Guideline

December 2016

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.

In this issue: Holding down veranda roofs ● Veranda roof bracing ● Holding up timber decks ● Putting up barriers ● Supporting slabs ● NZS 4218 calculation method and permitted glass areas ● Bulletin 605 amendment ● It's that time again! ● Next year's seminars

Holding down veranda roofs

Preventing uplift

NZS 3604:2011 *Timber-framed buildings* is silent on the fixing required for the rafter/veranda beam connection. Because verandas are subject to uplift across the roof surface as well as wind pressures under the open structure, all rafter/beam connections require specific design.

Veranda roof bracing

Keeping it stable

Veranda roof bracing is not covered by NZS 3604:2011.

A veranda roof is unlikely to project more than 2 m from the building as this would block a considerable amount of light from the building interior.

Roof bracing is unlikely to have any effect if veranda roofs up to 2 m wide are securely fixed to or restrained by the structure of the building.

BRANZ structural engineers suggest a rule of thumb that, where a lightweight veranda roof:

- projects 2 m or less from the building, it does not need to have roof bracing
- projects over 2 m from the building, specific engineering design is required.

A heavy veranda roof should always have roof bracing, and specific engineering design is also required.

More veranda construction details are given in *Build* 155 Veranda design and construction.

Holding up timber decks

Support options available

When constructing timber decks to the requirements of NZS 3604:2011, the deck must be supported on H5 125 x 125 mm square piles set in a concrete footing. Supporting a timber-framed deck on 100 x 100 mm posts is outside the scope of NZS 3604:2011.

Where the deck using 100 x 100 mm posts requires a consent, the application must be submitted as an alternative method with sufficient information to show that it will comply with the New Zealand Building Code.

Putting up barriers
Stopping us from falling (after Xmas drinks)

The barrier details referred to in MBIE *Codewords* 54 are those given in *Guidance on Barrier Design* clause 4.2.7 Timber barrier design for residential and domestic buildings . The guidance document states that the barrier construction it describes is limited to residential or domestic building use. All barriers in commercial or other building types such as theatres must be specifically engineered.

Supporting slabs
Maximum compacted hardfill depths under NZS 3604:2011

Under NZS 3604:2011, the maximum depth of compacted hardfill under a slab on grade is 600 mm. Hardfill must be compacted in 150 mm maximum thickness layers. Where the hardfill depth is more than 600 mm, specific engineering design is required.

In one case recently, suitable bearing was found at a depth of 650 mm. However, the depth of hardfill required to ensure the finished floor level to finished ground level met minimum ground clearance requirements exceeded 600 mm. This took the design outside the scope of NZS 3604:2011. Options to allow the design to proceed may include:

- carrying out additional soil testing to determine actual bearing capacity of the soil
- specifically engineering the fill design (the limitation on fill depth in NZS 3604:2011 is based on the weight of the fill and the bearing capacity of the soil)
- making up the height with a specifically engineered lightweight concrete.

NZS 4218 calculation method and permitted glass areas
Version variances

When using the calculation method from NZS 4218 as a means of compliance for H1 *Energy efficiency*, check which version of the standard is being referenced. The maximum glass area depends on the version being used:

- NZS 4218:2004 *Energy efficiency – Small building envelope*, which is the version cited in H1/AS1, gives the maximum glass area as 50% of wall area.
- NZS 4218:2009 *Thermal insulation – Housing and small buildings*, which we recommend using to support an alternative method for H1 compliance, gives the maximum glass area as 40% of wall area.

Bulletin 605 amendment
Oops

The recently published BRANZ Bulletin 605 *Residential glazing safety* gave, in paragraph 1.0.5, an out-of-date transition period for the changeover in F2/AS1 from NZS 4223.3:1999 *Glazing in buildings – Part 3: Human impact safety requirements* to the 2016 version of the standard.

F2/AS1 Amendment 3, which cites the 2016 version of NZS 4223.3, will come into force on 1 January 2017, and the previous version of F2/AS1, which cites the 1999 version of 4223.3, will cease to have effect on 31 May 2017 (i.e. it can be used on 30 May but not on 31 May).

It's that time again!
Santa time

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.

As we embark on 2017, we need to consider how we can:

- avoid the quality issues that have been identified in many new construction projects and those uncovered during building remediation
- meet agreed design and construction timeframes
- embrace quality medium-density housing to meet growing demand in several urban centres
- address the issues around the serviceability of new and existing buildings after a significant earthquake event
- ensure the products we specify and/or install have a verifiable provenance
- learn from the effects of the Kaikoura earthquakes with respect to the resilience of non-structural components in buildings
- incorporate quake-safe detailing into the fit-out of modern housing and apartments – details are available on the EQC website
- incorporate, where practical, a 'Code plus' approach to design and construction
- maintain safe and healthy working environments
- ensure that, in a major event, your business can continue to operate and survive.

Next year's seminars
Registration available soon

The first two BRANZ seminars leaving the starting blocks in 2017 are:

- 27 February – 9 March *Ventilation – Internal and Roof Space* (8 centres)
- 13–22 March *BRANZ Answers – Bracing* (7 centres).

More details on the content and dates/venues will be notified early next year.