Ask Jon Eakes

Pro: Integrating Windows to Walls

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I remember years ago, touring Quebec delivering CMHC builder and renovator courses in an effort to get contractors into trouble free window installations. Aside from the fact that they all had the funny habit of installing their windows in French, I was really intrigued to discover that each region had their own way of installing windows and of course this was the only way windows should ever be installed. Each region was surprised to learn that it was done differently someplace else. The only group that agreed with the CMHC experts who wrote the manuals was in the far away region of Sagney-Lac-St-Jean.

However today we have a CSA standard that is very explicit. And we have a Window Wise program that, like the R-2000 program, goes beyond the official standard. And all of you reading this article know how to do it right. But a call around to a handful of window manufacturer service departments tells me that a couple of guys out there still haven't gotten the message -- and they may be working on your sites!

Although Doug Beingessner, in his article in this issue, points out that most of the problems are from too many cooks in the kitchen leaving the window to fall between the cracks of trades responsibilities, I got intrigued by a very tiny specific question: "To what extent are fasteners and fastening techniques responsible for problem installations?"

Some guys still use nails. I guess I can't quite imagine that because I grew up as a cabinet maker. Then I got a detailed description as to how you can use nails if you leave them a bit slack so you can slide the window left and right on the nails before final shimming and securing. Believe it or not, there are new windows in this country attached right to double brick with ardox nails. Let's hope that the advent of the cordless drill has made driving screws so easy that the non-adjustable days of nails is drawing to a close.

But wait a minute, many manufactures provide "nailing flanges" or even recommend nailing through brick flanges. So bang it up (maybe straight) and be gone. Well, although they won't say it for the record, many of the manufacturer's own service reps hate their own marketing push towards nailing flanges. I say "marketing", because the reason for a nailing flange is not technological, but it is to be able to say that "our window is easier to install than theirs". Any window left to hang on it's nailing flange is eventually going to sag because rarely is a nailing flange attached at the centre of gravity.

Plywood jam extensions on a vinyl window are often used like nailing flanges. With the window pushed sometimes out beyond the house framing, and the weight hanging without any real support. (A side issue with nailing flanges, especially jam extensions, is that sometimes the glass plane falls beyond the insulation plane, and the interior framing is exposed to outdoor temperatures.)

It seems that FLAT SHIMMING under the weight of the window is the most critical part of window attachment. And the shimming must be structural. Several materials are acceptable for this, but no blown-in foam is considered adequate to carry the weight of the window. So the guys using nailing flanges and then locking it all in place with foam, are not adequately supporting the window.

If you are filling the cavity with foam, it must be applied in several passes, for even the non-expansive foam will expand enough to cause problems. By-the-way, the only frame insulation allowed in the Window Wise program is blown-in foam because they find that a full cavity of foam works every time

to both insulate and block air movement. They do spec foam with 20% expansion or less, which eliminates most off-the-shelf retail products.

Here is one service call surprise I heard about. There seems to be some problems with too many shims and too many fasteners with some vinyl window installations. There is no room left for expansion and contraction. In the same way, side shimming at the bottom rail with some windows can cause bowing, so the first shim goes a few inches up the side to allow for bottom rail expansion.

Double anodized panhead screws are the norm, but stainless steel would be a lot better, even if it is just for the aesthetic reason of not getting a condensation caused rust streak later on.

Both the CSA standard and the Window Wise program have very specific shimming and fastening requirements for every type and size of window. Things have gotten much more detailed since the days when I traveled around Quebec talking about shims and the like. Few installers still are aware of the need for these little differences. Of course the Window Wise guys would like to see you require Window Wise Certified Installers to avoid all the problems. Short of that, I would recommend that a shimming and fastening diagram be taped to each window waiting to be installed. Keep it simple and graphic, not heavy technical drawings. That doesn't make for much of an installation course, but sometimes change needs to be brought about with small specific steps.

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