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Window flashing IRC 2015 R 703.4 Flashing requirements. How to make window flashing logical and mechanical.

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Your window installer wants to wrap your water-resistive barrier (WRB) aka House Wrap inside onto your window jamb. You worry about water entering the window from your drainable WRB channels. Let's look at code requirements and give this process a review

The Code I will be reviewing as a homeowner today is IRC 2015 R703.4 Flashing and my focus will be on windows and the window rough-in framing. I'll be using the abbreviation WRB which stands for water-resistive barrier instead of using trade names or the words house wrap. This is for new construction interpreted from reading and observing framing practices. Window Flange and Nail Fin are interchangeable and only their roles are different. Nail Fin is typically found on new construction windows and flanges are found on replacement windows.

IRC 2015 Section R 703.4 Flashing. Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply with AAMA 711. Fluid-applied membranes used as flashing in exterior walls shall comply with AAMA 714. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashings shall be installed at the following locations:

1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier complying with Section 703.2 for subsequent drainage. Mechanically attached flexible flashings shall comply with AAMA 712. Flashing at exterior window and door openings shall be installed in accordance with one or more of the following:
 1. The fenestration manufacturer's installation and flashing instructions, or for applications not addressed in the fenestration manufacturer's instructions, in accordance with the flashing manufacturer's instructions. Where flashing instructions or details are not provided, pan flashing shall be installed at the sill of exterior window and door openings. Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the water resistive barrier for subsequent drainage. Openings using pan flashing shall incorporate flashing or protection at the head and sides.

The parts in BOLD are what I will cover in this article. I want to point out I'm not making suggestions but I am going to make questions to the logic of some processes.

First thing as a homeowner we understand that when you as a contractor tell us to "Caulk and Seal windows yearly or when leaks are detected" you're actually telling me to hang out my attic windows and apply a perfect line of caulk to the top and sides of my single hung window. That's not going to happen in my lifetime.

What's the homeowners view and answer? Flash the jambs in both cases so you prevent water from actually coming in contact with any materials being protected by your WRB. If you insulate or seal for air penetration you're most likely going to flush cut the WRB so foam or your rigid insulation have no obstructions caused by your WRB.

Final Review of the full flashing process for windows from a homeowners point of view no matter if you flush cut, cut back or wrap over your window jambs and sills.

Step 1; Install Window Flashing:

1. Flash the sill pan so that it drains any liquid outwards. Provide a horizontally level sill pan that has a 6 to 8 degree outward slope.
2. Flash the window jambs by starting just below the window header down to your sill pan overlapping by 2" and overlap outward on top of your exterior wall sheathing by 2" or at least the the width of your nailing fin.
3. Flash the header even with the top of your window extending out either side a minimum width of your windows nailing fin. Use the same flashing material to maintain an even flush surface around all sides of your windows covering. This padding should cover the width of your nailing fins.
4. Install your window using your manufacturer's installation method.

Step 2 Option 1 WRB Fold, Option 2 WRB Flush Cut, Option 3 WRB Cut Back.

Option 1: Using the WRB Fold In on window jamb method :

1. Cut the WRB from the top corners outward at 45 degree angles. Make your cuts long enough to place flashing tape over the top window nailing fin and at least 3 inches over the window head.
2. Wrap your WRB into the window jambs making sure not to go past the depth of the actual window. See note 1.
3. Install your window using your manufacturer's installation method.

Option 2: Using the WRB Flush Cut to window jamb method:

1. Cut the WRB from the top corners outward at 45 degree angles. Make your cuts long enough to place flashing tape over the top window nailing fin and at least 3 inches over the window head.
2. Cut the WRB flush with your window jamb on both sides of the window.
3. Install your window using your manufacturer's installation method.

Option 3: Using the WRB Cut back from window jamb method:

1. Cut the WRB from the top corners outward at 45 degree angles. Make your cuts long enough to place flashing tape over the top window nailing fin and at least 3 inches over the window head.
2. Cut the WRB back outside the window jamb the with of your nailing fin. Do this on both sides of your window rough in opening.
3. Install your window using your manufacturer's installation method.

Note (1): Some foam spray window insulation acts as a sponge and when your window leaks it will absorb the water and take time to dry. Be sure your foam does not come in contact with other porous materials like your wall framing.

If you are installing windows in a shed or accessory building you do not have to use WRB but it is recommended that you flash the window to drain water away from the inside wall.

Bottom line is simple, your windows are going to leak one day. It's important to mechanically channel the water outward. In a severe driving rain like what hurricanes can produce very few windows can drain fast enough so you might get window sills filling up with water. We used towels at the base of the sill to soak up the wind driven rain. The water was channeled just couldn't escape the weep holes faster enough so it backed up on the sills. Lucky for us the sills have a slope to keep the water at the window.

Keep these points in mind at all times when designing your windows and creating your installation process.

- Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the water resistive barrier for subsequent drainage.
- Openings using pan flashing shall incorporate flashing or protection at the head and sides.
- The flashing shall extend to the surface of the exterior wall finish.

Resource Research:

- IRC 2015 Code
- Leading window manufacturers
- Leading WRB manufacturers
- Leading flashing tape manufacturers

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