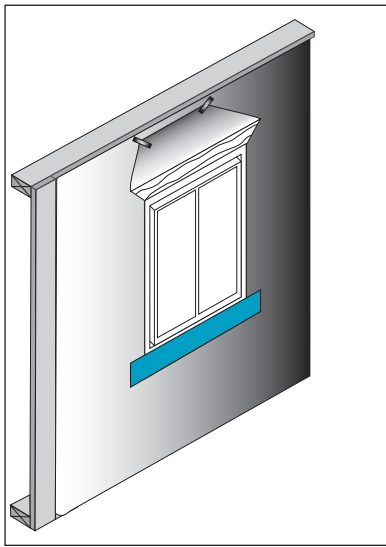4. **Do NOT** apply tape now. Set tape aside and follow instructions on next page.

FIGURE 4

SIDE PIECE LGTH. =
FRAME HT (A) + 17½"

8½"

(A)

9"   9"

FIGURE 5

HEAD PIECE
LGTH. = WIDTH + 20"

10"

WIDTH

10"

9"

FIGURE 7

Tape Application

First – Attach Sill Piece

1. Untape weather resistant barrier and apply to sheathing below sill and both sides. Starting at one side of the window, apply tape across the nailing fin and weather resistant barrier along the face of the wall **(FIGURE 7)**. Tape **must** cover the entire nailing fin, including the installation holes, the joint between the fin and the weather resistant barrier **and** extend out onto the exterior wall. Use a rubber roller to get good contact with the wall surface. Follow same procedure for brickmould units, keeping horizontal edge of tape as close to the sill as possible.

Second – Attach Side Pieces

2. Starting at the top, about 8-1/2" above the window, apply tape to the face of the wall over the nailing fin or as close to the brickmould as possible and work toward the bottom. Tape **must** cover the entire nailing fin, including the installation holes, the joint between the fin and weather resistant barrier **and** extend out onto the exterior wall. Use a rubber roller to get good contact with the wall surface. Bottom edge of tape should be flush or slightly overlap the sill piece **(FIGURE 8)**.
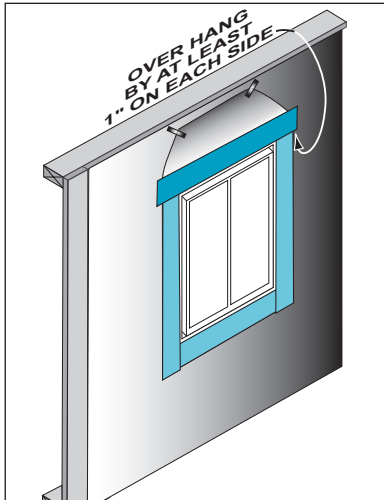
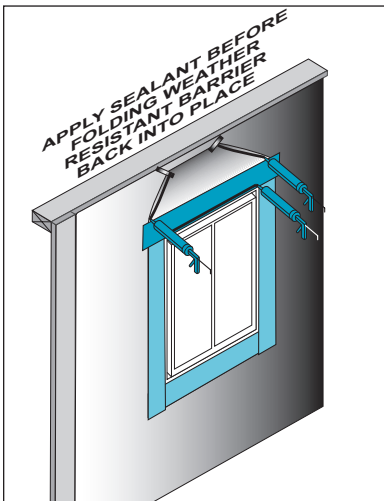3. Apply other side piece the same as Step 2.

FIGURE 8
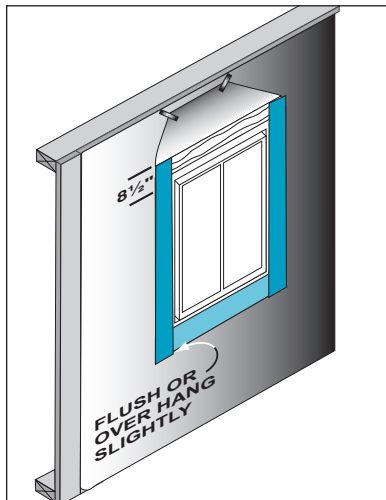
FIGURE 9

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.**

FIGURE 10

Third – Apply Head Piece – All Units
3. Apply top piece of Self-Adhering Weather Barrier Tape so one end extends 1" beyond a side piece of tape **(FIGURE 9)**. Apply top piece across the head nailing fin and over the opposite side piece of tape. On brickmould units, overlap the vertical drip cap leg. Ends of top piece should overlap each side piece by 1". Use a rubber roller to get good contact with the wall surface.

Reseal WRB To Window – All Units

1. Apply a generous, continuous bead of silicone sealant along head jamb and on the diagonals where the weather resistant barrier will lay when folded down on top of the Self-Adhering Weather Barrier Tape **(FIGURE 10)**.

2. Untape and fold down the weather resistant barrier at the head jamb over the Self-Adhering Weather Barrier Tape **(FIGURE 11)**. 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 using Self-Adhering Weather Barrier Tape **(FIGURE 11)**.

FIGURE 11
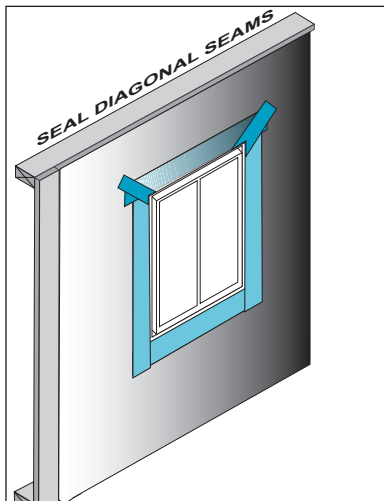
Finishing Details

To finish the window installation, use low expansion foam following manufacturers guidelines, or fiberglass insulation loosely insulating the gap between the window frame and rough opening.

⚠️ **IMPORTANT: Do not over pack insulation.**

Installation is ready for interior wall finish and trim.

Recommended Finishing Instructions

⚠️ **WARNING**

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

Vinyl and aluminum 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, 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.)

For Bare Wood Surfaces

For best results, wood should be sealed immediately upon installation or upon receipt, especially if unit is being stored for ANY length of time.

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 repriming, 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 only oil-based primer. Use compatible oil or water-based 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 (again on all exposed sides) to each item.

-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.

• A pre-stain wood conditioner, applied before staining, will help softer woods like pine absorb stain 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. Using a spar (marine) varnish as a sealer provides extra protection against sunlight and moisture. Let sealer dry completely.

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:** **Remove sash 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 (sash lock, tilt latches, operators, or sash rollers). Ensure bottom and top of sash are also sealed (FIGURE 1).**

> ⚠ **WARNING** **Sealer (paint or varnish) applied to sash <u>MUST</u> <u>DRY</u> <u>COMPLETELY</u> before reinstalling sash. If not dry, sash may stick in jamb liners. Also weatherstrip and jamb liners may be damaged.**

FIGURE 1 Sash Bottom
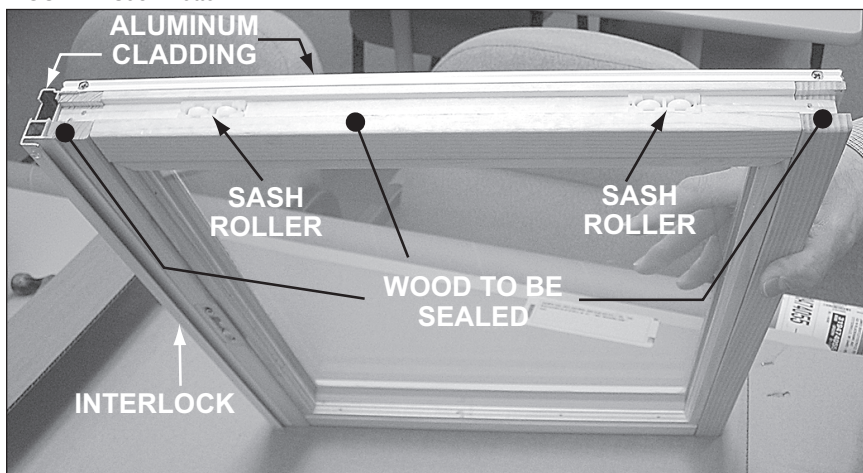
Products With Synthetic Stucco

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 window 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.