



Guideline

June 2020

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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COVID-19 construction protocols updated for alert level 1

Update rules for building sites

The protocols for building sites – one set for residential, the other for commercial and civil construction – have been amended for the step down to alert level 1. Key updates for residential construction sites include:

- encourage workers to stay 1 m from those outside their work bubble
- workers can work closer to other workers in their bubble where necessary
- non-essential visitors can undertake site visits
- encourage minimum 1 m physical distancing from a delivery team.

You can find the full details on the [CHASNZ website](#).

Sealant failure

Take care of the tube – and yourself

Two recent experiences with sealant are a reminder that care is needed with these products. In the first, silicone sealant that had been used in a domestic shower failed after just a few years in service. On investigation, this was found to be most likely the result of old silicone that had not been properly handled. If the product you are using has a use-by date, don't use it after that date. Keep the tube cool – not cooking on the dashboard of the ute. As with every material, check the manufacturer's guidelines and follow them.

The second sealant story came at the start of the month when contractors in Christchurch were applying sealant around piping and one became ill after inhaling fumes. The worker was taken to hospital for checking and then released. This shows the importance of taking the right precautions for the circumstances, whether that is wearing protective equipment or ensuring a workspace is effectively ventilated.

Timber, moisture and mould/algae growths

Getting sweaty under the covers is not a good idea

One of the many stories we heard coming out of the lockdown involved H1.2 treated timber in a roughly 90% weathertight house. In the 48-hour hurry to protect materials before the lockdown, the timber was stacked with fillets between most layers but not all. Plastic sheeting was wrapped over the whole stack, taped and weights added on top. When it was opened 5 weeks later, there was quite a lot of mould/algae growth present.

While materials can be stored under a tight cover, this should only be for a limited time – 5 weeks is too long – and the timber shouldn't be allowed to sweat under cover.

The first impression was that the stack had remained dry from the weather but the timber had sweated in the non-breathable wrapping. The weather was warm over lockdown, and residual moisture in the timber from the treatment process may have allowed condensation to form, allowing mould/algae to grow. (Boron treatment for H1.2 does not require a mould inhibitor, although some processors may add one.)

The mould/algae is visually unappealing but will typically disappear as the timber dries, although any areas that are particularly bad could be sprayed with a bleach solution. The mould/algae would be very unlikely to affect the timber or the preservative treatment.

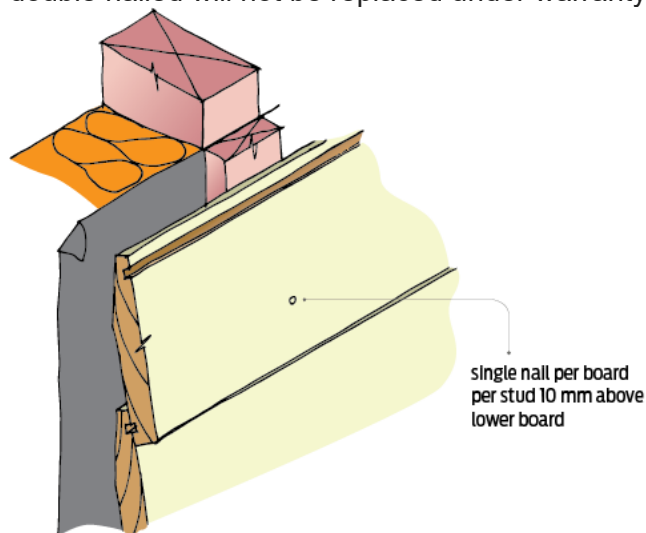
A bigger risk with boron treatment is when timber is subjected to rain wetting over a prolonged time. Boron compounds are water soluble and diffusible so can leach out – 3 months is generally the limit for this type of exposure. (If required, testing could be done to assess the penetration and retention of the boron in the timber.)

Too many nails spoil the board

Timber weatherboards should be single nailed

BRANZ surveys of new houses show that weatherboard wall claddings have enjoyed a slow but steady return to popularity over the last decade. Today, they are the most common type of cladding on new homes. Almost 60% of weatherboards are timber.

With installation of timber weatherboards, a single nail (Figure 1) is the fixing shown in Acceptable Solution E2/AS1, timber suppliers' literature and BRANZ Appraisals. Double nailing restricts timber movement and sometimes leads to splitting. This can obviously have impacts on durability and weathertightness. Some manufacturers have said that boards that split after they have been double nailed will not be replaced under warranty.



Despite this, we have seen double nailing on many site visits over the years and heard of building consent authorities that have refused to issue Code Compliance Certificates where timber weatherboards have been double nailed. At least three MBIE determinations have involved the fixing of timber weatherboards, the latest one just last year.

The rule is simple – stick to a single nail and take care with nail positions (nailing through laps is possible even with single nailing if it is poorly done). If a builder wants to use double nailing because of a particular problem (they think there is a risk of the timber cupping, for example), this should be discussed in advance with the designer, BCA and client to find a solution.

Heat pumps take another leap

It's all a gas

Heat pumps are becoming a favoured option for water heating. There has been a side to them that is less than environmentally friendly, however – many of them slowly leak refrigerant. In practical terms, just 1 kg of a commonly used hydrofluorocarbon refrigerant released into the atmosphere has the same effect as 1.3 tonnes of CO₂.

Air-to-water heat pumps are available now with technology that vastly reduces the problem – they use CO₂ as the refrigerant. While CO₂ is seen as one of the villains of climate change, as a refrigerant in air-to-water heat pumps, it has a major advantage. CO₂ has a global warming potential (GWP) of 1, while a traditional refrigerant used in some heat pump water heaters in New Zealand – R-134a (tetrafluoroethane) – has a GWP of 1300.

CO₂ refrigerant is not available for the typical domestic ductless air-to-air heat pumps in New Zealand.

Slab perimeter insulation

Getting round to it is a good idea

Just under two-thirds of concrete slab-on-ground floors in new houses have a continuous layer of expanded polystyrene (EPS) underslab insulation laid over the damp-proof membrane before the slab is poured. Underslab insulation by itself only raises the floor R-value by around R0.2 without the addition of a perimeter thermal break or perimeter insulation, yet very few new houses have perimeter insulation installed.

That is a lost opportunity. BRANZ research has tested perimeter insulation for both conventional slabs and waffle slab foundations. Extruded polystyrene (XPS) was used, protected with 3 mm grey uPVC sheet on the outside. Depending on circumstances, combining underslab with slab-edge insulation can result in thermal performance improving by 100% or more. BRANZ thermal modelling has shown R1.0 perimeter insulation to be optimal. Even an R-value of 0.8 (achievable with 25 mm XPS) still provides an improvement.

Care must be taken to ensure concrete hold-down fixing minimum edge distances are maintained when incorporating perimeter insulation into your details.

Fixing defects

There are steps to work out whether something is a defect or not

BRANZ regularly surveys new house owners on their experiences around the building of their home. While a clear majority are always satisfied with their builder, getting defects fixed after occupation comes up as a problem year after year. Defects that are not related to the Building

Code can be tricky to handle and a ripe area for disagreement – what exactly is acceptable or not acceptable?

- First up, go to the paperwork for the build – the drawings and specifications and contract and the paperwork given to the council with the consent application. Do they describe levels of finishes or tolerances?
- Next, check the paperwork supplied by the product manufacturer, including installation guidance. Have the manufacturer's recommendations or requirements all been met?
- Finally, look at any tolerance schedules or similar documents available. A good one to keep at hand is MBIE's [Guide to tolerances, materials and workmanship in new residential construction](#).

Fixing defects isn't a matter of choice. Under the Building Act, from the date that building work is complete, there is an automatic 12-month period for the client to identify defective work, which the contractor must remedy. This applies to all building work regardless of value. If building materials turn out to be faulty, the contractor must replace them. If the contractor disputes the defects, it is up to them to prove that the defect wasn't their fault or the fault of their subcontractors.

Recent news

June Building Code updates delayed until September

Due to the impacts from COVID-19 and stakeholder feedback, MBIE has decided to delay the [June 2020 Building Code update](#) until 24 September 2020.

Building Act amendment open for submissions

Submissions on the [Building \(Building Products and Methods, Modular Components, and Other Matters\) Amendment Bill](#) are open until 10 July 2020.

Law change to better protect subcontractors

The government has given more details of planned [changes around retention payments](#) in the Construction Contracts Act to give greater certainty to subcontractors.

New exemptions coming for building consent

The list of [work that can be done without a building consent](#) is being expanded. Building consents will no longer be needed for new or expanded low-risk building projects such as sleepouts, sheds, carports and outdoor fireplaces. The new exemptions are likely to commence later this year. (Note that these structures may have district plan implications, so check with your local council before building. A resource consent may still be required in some circumstances.)

Support for apprentices

The government will provide \$380 million to support up to 36,000 apprentices per year (including new apprentices) by providing a subsidy to around 18,000 employers. Employers with an eligible apprentice will be able to receive a base subsidy rate up to \$12,000 per annum (\$1,000 per month) for first-year apprentices and up to \$6,000 per annum (\$500 per month) for second-year apprentices.

<https://www.education.govt.nz/news/new-fund-to-keep-apprentices-in-work/>

Standard updated for suspended ceilings

[AS/NZS 2785:2020 Suspended ceilings – Design and installation](#) was published at the end of May, superseding the 2000 version.

Drop in new home consent numbers

The [number of new homes consented](#) in April 2020 (2,168) was nearly 17% lower than in April 2019. Stats NZ said this was the biggest percentage fall in monthly consents compared with the same month in the previous year since July 2011.

Deadline extended for healthy homes standards compliance statement

The deadline for landlords providing a compliance statement for the [healthy homes standards](#) has been extended from 1 July 2020 to 1 December 2020.