BRANZ

November 2021

GUIDELINE

Welcome to the BRANZ monthly technical update

New COVID-19 framework

New traffic lights system kicks off on 3 December

The whole country will move to the new COVID-19 Protection Framework (traffic lights) on 3 December 2021. CHASNZ are releasing a Preview of the COVID-19 Protection Framework for the construction sector on Friday 26th November and you can also register for a live webinar to be held on Monday 29th November. Find out more on the CHASNZ website. If you have

a workmate who is finding it tough to cope with everything that is happening, help is available through the MATES in Construction website or phone 0800 111 315.

H1 *Energy efficiency* amendments

More information and support coming

Details of the 2021 Building Code update are due to be released on 29 November, shortly after the release of this issue of *Guideline*. It is no secret that the update will include a significant upgrade to clause H1 *Energy efficiency*, although with a transition period. BRANZ is preparing supporting material for industry around the changes. This will appear in *Build* magazine articles, bulletins and other formats in coming months.

Code of ethics introduced for LBPs

Enforceable from 26 October 2022

On 26 October, the government introduced a code of ethics for licensed building practitioners (LBPs). The code requires practitioners to work safely, act within the law, take responsibility for their actions and behave professionally.

The code will become enforceable on 26 October 2022. Complaints about someone breaching the code can only be made to the Building Practitioners Board if the breach took place on or after 26 October 2022. Breaching the code may result in disciplinary action.

In this issue:

This is the last Guideline for 2021. We expect that, in late December, you will most likely be taking a well-earned break after a difficult year.

From everyone at BRANZ, we wish you a relaxing, happy and safe time off.

Guideline will return in January 2022.

Cavity battens

Getting the installation right is crucial to weathertightness and durability

We've heard from building surveyors and others recently that they have seen poor installation of cavity battens behind drained and vented wall cavities. If battens aren't installed properly, they can restrict gravity drainage and air circulation, trapping moisture behind the cladding. This can lead to corrosion, mould or rot. Problems reported include:

- far too many battens on a wall, both vertical and horizontal
- a solid batten running continuously along the top (recommended in the past but not today)
- battens placed over studs to the sides of windows, so three studs (double full height plus trimmer stud) result in three battens very close together
- two or three horizontal castellated battens installed at floor joist lines or onto window lintels
- castellated battens placed together, obstructing or blocking the castellations (holes).

The construction of drained cavities is set out in section 9.1.8 of Acceptable Solution E2/AS1. This states that cavities are formed using vertical cavity battens. Where a horizontal batten is needed to fix the top or bottom edge of sheet cladding, install a cavity spacer (a short length of batten) on a minimum 5° slope (Figure 1). There must be a minimum 50 mm gap between each end of the spacer and the vertical battens to allow drainage and ventilation. It is common sense to install no more battens than are required to support the cladding.

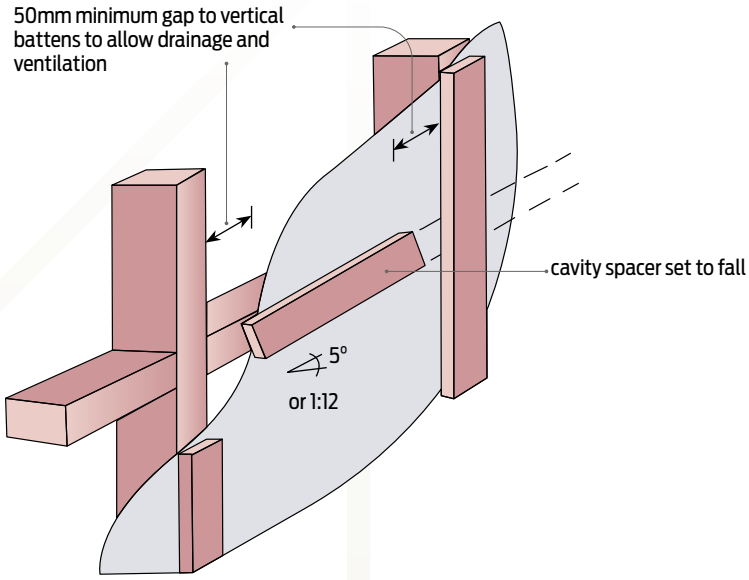


Figure 1. Cavity battens and cavity spacer following E2/AS1 requirements.

Requirements for cavity battens including spacing and fixing are also typically included in the installation instructions provided by wall cladding manufacturers.

Horizontal battens, used with vertical weatherboards, are typically castellated timber or proprietary plastic battens. Horizontal battens are not included in E2/AS1 so these are an Alternative Solution. Care is required:

- Ensure proprietary battens have had suitable independent review.
- Some proprietary battens allow horizontal airflow while others are specifically designed for horizontal use.
- The specific manufacturer's design and installation instructions must be followed.
- Avoid rectangular (non-bevelled top edge) timber castellated battens as these inhibit drainage.
- Horizontal battens are non-structural, so cladding fixings must be sufficiently embedded in the wall framing.

The design, installation and alteration of claddings (including the construction of cavities with battens) is restricted building work and must be carried out or supervised by a licensed building practitioner.

Moving communities back from the coast as sea levels rise

Managed retreat could be the hardest part of climate change

A 2021 report from the Intergovernmental Panel on Climate Change forecast that, under the best scenario (where greenhouse gas emissions fall relatively quickly), the global mean sea level will still rise by 0.3–0.5 m over the next 90 years. Under the worst scenario, where emissions continue with little change, a rise of up to 1 m in 90 years is forecast, with a 2 m rise not ruled out.

Local authorities around New Zealand are mapping areas at risk of sea-level rise. Some existing buildings – and even entire communities – will need to be moved. Where the risks of sea-level rise are known by a council, they must be recorded on the land information memorandums (LIMs) for affected properties. Many at-risk houses will become uninsurable. Hundreds of thousands of properties will be affected.

Managed retreat – the progressive withdrawal from areas at risk of climate hazards – could well turn out to be the most difficult part of climate change to deal with. Around the country, local authorities are already in conflict with residents of at-risk properties. Some residents want their councils to build massive sea walls to hold the water back. Others are arguing about the hazard zones freshly marked on council maps that make their homes unsaleable.

One of the new laws set to replace the Resource Management Act 1991 is the Climate Adaptation Act, which will address the legal and technical issues of managed retreat and possibly its funding. This is tentatively marked for introduction in 2023. The first national climate change risk assessment to help the government identify where it needs to prioritise action was published in April this year. A national adaptation plan outlining what we need to do is due to be published by August 2022.

B1/AS1, liquefaction and good ground

New rules come into play – are you ready?

Amendment 10 to Acceptable Solution B1/AS1 in 2011 stated that the Acceptable Solution could no longer be used for foundations on ground prone to liquefaction or lateral spreading in the Canterbury region. From 29 November, Amendment 19 extends the effect of Amendment 10 to cover the whole country.

Buildings on this type of ground will require more-robust foundations than before and will have to use a Verification Method or Alternative Solution for building consent. The definition of 'good ground' in Building Code clause B1 *Structure* has been amended.

Liquefaction happens when loose saturated soils lose strength and stiffness, typically as the result of earthquake shaking. This was a major feature of the 2010/11 Canterbury earthquakes when liquefaction caused considerable damage to buildings. The new rules aim to ensure buildings on these soils have greater resilience.

While the change was already applied in Canterbury, it was expanded to the whole country as part of the 2019 Building Code update but with a 2-year delay in its implementation. The time gap allowed councils to finish their mapping of liquefaction-prone land.

You can find more details on the Building Performance website here and in a 2017 government publication Planning and engineering guidance for potentially liquefaction-prone land.

Delays in processing building consent applications

You can speed things up with the right response to RFIs

Building consent authorities (BCAs) around the country are struggling under huge piles of building consent applications. Some, like Tauranga City Council, are seeing periods when they receive twice the number of applications they would normally expect.

While BCAs are taking steps to speed things up, there are things that applicants can do as well. A biggie is how you respond to requests for information (RFIs) from the BCA. In particular:

- make sure all the items asked for are addressed, with nothing forgotten
- explain as clearly as possible what the answers are
- ensure you include all required new supporting documents
- if the answers lie in specific documents, identify those documents very clearly in your covering letter
- respond without delay - your application is on hold until you get your responses back to the BCA.

Utility-scale solar power

The slow development of utility solar generation in New Zealand

Growth in residential solar photovoltaic (PV) generation systems has rocketed in recent years - numbers have almost trebled in just 5 years to over 32,000 homes. But while households have rapidly picked up PV, bigger players continue to burn coal and gas to produce electricity. What's happening?

New Zealand has enormous potential for utility-scale PV generation. A report commissioned by the government in 2020 found that the maximum potential under our current grid capacity/configuration is around 7 GW - bigger than the 5.2 GW represented by all our current hydro dams together. Major development could be possible in just 5-10 years.

Countries such as Sweden and the UK - not famed for their endless hours of sunshine -generate significantly more PV electricity than New Zealand.

So why aren't our big players making power while the sun shines? The report's author, Dr Allan Miller, offers some explanations:

- The capacity factor of solar is probably only around one-third to one-quarter of the energy produced by hydro, so it will not produce anywhere as much energy or GWh.
- Building huge solar generators (as much as 7 GW) would be likely to depress the wholesale price of electricity. Large-scale solar to the extent of 7 GW is therefore unlikely unless there is an increase in electricity demand (possible with a shift to electric heating and electric vehicles).
- New Zealand hasn't had to offer the huge subsidies for renewable generation that some other countries have because we already have large hydro and geothermal resources and wind generation has grown rapidly over the last 15 years with the potential for much more.

The biggest potential might be for rooftop commercial solar, with higher self-consumption of solar energy and lower per-unit capital cost compared to residential solar.

Changing recession planes

Changes proposed in the new MDH law

The introduction of a new law last month to speed up the development of medium-density housing in larger cities received a lot of attention. The law would allow landowners to build up to three homes of up to 3 storeys on most sites up to 50% maximum total coverage of the site without the need for resource consent.

This new law, the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill, will apply in Auckland, Hamilton, Tauranga, Wellington and Christchurch along with some adjacent local authorities.

One change in the Bill received less attention - changing recession planes (Figure 2). District plans limit the maximum height of new buildings relative to the distance from the boundary by using recession planes. Not allowing new buildings to breach a recession plane (without the agreement of affected parties - usually adjacent neighbours) reduces the risk of new buildings blocking out their neighbours' sunlight.

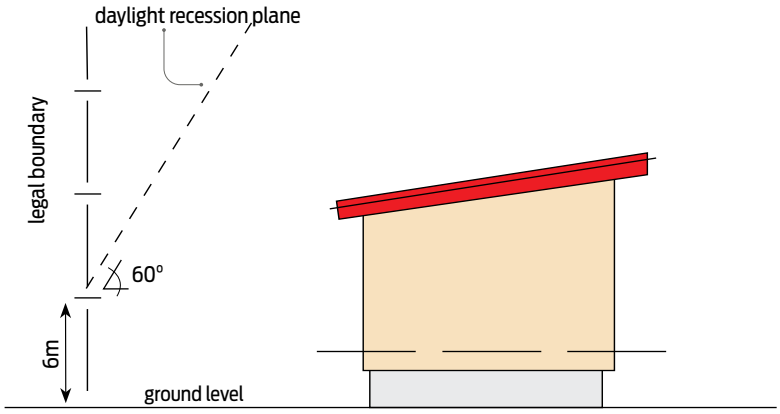


Figure 2. A daylight recession plane marked from a property boundary.

Schedule 3(A) of the proposed law states that buildings must not project beyond a 60° recession plane measured from a point 6 metres vertically above ground level (with some exemptions). This is considerably different from the requirements in many existing district plans where, at the moment, the line starts typically around 2.5 m or less above ground level and the angle can be much lower - 35° or even less in some cases. The impact of the change is that taller buildings will be allowed closer to boundaries than the existing rules allow.

Kick-outs and bird's beaks

The right edge treatment is crucial for flashings

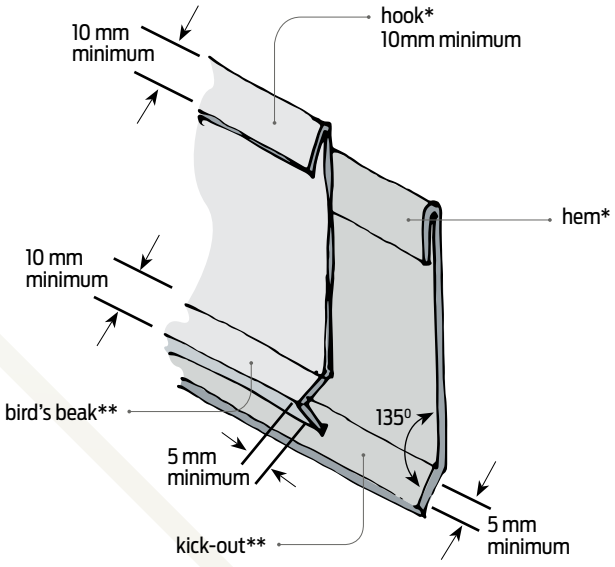
Flashings are a key component of weathertight design, but it's not unusual to see new buildings where flashing edges don't have the correct treatment. This is crucial to stiffen the flashing and form an effective drip edge.

As you might expect, there is guidance in Acceptable Solution E2/AS1 (section 4.5.1).

This requires the exposed bottom edges of flashings to be folded to a kick-out or a bird's beak (Figure 3).

For wind zones up to and including the very high zone, flashing upstands must have either a hem or hook or an additional 25 mm in upstand height. In extra high wind zones, you need to have both a hem or hook plus an extra 25 mm of upstand height.

You can also find details about edge treatment of flashings in the *New Zealand Metal Roof and Wall Cladding Code of Practice*.



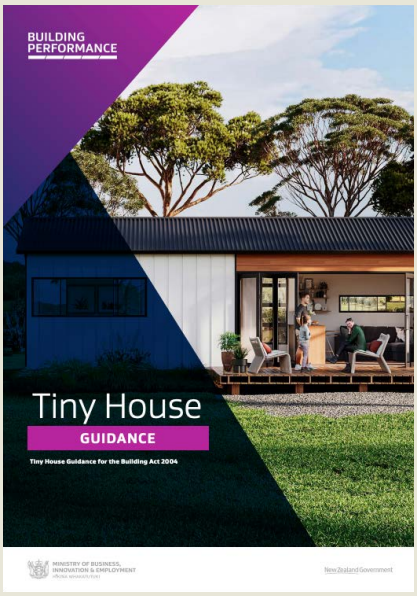
*stiffen top edge and prevent moisture tracking behind the flashing
**stiffen bottom edge and provide a positive drip edge

Figure 3. Four different edge treatments of flashings.

News

MBIE releases tiny house guidance

A new guidance document looks at the definitions of a tiny house, how to determine if a tiny house is a building or a vehicle or both and what relevant laws apply.



Suicide risk among construction workers

University of Otago research has found that New Zealand construction workers are more than twice as likely to die by suicide than the rest of the workforce. At highest risk are men aged 20–24 and then men aged 45–49. Māori men are significantly overrepresented.

PrefabNZ becomes OffsiteNZ

PrefabNZ has changed its name to OffsiteNZ to reflect the increasing growth, innovation and diversity in the off-site construction sector.

Multi-unit home numbers growing fast

Stats NZ figures show that multi-unit homes (including townhouses, apartments and flats) made up 46% of consented homes in the 12 months ended September 2021 compared with 29% just 5 years earlier.

Premium changes and new tool around flood risk

Tower has a model to better assess flood risk of homes across New Zealand. The company estimates 90% of customers will see a premium reduction while 10% will see an increase based on the risk.

Submissions closed on Housing Supply Bill

Submissions have closed on the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill. A report is due on 2 December 2021.

New Zealand project shines in Glasgow

One of just 17 sustainable projects in the virtual reality (VR) online pavilion that was part of the COP26 climate change event in Glasgow was from New Zealand. The Auckland social housing development was designed by Context Architects for Kāinga Ora, with support from BRANZ and others.

Pacific buildings at risk

A report produced by The World Bank and the Marshall Islands Government found that, on some of the atolls, more than half the building stock may be inundated by sea-level rise. The islands are home to 60,000 people.

Looking ahead

- 29 November 2021 – MBIE due to publish details on the 2021 Building Code update, including significant changes around clause H1 *Energy efficiency*.
- 2 December 2021 – report due from the parliamentary committee considering the Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill.
- 31 December 2021 – the last day an application can be received for a claim under the Weathertight Homes Resolution Services Act 2006.
- 1 July 2022 – in high-risk areas such as Wellington, earthquake-prone buildings (other than priority buildings) must be assessed.
- 1 July 2022 – in medium-risk areas such as Hamilton or Nelson, earthquake-prone buildings in the priority category must be assessed.