



WEB BASED CORE APPLICATION SPECIFIC INSTALLATION INFORMATION AND METHODS



Proper Window & Door Flashing

Although all possible measures have been taken to insure the accuracy of the material presented, WIXSYS, and the author are not liable and do not assume any liability in case of misinterpretation of directions, misapplication, improper installation, or typographical error. Pictures and Diagrams are meant to represent typical situations and are for guidance. Actual product dimensions, representations and specifications are to be supplied by the manufacturer.

Proper Flashing - Divert. Drain. Dry.

Regardless of whether a window is installed in a brand new opening or an existing opening, the installation must be integrated into the wall to allow water to be diverted from coming into the cavity and therefore into the interior. Water that enters the cavity must be allowed to drain; and moisture trapped in the wall or cavity between the window and the framing, must be allowed to dry to prevent mold, mildew and rot. Simple: Divert, Drain and Dry.

This goal is accomplished through proper flashing which not only blocks the infiltration of water, but also is lapped in such a way that the water drains down, and then to the outside.

An integral part of a properly flashed opening is the sill. Moisture can enter the cavity from outside and also from inside.

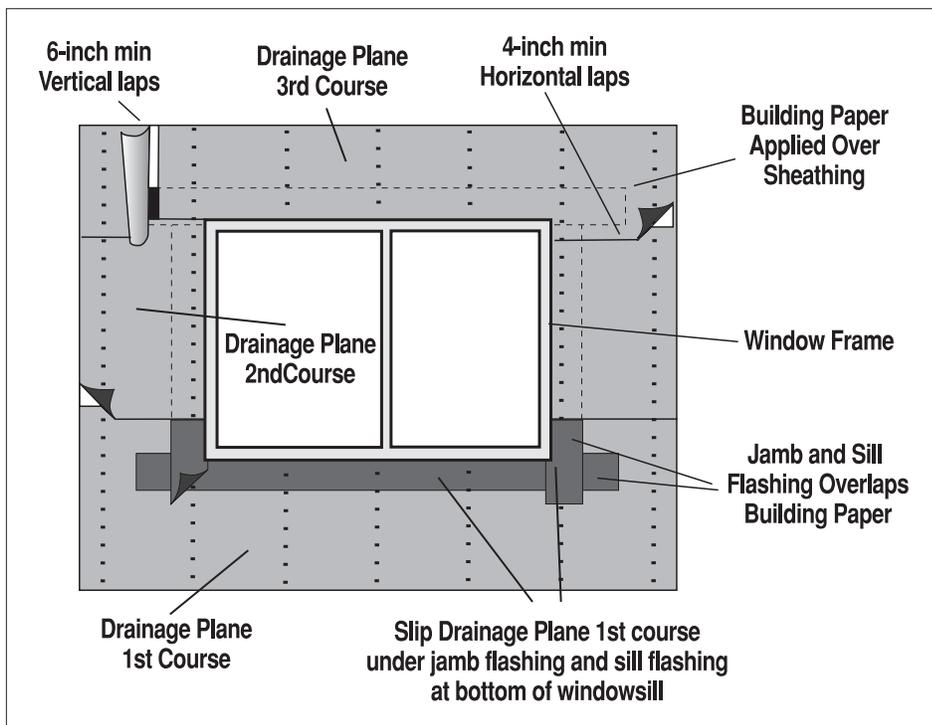
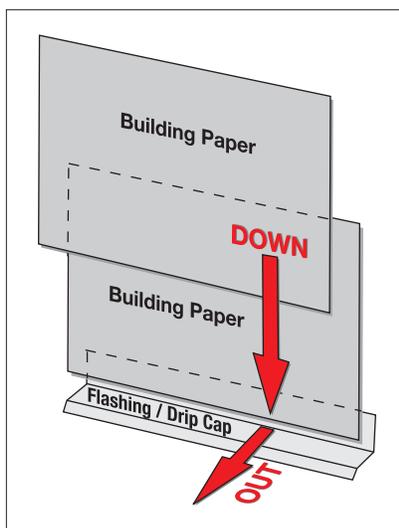
When the outside is colder than the inside, the inside air will carry a lot more moisture, and since warm air moves towards cold air, the warm, moist interior air will make its way into the wall where it will condense out the moisture.

This moisture, in the wall, when the opening is properly flashed, will make its way down the sides of the new window towards the sill, where the sill configuration should allow this moisture to exit.

For the moisture that may be left to be prevented from causing problems, the cavity must be allowed to dry. This is accomplished by not completely sealing the full perimeter of the new window/wall interface allowing the space and materials to properly dry.

There are two basic methods of flashing: Method A where the Weather Resistant Barrier is applied after the window is mounted, and Method B where it is applied before window mounting.

The bottom line is divert the environmental water, drain any that makes its way inside, and dry whatever is left.



Flashing, Drainage and Vapor Barrier Continuity

Modified Method A Flashing

After applying Weather Resistive Barrier (WRB) to sheathed wall, cut as shown to allow folding back over jamb and sill framing. Tape the fold-backs in place on the interior.

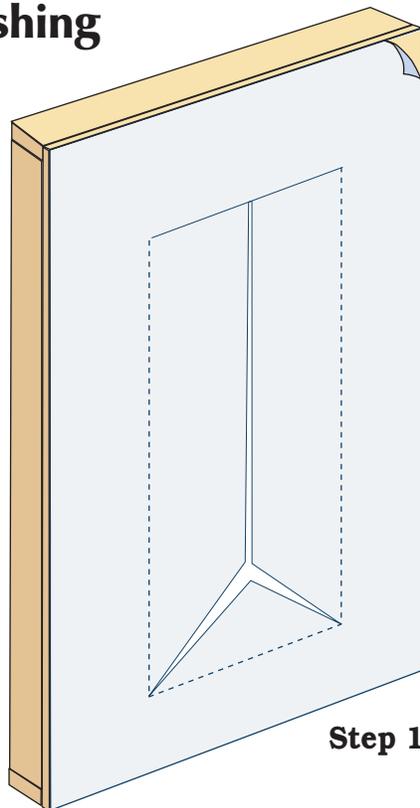
Place a strip (9 inches) of adhesive-back flashing across the wall under sill as shown.

Cut and fold back the top of the WRB along header as shown. Properly caulk the nailing flange of the window (or the wall) and place the new window into position and fasten.

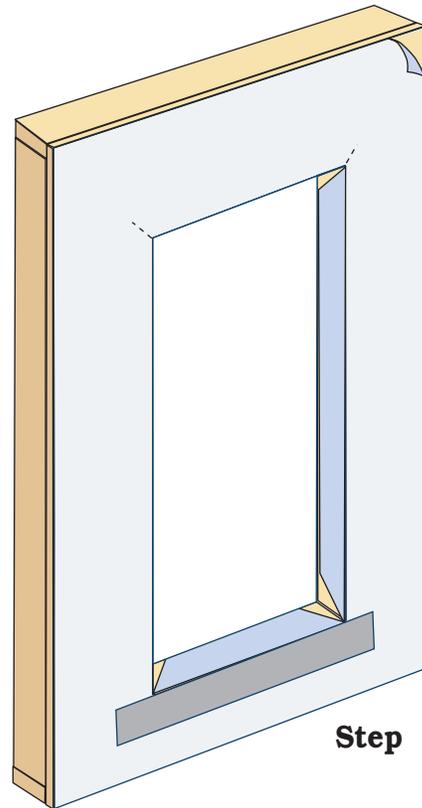
Place strips of adhesive-backed flashing over the jamb portion of the nailing flange to lay over the flange and WRB.

Place a strip of adhesive-backed flashing over the top of the window flange, lapping the jamb flashing.

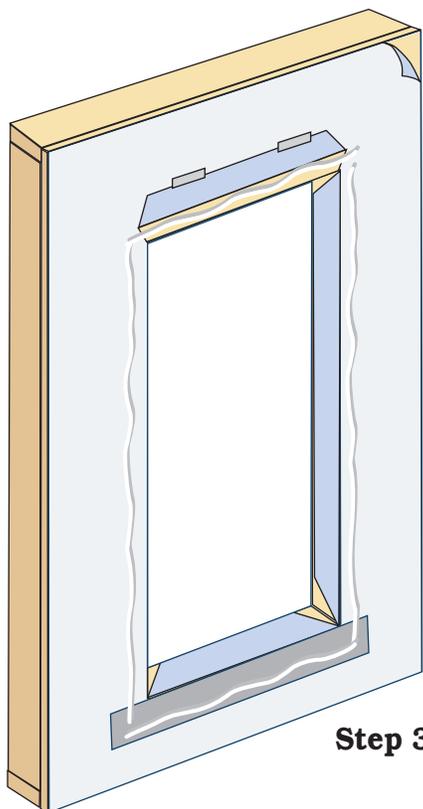
Fold down the folded back top of the WRB, and tape the corners to secure it.



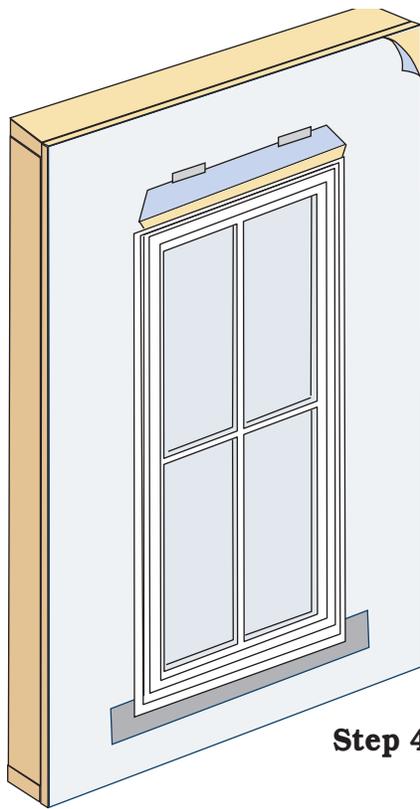
Step 1:



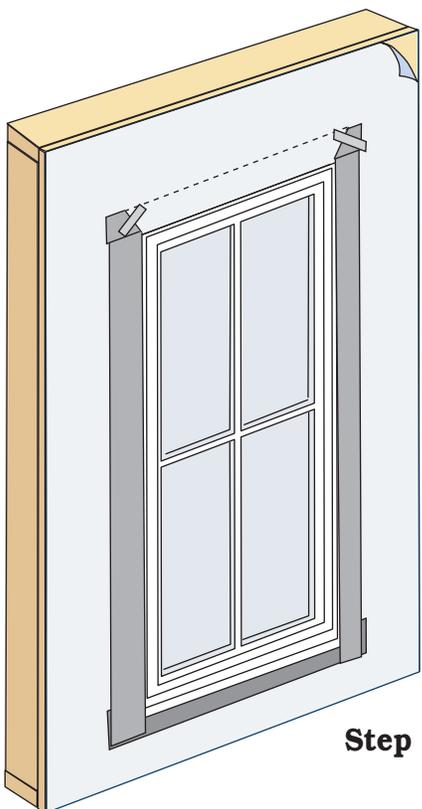
Step 2



Step 3:



Step 4:



Step 5:

Flashing, Drainage and Vapor Barrier Continuity

Modified Method B Flashing

The opening is cut out of the Weather Resistant Barrier (WRB). The jambs and header portions are folded back as shown. The WRB can be applied after the opening is flashed, but before mounting window.

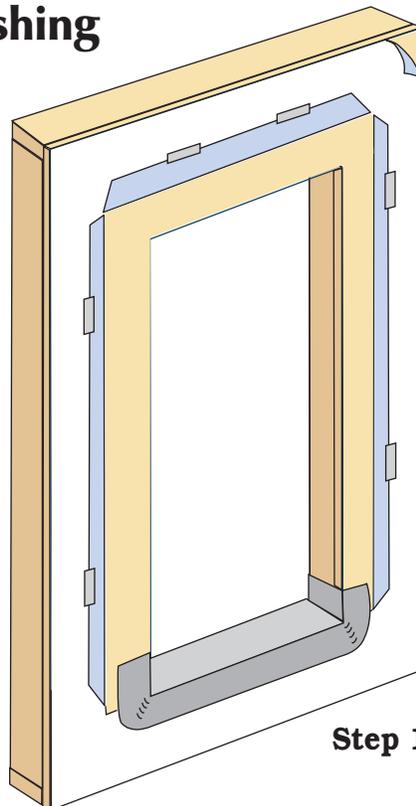
Flexible adhesive-back flashing is applied over the sheathing and interior jamb section of the rough opening.

Flexible adhesive-backed flashing is applied to the sill (preferably with a sill pan) is installed for proper sill drainage.

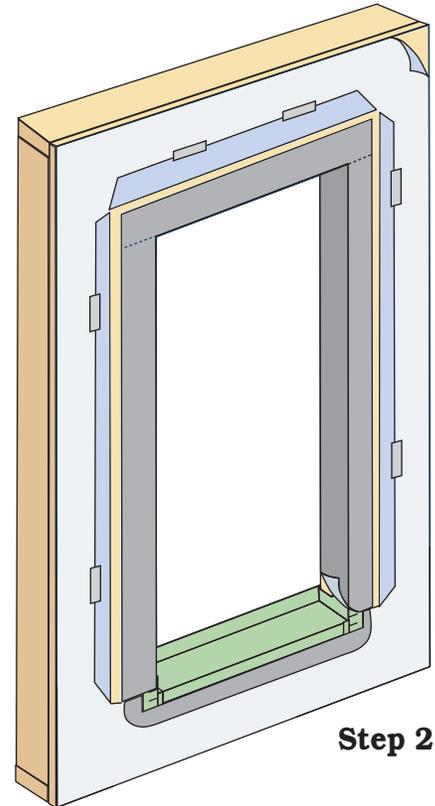
Proper caulk/sealant is applied under the window mounting (nailing) flange and the window is mounted and fastened.

Strips of adhesive-backed flashing are applied over the header, and jamb portions of the window mounting flange. Do not flash over window at sill to allow drainage.

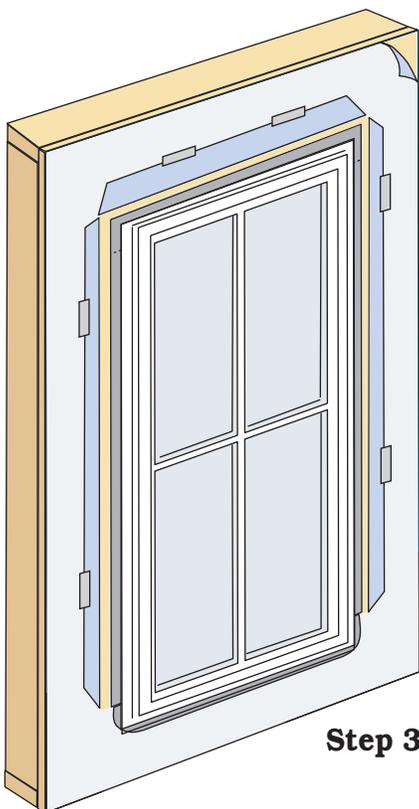
Untape the fold-backs and place them over the flashing strips and tape at corners to secure them.



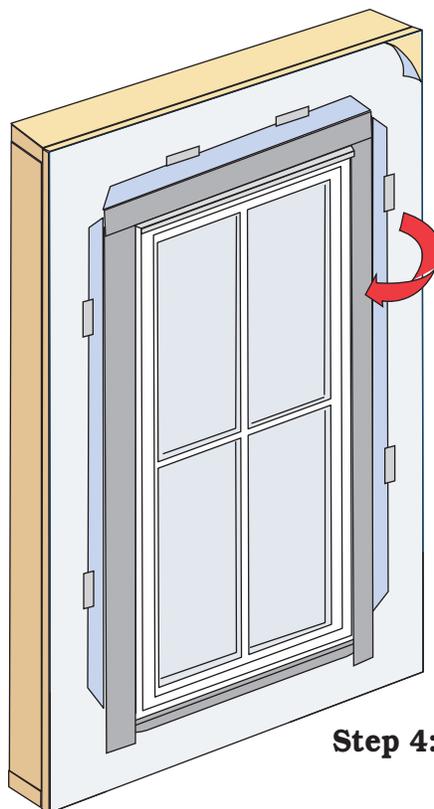
Step 1:



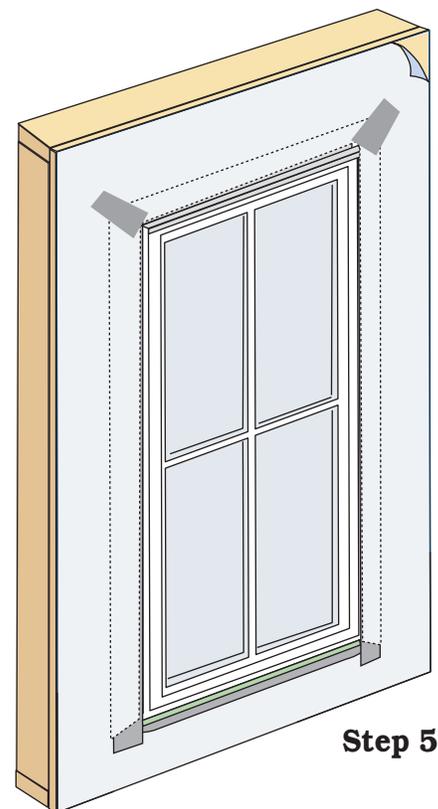
Step 2:



Step 3:



Step 4:



Step 5:

Application, Shimming, Fastening, and Sealing

Application: The new window must be installed plumb, level, and square. Make sure loads from the wall above are not transferred to the window.

Shimming: All shimming should be done with the proper pressure to the mainframe of the newly installed window to guarantee the proper operation of the window sashes.

The shims should be made of a material that is hard enough to support the window, provide good thermal insulation, resist decay, and allow for fastening to run through.

Fastening: To fasten the window properly to the opening, use corrosion resistant fasteners of sufficient size and length to permanently anchor the new window. In most cases, these anchors are supplied with the window unit.

1. Fastening for Replacement or Renovation: Fasten to the jambs, and/or head sections of the left-in-place frame using corrosion resistant screws, or nails when conditions permit. Use non-tapered shims as needed, and install at all fastening points.

2. Fastening for New Construction: Fasten the “new construction” vinyl window into the opening structure by fastening the integral fin. Take care to allow for natural expansion and contraction of the window or door fin. Use cap-nails along header as shown elsewhere. Shim any gap present between the new window and the opening, as needed. Use corrosion resistant fasteners.

Caulking:

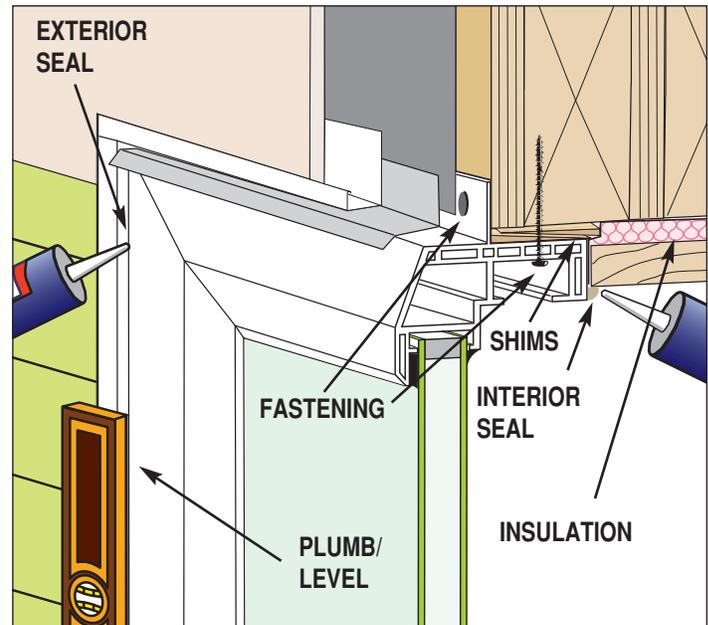
1. Replacement: Use caulking during mounting of replacement vinyl windows as follows:

Inside/Out Application- Apply caulk to the back of the exterior stop, and under the sill when the newly installed window is mounted against the exterior stop leaving weep gaps.

Outside/In Application- Apply caulk to the back of the interior stop, and under the sill when the newly installed window is mounted against the interior stop.

2. Renovation & New Construction: Caulking alone is not recommended for use during renovation or remodeling installation. Instead, use proper flashing methods described in detail elsewhere.

Insulation: After the new vinyl window is mounted in the opening, use fiberglass insulation, or equal to insulate any perimeter voids between the mainframe of the new window, and the opening. The insulation should never be compressed into the void(s) in a manner that lessens its insulation effectiveness.

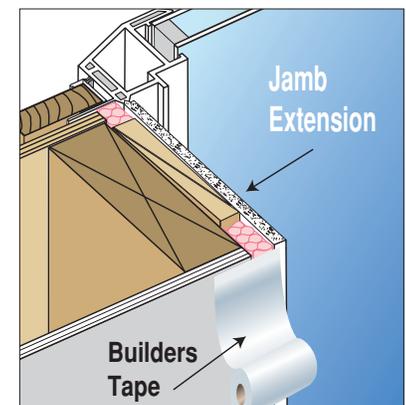


Also, compression of the insulation could exert pressure on the frame of the new window that will distort the frame, which could impede smooth operation of the new window. It is also recommended that a proper air seal on the warm side of the insulation be provided.

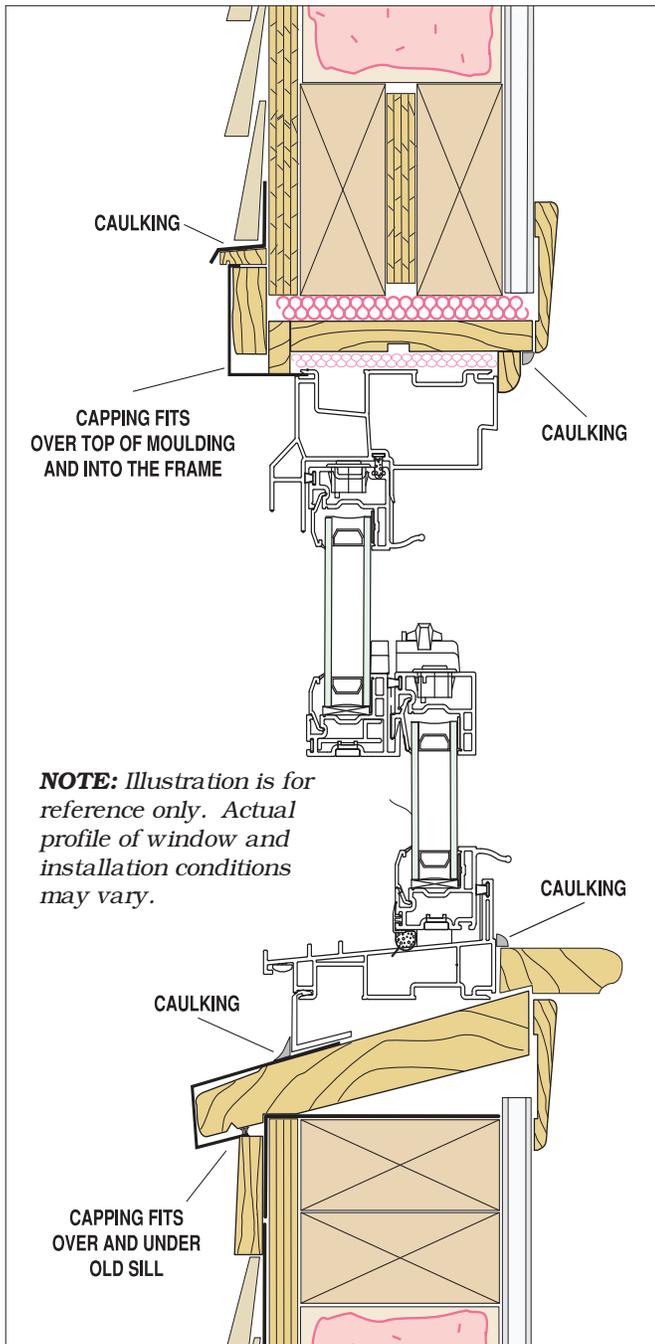
Interior Air/Moisture Seal: It is recommended that an air and moisture seal be provided on the interior side of the rough opening gap using sealant, or Barrier Tape. To prevent drafts, heat loss, and further reduce the potential for the formation of condensation between the wall and the new window, it is essential that the rough opening gap doesn't allow air and moisture to pass between the new window and the existing wall into the opening cavity.

1. **Sealant Method:** Apply Caulk/Sealant to the interior side of the rough opening in a continuous manner to provide an even, unbroken sealant bead sufficient to fill the gap between the new window and the rough opening. Where needed, foam or rubber backer rod can be used as a “bond breaker” ensuring that the sealant only bonds to the window frame and the rough opening.

2. **The Barrier Tape Method:** Tape that is impervious to air and moisture, with adhesive of sufficient strength to adhere to wood, vinyl, metal, or plastic shall be placed across the rough opening gap adhering to the dry wall on one side of the gap, and the interior surface of the window frame on the other, or between the new window frame and the left-in-place frame.

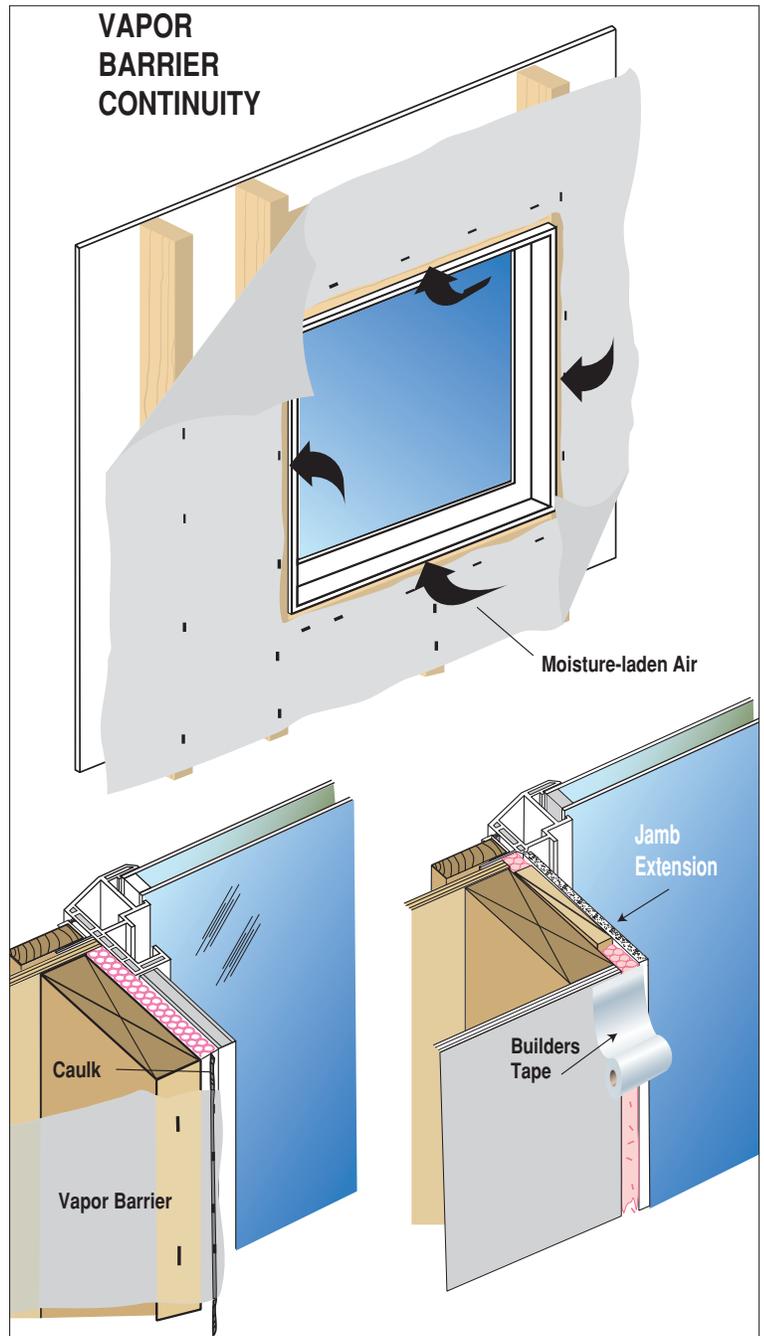


Capping and Vapor Barrier Continuity



Vapor Barriers are usually violated when new windows are installed.

Moisture laden air is allowed into the cavity between the rough opening framing and the new window frame. Allowing moisture into the cavity can cause rot, mold or other degradation of the installation and lower the thermal performance of the new window unit.



COMPLETE THE VAPOR BARRIER TO THE WINDOW

Run a Caulk Bead Down the Window Frame to Seal the Vapor Barrier to the Rough Opening Framing. Or use Builders Tape to create Vapor Barrier between Wallboard and Window Frame - covering insulated gap.

NOTE: Vapor Barriers for all climates other than defined as "Humid" by ASHRAE (the Coastal Regions of Louisiana, S. Carolina, Georgia, and Florida.), Vapor Barriers are recommended on the interior, or "warm side" of the building wall.

Other Flashings

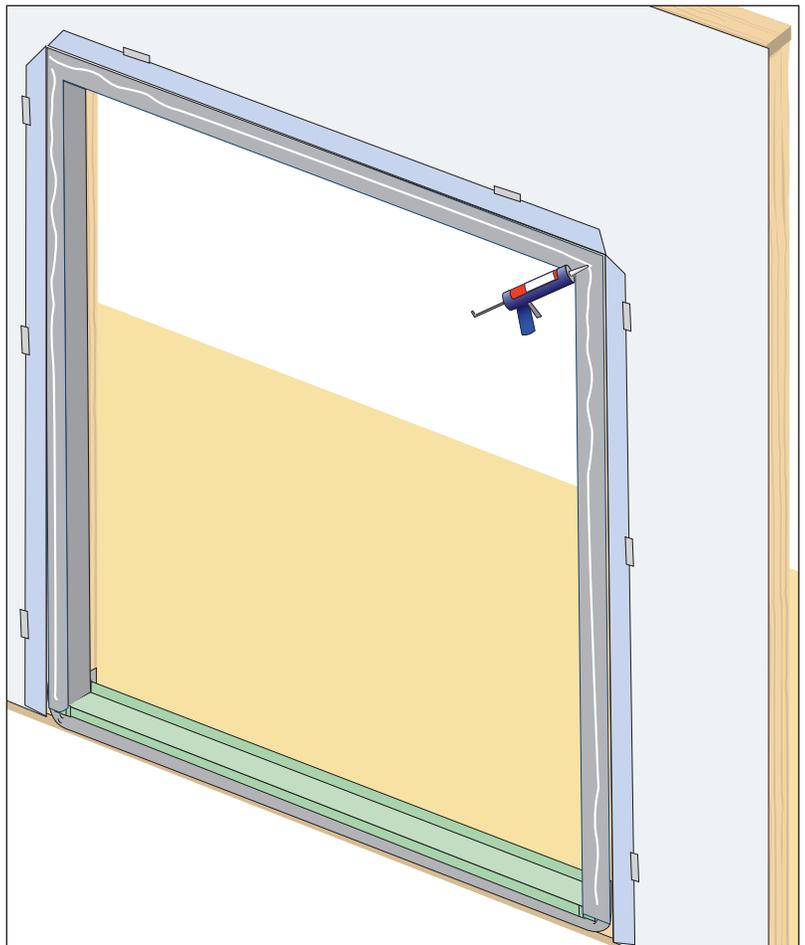
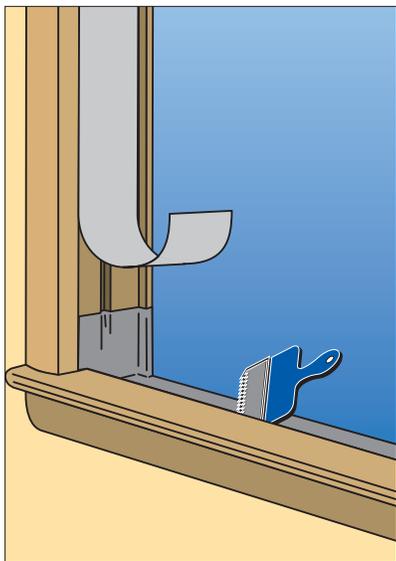
Flashing Doors

Flashings for doors is not applied very differently than windows. Either Method A or B can be used with effectiveness. The major concern when flashing doorways is handling the sill.

Sills present problems because they rarely are level and flat, and there is little success trying to shim the sill. Protect the sill against water that may lay on it, and/or blow up and under it. Unless there's no other way, do not screw through the door sill into the flooring underneath and create a water path.

Left in Place Window Frames

When an old wood window is left in place, it is advisable to apply either adhesive-backed flashing or liquid flashing to the old frame. Not only will this drain out water that finds its way in, it will protect the old frame from rotting or becoming moldy buried under the new window.



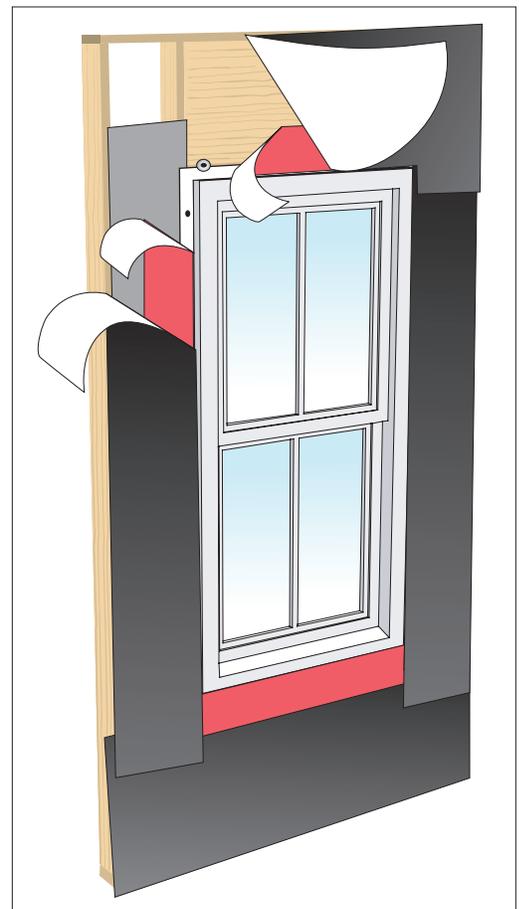
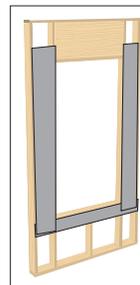
Flashing Direct to Framing

When siding is to be placed over foam core sheathing, as in stucco over frame, flashing is applied directly to the rough opening and multi-layered to be sure that not only the water shedding properties are created, but some protection is provided against water and moisture absorption of the stucco, etc.

There can be three layers:

1. The flashing applied to the header, jambs and sill framing. (Gray)
2. The flashing applied over the nailing fin of the window. (Red)
3. The building paper lapped prior to the foam core and/or lathe application. (Black)

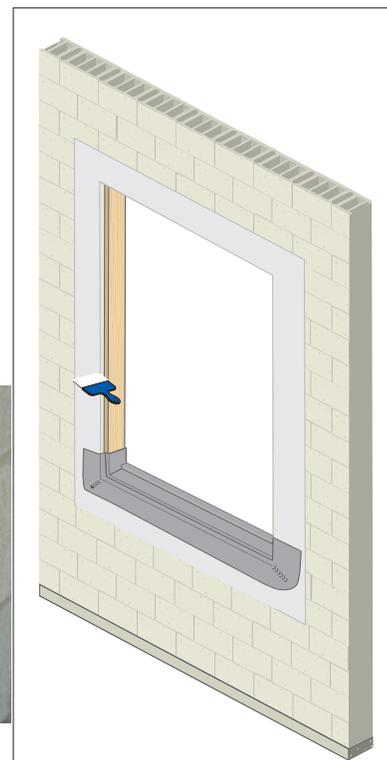
Lapping and allowing the system to breathe are important for each flashing layer.



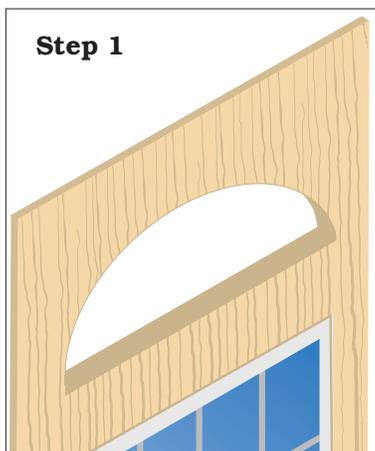
Other Flashings

Flashing Block Walls

Block Walls will absorb water, and must “dry” on their own. Flashing for block walls is more to divert the water away from the opening than to prevent this absorption. Liquid Flashing is applied to the perimeter of the opening, and out about 6 inches on all sides. Flexible adhesive-backed flashing is used on the sill, over the sill buck to create the effect of an active sill pan. The sill flashing can be excluded when a pre-formed sill is used (the shape of a pan) and coated with the liquid flashing.



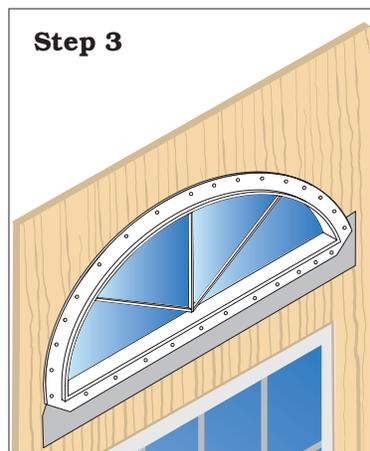
Flashing Curved Windows



Step 1

Take care that the sheathing is applied with the correct arc and that the proper support for the curved window is in place.

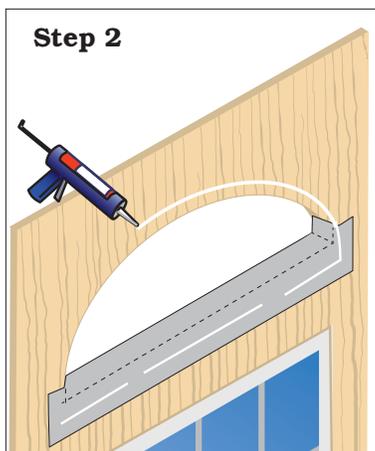
Too often it is cut or formed haphazardly and the resulting gaps invite leaks no matter how well the opening is flashed.



Step 3

Place the window in the opening. Nail just enough to anchor it to the opening, but not too much to deform the nailing fin and allow the window to slightly expand and contract.

Do not nail across the bottom.

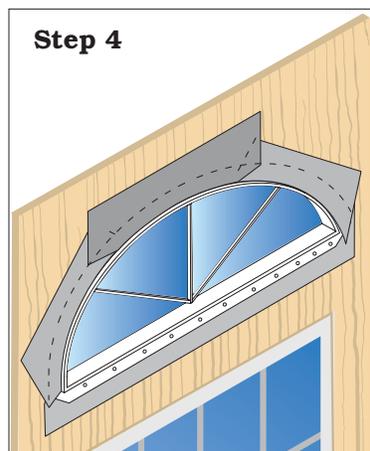


Step 2

Just as you would in a rectangular opening, the sill flashing is applied across the bottom and slightly up the sides. Make sure it extends past the sides of the opening.

Place a bead of caulk on the sheathing or behind the nailing flange.

Caulk across the bottom leaving two gaps for drainage.



Step 4

Cut three pieces of flashing and apply them in overlapping sequence over the nailing flange.

Apply top piece last.

Use flexible uPVC or carefully notch aluminum to make a drip cap if needed.

