BRANZ

August 2021

# GUIDELINE

Welcome to the BRANZ monthly technical update

## COVID-19 alert levels and construction

### Where to find reliable up-to-date details

While higher alert levels are in place for COVID-19, specific health and safety requirements apply to construction work and construction sites. You can find details on the CHASNZ website.

There are new health and safety protocols for vertical, horizontal and residential construction under Alert Level 4. These cover:

- links to government defined essential construction work
- encouraging business promotion of vaccines for workers
- face covering requirements for essential work

There have also been adjustments to the Alert Level 3 requirements around promotion of vaccinations.

Building, construction and maintenance services may be able to operate during COVID-19 Alert Level 4 restrictions if they meet the Government criteria for Alert Level 4 businesses and services.

Visit MBIE's Building Performance website to see criteria for Alert Level 4 construction businesses and services.

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.

### In this issue:



## Lead poisoning is still a problem

### And the rules around notification have changed

You might think that, since lead was taken out of house paint and petrol several decades ago, the threat of lead poisoning has gone - but it hasn't. Recent research shows that lead is still found in some new building materials. It can be more harmful than previously thought, and the number of people affected has been rising.

Lead is a poison that can cause serious illness. It builds up in the body, and there is no known minimum safe level of exposure.

There are three main sources of lead from houses:

- Old paint being removed. Lead absorption is a notifiable disease, and males aged 45-64 account for the highest number of notifications, with 40% of work-related notifications in 2019 involving painters.
- Water harvested from older roofs. One New Zealand study found that people who relied on roof water from older roofs had 30% higher levels of lead in their blood than people who relied on mains supply. This may be the result of lead in storage tanks, flashings, roof nails and paint.
- Household plumbing. While typically relating to old pipes and fixtures, it can also apply to new items. Master Plumbers recently tested five taps bought online and found three had lead levels above the allowable limit.

On 9 April this year, the level at which a person's lead absorption results must be notified to a medical officer of health was halved (to 0.24 micromole/litre). This was done after evidence


showed the level of lead in the blood that can cause irreversible damage was lower than previously thought. Even before this change, notification numbers of people with lead poisoning had been climbing. The numbers for 2019 were double those of 2017.

# Better bevel-back weatherboards

## Installation quality is key

BRANZ surveys indicate that weatherboards are the most commonly installed wall claddings on New Zealand houses today. Timber bevel-back weatherboards have a share of that. Occasionally, we see installations not as good as they could be. Some key things to remember:

- Don't seal the board laps - this restricts drainage and drying. Some manufacturers (and BRANZ Appraisals) require a 2 mm expansion gap at the overlap.
- At external corners, make very clean sealed cuts to ensure tight mitred joints, with either a 50 x 50 mm corner flashing behind or corrosion-resistant soakers. Another option is a corner box with scribers (Figure 1). Soakers and/or precut scribers are usually available from weatherboard suppliers.
- Seal the timber at all cut ends, notches and holes.
- While there is installation guidance in E2/AS1, also follow the manufacturer's instructions and any guidance or requirements in BRANZ Appraisals for appraised products.

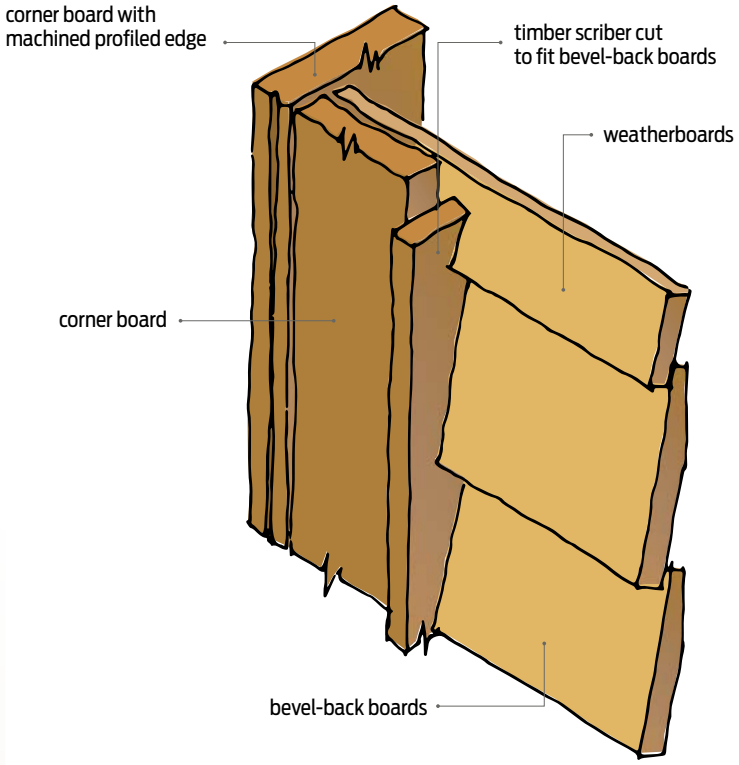



Figure 1. Corner boards with scribers on bevel-back cladding.

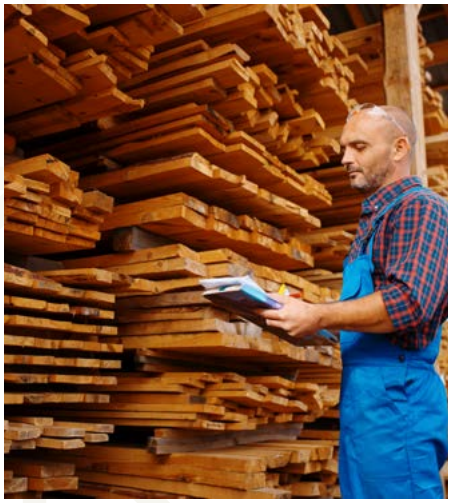
# Sawmill closures and new factory openings

## The focus is moving to engineered wood and panel products

Timber shortages have taken the headlines for months, and the New Zealand Timber Industry Federation has said that sawmills' ability to ramp up production quickly has been constrained by a lack of availability and rising costs of logs and labour. Five bigger sawmills representing around 400,000 cubic metres of annual production have closed down in the last few years, along with smaller mills. The 624 enterprises in the overall log sawmilling and timber dressing industry in 2004 had shrunk to just 360 by 2020.

A number of new factories have opened, however, some just in the last 12 months, with a particular focus on engineered wood and panel products.

- In Rotorua, Red Stag opened a CLT (cross-laminated timber) plant in a 1.1 ha building - the largest timber building footprint in New Zealand. It has the potential to produce panels up to 16.5 m × 4.5 m.
- In Cromwell, Hector Egger NZ (working with a Swiss company) opened a 3,500 m² plant producing prefabricated timber panels and high-tech structures for residential and commercial buildings.



- In Gisborne, Wood Engineering Technology opened its first line in a plant producing proprietary engineered wood products. Once fully developed, the Gisborne plant will have six production lines producing up to 140,000 cubic metres each year.
- In Nelson, Prolam opened its own sawmill as a step towards being more self-sufficient in its production of structural timber including glulam and LVL. The company also installed a new optimising cross-cut saw, increasing production capacity.
- In New Plymouth, Woodspan's CNC (computer numerical control) machine can process laminated timber cross-sections 300 mm high, 1250 mm wide and up to 10 metres long. It can process a PLT (parallel laminated timber) floor panel from start to finish in around 6 minutes with great precision.
- In Matamata, Concision (a manufacturer of panellised and modular components using technology from the German firm Weinmann) opened a new factory. It will be supplied with materials from the firm's 5-year-old Rolleston factory.

While Carter Holt Harvey (CHH) received stick earlier in the year for stopping supply of structural timber to two retail chains, in fact the company has been making big investments in capacity expansion in the last 3 years - industry sources suggest a figure around $100 million. It has been reported CHH is supplying 40% more structural timber now than in 2019.

# Expansion joints in metal flashings

## Key pointers to maintain weathertightness

Where flashings are joined, fixed down at each end and are long (dark-coloured steel, copper and aluminium over 8 m or light-coloured steel and stainless steel over 12 m), the joints must be expansion joints. Expansion joints allow for thermal movement. There must be a 200 mm lap, with fixings on both sides of the lap able to slide (Figure 2).

Fastenings must be compatible with the flashing material (see Tables 21 and 22 in Acceptable Solution E2/AS1 for more details). Exposed flashings such as barge and ridge flashings must be fixed along both edges. Laps in ridge or parapet flashings should face away from the prevailing wind direction.

You can find more details in E2/AS1 (4.5.2 Metal flashing joints) and the NZ Metal Roof and Wall Cladding Code of Practice. When using uncoated galvanised steel, zinc, stainless steel or copper flashings, E2/AS1 requires joints to be riveted or soldered as described in the Code of Practice.

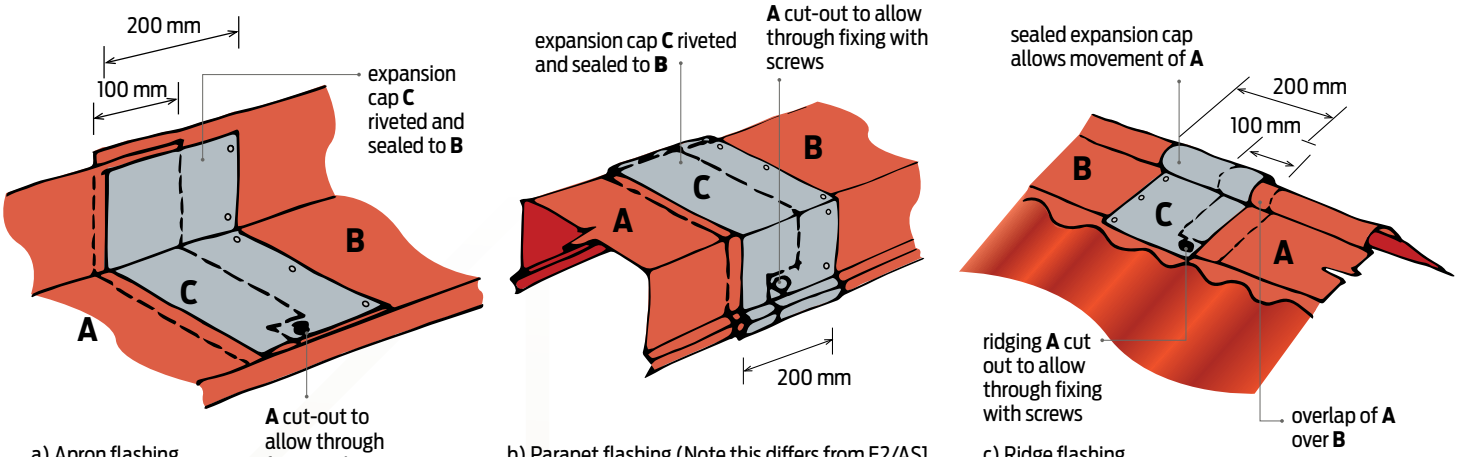



Figure 2. Expansion joints to allow thermal movement.

# Sea-level rise – new forecasts

## Rising sea levels will have a big impact on the building industry

A major assessment of climate change released on 9 August by the IPCC (the UN's Intergovernmental Panel on Climate Change) forecasts large rises in sea level.

Under the best of five possible scenarios, where governments around the world quickly agree to make substantial reductions in emissions, the global mean sea level is forecast to rise by one-third to 0.5 m over the next 90 years. Under the worst scenario, where there are few reductions made in greenhouse gas emissions, a sea-level rise of up to around 1 m in 90 years is forecast, with the note that an increase as much as 2 m "cannot be ruled out". The IPCC report was approved by representatives of 195 national governments and is regarded as conservative.

Recent local measurements lend support to the forecasts. In Lyttelton Harbour, the average rise in sea level over the first 60 years of last century was 1.3 mm/year. In the last 15 years, it has averaged 7 mm/year.

NZ SeaRise, an MBIE-funded research programme involving experts from various bodies including NIWA, aims to improve the predictions of sea-level rise around the country over the next century. It plans to share detailed maps and models.

A 2015 government study estimated that there were about 9,000 New Zealand homes less than 500 mm above current spring high tide levels - more than the number of homes in the red zone after the Christchurch earthquakes. A 2019 international study estimated that 71,000 New Zealanders live within 1 m and 240,000 within 2 m of the current mean high tide line.

One of the three new laws replacing the Resource Management Act is the Climate Adaptation Act (CAA). This will tackle managed retreat - the thorny business of moving buildings and communities away from at-risk areas. Consultation on the CAA is scheduled for early next year, with the intention of having a Bill introduced to Parliament in 2023.

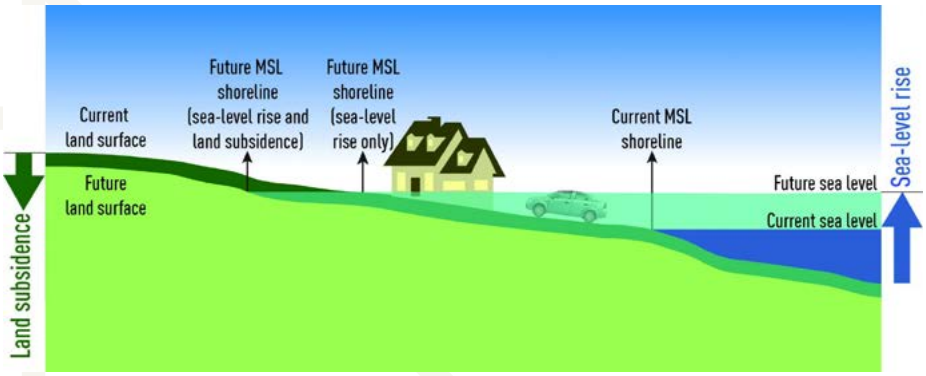



Figure 3. Changes in land levels and sea level will combine in some areas.
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# Evaluating building performance

## The Roadmap project

Buildings need to be warm, dry, healthy and zero carbon, but how do we evaluate whether a design will meet these performance requirements?

The BRANZ Roadmap project will scope how we can work towards a web-based, accessible, integrated predictive solution, that draws on existing tools and data.

Thank you to all those who have already completed our survey. We are getting some useful and interesting results.

There is still time to get involved.

To complete the survey, click here: Roadmap survey

To register interest in the stakeholder meetings and to receive more information email the Project Manager jonquil.brooks@branz.co.nz

# News

### Office buildings blow their carbon budget

New BRANZ and Massey University research shows the carbon footprint of the New Zealand office sector is four times higher than its carbon budget (the level of emissions it can be responsible for while the country moves towards its 2050 net-zero carbon goal). New builds are predicted to be more than five times over budget. The researchers say the carbon footprints of new office buildings can be significantly reduced by improved design and using more climate-friendly materials.

### Construction costs rising fast

Residential construction costs are rising at their fastest rate in at least 9 years, according to a recent Cordell report. It found that prices had increased by 2.2% in the June quarter alone - the largest increase since they began recording the data in 2012.

### Mental health first aid in construction

Site Safe has launched a Mental Health First Aid in Construction course, developed in partnership with St John. The 1-day courses are currently planned for Auckland, Wellington and Christchurch, with other locations subject to industry demand.

### Emergency powers tested

New Building Act powers around managing buildings in an emergency were first used in extreme weather events this winter. After a tornado struck in Papatoetoe, Auckland Council requested designation of an area for building management for the first time. Auckland Council was able to use the rapid building assessment system and direct evacuations, inspect properties and place notices on buildings.

### Property industry impact report released

The Property Council commissioned Urban Economics to investigate the economic impact of the New Zealand property industry. The new report looks at the property industry's economic contribution, size, value and employment numbers.

### Construction jobs up 6%

The Infometrics Quarterly Economic Monitor for the June 2021 quarter reported that construction industry job numbers are up 6% pa. "Residential consent figures are pointing to a strong pipeline of work for builders, with 18% pa growth in consents a positive sign."

### Young see home ownership as unattainable

A recent survey conducted by the Financial Services Council found that 83% of people aged 18-39 think the dream of home ownership is no longer attainable for the average New Zealander.

### Standards updates

An updated AS/NZS 1170.2:2021 *Structural design actions - Part 2: Wind actions* was published at the end of July.

BS 5250:2021 *Management of moisture in buildings. Code of practice* was published in July and is available from Standards New Zealand.

### COLAB21: Offsite Construction Innovation Conference

This 1-day event is being held in the Michael Fowler Centre, Wellington, on 19 October 2021.

### South Pacific Passive House Conference November 2021

The 2021 conference will be held at the Auckland University of Technology (AUT) on 25-27 November this year.