GUIDELINE BRANZ
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July 2014

BRANZ presentation and question and answer sessions at BUILDNZ Christchurch

In conjunction with BUILDNZ Christchurch, 31 July–2 August, BRANZ is running two types of presentation:

- On Thursday 31 July at 11.30 am, Lynda Amitrano, Evaluations and Building Sustainability Manager, will talk about sustainability research tools.
- There will be a question and answer session each day hosted by Trevor Pringle ANZIA, Principal Writer, and Tom Edhouse of the BRANZ Helpline, who will be available to answer specific questions. They will also cover a number of the questions that were raised from the floor during the recently completed *You Asked – 24 Critical Questions Answered* seminar series. (The sessions are not a repeat of the *You Asked* seminar as shown in the BUILDNZ programme.)

The BRANZ question sessions are:

- 4.00 pm on 31 July
- 2.00 pm on 1 August
- 1.00 pm on 2 August.

Reiterating that insulating existing external walls is NOT exempt from a building consent under Schedule 1 – exempt building work

The Building Amendment Act 2013, enacted in November 2013, is the result of a comprehensive review of the Building Act 2004. As part of these amendments, Schedule 1 (exempt building work) has been reformatted, rewritten (there have been changes to the types of work that do not require a building consent under Schedule 1) and split into three parts:

- Part 1: Exempted building work (general work that is not covered by Parts 2 and 3 and includes a council's discretion to exempt any building work).
- Part 2: Sanitary plumbing and drainlaying carried out by people authorised under the Plumbers, Gasfitters, and Drainlayers Act 2006.
- Part 3: Building work for which design is carried out or reviewed by a chartered professional engineer.

One area that was not changed is the requirement to obtain a building consent where external walls of existing buildings are being insulated.

Get a copy of the new MBIE publication *Building work that does not require a building consent*.

Considerations that need to be made when assessing the suitability of an external wall for the retrofitting of insulation:

- Will the installation of the insulation increase the level of moisture in framing and lining materials? If so, what effect could that moisture have? Will it result in permanent damage to plasterboard linings, blistering of exterior paintwork or cupping of existing sarking (often behind plasterboard in pre-1920 homes)?
- Is it possible that the installation of the insulation will fill the drainage and ventilation cavity behind brick veneer? Filling the 40 mm minimum cavity with insulation will negate the drainage and drying that occurs behind the brickwork, and therefore effective moisture control is lost. Older brick veneer installations often had no wall underlay, so retrofitting of insulation must maintain a clear cavity.

- Many pre-1978 houses were not required to have wall underlay behind claddings, and if it was installed, it was only behind the cladding. Where a building had a soffit, the wall framing above the soffit lining may not have had wall underlay installed. Unless the interior wall linings are removed, to retrofit some form of segment insulation, it will be impossible to insulate the upper part of the wall with any sort of blown material, leaving a 300 mm deep area of wall below the ceiling that is uninsulated.

Raised level walk-on surfaces over waterproof decks

Where the walk-on surface of a waterproof deck is supported above the membrane on proprietary chairs or furred framing, barrier heights (F4/AS1 Table 1) must be measured from the finished level of the walk-on surface and not from the level of the waterproof surface to ensure the correct minimum barrier height of 1 metre is achieved.

Walk-on surfaces must also be removable, free draining and not be fitted hard against the wall claddings.

Preventing dampness under suspended floors

For suspended floors that are damp as a result of moist ground conditions and/or lack of adequate ventilation, installing a sheet polythene vapour barrier over the ground to minimise the amount of water being emitted into the subfloor space is recommended.

When installing the ground cover:

- remove any sharp object that might puncture the vapour barrier before laying it out
- lap joints 150 mm
- ensure that it fully covers the soil area under the building and prevents water ponding on top of it
- weigh it down with stones or old bricks to stop it moving in the wind
- trim and tape the vapour barrier around piles.

Also check that:

- as much ventilation as possible has been provided
- there are no plumbing or drainage leaks
- surface water is not able to flow under the house.

Resources available include:

- NZS 3604:2011 *Timber-framed buildings* section 6.14 Prevention of dampness
- BRANZ *Good Repair Guide: Damp Subfloors*

Raking wall frames – selecting the stud sizes

Where full-height studs are used, for example, on a gable end wall where the building has a flat ceiling with a roof space, the ceiling height is used to determine the stud length across the wall using NZS 3604:2011 Table 8.2, which will give the stud centres for a given size for the wind zone the building is located in.

The reason why the ceiling height is used to determine stud length is that the ceiling provides lateral support to the wall framing.

Double fixing capacity for veranda beams attached to posts as required in NZS 3604:2011 Table 10.8

A doubling of the fixing capacity for veranda beams to posts (because the gravity and uplift load carried is greater) is required for:

- posts that support a veranda beam joint
- the middle post(s) where a veranda beam spans over three or more posts.

Check the manufacturer's rating of T brackets to ensure they meet the required capacity – not all brackets can provide sufficient capacity.

Improving insulation performance at wall intersections

Where framed walls intersect (external corners and internal wall intersections with outside walls), the small gaps that remain create thermal bridges and as such reduce the overall R-value of the wall. Installing insulation is recommended to remove the thermal bridges in the thermal envelope. This is typically done by pushing strips of extruded polystyrene, which have a degree of moisture resistance, into these gaps just before the wall underlay is installed.

Correct nails for enclosed (dry in service) framing

NZS 3604:2011 Table 4.3 permits the use of bright steel nails for framing that is enclosed (remains dry). Where that framing is H3.2 treated, the type of fixing depends on the treatment used – CCA, copper azole or copper quaternary:

- For CCA (preservative code numbers 01 or 02) treated timber – bright steel.
- For copper azole (preservative code numbers 58 or 88) treated timber – hot-dip galvanised (NZS 3604 clause 4.4.4).
- For copper quaternary (preservative code numbers 89 or 90) treated timber – hot-dip galvanised (NZS 3604 clause 4.4.4).

If you are unsure of the treatment type used for the H3.2 timber, use hot-dip galvanised nails.

Questions from the floor from the recent *You Asked – 24 Critical Questions Answered* seminar

Over the next few months, *Guideline* will publish answers to questions raised from the floor during the recent *You Asked* seminar series.

Do the span tables in NZS 3604:2011 allow for point loads on bearers or joists such as might occur where there is an isolated internal post?

No – all tables in NZS 3604:2011 are based on loads being evenly distributed across members such as beams, joists and bearers.

Can you still use a bent rebar to hold down a bottom plate?

Under NZS 3604:2011, a 10 mm diameter plain rebar embedded into a foundation wall can be used to fix down the sole or bottom plate to subfloor jack stud framing. NZS 3604:2011 does not allow bent embedded rebar to be used to hold down a bottom plate of wall framing to a floor slab.

How is the design of the structure of eaves widths over the dimensions given in NZS 3604:2011 to be dealt with?

Eaves overhangs that are greater than the limits given in NZS 3604 (750 mm) must be specifically designed to resist the uplift forces as a result of the overhang of the eaves.

In a cavity, won't the horizontal plastic tape required to restrain the flexible wall underlay be a trap for water that gets on the wall underlay?

The whole purpose of the cavity is to prevent water getting onto the wall underlay – if it does, there is a much bigger problem that needs to be addressed.

Can you extrapolate a loaded dimension?

No – take it up to the next value.

What are the tying down requirements for jack studs that are installed between the lintel and the top plate?

The answer is given on *Build* 143 on page 32.

Where 140 mm wide bottom plates are used with a concrete masonry foundation wall, can the fixing down requirements of NZS 3604 for in situ foundation walls be used rather than those for masonry foundation walls because the fixing is further in from the edge of the slab?

Yes, as long as the distance from the edge of the poured concrete (where it abuts the shell of the header block) is more than 50 mm.

Under E2/AS1, can flashing tapes be used as a back flashing?

No, as flexible flashing tape does not meet the requirements of E2/AS1 clause 4.3 Acceptable flashing materials.

From MBIE

On 1 July 2014, changes to Acceptable Solutions and Verification Methods for Protection from Fire and Backcountry Huts became effective.

Codewords 61 – July 2014 has articles clarifying:

- the use of scupper outlets with membrane roofing – particularly the use of scuppers that are formed on site
- compliance of aluminium door sills where installed into a slab rebate
- the permitted gap between the front downturn on a window head flashing and the head flange of the window.

New from BRANZ

The second edition of BRANZ Good Practice Guide: *Concrete Masonry* is now available. This edition updates the publication and brings it into line with the revised edition of NZS 4229:2013 *Concrete masonry buildings not requiring specific engineering design*, which is now cited in B1/AS1.

Also recently published and available for free download is Study Report 316 *New housing condition – a preliminary assessment*. One finding of the research so far is that prelining inspections indicate that approximately 75% of houses have Code non-compliance defects, mainly related to excess cut-outs in framing, lack of or misplaced holding down bolts and inadequately fixed windows. The average number of these defects was 1.4 per house.

BRANZ seminars advance notice – BEES

The BEES seminar (22–29 September in 5 main centres) will focus on findings and recommendations from the recently completed Building Energy End-use Study of commercial office and retail buildings. More details will appear on the BRANZ website soon.