WEB BASED
APPLICATION SPECIFIC
INSTALLATION INSTRUCTIONS

Face Seal Fin and Integral J-Channel Install

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Face Seal Finned Window with Stucco Finish on Wood Framed Wall

Using a stucco finish over a wood framed home is a tricky window and door installation. It is a very common exterior finish in California and other warmer climates.

Stucco is not waterproof - no matter how skilled the plasterer is. Rain will get behind the stucco..

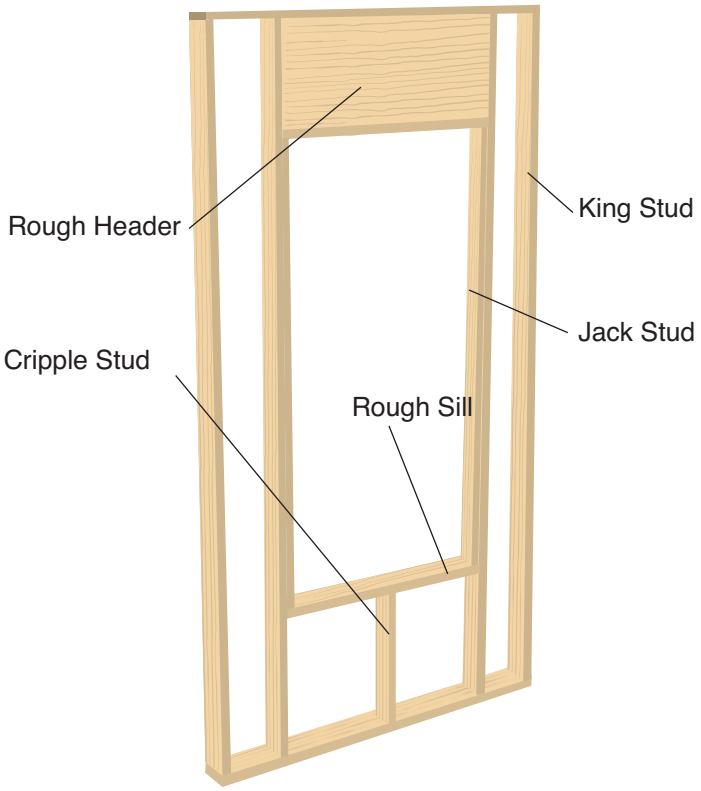
The goal, then, is to seal the window and door against water penetration before the stucco finish is applied to make sure the water behind the stucco will run down and out, and not penetrate the seal around the window. Since stucco itself will let water through, then the most important aspect of the window installation is build the proper drainage plane behind the stucco cladding and if it doesn't work right, it puts undue pressure on the window flashing - sometimes beyond its design.

The following diagrams show a double system The first flashes the window, and the second re-flashes the installed window to create the drainage plane behind the final stucco, cement or plaster finish.

The drainage plane also serves to protect the framing from the water that comes through and behind the stucco.

Be cautious where the fasteners are applied to mount the lathe. Errant nails or hardware can puncture the well flashed window creating the very water paths you so carefully tried to avoid.

It is also recommended that a weep screen be used to assure proper drainage out of any water behind the system. When sealing along the bottom, make sure you leave two 2-inch gaps where there is no sealant, to allow proper drainage when necessary,



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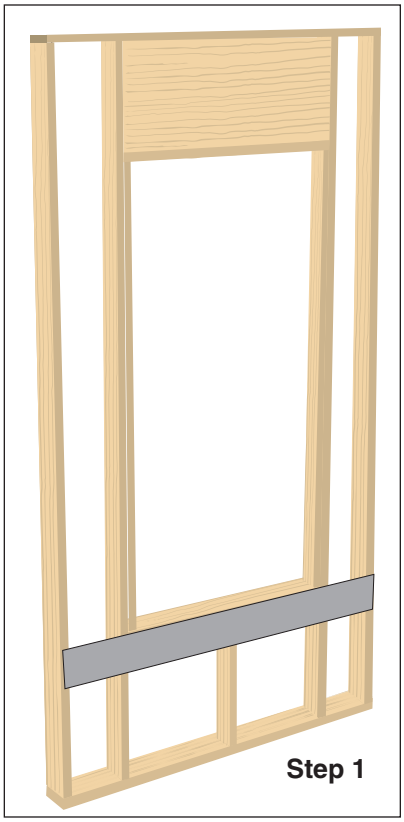
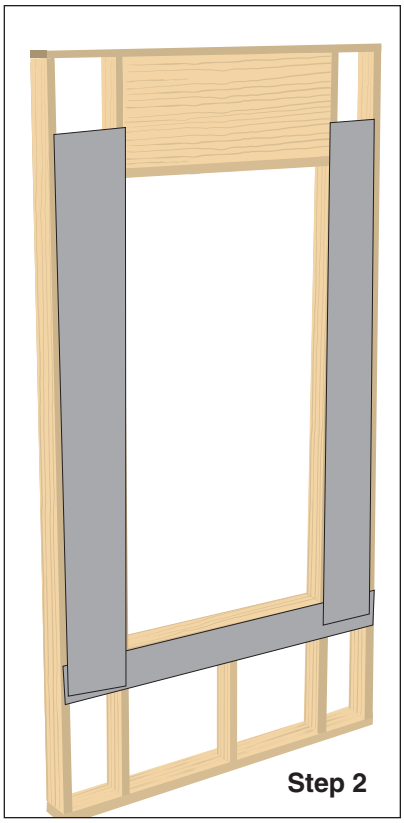
Step 1:
Using flashing nails or staples, attach strip of building paper at the sill.

Attach top only and leave the sides and bottom loose.



Step 2:
Using flashing nails or staples, attach strips of building paper along jambs.



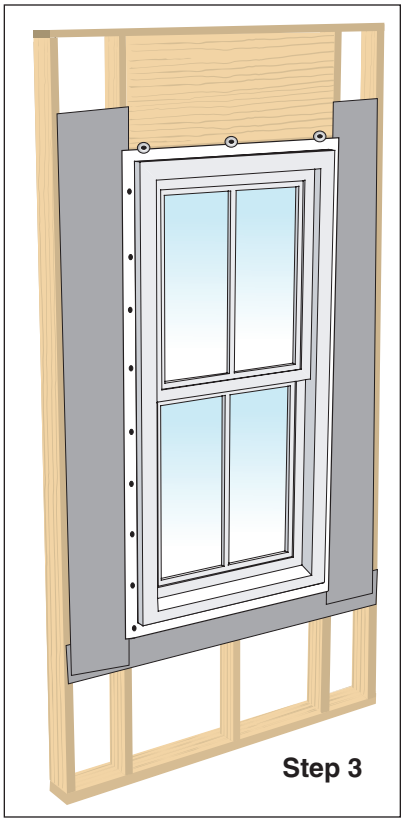
Step 3:
Install window plumb, level and square using shims as necessary.

Nail through mounting fin to studs on jambs.

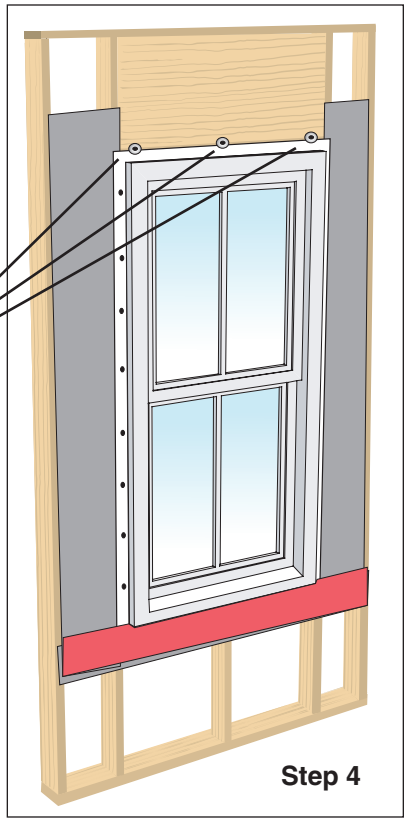
Using Simplex nails, attach header nailing fin. This will allow expansion and contraction freely.

Do not mount along bottom.

If sealant is to be used, makes ure weep space is left at the sill and that the sealant is chemically compatible with the building paper.



Step 4:
Install flashing at the sill, covering the bottom nailing fin. the sill flashing.



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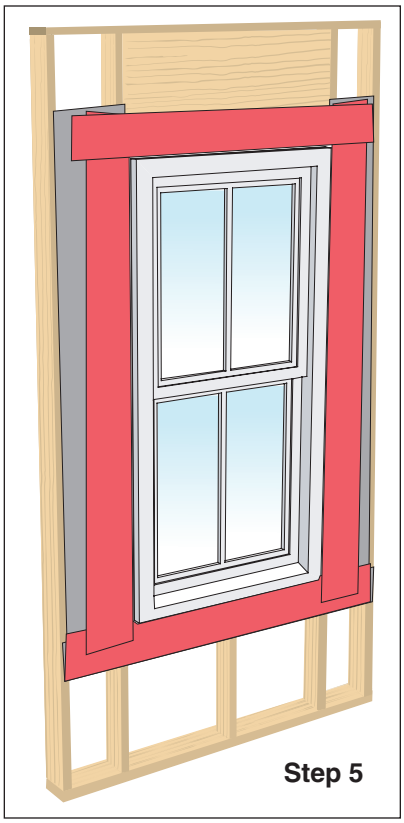
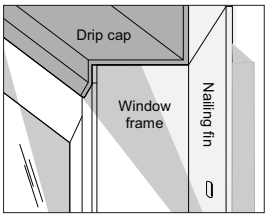
Step 5:
Install additional flashing along jambs, overlapping bottom flashing.

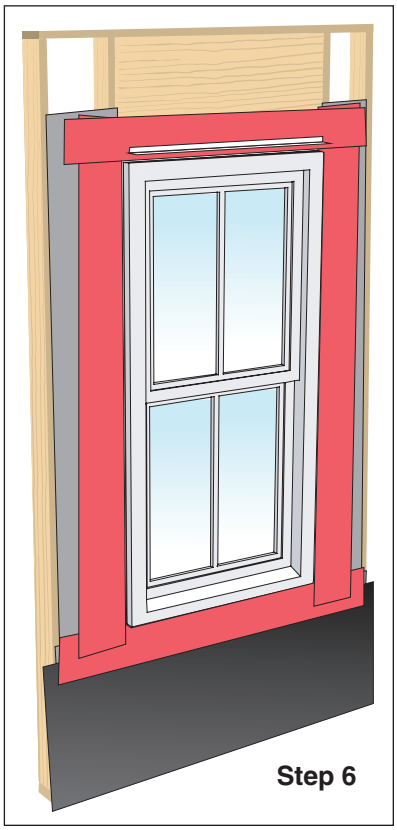
Install final piece of flashing on header, overlapping the jamb flashings.



Step 6:
Install first course of building paper under sill flashing, and apply sealant.

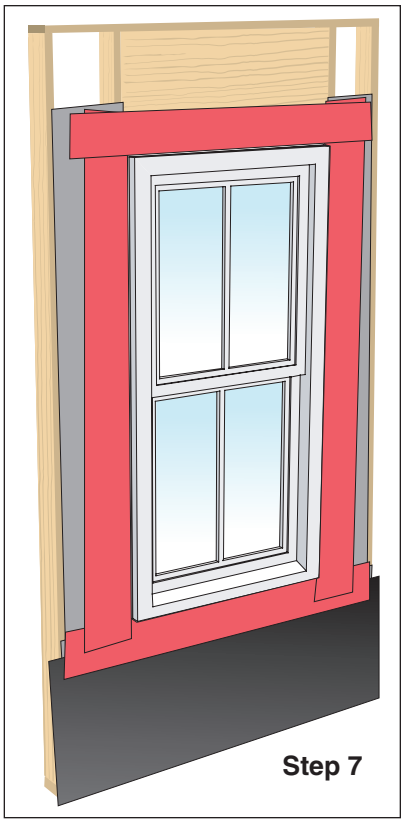
Install Drip cap, over top of window as shown.



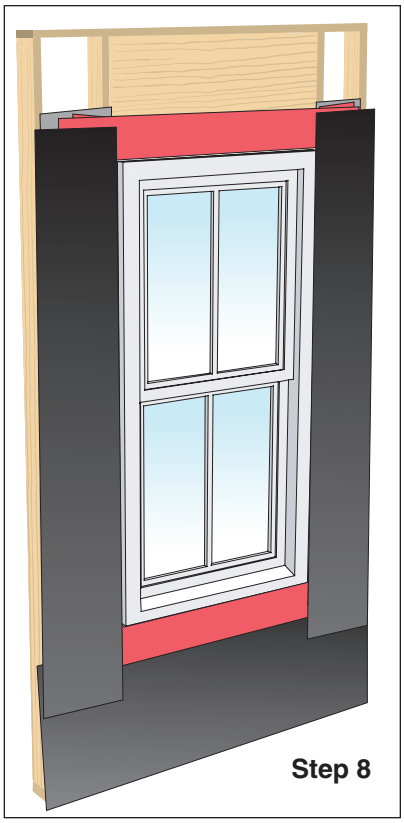


Step 7:
Install Final course of building paper over the top flashing, overlapping the jamb flashing.

Seal paper to nailing fin with sealant.



Step 8:
Install building paper over both Jambs, overlapping bottom course of building paper.



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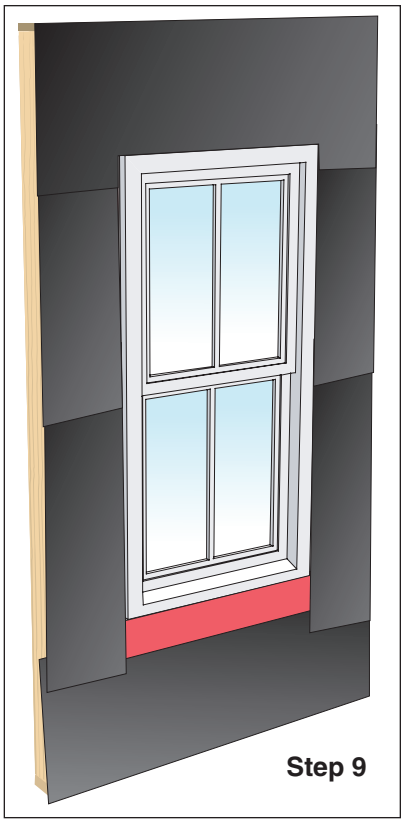
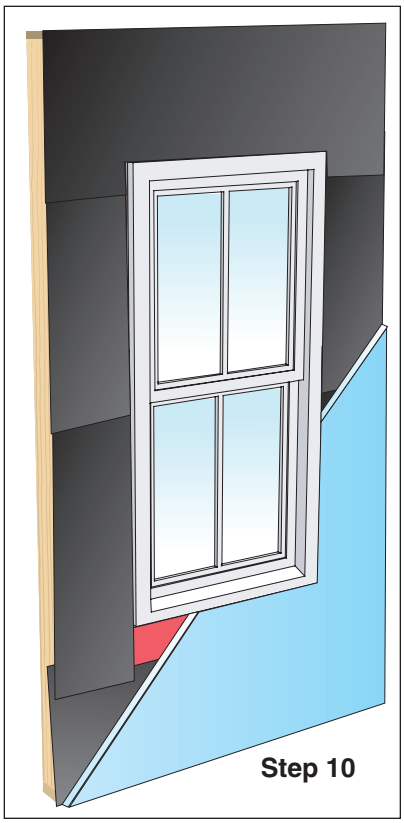
Step 9:
Install Final course of building paper over the top flashing, overlapping the jamb flashing.

Seal paper to nailing fin with seal



Step 10:
Install foam sheathing (or other appropriate substitute) over the building paper.



Step 11:
Apply a suitable lathe over the sheathing.

Step 12:
Trowel on stucco, making sure it makes proper bonding contact with the lathe.

Provide an expansion joint between the stucco and the window (a gap for backer rod and sealant).

Air seal around entire perimeter with sealant.

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Integral J-Channel Install

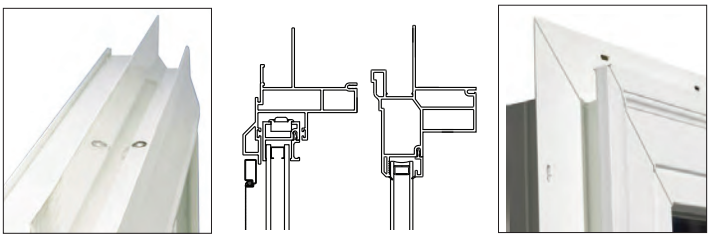
Most brands of uPvc replacement windows with mounting fins, are available with an integral J-Channel (siding return) molded into the window frame profile. These "built-in" J-Channels can be wide and decorative, others can be thinner. However, each variation serves the same purpose: to enable diversion of water from around the window without installing a separate J-Channel and/or drip cap.

Installation of a window with a built-in J Channel is straightforward and can be done with either the "Barrier Method" or Drainage Method" of flashing.

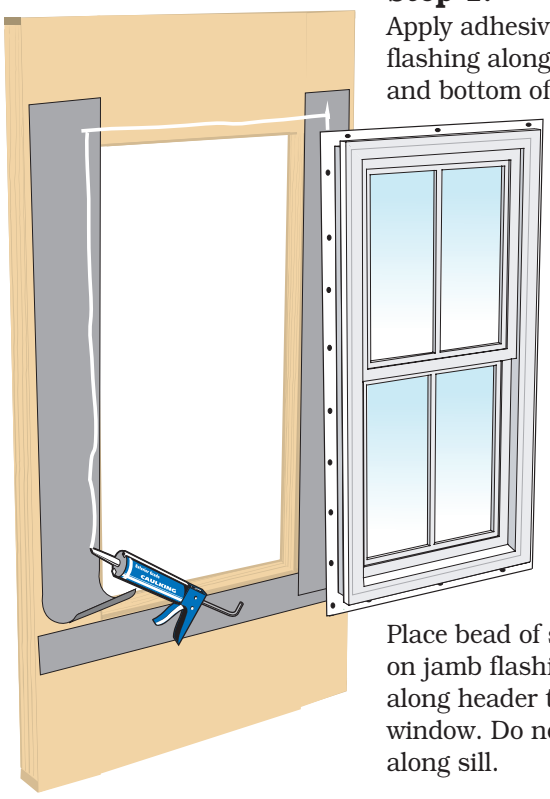
The diagrams here show "Method B" where flashing is first attached to the wall, then a second layer over the fin, and optional building paper layer installed over the total wall, overlapping the flashing.

The goal no matter which method is used is to properly overlap the flashing on the wall and finally overlap the second flashing layer over the mounting fin. In this way, water is directed around and down the sides of the new window, properly draining and preventing water intrusion.

Remember: Do not seal the bottom fin to allow water that may enter or condense inside the opening, to have a proper patch to drain and eventually dry.

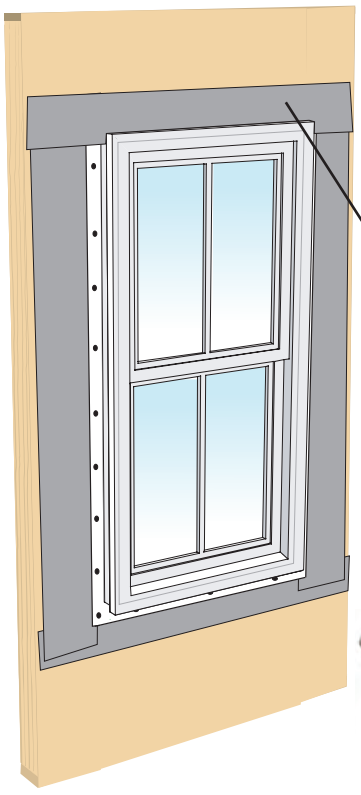


There are more than one style of Integral J-Channel frame profiles.

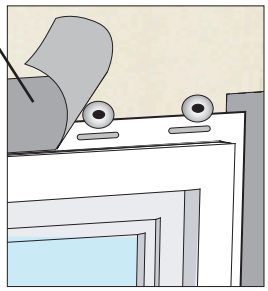


Step 1:
Apply adhesive-backed flashing along sides and bottom of opening.

Place bead of sealant on jamb flashing and along header to set the window. Do not apply along sill.



Step 2:
Mount window using nails along the jambs and Simplex-type cap nails along the top to accommodate expansion as shown.



Place horizontal flashing over top of header nailing flange, overlapping jamb flashing.

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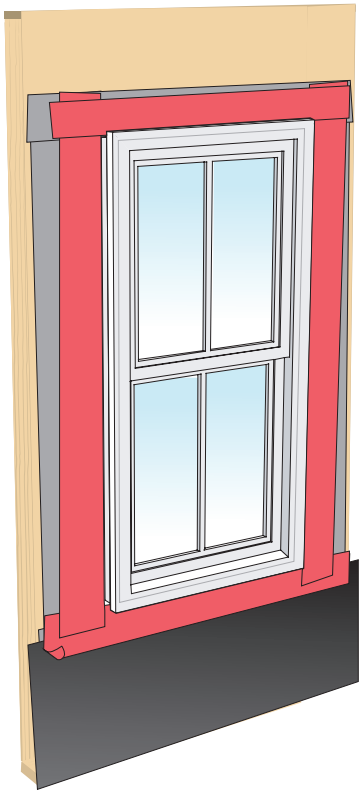
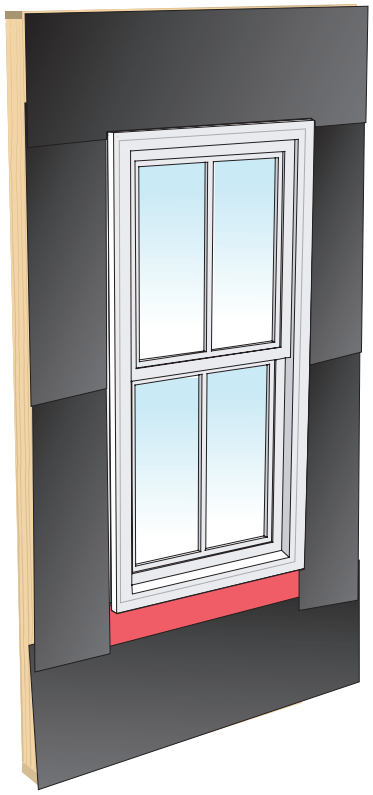
Integral J-Channel Install



Step 3:
Using another layer of flashing, starting with the sill, overlap strips to cover the jambs and header also.

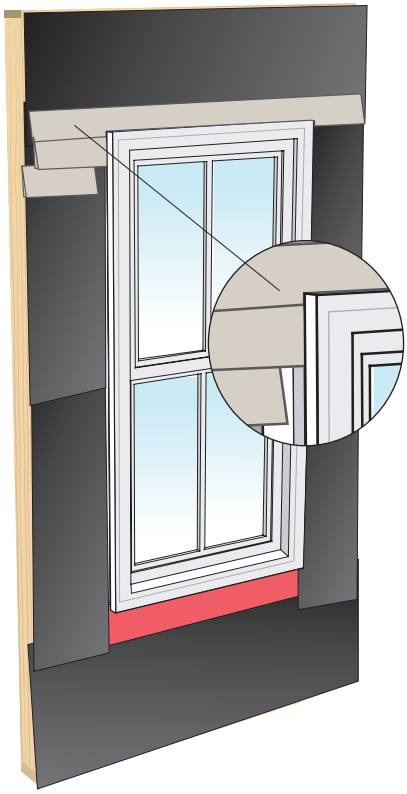
If you choose to apply building paper, start the first strip tucked under the bottom (sill) flashing.

The goal is always to overlap in ship lap fashion to direct water down and away from the new window.

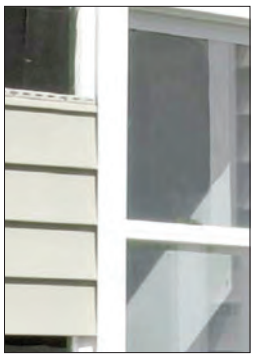


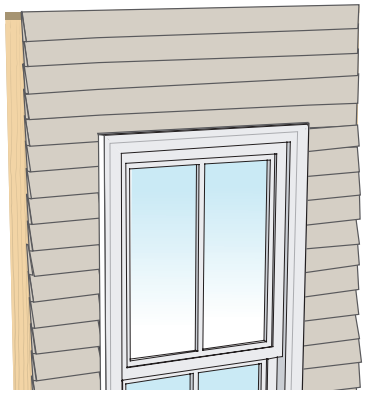
Step 4:
Finish installing the overlapping building paper.

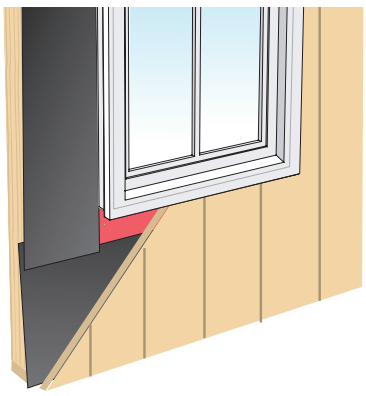
Remember to leave the bottom of the window unsealed to allow drainage of any water or condensed moisture in the opening cavity.



Step 5:
Integral J-Channel frames allow installation of the siding by "tucking" it inside the spave created by the j-channel and the window frame.







Step 6:
Finish applying the exterior siding or paneling - or even stucco.

Proper drainage and finish trim all in one application.

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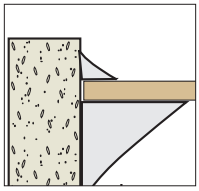
Picking the Proper Sealant

AWDI understands that the application of a sealant is as crucial as the choice of sealant. When a bead of sealant is applied to a joint there are severable factors to consider:

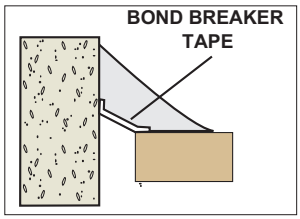
- Adhesion
- Flexibility
- Durability
- Compatibility
- Temp, Weather, Exposure)
- Aesthetics

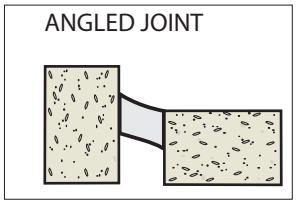
Within these three performance aspects there are countless combinations of applications, substrates and conditions a sealant is exposed to.

Bedding Joints:
For bedding joints, it is especially important that the sealant meet AAMA 800-802, and is of the right consistency and made up of 100% solids so it will not shrink after cure, unlike solvent and latex based sealants that shrink and create gaps after curing.

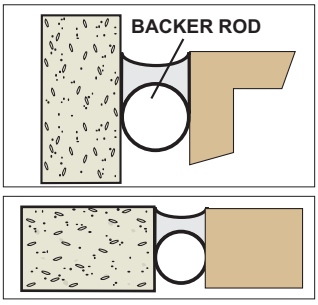


Fillet Joints:
A fillet joint is formed when two surfaces come together to form a right angle. The sealant used to join these two surfaces is triangular in shape. The sealant must adhere to the variety of substrates you're faced with. Without strong adhesion there is a high chance that the sealant will pull away from the substrate allowing for air and water infiltration.





Control Joints:
A control joint is formed when two similar or dissimilar materials meet or when substrates do not form a right angle. This joint will require both a backer rod and sealant for proper application. This joint can be as wide as 5/8 inch and be prone to extreme movement, a highly flexible sealant is necessary for a reliable seal with this application. In order to successfully install a window or door and effect a lasting weathertight seal, AWDI recommends an ASTM C920, Class 50 sealant such as premium DYNAFLEX® from DAP as a good representative to seal the exterior joints of windows and exterior finish materials. The best choice is a sealant that meets AAMA 800-802 to assure proper adhesion to the most common building materials and that is compatible with WRB and flashing tapes; and can be ued in a wide temperature range and wet surfaces.



Desired Properties

- No Shrinkage
- Locks out air and water infiltration to protect integrity of the seal
- Proven Wet Surface Application
- Ability to use the same sealant in warm and cold temperature situations to produce consistent results. 0F – 140F cold and warm weather application
- Strong Adhesion / All Surfaces Will stick to even the most difficult to bond building materials
- 5X stretch, 50% joint movement Long term durability assurance even with expansion and contraction of building materials
- 24 hour fast cure, paintable 1 HR. Fast cure to protect the building structure from outside forces and quick paintability saves time
- Achieves bubbling resistance faster to ensure optimal aesthetics
- 4,600 + Color Matches ensures perfect color match to all primary building materials
- Dirt & Dust Resistance ensures optimal visual appeal long after an installation
- UV Resistance
- Long term durability to compliment the durability of the building structure

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Spray Foam Insulation

While the term “Spray Foam” is often widely used in construction, there are two different types and each has its advantages and disadvantage.

Spray foam has been shunned by window installers and manufacturers over the years because foams, in the past, have either continued to expand after trim has been applied deforming the more pliable vinyl window frames, or because they have been over used to fill the gaps left when old windows are removed and the underlying rough opening has been exposed.

Make sure the foam you use has been tested in accordance with AAMA 812 and meets standard for low pressure development.

Most standards applying to window installation do not delineate between open cell foam and closed cell foam, the more popular “minimal expansion” foams are most frequently used and they are mostly closed cell. More confusing yet, is when foams are recommended, the compressed foam tape alternatives are called out to be open cell.

When it comes to Spray Foams, it helps to understand the differences.Open-cell spray foam (ocSPF) has a cell structure where the cells are filled with air. The open-cell structure renders soft, flexible foam, with a density of about 0.5-0.8 pounds per cubic foot (pcf).

The R-value per inch of open-cell foam typically ranges from R3.6 to R4.5 per inch. Unlike fiberglass and cellulose, the fine cell structure of ocSPF makes it air-impermeable at certain thicknesses. The air-impermeability of ocSPF qualifies it as an air-barrier material, dramatically reducing air leakage through the building envelope, significantly lowering the building’s heating and cooling costs. However, ocSPF, like fiberglass and cellulose insulations, is moisture-permeable, and may require the installation of a vapor retarder in colder climates.

Closed-cell spray foam (ccSPF) has a closed cell structure which yields rigid hard foam, with a density of 1.8-2.3 pound per cubic foot (pcf), and can provide structural enhancement in certain framed buildings. The smaller cells trap insulating gas from the curing, which has a lower thermal conductivity than still air, and increases the R-value to anywhere from R5.8 to R6.9 per inch.

Like ocSPF, ccSPF is also air impermeable at certain thicknesses and can qualify as an air-barrier material. The bigger benefit is that the closed-cell structure of ccSPF also makes it water-resistant, and is the only spray foam that can be used where contact with water is likely.

At a thickness of 1.5 inches, no additional vapor retarder is required for most applications.

Desired Properties

- Make sure the foam used has been tested in accordance with AAMA 812 and meets standard for low pressure development.
- Quick Setting Formulation: can be cut or trimmed in less than 1 hour
- Cold Temperature Application: can be applied in temperatures as low as 14F
- Insulation Value of R5: makes it an efficient method for stopping air and moisture infiltration
- Remains Flexible Once Cured: will not crack or dry out

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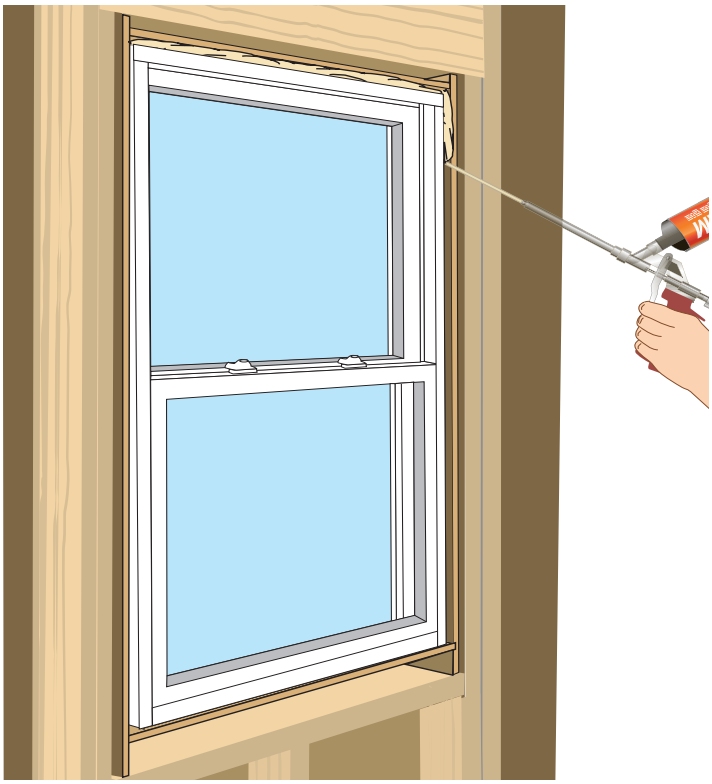


Using Spray Foam

For the best installation, it is necessary for the gap around the window or door to be sealed to block out air, water and vapor penetration. ccSPF can do that well if selected and used properly. Improper use can create water traps, impede drainage and exert excessive pressure to the window frame during expansion.

Remember: Vapor barriers need to applied on the warm side of the opening. Double vapor barriers (one on the warm side and another on the cool side) encourage condensation between and will trap the resulting condensation. Also, window installation cavities (the space between the window frame and the rough opening, or left-in-place old window frame) need to "breathe" to the outside, and allow drainage of collected water to the outside.

Used wisely, ccSPF can be the best solution. AWDI recommends DAP® DRAFTSTOP 812 Window and Door foam. DAP® DRAFTSTOP 812 also achieves a thermal performance of R-5 per inch.

Application

DAP DRAFTSTOP Foam is applied using a Foam Applicator Gun. This foam and gun combination allows for more precise application than the straw grade foam alternative. This gun offers a rear valve used to control the size of bead applied into the openings. The valve also allows the life of the foam to be extended by closing the opening of the barrel for future use.

For even smaller openings, a detachable screw on top is included with the gun to be able to fill gaps as small as ¼" wide.

Important tips:

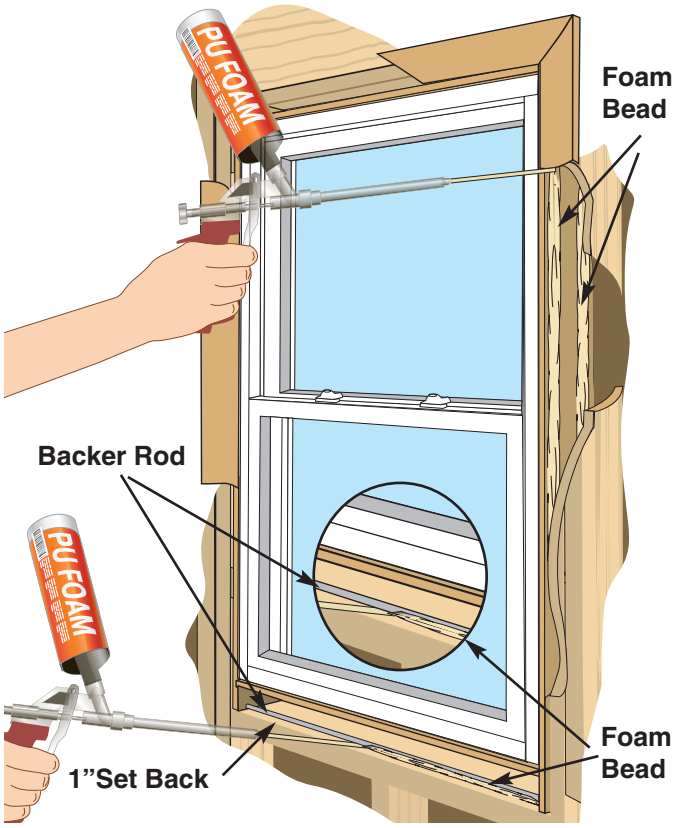
• Similar to the sealant gun, it is critical that you balance the movement of the foam gun or straw barrel and how you dispense the foam so that the foam makes contact with both the rough or existing window frame and replacement window frame.

• If the dispensed foam does not make contact with both the rough frame and the window frame, there won't be an adequate bond to seal out water and air.

• Industry Standards suggest application of 1 inch beads, separated by an equal space. Be careful not to create two vapor barriers - one at the exterior and one at the interior. Make sure there is the ability for the opening to breathe to the cold side for drying and drainage. Use backer rod about one inch in the sill as a stop to make a workable back dam

• When applying foam around the perimeter of the window or door, you must maintain a minimum depth of 1 inch. This depth is required to provide the correct thermal performance, to help improve energy savings, and to protect against condensation problems.

• When applying foam as a back dam to the gap between the window frame and the rough sill, do not allow the foam to extend to the exterior edge of the opening. Maintain a minimum of a 1 inch gap between the foam and the exterior edge of the rough sill. If foam fills this gap at the sill, any water from leakage will not be able to drain to the drainage plane or exterior cladding surface. Place backer rod the length of the sill, 1" from edge and use it as a back dam guide.



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