Guideline

January 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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A new year resolution

We need to get it right

The year has just got under way, and already newspapers are reporting again issues with building and material quality and unauthorised substitution of materials.

While an active industry can lead to shortages or delays in getting the right materials delivered, it is not an excuse for unauthorised changes or product/material substitution.

What it does mean is that we need to be better organised on site by:

- ordering materials earlier
- keeping to the construction programme.

As the next item states, unauthorised changes may result in a stop work or notice to rectify being issued and the offending materials removed and replaced. This will delay the project further with the burden of cost being squarely the responsibility of the trade that made the change.

Other consequences may include:

- unhappy clients
- not meeting specified completion dates
- the possibility of liquidated damages being imposed because completion was not achieved when specified
- being in breach of contract – in effect, a contract says that the building will be constructed as detailed using the materials specified.

We need to address quality

As reported in the *New Zealand Herald* 10 January 2017 (abridged)

As Auckland's construction boom gains momentum, traditional building materials are becoming harder to find, with the Council saying some builders are turning to alternative products.

Ian McCormick, General Manager of Auckland Council's Building Control team, said inspectors were seeing more substitutions than ever before, but he warned all products needed testing.

Auckland Council Manager of Inspections Jeff Fahrensohn said he was aware of a number of incidents where non-compliant products had been used and had to be removed. In one case, a homeowner was forced to replace a new roof after the company could not prove compliance to the council.

Another case resulted in electric wiring in four homes being removed after being deemed non-compliant, resulting in thousands of dollars of costs for the developer.

Melbourne's faulty building crisis
Quality not just a New Zealand problem

The following is a report from the *Melbourne Age* on 18 December last year:

> Shoddy materials and poor workmanship mean many homes and apartments in Victoria are likely to be outlived by their owners.
>
> Structural failures are already emerging in residential buildings that are just a few years old, while a widespread "leaky building syndrome" has caused mould infestations so severe that many houses have become uninhabitable.
>
> Builders Collective of Australia president Phil Dwyer said there would be an "endemic failure of the building industry" in the next 10 years as a consequence of developers chasing profits at the expensive of longevity.
>
> "There will be so many defects and problems in buildings that we won't be able to cope," he said.
>
> Veteran building regulation expert Stephen Kip said it was extremely likely lives would be lost in Victoria due to poor building standards. He said he was aware of at least half a dozen occupied buildings that he considered unsafe for people to live in, mainly because of major fire safety risks caused by insufficient fire separation and the use of combustible cladding.

Be careful about what we read
Not all information is correct information

One of the issues facing building and other industries is misinformation. It is unrealistic to expect our customers to be well informed when some of that misinformation comes from the industry itself. The following were taken from a New Zealand builder's blog.

> "In general, we should accept that the bulk of New Zealand's housing stock was built before 1978. The reason I choose this date it that it marks the year when insulation in walls become part of the Building Code."
> *Misinformation 1 – Insulation of walls became a requirement in 1978 but the Building Code was not enacted until 1992.*
>
> "It is important to note that Council now require a Building Consent for retrofitting insulation."
> *Misinformation 2 – The requirement is a statutory requirement and applies to the insulation of external walls only.*

"RBW is now defined as work on the design, construction, renovation and alteration of residential buildings."
Misinformation 3 – The MBIE definition of restricted building work is 'work that's critical to make a home structurally sound and weathertight', so much of the building work done is not restricted building work.

H1 Amendment 3
Change of cited standard

Amendment 3 to H1/AS1 and H1/VM1, which became effective 1 January 2017, now cites NZS 4218:2009 *Thermal insulation – Housing and small buildings* as a means of compliance for Clause H1 *Energy efficiency*. The previous versions of H1/AS1 and H1/VM1, which cite the 2004 version of NZS 4218 will cease to have effect on 31 May 2017 (i.e. it can be used on 30 May but not on 31 May).

Other changes are:
- removal of all tables from the Acceptable Solution and Verification Method
- concrete slab-on-ground floors are deemed to achieve a construction R-value of R1.3 unless a higher value is justified by calculation or testing
- modification of the calculation method in NZS 4219:2009 to allow a glazing area of up to 50%.

BRANZ corrosion research
Reported overseas

Findings from the BRANZ fixing and fastening corrosion research has been reported recently on the website of the American Society of Home Inspectors and in the *Professional Deck Builder* magazine.

Noise and acoustic privacy
Keeping it quiet

Building Code clause G6 *Airborne and impact sound* gives the specific requirements for inter-tenancy walls and floors to limit the transmission of unwanted noise.

The Resource Management Act (section 16) and district plans set limits for environmental noise generated within or outside a property. Common law applies where the noise generation is considered a private nuisance.

Demonstrating compliance in the first instance and then checking on site that the Building Code performance requirements will be and have been met is not easy.

Guidance for BCAs regarding Code compliance under clause G6 and environmental noise is given on the website http://regulatorynoise.nz/.

Glazing safely
Bathroom glazing height exemption removed

F2/AS1 Amendment 3, which cites the 2016 version of NZS 4223.3 *Glazing in buildings – Part 3: Human impact safety requirements*, came into force on 1 January 2017. The previous version of F2/AS1, which cites the 1999 version of NZS 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).

There is a 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.

The F2/AS1 exemption to NZS 4223.3 allowing ordinary glass in windows with a minimum sill height of 1,500 mm from the floor has been removed from the Acceptable Solution.

The 2016 version of the standard requires all glass in bathrooms within 2,000 mm of the floor to be Grade A safety glazing, including glass shelves and fittings. All mirrors must be safety glass unless they are fitted into a cabinet or fully adhered to the wall surface. (Framed mirrors that hang on a hook or stand on a cabinet are excluded from the standard.)

Notice to fix
What does it mean?

A notice to fix is a statutory notice requiring a person to remedy a breach of the Building Act 2004 or regulations under that Act. A notice to fix can be issued for all breaches of the Act, not just for building work.

From MBIE web-based information Acting on a council notice to fix, there are three situations in which a notice to fix can be issued for building work that has not been or is not being carried out in accordance with the Act or the building consent. The notice to fix only applies:

- to building work required during the period in which a building consent is operative
- in respect of building work for which a building consent should have been obtained
- in respect of building work for which a building consent was not required but where there was a requirement that the work meet the Building Code.

Additional information is given on page 20 of the BOINZ September 2016 *Straight Up* magazine.

BRANZ seminars
Ventilation

Ventilation can be the difference between a building that is dry and healthy and one that is not. For what appears to be a seemingly simple process, there are a number of intricacies that lead to many buildings being constructed with inadequate ventilation. This not only degrades the thermal performance of the building but also adversely affects the health of the occupants.

In this seminar, we will provide our best guidance on roof and living space ventilation based on BRANZ research. In each case, we'll talk about the possible moisture issues faced through inadequate ventilation and the science behind the solutions for addressing them.

The topics covered include:

- Living space ventilation
  - Building Code clause G4 in action
  - Ventilation options
  - Pros and cons
  - Drying out damp houses
  - Effective duct and fan selection
- Roof space ventilation
  - When is roof space ventilation required?
  - Examples of roof space ventilation calculations
  - Risk factors leading to condensation
  - Good ventilation practice.

The seminar will be presented by two of the following BRANZ presenters in any one location:

Greg Overton – Building Performance Engineer
Stephen McNeil – Building Physicist
Manfred Plagmann – Senior Physicist
Stephan Rupp – Building Physicist

Dates and venues

Date	Location	Venue
Mon 27 Feb	Dunedin	Dunedin Centre
Tue 28 Feb	Queenstown	Crowne Plaza Queenstown
Wed 1 Mar	Christchurch	Addington Events Centre
Thu 2 Mar	Auckland – North Shore	QBE Stadium
Mon 6 Mar	Hamilton	FMG Stadium
Tue 7 Mar	Tauranga	Trinity Wharf
Wed 8 Mar	Auckland – Central	Crowne Plaza Auckland
Fri 10 Mar	Wellington	Amora Hotel

All seminars run from 1.00–4.00pm.

Online registration is available now.

BRANZ Answers: Bracing

Timber-framed buildings are required to be braced to resist horizontal loads from wind and earthquake.

This seminar takes a back-to-basics approach to bracing, taking you through the steps that need to be addressed using examples to calculate the bracing required for framed walls.

We will start by looking in more detail at why we need bracing and what information is needed to begin the process of calculating wall bracing.

Topics will include:
- how bracing capacity is determined
- the specific loads bracing will be subjected to and how those loads act on a building
- the steps to work out bracing demand such as the effect of location, building height, wind and earthquake zones and cladding weight
- the role of proprietary systems.

Once we have set the scene, the aim is to outline the steps you need to take to meet that demand by explaining the principles of:
- bracing lines
- distribution of bracing
- meeting bracing demand
- connections of bracing to the floor
- diaphragms
- effect of wall height.

These principles will then be applied to a couple of simple design examples.

Presenters will be:
Roger Shelton – BRANZ Senior Structural Engineer
Trevor Pringle – ANZIA – BRANZ Principal Writer

Dates and venues

Date	Location	Venue
Mon 13 Mar	Dunedin	Dunedin Centre
Tue 14 Mar	Christchurch	Addington Events Centre
Wed 15 Mar	Auckland – Central	Heritage Auckland
Thu 16 Mar	Wellington	InterContinental Wellington
Mon 20 Mar	Hamilton	Claudelands
Tue 21 Mar	Tauranga	Trinity Wharf
Wed 22 Mar	Auckland – North Shore	QBE Stadium

All seminars run from 1.00–4.00pm.

Online registration will be available mid-February.