Why is it that windows fixed with claddings over a drained cavity don’t need a sill flashing, while direct-fixed claddings do?

The Acceptable Solution for External moisture (E2/AS1) states that windows around direct-fixed claddings shall have sill tray flashings to direct moisture to the outside. Where the Acceptable Solution refers to claddings over a drained cavity, however, it states that claddings shall have no sill trays.

Cavities provide drainage and drying

Traditionally, sill flashings have been accepted by most as essential. It can therefore be a little mystifying why a window installed in a cavity does not need one. The answer is really quite simple. A cavity incorporated into a cladding system provides drainage and drying should any water enter behind the cladding, therefore flashings become less important. Under the Verification Method E2/VM1, failure only occurs if water reaches the structural framing. The cladding is not considered to have failed should water penetrate into the cavity immediately behind the cladding.

A full-width sill flashing, from jamb to jamb, was seen as interfering with the ventilation of the cavity, thereby making pressure equalisation more difficult.

Short ‘shoes’ give added protection

It is also widely accepted, however, that aluminium windows can leak over time through the mitres and that a serious failure at a jamb or head can...
direct quite large volumes of water towards the sill. In these circumstances it is conceivable that water could track to the dry side of the cavity which would constitute a cladding failure. BRANZ considered these possibilities, and while there is no requirement for sill trays (and in fact a full-width sill flashing is to be avoided) adapting the tried and true method of flashing timber sills with a short ‘shoe’ gives some added security.

Inserting a 150-mm-long sill tray beneath where water might possibly be directed, prevents failure by redirecting any water to the exterior. This short tray is all that is required to provide additional security and peace of mind.

The previous edition of BUILD described how we tested aluminium window details with a weatherboard cladding. The tests showed that even if the scribe, facing and air seal were all to fail in unison, the sill tray was able to redirect water to the exterior of the building and prevent failure. This seems a low-cost method for added security.

Figure 2: Window jamb detail with cavity and sill flashing.