



# Guideline

## September 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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### **Closed, sheltered or exposed**

*Location, location, location*

NZS 3604:2011 *Timber-framed buildings* Figures 4.3(a) and 4.3(b) use the terms 'closed', 'sheltered' and 'exposed' to describe the location of metal components on a building. Their location can have a significant bearing on their exposure to moisture and airborne corrosive substances and the potential for degradation.

These are the definitions:

- Closed – metal components within the weatherskin of the building and protected from any moisture or airborne contaminants. Examples are framing fixings and truss nail plates within a roof space.
- Sheltered – those elements above a 45° line extending down from the front edge of an overhanging part of the structure such as an eaves or projecting floor or those fixings immediately below a suspended floor or waterproof deck. Sheltered components are exposed to airborne salts but not subject to regular rainwashing. For a building with 600 mm eaves, the sheltered zone extends 600 mm down from the level of the eaves.
- Exposed – those elements below the 45° line or, for suspended floors, fixings adjacent to the ground and all fixings under a timber slat deck. They are exposed to airborne salts and rainwashing.

Note that there are some inconsistencies between Figures 4.3(a) and 4.3(b). For example, Figure 4.3(a) uses weathertight structure to define sheltered, while Figure 4.3(b) simply refers to sheet decking, which is not necessarily waterproof.

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### **Lateral support to studs**

*Dwang or else*

NZS 3604:2011 (clause 8.5.4) requires wall studs to be laterally supported to keep them straight and restrict the potential for bowing or twisting. Traditionally, this was done with rows of nogs or dwangs, but there are other options. NZS 3604:2011 says lateral support can also be provided by:

- metal angle walings (a horizontal timber or beam fixed across the face of vertical members)
- horizontal (board/plank) and sheet exterior wall claddings covered by E2/AS1
- mechanically fixed interior linings.

For claddings and linings, clause 8.5.4 also says that the lining or cladding must be directly fixed to the studs. Building paper or other separation, as long as it is less than 3 mm thick, can be used.

The questions that arise from this are whether lateral support can be provided by the following types of construction:

- A rigid wall underlay of plywood or fibre-cement in accordance with E2/AS1? Our interpretation is yes, as it is directly fixed to the framing.
- A proprietary plywood or fibre-cement rigid air barrier? Again, yes.
- An E2/AS1 horizontal or sheet cladding fixed to a timber cavity batten? Generally yes, as the cladding fixings have to penetrate the stud. Exclusions to this would be an EIFS cladding as the polystyrene backing would provide little if any lateral support to the fixings and therefore the framing. Claddings that utilise a slotted fixing, such as uPVC, do not provide lateral support.

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## **Future allowances**

### **Be prepared**

Many design features can be incorporated into buildings we are designing and building now that will make them easier to live in or update for new technology in the future.

How we connect with the outside world changes rapidly, and we need design and construction options that will make keeping up in the future easier.

For example, fibre is being rolled out throughout the country. Even if you are designing/building where fibre is not yet available, consider installing a conduit, duct or similar to allow it to be easily installed when it arrives.

Other areas where future proofing should be considered are:

- installation and cable entry for photovoltaic panels
- electric vehicle or mobility scooter charging
- wider doors, which make movement around the building easier as the occupants age
- home automation and control
- level-entry showers
- exceeding the minimum for insulation
- triple glazing
- home sprinklers
- linked smoke alarms.

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## **Notional boundaries**

### **Not real but important**

The principle of notional boundaries (paragraph 5.1.2 of C/AS1) is applied to protect buildings where occupants are likely to be sleeping. The notional boundary rule will apply where two or more buildings have a sleeping type use and are on the same property under a single title. An example is a dwelling with an adjacent sleepout in close proximity.

Paragraph 5.1.1 requires all walls within 1 m of the notional boundary and within 90° of the boundary to have a minimum 30/30/30 fire rating. For buildings on the same property, a notional boundary needs to be 1 m from both buildings to avoid the provision of a fire-rated wall. If the buildings were 2 m or more apart, they do not require a fire rating. Where the gap is less than 2 m but more than 1 m, only the wall of one building will need to be fire rated.

More detail is contained in [Build 158 page 34](#).

## **BRANZ Find – keeping track of what’s new**

### **The updater**

It can be a challenge to keep up with changes to Building Code clauses, new and amended standards and the release of new publications and resources.

[BRANZ Find](#) has launched a ‘What’s new’ page that is regularly updated by staff monitoring changes in the industry. You can stay on top of what’s new in your own time and link straight to new publications and resources.

This creates a useful companion to the simple ‘search and find’ features already available with BRANZ Find.

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## **Industry news**

### **New Zealand Commercial Project Awards**

Entries are open for the New Zealand Commercial Project Awards and close on 24 October. For more information, visit [www.commercialprojectawards.co.nz](http://www.commercialprojectawards.co.nz).

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## **BRANZ seminars 2017**

### **BRANZ to the Regions**

BRANZ presented a ventilation (space and roof) and NZS 3604:2011 bracing seminar to a limited number of main centres early in 2017. Subsequently, there were a number of requests to bring the key components of each seminar to the regions. While this seminar abridges both those seminars, the key elements of content have been retained.

### ***Ventilation component***

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 seminar will cover 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 solutions to address them.

The topics covered include:

- why ventilation is needed
- living space ventilation
  - clause G4 and ventilation options
  - drying out damp houses
  - effective duct and fan selection
- roof space ventilation
  - when roof space ventilation is required
  - simple roof space ventilation calculation
  - roof ventilation details.

### ***Bracing component***

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:

- why we need bracing
- making bracing easier
- the steps to work out bracing demand for wind and earthquake
- bracing capacity and how it is determined
- bracing lines and distribution of bracing.

These principles will then be applied to three simple design examples.

### **Presenters**

Bracing: Roger Shelton – BRANZ Senior Structural Engineer and NZS 3604:2011 expert

Ventilation: Trevor Pringle – ANZIA – BRANZ Principal Writer

### **Dates and locations**

Mon 18 Sep	Whangarei	Forum North
Tue 19 Sep	Kerikeri	Turner Centre
Wed 20 Sep	Palmerston North	Distinction Palmerston North
Wed 27 Sep	Blenheim	Marlborough Convention Centre
Thu 28 Sep	Nelson* (12.00–3.00pm)	Rutherford Hotel Nelson
Mon 2 Oct	Napier	Napier Conference Centre
Tue 3 Oct	Rotorua	Millennium Rotorua
Wed 4 Oct	New Plymouth	The Devon Hotel
Mon 9 Oct	Invercargill	Ascot Park Hotel
Tue 10 Oct	Queenstown (BRANZ Answers Bracing – no ventilation component))	Heritage Queenstown
Wed 11 Oct	Timaru	Landing Services Conference Centre

\* All seminars run from 1.00–4.00pm except for Nelson. This seminar will run from 12.00–3.00pm, and a light lunch will be available from 11.30 am.

[Online registration](#) is available now.



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