Guideline

April 2017

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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Citing of NZS 4218:2009 in H1/AS1

A clarification

As a result of the recent citing of NZS 4218:2009 *Thermal insulation – Housing and small buildings* in *Energy efficiency* Acceptable Solution H1/AS1, a number of BRANZ publications will now incorrectly reference NZS 4218:2004 as the cited standard. (Note that NZS 4218:2004 is still an option as a means of compliance up to 30 May 30 2017.)

The publications where this will occur include:

- BRANZ *House Insulation Guide* (5th edition)
- Building Basics *Insulation*
- Bulletin 602 *Thermal modelling tools for houses*
- Bulletin 598 *Insulating glass units*
- Bulletin 539 *Recessed downlights*
- Bulletin 522 *H1 compliance options*
- Bulletin 504 *NZS 4218 calculation method*
- Bulletin 501 *Insulating suspended timber floors*
- Bulletin 500 *Optimising energy-efficient design of houses*
- Bulletin 494 *Thermal insulation of new houses*.

Work is already under way to update and re-release Bulletin 504 *NZS 4218 calculation method*. The other publications will be progressively updated.

Residential pools

Prevention of access requirements

MBIE recently set out the requirements for notices pool manufacturers and retailers must supply with pools.

The notices inform consumers that pools must have barriers that restrict access by young children.

You can read more on the MBIE website: F9 Restricting access to residential pools

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Changes to fire safety requirements for external cladding

MBIE Codewords 77 advice

Recent high-profile fires in Melbourne and Dubai highlighted the risk of combustible external cladding material on high-rise buildings. Although these buildings were all fully sprinkler protected, fires that started on the outside of the building were responsible for rapid fire spread over several storeys.

Historically, New Zealand requirements have been developed on the theory that fires generally start inside buildings where sprinklers can control and prevent them spreading. However, based on the fires in Melbourne and Dubai, it is now recognised that fires can start on the outside of buildings and create significant damage. This has resulted in a review of the New Zealand requirements.

From 1 January 2017, a restriction applies on the use of combustible external cladding as published as part of Amendment 4 to *Protection from fire* Acceptable Solutions C/AS2–7. Previously, buildings up to 25 m high or those with sprinkler protection required no testing of external cladding material. The amendment removes this dispensation so all cladding for buildings over 7 m high requires a fire test. The test is a small-scale cone calorimeter test to ISO 5660 that provides the total and peak heat release rate of the material. The higher the heat release rate, the more combustible the material. More detail is given in MBIE Codewords 77.

What is happening elsewhere

10 trends to look out for

Construction Dive is a US website with the stated mission of providing busy professionals with a bird's-eye view of the construction industry in 60 seconds. It identifies the following top trends for 2017:

1. Collaborative project delivery methods will become more popular.
2. The (US) labour shortage will continue to plague the industry.
3. The feeling of uncertainty will linger under the new administration (and New Zealand has an election coming this year).
4. Offsite/modular construction will gain a stronger foothold in the market.
5. (US) Construction firms are cautiously optimistic for a future infrastructure spending boost.
6. The Internet of Things (IoT) holds the potential to revolutionise the job site. IoT encapsulates several aspects of the construction tech landscape, including equipment and employee tracking, wearables, drone surveying and other information collected on the job site.
7. Construction costs will rise due to materials and labour.
8. Virtual and augmented reality (VR/AR) tech will pick up steam.
9. The (US) sustainable construction movement will consider changing its message.
10. Construction firms will face increased scrutiny and prosecution of safety and fraud incidents.

ConstructConnect, another US website, lists its top five priority areas as improved growth, technology, modular construction, labour shortages and safety on site.

It is interesting the number of parallels with the New Zealand construction industry.

Safety on site

US vs NZ

In the US construction industry, the four leading causes of worker deaths from accidents, known as the Fatal Four, were falls, being struck by objects, electrocution and getting caught in/between objects. The Fatal Four were responsible for 64.2% of all construction worker deaths from accidents in 2015:

- Falls – 364 out of 937 total construction worker accidental deaths in 2015 (38.8%).
- Struck by object – 90 (9.6%).
- Electrocutions – 81 (8.6%).
- Caught in/between – 67 (7.2%).

In 2015 in the US, both the number of total worker deaths from accidents (937) and the fatal injury rate (10.1 per 100,000 full-time equivalent workers) increased.

Recent New Zealand accident statistics:
- The overall number of accident claims has been increasing slightly each year since 2012.
- Since 2002, the incidence rate has been consistently higher for self-employed workers than for employees. In 2015, the incidence rate was 147 claims per 1,000 FTEs for self-employed people compared with 106 claims for employees.
- Workers aged 15–24 years and workers aged 65 years and over had the highest claim rates across all age groups.
- In 2013, New Zealand construction workers had an injury incident rate of 172 claims per 1,000 FTEs (15% of all claims in 2015).

Bearer loaded dimension
Calculation correction

In the March *Guideline*, we gave the formula for working out the bearer loaded dimensions where it finishes on the line of an external wall. Unfortunately, the calculation given had been incorrectly summarised (from that in *Build* 137), and the error was missed in our checking.

The corrected formulas are:
- for a light roof – the joist span (in m) divided by 2 plus 1 m
- for a heavy roof – the joist span (in m) divided by 2 plus 1.8 m.

For longer joist spans, the difference in the previous formula and this calculation would be relatively small.

BRANZ seminars
BRANZ Answers 17 – advance notice

Following on from the successful BRANZ Answers 2016, this 2017 seminar will cover a wide range of new topics that have been developed from common questions asked of the BRANZ helpline. This is important technical information everyone needs to know.

As we said in 2016, the key to any question is getting the right answer.

This seminar aims to give you the answers to a wide range of practical questions. The topics covered will range from the new requirements for fencing of swimming pool to specific topics covered under these general headings:
- Concrete slab design and construction – free joints, shrinkage control joints, floor tile movement control joints, reinforcing steel cover, edge distances, slab moisture content, screw bolt installation.
- Flashings – proprietary flashings and large roof flashings.
- Access – level entries, stair design.
- Building exterior – timber finishes, timber profiles.
- Verandas and sunshades – uplift, fixings/connections, bracing.
- Corrosion – protection to structural steel, dissimilar metals.

- Compliance – notices to fix, certificates of acceptance, outbuilding exemptions, acoustic wall principles, NZS 4246:2016 *Energy efficiency – Installing bulk thermal insulation in residential buildings*.
- Innovation – prefabrication/panellisation, CLT, LVL.

This seminar is a must for BCAs, architects, designers and builders.

The seminar will be delivered by:
Greg Burn – NZCD(Arch), DipBus (Marketing) – Structure Ltd
Des Molloy – the 'Old Geezer' returns

The seminar will come to 21 centres during June and July. Specific dates will be announced when planning and venue booking have been completed.

BRANZ seminars – stop press

Subject to staff availability, BRANZ plans to bring a seminar covering the key elements of the recent *Bracing* and *Ventilation* seminars to regional centres later this year.