Guideline

December 2015

Welcome to this update on technical and informative advice for the building and construction industry on issues relating to building controls and good construction practices.

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Raking apron flashings require a cross-fall

What E2/AS1 says

E2/AS1 Figure 8B detailing a raking apron flashing requires that the flashing be installed with a cross-fall. Figure 8B also specifies a tapered stop-end to facilitate drainage of water off the flashing. No specific cross-fall slope is given. However, it is common for these flashings to be fitted hard to the roofing without the cross-fall. Where this occurs and the flashing terminates within a wall area with a stop-end or kick-out, water can be trapped at the base of the flashing. Any area of a metal flashing that traps water is likely to also trap dirt. When this occurs, the risk of corrosion is significantly increased.

E2/AS1 flashing cross-falls

Check the requirements

E2/AS1 does specify a minimum flashing cross-fall of:

- 15° for a head flashing to a window
- 5° for a balustrade or parapet cap flashing
- 15° for inter-storey flashings
- 0° for a window sill tray flashing in a direct-fixed cladding
- 10° for sill flashings to stucco and horizontal profiled metal.

For the sill flashing to the top of direct-fixed vertical profiled metal terminating below a window, a slope is shown to that part of the flashing capping the cladding. However, no angle is given.

Roof insulation – material thicknesses and performance

Design options

In the November *Guideline*, we talked about the relationship between roof or ceiling insulation, the space required to fit it into and the potential for lofting. Designers always have the option of specifying an insulation that:

- does not loft
- has a higher performance for the same or lesser thickness

- in skillion roofs particularly, has the same level of performance without the need to increase framing sizes – note that specific protection from fire requirements apply if foamed plastic is to be used.

Historic bracing ratings
Wind and earthquake

Where buildings are being renovated, determining the amount of bracing provided by the existing walls can be difficult. The *Build* article Bracing ratings (*Build* 144, page 24) has a table that can be used to assess the amount of wind and earthquake bracing provided by a range of older construction methods. For example, a 150 x 25 mm let-in brace fixed with two 75 x 3.15 mm nails to each stud (three nails to the top and bottom plates) will provide 40 bracing units per installed brace for a 2.4 m length of braced wall.

Insert thermal breaks to concrete slabs
New detail

BRANZ Bulletin 576 *Edge insulation of concrete floor slabs* incorporates a new detail for an insert thermal break to the perimeter of a concrete floor slab. In place of the timber strip previously detailed, the revised detail incorporates a 10 mm thick strip of XPS with an R-value of R0.25. The reason for the change is to minimise the potential for differential movement at the junction between the slab and the foundation wall under earthquake loads. This is achieved by limiting the thermal break thickness to 10 mm (rather than 45 mm when timber was used).

New source of building materials – a cautionary note
Questions to ask

Searching for new building materials on Trade Me brings up an amazing array. For many familiar products, the brand names are unfamiliar. While it is difficult to assess how much of these materials is sold, there must be a market for the products to be continuously available.

While many may be satisfactory, there are a number of questions that should be considered before committing to an online purchase:

- Is the product suitable for use in New Zealand? It is common to see comparisons made with ostensibly similar products that have a proven history of use in New Zealand. However, not all products that appear to be the same are.
- Does it meet the relevant performance requirements of the New Zealand Building Code and/or applicable standards?
- Can independent reputable verification of performance and durability be provided?
- Are the products from an identifiable reputable source?
- Is there back-up available in the event of failure?
- Is there a warranty?
- Can installation instructions, safety data sheets and so on be provided?
- Will you be in breach of contractual obligations by substituting a nominally similar product?

Identifying safety glass
What to look for

NZS 4223:1999 *Glazing in buildings – Part 3: Human impact safety requirements* clause 303.7 states that each panel of safety glass must be legibly and permanently marked with:

- the name, registered trademark or code of the manufacturer or supplier

- the type of safety glazing material – this may be in the form of a code, for example, T for toughened glass, L for laminated glass, as indicated by the relevant test standard (refer to AS/NZS 2208:1996 *Safety glazing materials in buildings*)
- the standard to which the safety glazing material has been tested, for example, AS/NZS 2208:1996
- if applicable, the classification relating to impact test behaviour – A for grade A, B for grade B.

The marking is normally found in the bottom left-hand corner viewed from the outside corner of the panel. Marking on thick glass can be on the edge of the glass but should be legible after installation. Removable labels of any kind are not suitable for the purposes of permanent marking.

Proprietary bottom plate anchors
Minimum capacities

Where proprietary fasteners are used with concrete floors, these must be tested (NZS 3604:2011 *Timber-framed buildings*) to provide the following minimum capacity.

For internal walls:
- In the plane of the wall – 2 kN
- Out of the plane of the wall – 2 kN

For external walls:
- Horizontal loads in the plane of the wall – 2 kN
- Horizontal loads out of the plane of the wall – 3 kN
- Vertical loads in axial tension of the fastener – 7 kN

NZS 3604:2011 states that the proprietary fasteners must be within 150 mm of each end of the plate and at no more than 900 mm centres (600 mm where slab edges are formed with concrete masonry header blocks). It is possible to use specific design with proprietary fasteners that have been tested and shown to have lower capacities than above provided the fixing centres are reduced.

Other parameters to be considered when specifying proprietary bottom plate anchors are:
- the strength of the concrete used when the testing was carried out (in some cases, this is much higher than NZS 3604:2011 requirements, which are typically 17.5 MPa or 20 MPa)
- the edge distance requirements for the specific fixing
- whether the fixing is a component of a bracing system – in this case, the supplier's requirements must be achieved.

Proprietary bracing systems may require bottom plate fixings with characteristic strengths up to 15 kN that may need to be taken into account. There are BRANZ Appraised bottom plate anchors that have been assessed as meeting greater capacity than those specified as a minimum in NZS 3604:2011.

It's Santa time once again!
Season's greetings

From all of us at BRANZ who help bring you Guideline, we wish you a Merry Christmas and a Happy (and hopefully prosperous) New Year.