APRIL 2013

Timber framing in contact with metal posts

Where galvanised steel posts are used outside and are framed in with CCA-treated timber (or timber treated with other copper-bearing preservatives, such as ACQ and CuAz) that is in contact with the posts, a damp-proof course (DPC) must be inserted between the post and the steel to prevent the timber preservative from reacting with the steel post.

ALF 3.2

The ALF (Annual Loss Factor) 3.2 tool is a free online aid to the thermal design of houses (see http://alf.branz.co.nz/). It is presented in a step-by-step format, providing a simple method of calculating the energy performance of conventional New Zealand houses.

A problem that has been identified is that sometimes the program stops and indicates it is calculating, but nothing appears to be happening. If this occurs, check that a zero has not been placed in a field that doesn't apply. If there is a zero in a field that doesn't apply, remove the zero and leave the field blank (i.e. don't make an entry into a field that doesn't apply).

Revised standard published for concrete masonry buildings - NZS 4229

NZS 4229:2013 *Concrete masonry buildings not requiring specific engineering design* sets a minimum standard for the design and construction of reinforced concrete masonry buildings. The standard has undergone a revision to ensure it is consistent with the loadings values and requirements given under the AS/NZS 1170 loadings standards.

The key changes to the standard are as follows:

- The earthquake zones have been aligned with NZS 3604:2011 *Timber-framed buildings*, introducing four zones instead of three.
- Earthquake actions may now be calculated specifically for a site's subsoil classification.
- The earthquake actions have increased in some areas as a result of the change in earthquake demand and the greater spread in demand over New Zealand as detailed in NZS 1170.5:2004 S*tructural design actions - Part 5: Earthquake actions - New Zealand*.
- An extra high wind zone has been introduced to align with NZS 3604.
- Durability provisions now align with current requirements by reference to the NZS 3604 requirements.
- Appendix B, cantilevered walls, has been detailed to comply with the revised earthquake demands.
- The retaining walls in Appendix A have been aligned with the latest designs in the New Zealand Concrete Masonry Association's New Zealand concrete masonry manual.
- Changes introduced to the NZBC compliance documents by MBIE in 2011, which modified its referencing of NZS 3604:2011 and NZS 4229:1999, have been incorporated. These changes include the definition of 'good ground' for the Canterbury earthquake region and new requirements for concrete slab floors and foundations.

- Previously, NZS 4229:1999 covered masonry veneer wall covering. This information is to be contained in Acceptable Solution E2/AS3 in NZBC compliance document E2 External moisture. In the meantime, guidance is provided in Appendix E of NZS 4229:2013.

The revised NZ 4229:2013 standard can be ordered from New Zealand Standards.

R-values for concrete blocks
R-values for solid filled concrete blocks can be calculated using the table on page 106 of the BRANZ House *Insulation Guide* (4th edition). Take the block size, and subtract the insulation material R-value in the top column from the construction R-value in the columns below. For example, without external insulation, a 250 block = R 0.3, a 200 block = R 0.3 and a 150 block= R 0.2. Note that this does not apply to blocks systems that incorporate insulation within the block.

Joist centres for tiled floors on suspended timber floors
Tiled floors are susceptible to movement, so joist spacing should not exceed 400 mm. To prevent deflection in the substrate between joists, BRANZ also recommends reducing the spans given in NZS 3604: 2011 *Timber-framed buildings* by 20%. Maximum deflection for tiled floors is 1/360 of the span. Where large tiles are used or the span is over 3 m, reduce the deflection to 1/480.

For more information on tiling, see *Good Practice Guide: Tiling*.

Bracing connections to top plates at external walls
Clauses 8.7.3.3 and 8.7.3.4 of NZS 3604 cover bracing connections to top plates, both inline and at right angles to external walls.

Inline joints require the following:
- For inline joints in top plates where the wall contains bracing elements up to 100 bracing units (BU) per metre, the top plate joint requires a minimum of a 3 kN fixing.
- For inline joints in top plates where the wall contains bracing elements that exceed 100 BU per metre, the top plate joint requires a minimum of a 6 kN fixing.
- Where the wall contains one or more bracing elements, use the value that is required for the top plate jointing that applies to the highest rating bracing element.

Walls that are at right angles to the external walls require jointing at top plates as follows:
Walls that contain bracing elements of not more than 125 BU require at least one fixing of 6 kN capacity to an external wall.
- Walls that contain bracing elements that exceed 125 BU and up to 250 BU require a minimum of 6 kN connections to two external walls.
- Walls that contain bracing elements over 250 BU require a minimum of two connections to external walls, each connection to be a minimum of 2.4 kN per 100 BU contained in the wall.
- The fixings required for walls at right angles, as above, can be direct attachment or through framing members in line with the wall, for example, a truss bottom cord or ceiling joist.

Cladding overhang requirements at cantilevers
Where a wall is positioned over a cantilevered joist, the cladding to that wall is required to extend below the lowest part of the timber floor framing by a minimum of 50 mm (see E2/AS1 Table 18 Note 2).

New BRANZ publications
BRANZ's new publication, *Engineering Basis of NZS 3604*, has just been released and is free to download. This publication is intended as a source document for those who need to know the basis for the engineering decisions underpinning NZS 3604 *Timber-framed buildings*. It is especially useful for those users of NZS 3604 whose projects, designs or systems fall outside its scope. Ambiguities and problem areas are also highlighted for attention by future standards drafting committees.

The latest title in the BRANZ Building Basics series, *Your Business*, is now available. This publication is a comprehensive guide on all facets of starting and running a successful building business, including business structure, planning and finances; legal framework; running a construction business; and working on a construction project.

The next title in the BRANZ Building Basics publication series, *Minimising Waste*, will be available in May.

BRANZ 2013 seminars: *Getting the Best Out of Your Building* - BRANZ science roadshow
Getting the Best Out of Your Building will use the expertise of BRANZ scientists and their latest research to aid the future performance of well designed and built homes and buildings. Knowledge gained through the scientists' research projects will be presented on:

- ventilation drying in weathertight structures
- air infiltration and ventilation
- thermal bridging in the building envelope
- the Healthy Housing Index
- current energy performance of homes
- availability and assessment of new technologies.

Seminar dates and locations:

Date	Location
Monday 27 May	Invercargill
Tuesday 28 May	Queenstown
Wednesday 29 May	Dunedin
Thursday 30 May	Timaru
Tuesday 4 June	Palmerston North
Wednesday 5 June	Wanganui
Thursday 6 June	New Plymouth
Monday 10 June	Christchurch

Tuesday 11 June	Greymouth
Wednesday 12 June	Nelson
Thursday 13 June	Blenheim
Monday 17 June	Whangarei
Tuesday 18 June	Auckland - Mount Wellington
Wednesday 19 June	Auckland - North Shore
Thursday 20 June	Hamilton
Wednesday 26 June	Masterton
Thursday 27 June	Upper Hutt
Friday 28 June	Wellington
Monday 1 July	Tauranga
Tuesday 2 July	Rotorua
Wednesday 3 July	Gisborne
Thursday 4 July	Napier

All seminars will be held from 1.00-4.00 pm. More details are available on the BRANZ website.