

# INSTALLATION INSTRUCTIONS

## H3® Nail Fin Installation



SIERRA  
PACIFIC  
WINDOWS



## INTRODUCTION

This document will provide the necessary steps to install Sierra Pacific Windows (SPW) using nail fin/mounting flange. This instruction covers standard (non-impact) rated H3 nail fin windows in a typical membrane drainage system. Refer to pages 9 to 12 for installation for other wall conditions. Contact SPW for installation in wall conditions not noted in this instruction.

Refer to [www.sierrapacificwindows.com](http://www.sierrapacificwindows.com) for supplemental thru-frame and brickmould H3 Installation Instructions.

## NOTICE

Installation requirements may vary in regions and in other types of construction. Proper installation is essential and Sierra Pacific Windows recommends consultation with an AAMA Certified Installer, or other qualified, registered building professional before installation of any Sierra Pacific product. Proper installation of Sierra Pacific products is the responsibility of the installer. Sierra Pacific is not responsible for the design of, conditions in, or performance of building construction beyond the perimeters of the Sierra Pacific units, or for proper integration of the Sierra Pacific units with the weather-barrier systems of the building.

## ⚠ IMPORTANT NOTIFICATIONS

- **Please read these instructions in their entirety prior to beginning the installation process.** Failure to follow these instructions will void the warranty. Any alteration or deviation to this instruction must be reviewed and approved by SPW.
- H3 windows are designed and manufactured with a fully welded vinyl main frame and integral perimeter nail fin for an air-tight and water-tight installation. On all H3 windows the integral nail fin defines the water plane of the product. Proper integration of any building weather barrier systems **MUST** be made from the nail fin (water plane) location to the interior of the opening.
- Sierra Pacific Windows is not responsible for site measurements or the structural requirements for the installation of the window and door units.
- It is the responsibility of the installer to confirm that any installation materials such as sealants, flashings, foam, and weather barriers are compatible with one another.

## ⚠ SAFETY PRECAUTIONS

- Always wear necessary protective gear such as safety glasses, gloves, ear plugs, clothing, etc.
- Ensure the work area is accessible and safe for performing installation of the window and/or door.
- Use all power tools in accordance with manufacturers' instructions.

## ⚠ DANGER



Screens will not stop children, anyone, or anything from falling out window or door.

Keep children and objects away from open windows or doors.

**Falling from window or door 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) 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.

## TOOLS REQUIRED

- Framing square
- 3' level
- 6' level
- Tape measure
- Caulking gun
- Drill and driver bits
- Utility Knife

## MATERIALS NEEDED (Supplied by Others)

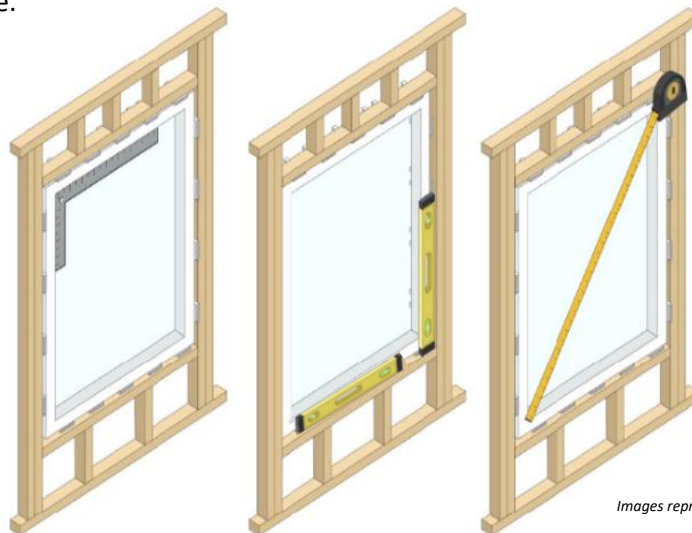
- Non-compressible (plastic) shims in various thicknesses
- Silicone Sealant for Window/Door Installation
- Sill Pan (recommended)
- 4" (minimum) Self-Adhesive Flashing (SAF) tape
- Batt insulation or Low Expanding Foam
- 1-1/2" (minimum) Non-corrosive Screws  
[or fastener length long enough for a 1" min. embedment]

## 1 PRE-INSTALLATION INSPECTION

It is recommended to conduct a pre-installation inspection to ensure successful installation of your new SPW product.

- 1.1 Ensure the area is accessible and safe for maneuvering.
- 1.2 Ensure you have all necessary tools and adequate materials as noted on above.
- 1.3 Remove packaging materials and inspect units for damage and/or shortages. Immediately contact your dealer informing them of any damage or issues with received product.
- 1.4 Check size (width and height), plumb, levelness, and squareness of the rough opening (See Figure 1). The rough opening should allow a minimum  $\frac{1}{4}$ " shim space at head, sill, and jambs. The sill **MUST** be flat, level, and capable of supporting the weight of the unit. Make all necessary adjustments to ensure the rough opening is plumb, level, and square.

Figure 1



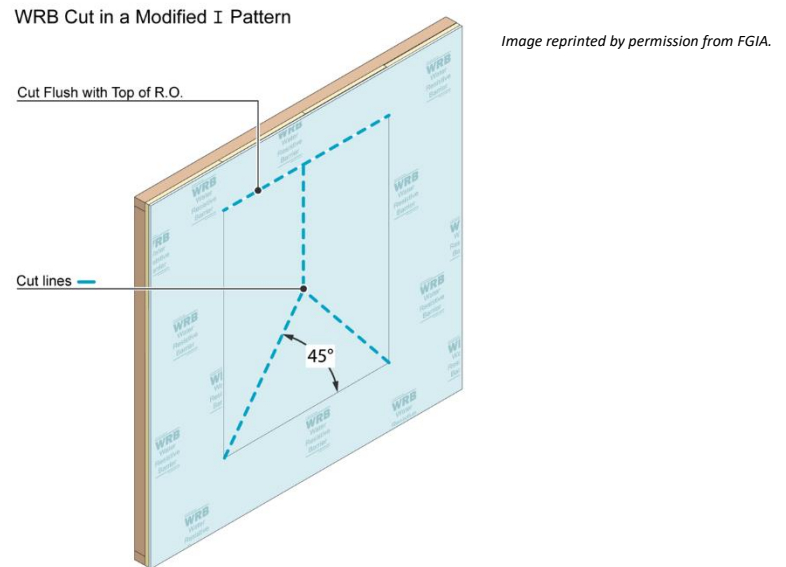
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- 1.5 Check/measure the unit size to ensure each unit will fit its designated rough opening.
- 1.6 To assist in ensuring units are installed square in the opening, keep units closed and locked during installation.

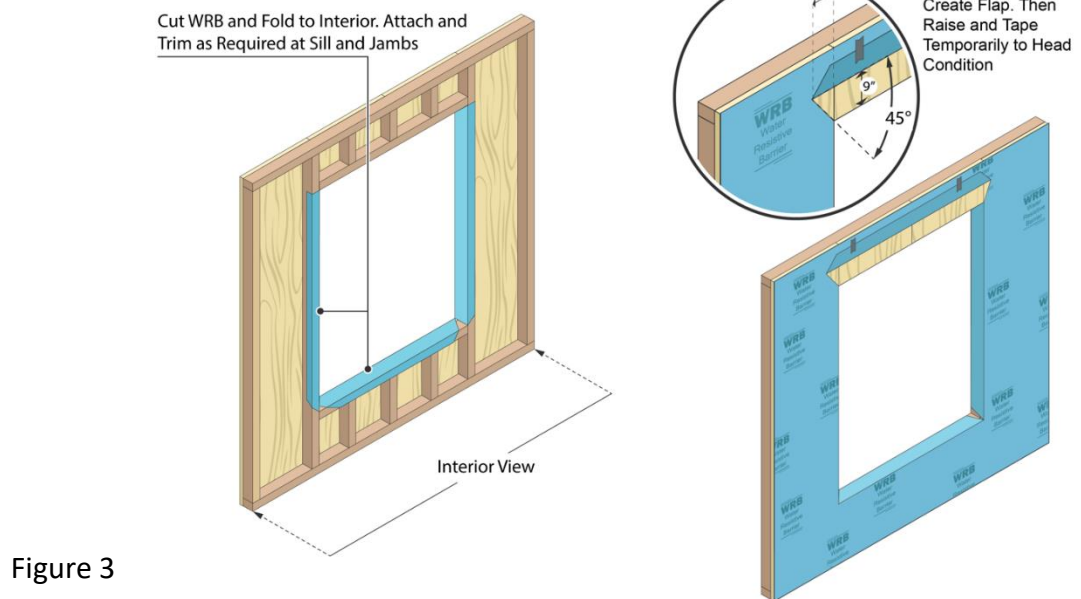
- ⓘ Note: SPW recommends the InstallationMaster A1 flashing method when installing units with nail fins. This method is used when the weather resistant barrier (WRB) is applied before the unit, and the jamb flashing is applied over the nail fin.
- ⓘ Note: Minimum 4" flashing may be used when applying self-adhesive flashing (SAF) tape.

2.1 Cut the WRB that covers the window opening in a modified I-Cut and fold and attach to the interior (See Figure 2).

Figure 2



2.2 Cut the head of the WRB with 45° diagonal cut at each end and tape in place to be folded down after unit is installed and flashed (See Figure 3).



2.3 Prepare and cut the Self-Adhesive Flashing (SAF) tape for installation. To save time and develop an efficient installation process, the flashing material may be cut in advance, using the formulas in the following table (see Figure 4).

Sill Flashing	= ROW + (2 x Flashing Width)
Jamb Flashing	= ROH + (2 x Flashing Width) – 1”
Head Flashing	= ROW + (2 x Flashing Width) + 2”
Legend	
RO = Rough Opening	
ROH = Rough Opening Vertical Height	
ROW = Rough Opening Horizontal Width	

Figure 4

2.4 Using SAF tape apply the horizontal sill flashing level with the top edge of the rough opening frame. Each end of the sill flashing must extend beyond the rough opening and each side by the total width of the flashing tape being used (see Figure 5).

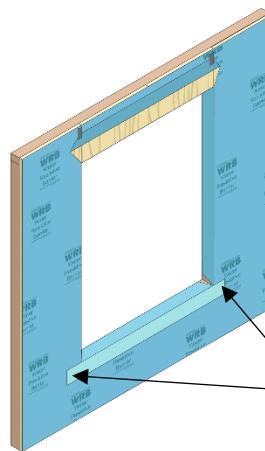


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Figure 5

This dimension is dependent on the width of SAF tape being used (i.e. – 4” SAF tape would extend 4” on each side).

2.5 Apply the sill pan flashing using SAF tape cut to the width of the sill plate and 6” up each side (see Figure 6). Flashing tape must be wide enough to cover the sill to at least the depth of the window plus at least 2” which shall lap onto the face of the drainage plane.

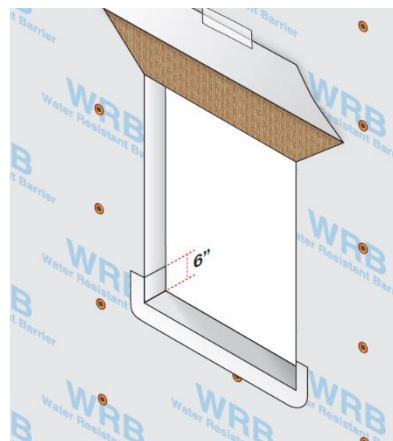


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Figure 6

Use of a rigid sill pan is recommended but not required. See page 13 for the use and installation of a rigid sill pan.

- 3.1 Prepare the unit for installation by inspecting and cleaning the back side (interior surface) of the nail fin.

**⚠ IMPORTANT: Any damage or missing sections of the integral nail fin must be reported to the dealer and the unit not installed.**

- 3.2 Apply a continuous 3/8" nominal bead of sealant on the back side (interior surface) of the nail fin at the head and both jambs (sides), ensuring the sealant is applied in line with any pre-punched holes or slots (see Figure 7). Alternatively, the sealant may be applied to the wall surface as opposed to the back of the nail fin. However, it is critical that the sealant is applied in line with where the nail fin will be pressed against the exterior wall when installed.

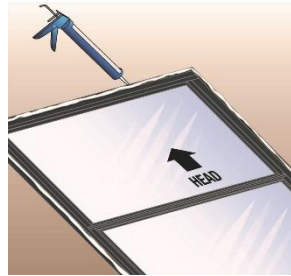


Figure 7

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- 3.3 Apply a discontinuous 3/8" nominal bead of sealant along the back side (interior surface) of the sill nail fin, leaving two 2" voids within 4" of each jamb (see Figure 8).



Figure 8

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- 3.4 Apply non-compressible (plastic) shims, minimum 1/8" thick, along the rough opening sill before setting the window into the opening (see Figure 11 on page 7). Thicker shims may be necessary to ensure a level sill. This will allow for any moisture that gets into the rough opening to weep to the exterior.

- 3.5 With the sill shims in place, immediately center and set the window in the opening (see Figure 9) ensuring squeeze out of the sealant under the flange and in any pre-punched fastener locations (see Figure 10).



Figure 9



Figure 10

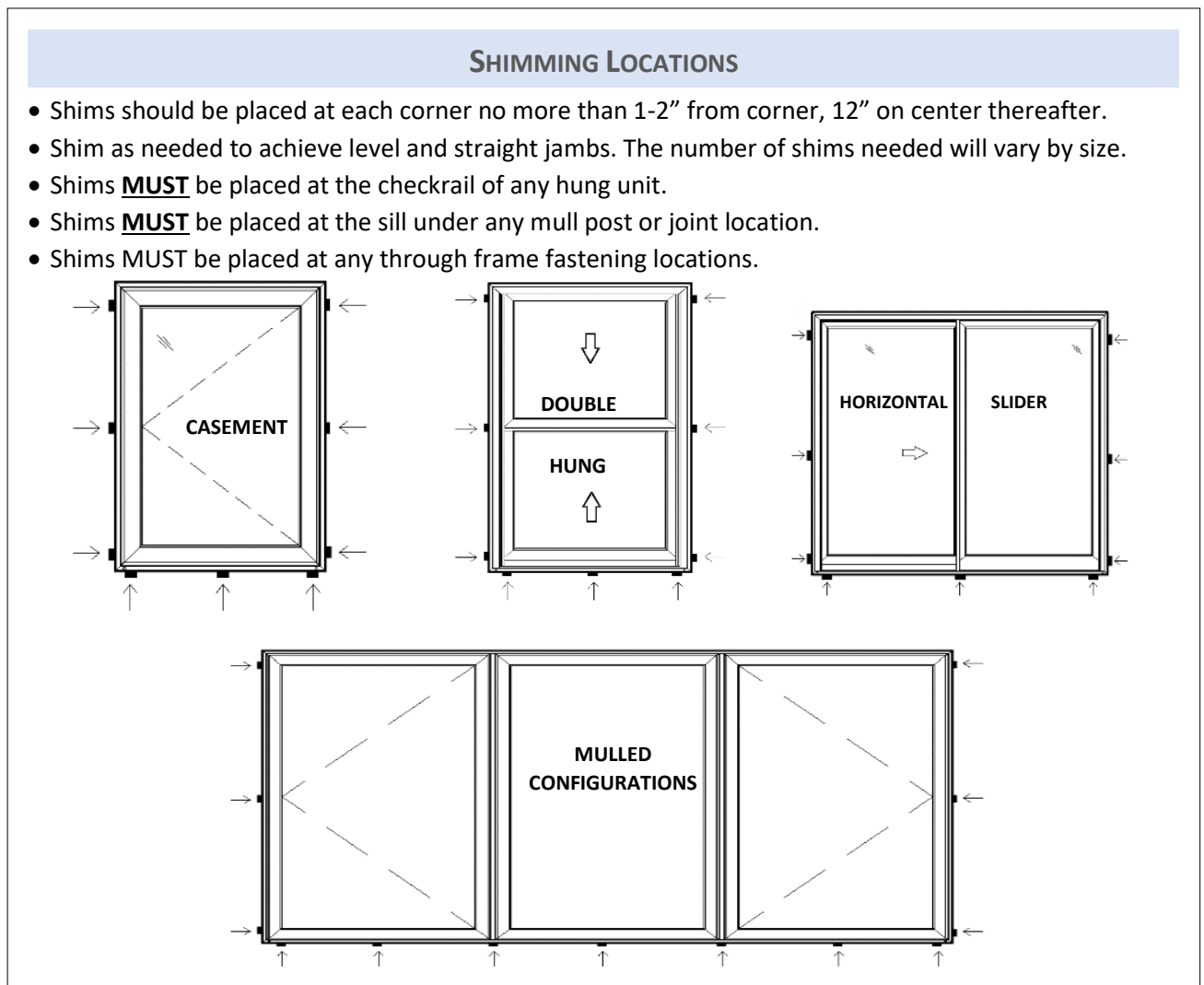
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3.6 Using minimum 1-1/2" non-corrosive screw, fasten the unit in either upper corner temporarily holding the unit in place. The screw should be located 1" - 2" from the corner in a pre-punched hole.

ⓘ Note: The length of fastener used must be long enough to ensure a minimum 1" embedment into the structure.

3.7 Using a tape measure and level, check the unit for square, straight, and level, shimming as necessary (see Figure 11 for proper shimming locations). Once the unit is square, straight, and level, place a screw in the opposite corner of the unit. Continue fastening the unit in place using screws in the pre-punched hole locations. Screws should be placed 1" - 2" from each corner and 6" - 8" on center thereafter.

Figure 11



***Refer to section S2 on page 14 for additional steps and fastening of units requiring installation straps.***

- 3.8 Apply SAF over each side jamb nail fin. Position the top end of the flashing tape 2" above the rough opening, such that the head flashing (applied in the next step) will lap over the jamb flashing by at least 2" (see Figure 12). Use firm pressure (use of J-Roller is recommended) to apply the SAF tape to promote a consistent seal to the window flange and exterior wall.



Figure 12

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- 3.9 Apply SAF across the head nail fin and rough opening. Cut and position the head flashing to the width of the rough opening and extending 1" over each outside edge of the side jamb flashing already applied (see Figure 13).



Figure 13

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- 3.10 Fold down the head flap of the WRB previously cut and taped in place in Step 2.2. Allow the WRB to lay flat over the head flashing. Using sheathing tape or SAF tape, apply the tape over the diagonal cuts made in the WRB (see Figure 14).



Figure 14

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## FINISHING THE EXTERIOR

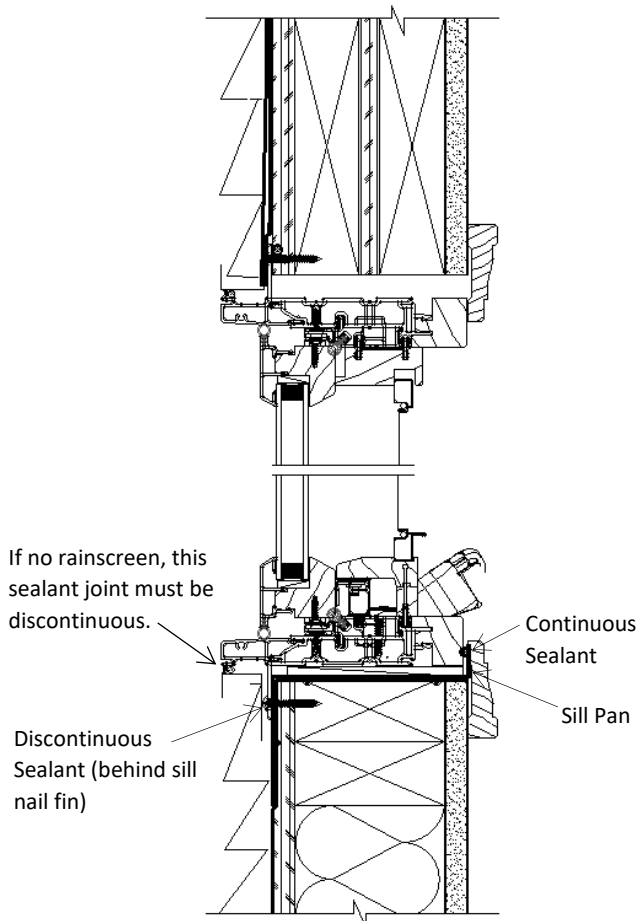
H3 windows are designed and manufactured with a fully welded vinyl main frame and integral perimeter nail fin for an air-tight and water-tight installation. On all H3 windows the integral nail fin defines the water plane of the product. Proper integration of any building weather barrier systems **MUST** be made from the nail fin (water plane) location to the interior of the opening.

Any moisture exterior of the water plane (between the building envelope and exterior façade) should be expected and therefore any perimeter sealing of the exterior façade to the clad nosing of the H3 window **MUST** be avoided unless there is a designed airspace or rainscreen between the exterior façade and the building's weather vapor barrier.

Applications where a designed airspace or rainscreen is not incorporated, other water management systems (e.g. – sill flashing, discontinuous sealant at the sill, etc.) **MUST** be implemented to direct any moisture from the water plane to the exterior of the façade.

See below illustrations for proper installation in common exterior finishes. Contact SPW with any questions regarding installation in your specific application.

### VINYL SIDING

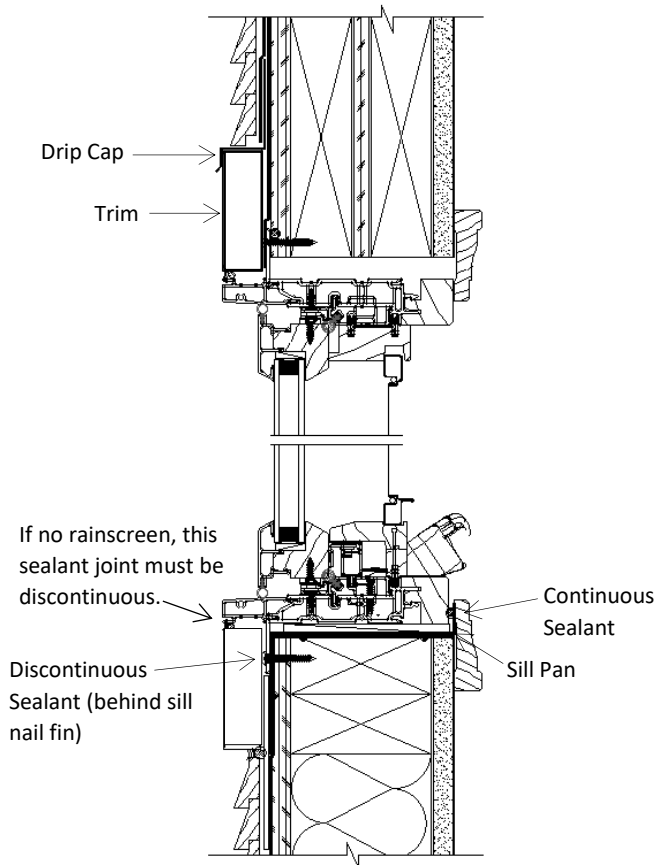


#### Typical Building Envelope:

- Exterior Sheathing
- Building Wrap
- Flashing Tape
- Vinyl Siding w/J-Channel

- A drainage plane (rainscreen<sup>1</sup>) system is recommended but vinyl siding may be applied directly to the weather barrier and sheathing.
- A sill pan is recommended for drainage from the rough opening to the drainage plane. A continuous bead of sealant should be applied to the interior upturn leg of the sill pan.
- Sealant should be applied to the interior side of the nail fin, continuous on the head and sides, discontinuous at the sill.
- If sealing the J-channel tight against the nail fin and/or sheathing, the expansion joint at the sill **MUST** be discontinuous.

## WOOD SIDING

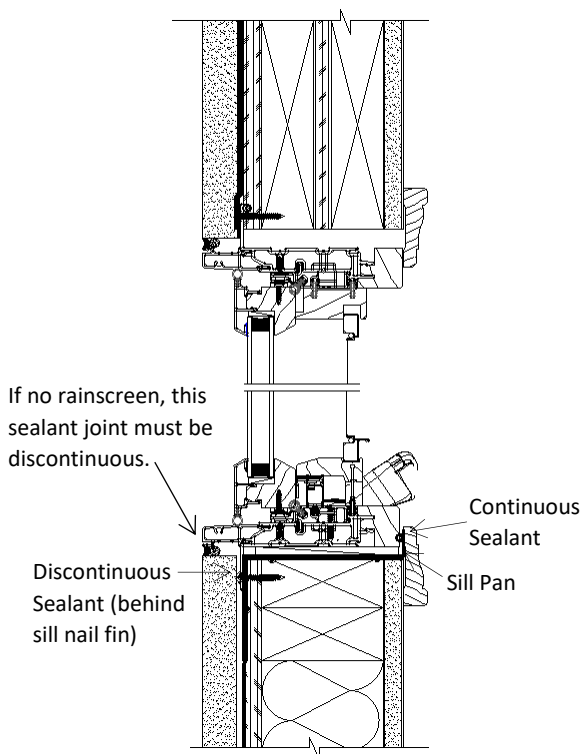


### Typical Building Envelope:

- Exterior Sheathing
- Building Wrap
- Flashing Tape
- Wood Siding and Trim

- A drainage plane (rainscreen<sup>1</sup>) system is recommended to allow for any moisture outside the water plane to drain and exit to the exterior of the façade. The drainage plane may be made using furring strips or rainscreen material.
- A sill pan is recommended for drainage from the rough opening to the drainage plane. A continuous bead of sealant should be applied to the interior upturn leg of the sill pan.
- Sealant should be applied to the interior side of the nail fin, continuous on the head and sides, discontinuous at the sill.
- If a rainscreen system is not incorporated, the expansion joint at the sill **MUST** be discontinuous.

## STUCCO

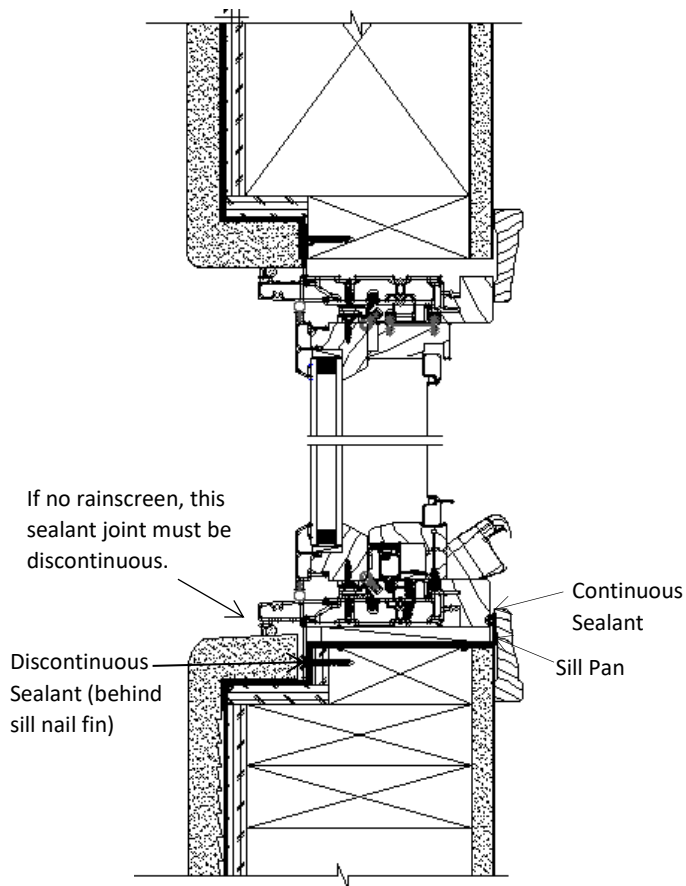


### Typical Building Envelope:

- Exterior Sheathing
- Building Wrap
- Flashing Tape
- Stucco with Rainscreen

- A drainage plane (rainscreen<sup>1</sup>) system is recommended to allow for any moisture outside the water plane to drain and exit to the exterior of the façade. The drainage plane may be made using furring strips or rainscreen material.
- A sill pan is recommended for drainage from the rough opening to the drainage plane. A continuous bead of sealant should be applied to the interior upturn leg of the sill pan.
- Sealant should be applied to the interior side of the nail fin, continuous on the head and sides, discontinuous at the sill.
- If a rainscreen system is not incorporated, the expansion joint at the sill **MUST** be discontinuous.

## BULLNOSE STUCCO AND/OR RECESSED

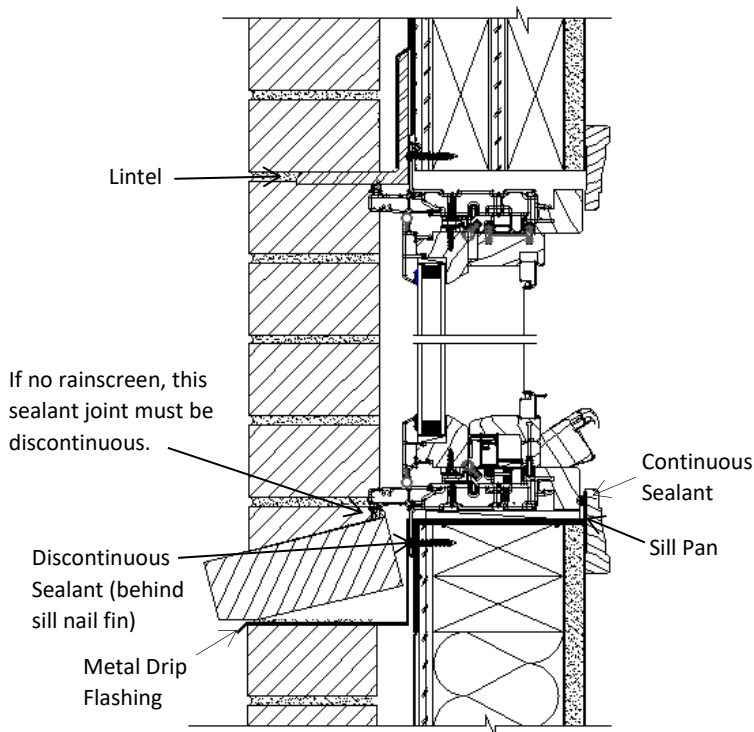


### Typical Building Envelope:

- Exterior Sheathing
- Building Wrap
- Flashing Tape
- Stucco with Rainscreen

- A drainage plane (rainscreen<sup>1</sup>) system is recommended to allow for any moisture outside the water plane to drain and exit to the exterior of the façade. The drainage plane may be made using furring strips or rainscreen material.
- A sill pan is recommended for drainage from the rough opening to the drainage plane. A continuous bead of sealant should be applied to the interior upturn leg of the sill pan.
- Sealant should be applied to the interior side of the nail fin, continuous on the head and sides, discontinuous at the sill.
- If a rainscreen system is not incorporated, the expansion joint at the sill **MUST** be discontinuous.

## BRICK VENEER AND/OR RECESSED

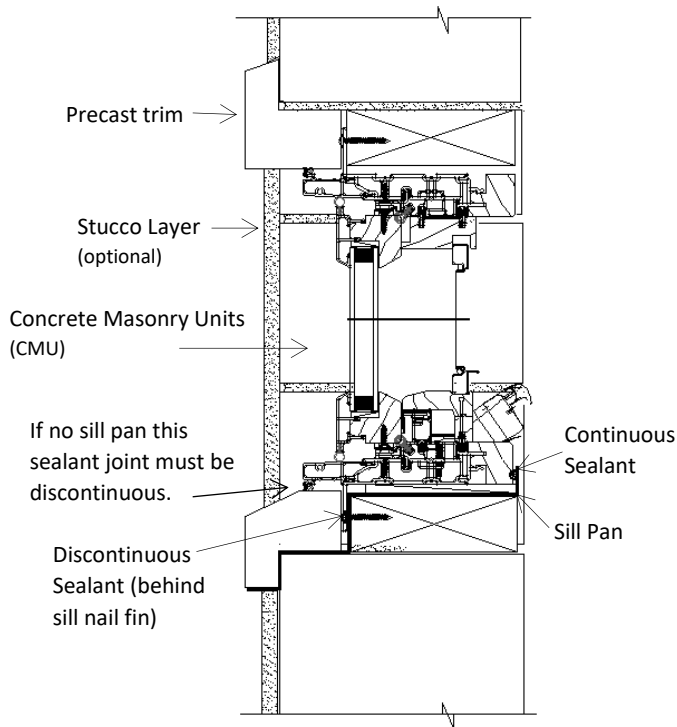


### Typical Building Envelope:

- Exterior Sheathing
- Building Wrap
- Flashing Tape
- Brick Exterior with 1" Min. Airspace

- Flashing and weep holes must be incorporated under any sill bricks to allow for any moisture outside the nail fin of the window to drain and exit to the exterior.
- A sill pan is recommended for drainage from the rough opening to the drainage plane. A continuous bead of sealant should be applied to the interior upturn leg of the sill pan.
- Sealant should be applied to the interior side of the nail fin, continuous on the head and sides, discontinuous at the sill.
- If a rainscreen system is not incorporated, the expansion joint at the sill **MUST** be discontinuous.

## CMU WALL W/WOOD BUCK



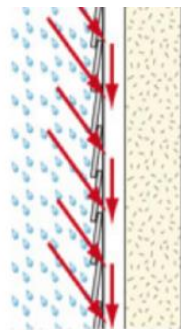
### Typical Building Envelope:

- Exterior Sheathing
- Building Wrap
- Flashing Tape
- CMU Block w/Applied Stucco and Pre-Cast Trims

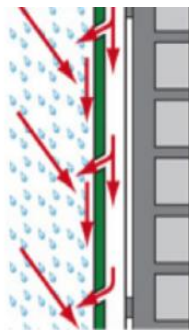
- A sill pan is recommended to direct any moisture from the rough opening or outside the nail fin of the window, over the CMU block and under any pre-cast trims. A continuous bead of sealant should be applied to the interior upturn leg of the sill pan.
- **If a sill pan is not incorporated, the expansion joint at the sill of the unit MUST be discontinuous.**
- Sealant should be applied to the interior side of the nail fin, continuous on the head and sides, discontinuous at the sill.

<sup>1</sup>Rainscreen - is an exterior wall detail where the siding (wall cladding) stands off from the moisture-resistant surface of an air/water barrier applied to the sheathing to create a capillary break and to allow drainage and evaporation.

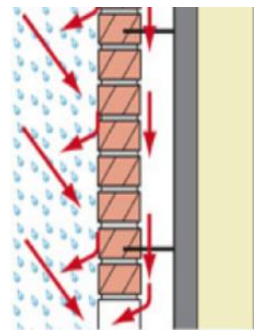
A rainscreen may be created using furring strips or engineered rainscreen building wrap.



Lap Siding  
(Wood)



Panel Cladding  
Systems

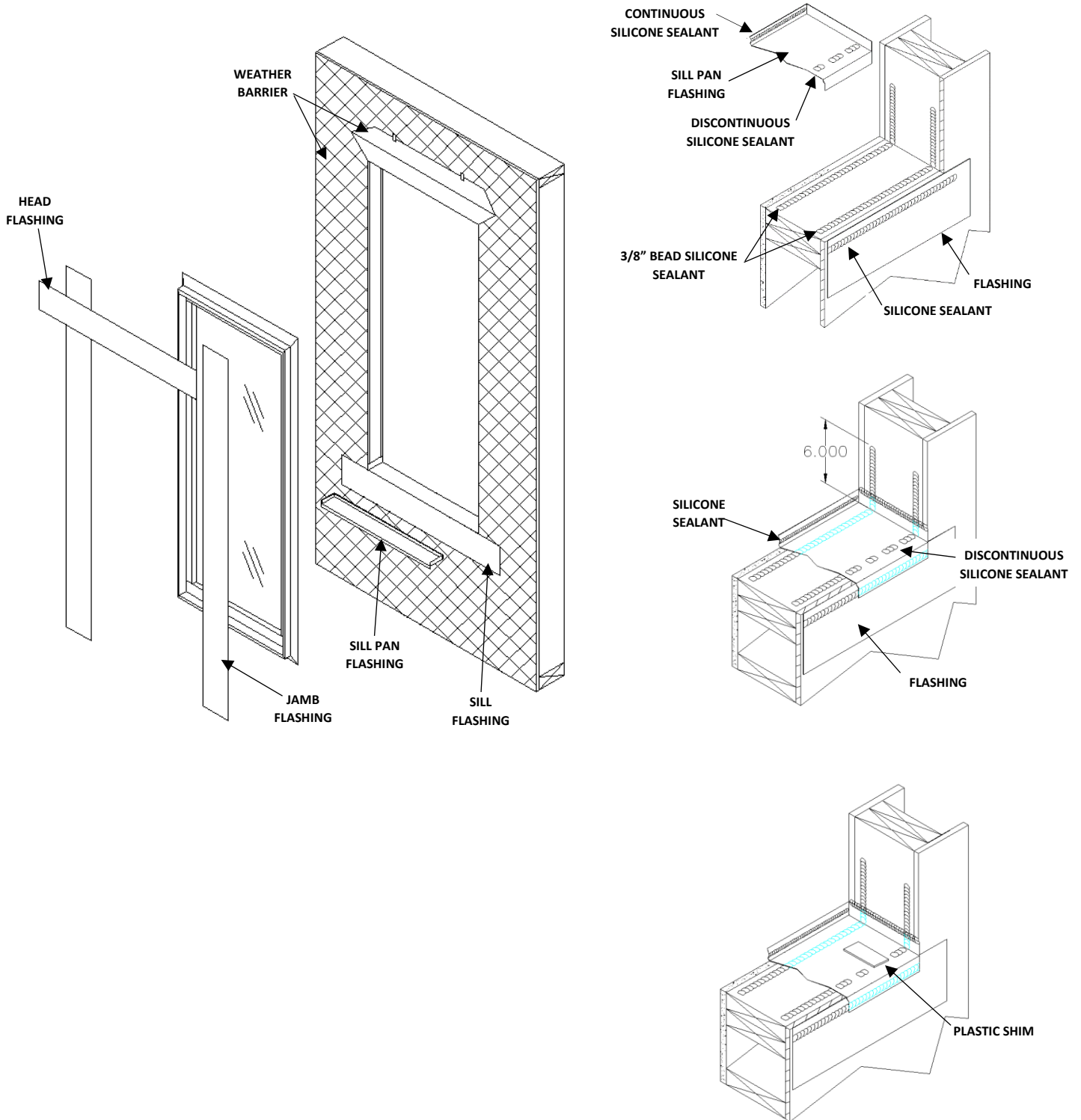


Masonry  
Veneer

SPW recognizes there are many wall conditions, building applications, and installation practices outside of the more common applications as shown in this instruction. Please contact SPW if your intended installation is outside of the conditions shown, and we will assist you with an approved recommended installation for your specific project.

**!** Note: Following the sealant instructions is strongly advised. Anything other than a discontinuous bead of sealant (as shown) at the front of the sill pan could allow water to become trapped, resulting in potential water damage. Such action will void the manufacturer’s warranty.

**!** Note: When setting a window or door into the sill pan, it is recommended that the unit be set onto 1/8” minimum non-compressible shims. This will allow for any water collected in the sill pan to weep to the exterior. Space shims 1” to 2” in from each end of the sill pan, and 12” on center thereafter as needed.



H3 units may require the use of installation straps in combination with the nail fin install to meet a specific performance rating. The installation straps will ship installed from the factory as required.

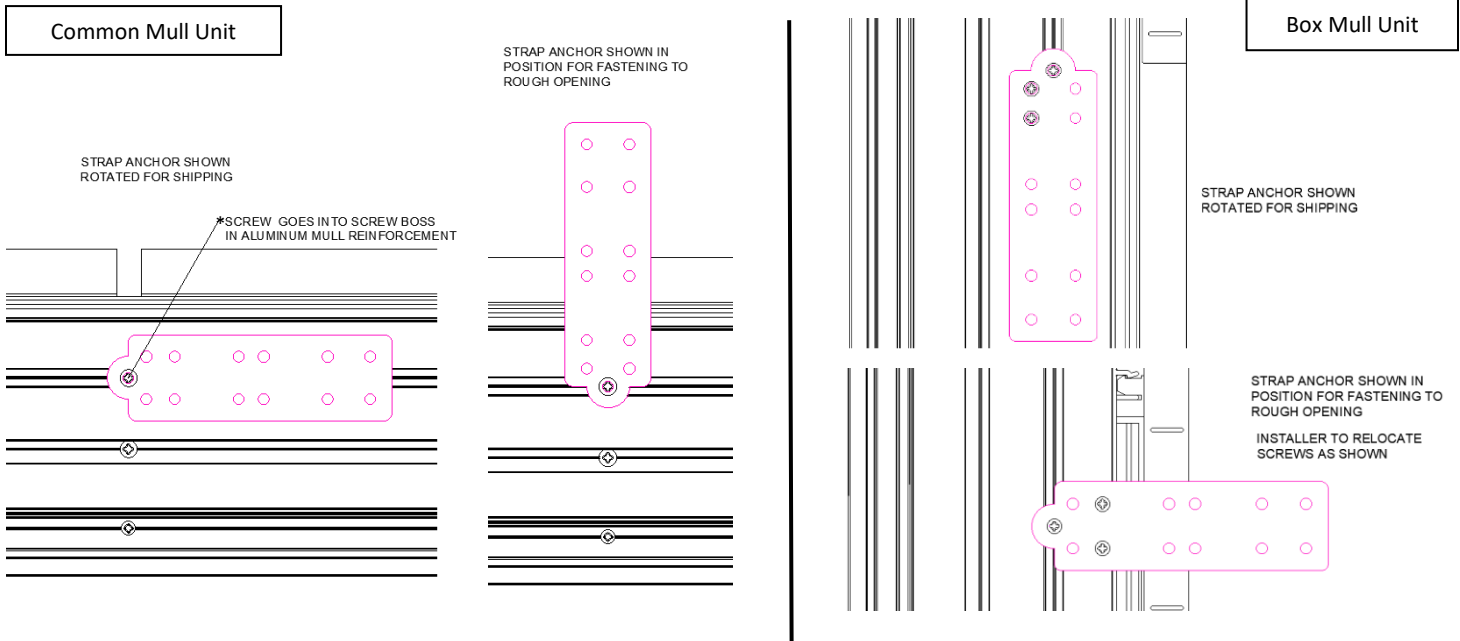
Prior to installing, the installation straps must be repositioned on the jambs so they may be fastened to the rough opening. Depending on the rough opening depth, installation straps may be fastened flat to the opening or bent and fastened to the interior of the opening.

Straps must be fastened to the opening using a minimum of two fasteners, preferably in diagonal pre-punched hole locations.

1

Reposition the installation strap on the jamb by rotating it so it is perpendicular to the jamb.

- On units with straps at the mull post (common mull), loosen the main screw, rotate the strap, and tighten the screw.
- On units with strap on either side of a box mull or in the middle of the jamb, remove the two bottom screws, loosen the screw at the radius head\*, rotate the strap, tighten the screw at the radius head, and insert the remaining two screws in the pre-punched screw holes.



2

Using #8 wood screws, fasten the installation strap to the rough opening. The screw length used must achieve a minimum 1" embedment. Depending on wall depth the installation strap may be left flat or bent to fasten to the rough opening.

