Roof penetrations
E2/AS1 Figure 53 gives one way of detailing roof penetrations up to 60 mm diameter with a minimum roof pitch of 10° using a proprietary boot flashing. Figure 54 gives one option for penetrations that have a larger diameter, which utilises a flat supported cover flashing to which the proprietary boot flashing is sealed. The difficulty with this detail is the fitting of the flat flashing under the roofing profile, particularly with corrugate profile, above the penetration, and it is common to extend the flat cover flashing up to the ridgeline or roof apex, which makes the installation easier.

When adopting the flash back to ridge detail as an alternative method, all surfaces must be completely dry when the flashing is installed to minimise the risk of condensation forming on the underside of the cover flashing. If condensation did occur on the underside of the flashing, there is the risk that it may run down the underside of the flashing to the flue and track into the roof space or down the flue and appear as a leak.

Recycled building materials
A list of building material recyclers is given in the REBRI site in the Toolbox section on the BRANZ website. On the right-hand side of the REBRI page, there is a link to recyclers throughout the country.

Base of brick veneer walls – 100 mm veneer rebate

A number of parts of the country use a 100 mm slab rebate when designing and building masonry veneer walls instead of the 50 mm minimum typically detailed in NZS 3604. When this is being done, Figure 7.10 of NZS 3604 requires a minimum of 25 mm between the base of the rebate and the top of the paving. Where there is no paving, NZS 3604 clause 7.5.2.1 requires a 150 mm minimum distance between floor level and outside ground level (which means there should be 50 mm between the bottom of the rebate and the finished ground level).

Tiled showers and glazed screens
When shower or splash screens are attached after the tiling has been completed, there is a risk that moisture absorbed into the grout can be transferred beyond the screen and into areas of tiling where there may not be a waterproof membrane installed behind the tiles.

To address this, always carry the waterproofing at least 150 mm past the location of the screen and preferably detail the shower with a framed screen that is installed after the waterproofing but before the tiles. Tiles are then sealed to the screen frame with a flexible sealant. As an alternative, the screen could be installed after the wall is tiled, but a flexible sealant should be used to seal the first vertical and horizontal joint past the screen to prevent the moisture movement through the grout.

Details are given in Section 7 of BRANZ *Good Practice Guide – Tiling.* For bathroom floors with tiles laid over an absorbent substrate such as plywood, fibre-cement or particleboard, BRANZ recommends that a waterproofing membrane be applied to all of the floor area.

Screens should always be sealed to either the membrane or the tiles to restrict the potential for water to leak around them. Details for the correct installation of shower wastes to ensure any subtile moisture is not transmitted into the substrate are also given in BRANZ *Good Practice Guide – Tiling.*

NZS 4218:2009 BRANZ Calculation Method Tool
The NZS 4218:2009 Calculation Method Tool available on the BRANZ website to show compliance with H1 for consenting as an Alternative Solution has been available for some time now. There have been some enquiries about the warning "R-value too low" that appears on screen when using the tool. This is to warn the user that the R-value chosen is of a lower value than the 50% R-value reduction permitted in NZS 4218:2009. This reduction will need to be compensated for in some other element of the thermal envelope by increasing its performance.

Care needs to be taken when setting up the project summary sheet, as the selection of the climate zone will impact on the minimum R-values required, as will the wall construction type chosen in the drop-down menu. It is important that the instructions for use are followed. If the wall type is not chosen in the drop-down menu, the default "any wall type" will set the required R-values for the reference building (from Table 2 of NZS 4218:2009). This may trigger an "R-value too low" alert if the R-values typical of solid timber (Table 3) or high thermal mass (Table 4) wall constructions are used.

The Calculation Method Tool does NOT check R-values against the minimum values in E3/AS1 – these must be checked separately.

For the design to pass, the proposed building must have a heat loss no greater than the reference building.

Roof trusses installed over site-built wall framing
If builders are making their own frames on site and the design calls for a trussed roof structure, they need to consult their truss supplier about the truss layout to be sure that lintels being used are able to carry loads of girder trusses that are commonly used in a number of situations.

Allowing for construction moisture
Condensation in houses being constructed and/or recently occupied can be an issue where construction moisture is still being released from building components. For example, concrete slabs require approximately one month per 25 mm concrete thickness to dry out from the time the building is closed in, possibly longer in winter. BRANZ Bulletin 515 gives some sobering figures about how much water needs to dry out of concrete. Drying is also required for all of the other construction activities that use water such as waterproofing membranes, tile grouts, masonry wall grouts, plasterboard stopping and painting. There must be plenty of ventilation during construction and immediately after completion to remove the moisture and to ensure it is not absorbed by moisture-sensitive materials such as kiln dried timber framing.

DPC and steel framing
Steel framing in contact with concrete floors and masonry walls requires the installation of a damp-proof course (DPC) between it and the masonry or concrete as is done with timber framing to prevent the moisture held within these materials affecting the steel. Floor channels need to be checked before the insulation and lining is installed to see that no moisture is retained within them.

BRANZ Seminars
Our next seminar will be held in early December and will focus on weathertightness remediation design. To be held in the areas most affected by this problem, the seminar will introduce architects, designers and building officials to the complexities of working in this area. Further information including seminar dates will be available on our website in October.

Guideline *is a free monthly update on building issues prepared by BRANZ and funded by the Building Research Levy.*

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