

August 15, 2024

Technical Papers

Position Statement for the Replacement of Windows

As Building Envelope Consultants, we are often asked how to properly replace damaged or old windows. There are several approaches to window replacement. It would be essential to know and understand the original window interface points for the water and air control layers based on the original design, as it is essential to maintain the continuity of those layers to the replacement window; these two layers could be in the same location, but not always.

The Preferred Method:

It is crucial to preserve the functionality of the original window installation. Therefore, if the original window had nailing fins or flanges, installing new windows with nailing fins or flanges is highly recommended. This process involves cutting and removing the wall cladding around the window to allow for the removal of the old window with nailing fins or flanges and the installation of a new window with nailing fins or flanges that are integrated with flashing papers. Obviously, this will require repairing the removed wall cladding.

A less desirable but viable option:

If it is decided to cut off the nailing fins or flanges and install new windows during the window replacement, it's important to understand that this choice will reduce the windows' functionality. With reduced functionality, the windows are more prone to leakage. If that is the decision, then EDI will be most comfortable with the following steps.

1. Cut out the window through the isolation joint, not damaging the wall cladding.
2. Install a full-width metal sill pan flashing with end dams and back dams sloped to drain to the exterior. The sill pan flashing must project out over the wall cladding with the pan turn-down, creating a drip that laps the wall

cladding by about 1 inch. (a 30-degree angle down is ideal to drain over the cladding)

3. Install an edge wrap or flashing papers to seal the edges (jamb) of the wall cladding to the rough opening framing and lap the end dams on the sill pan flashing.
4. It's essential to size the window to about 1 inch narrower than the rough opening. This precision provides room for a 3/8" to 1/2" isolation joint at each jamb, a crucial step in the installation process.
5. Install the window or door per the manufacturer's installation instructions.
6. Finally, it's of utmost importance to seal the window jambs to the wall cladding with a closed-cell backer rod and appropriate sealant. This step is a critical measure in preventing any potential leakage.

The above steps will not provide the same functionality to prevent water intrusion as the window with nailing fins or flanges; however, it will provide an alternate water management system when the window or window joints leak.

Additional Thoughts:

It is essential to understand where the drainage points are located on and within the replacement window(s). For instance, does water get inside the frame, drain down through the frame, and exit out of the front weeps below at the sill? The sill pan must be constructed to get this water to the face of the cladding system. [This may be the most common approach. The sill pan is also for unintended leaks, such as joints in the window unit's construction or the unit's racking failure. The sill pan is also for untested window systems such as those mullled together. Some manufacturers provide single-unit testing compliance by a testing organization (such as AAMA or ASTM); however, they do not test two units mullled together (even with their own products), and failure can occur in those circumstances. The consultant must know and understand the details, requirements, and limitations of the products used to ensure a successful assembly.

