BRANZ

July 2022

GUIDELINE

Welcome to the BRANZ monthly technical update

Construction and COVID-19

Protection framework in place

New Zealand is operating under the rules of the COVID-19 protection framework. You can find out what this means for building work and building sites 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.

Changes to house insulation upgrade dates

Amended versions of 5th edition H1/AS1 and H1/VM1 coming

The Ministry of Business, Innovation and Employment (MBIE) has announced changes in the implementation dates for house insulation under the 5th edition of H1/AS1 and H1/VM1.

The date for transition to the 5th edition documents will remain as 3 November 2022. From this date, the previous 4th edition H1 documents can no longer be used for building consent applications.

However, an amendment to the new 5th edition documents will be published in August 2022. Where building consent applications for housing are submitted before 1 May 2023, roof, wall and floor insulation levels can be equivalent to the previous (4th edition) requirements.

Window and door construction in new houses below the upper North Island (climates zones 3-6) will now have a two-step increase. The first step is a minimum R-value of R0.37 required from 3 November 2022. The second step is an increase on 1 May 2023, to R0.46 in zones 3 and 4 and R0.50 in zones 5 and 6.

Window and door construction in the upper North Island (climate zones 1 and 2) will retain the previous timeline, a minimum R-value of R0.37 from 3 November 2022, then increasing to a minimum R-value of 0.46 on 2 November 2023.

You can download the full details of the decision from the Building Performance website.

In this issue:

BCAs and producer statements

Assessing the people behind the paperwork

Producer statements – written expert opinions – are widely used as part of the building consent and compliance process, yet they have no formal basis in the current Building Act. A BCA looking at a producer statement must decide how much weight to place on it basically by considering the person who produced it and the underlying work. In practice, PS1s (Design) and PS2s (Design Review) are often produced by chartered professional engineers (CPEng), but there is no requirement that people producing these documents must be registered engineers. The other two types of producer statement are PS3 (Construction) issued by the building contractor or subcontractor and PS4 (Construction Review) issued by the designer such as a CPEng.

MBIE Determination 2021/023 provides some interesting points about producer statements. In essence, a dispute arose when a BCA refused to accept a PS1 for the design of a retaining wall from someone who was not a registered CPEng. The determination provides useful discussion and ultimately found that the BCA was wrong to make a decision based on the fact that the PS1 was not provided by a CPEng.

The determination points out that a BCA can request a producer statement but it cannot require that one is provided. It is not obligated to accept one just because one has been provided. As MBIE points out elsewhere, however, "Councils may make it a condition of the building consent that a CPEng monitors elements of the construction work and reviews construction, completing a PS4."

See more about producer statements from MBIE and guidance on use of producer statements from Engineering New Zealand.

Waste disposal levy kicks in for C&D fill

Planning and management can save

From the start of this month, construction and demolition fill (class 2) will attract a levy of $20 per tonne. This will rise to $30 per tonne in July 2024. Managed or controlled fill facilities (class 3 and 4) will have a levy of $10 per tonne applied from July 2023. The changes are likely to have an impact – some industry calculations have found that a $10 per tonne levy may double disposal costs for many projects. There is now a powerful incentive to better manage waste on construction and demolition projects.

One approach is through following the 5 Rs:

- **Reject:** Avoid using products that cannot be repaired, reused or recycled when there are other options available
- **Reduce:** On a large scale, ensure a building is no larger than it need be. On a smaller scale, reduce off-cuts through designing to match standard product sizes or locate a bathroom next to a laundry to reduce hot water pipe length.
- **Reuse:** Keep hold of off-cuts above a certain size and use them when a small piece of material is required. Reuse can also apply to whole buildings, relocating houses to new sites.

- **Repair:** When buying new products, choose products that can be repaired rather than ones that can only be dumped.
- **Recycle:** Opt for materials that can be collected by a salvage company for recycling or taken back by a manufacturer to be reprocessed into new product. Aluminium and steel are recyclable, concrete may be crushed and used as a base for paving or roading.

Where none of the 5 Rs are possible, disposal at a landfill or waste facility is the last resort.

For more information, see BRANZ Bulletin BU671 *Reducing construction and demolition waste*.

Winter warmers

Five tips for construction in the cold

- While you're rugged up to stay warm, make sure the extra gear you're wearing doesn't interfere with your **protective gear**. For example, earmuffs only work properly when they're directly on your ears and not sitting lopsided outside a thick beanie.
- It is an employer's legal obligation to ensure, so far as is reasonably practicable, that workers' **health and safety** is not put at risk in extremely cold environments. This may involve changes such as extra breaks for warming up. In extreme cold, specialised thermal and weatherproof clothing fits the definition of PPE, which employers are responsible for providing.
- Keep an eye on **your workmates/ your employees**. If anyone looks like they are becoming unwell, get them home or somewhere warm to recover. Some employers have been hit with big fines when insisting workers remain on the job even when they become ill.
- With **paint**, you may know that you shouldn't generally apply paint if the temperature is below 10°C, but there's a bit more to think about than that. First, be aware that the temperature of the surfaces you are painting can be lower than the air temperature, and be aware of the dew point – for example, Resene recommends applying solventborne and industrial paints only when the temperature is at least 5°C above the dew point. In Auckland in July, the dew point average is 8°C. Some manufacturers have an additive that allows their paint to be applied in temperatures as low as 3°C.
- In very cold weather, **concrete** sets and gains strength at a lower rate. If temperatures dip below freezing, the surface of the concrete can be physically damaged. Concrete NZ says that the temperature of the concrete when it is placed in forms should be above 5°C. Concrete suppliers can give advice for your circumstances.

Structural cavity battens in extra high wind zones

Centres for batten fixings must be reduced

The fixings for claddings installed over a cavity need to be longer than direct-fixed claddings to achieve the minimum framing penetration. One way of getting around this is by structurally fixing the cavity battens to the frame, which allows standard-length cladding fixings to be used.

The structural integrity of this fixing arrangement for timber weatherboards was confirmed some years ago by BRANZ Test Report ST0589 Version 2 *Fixing horizontal weatherboards to studs over a cavity*, but the calculations only went up to the very high wind zone. BRANZ engineers have now done the calculations for the extra high wind zone. The key change is that, while batten fixings up to the very high wind zone are required at 300 mm centres maximum (Figure 1), fixings for the extra high wind zone must be at 250 mm centres maximum.

You can find more information in BRANZ Bulletin BU673 *Cavity battens*.

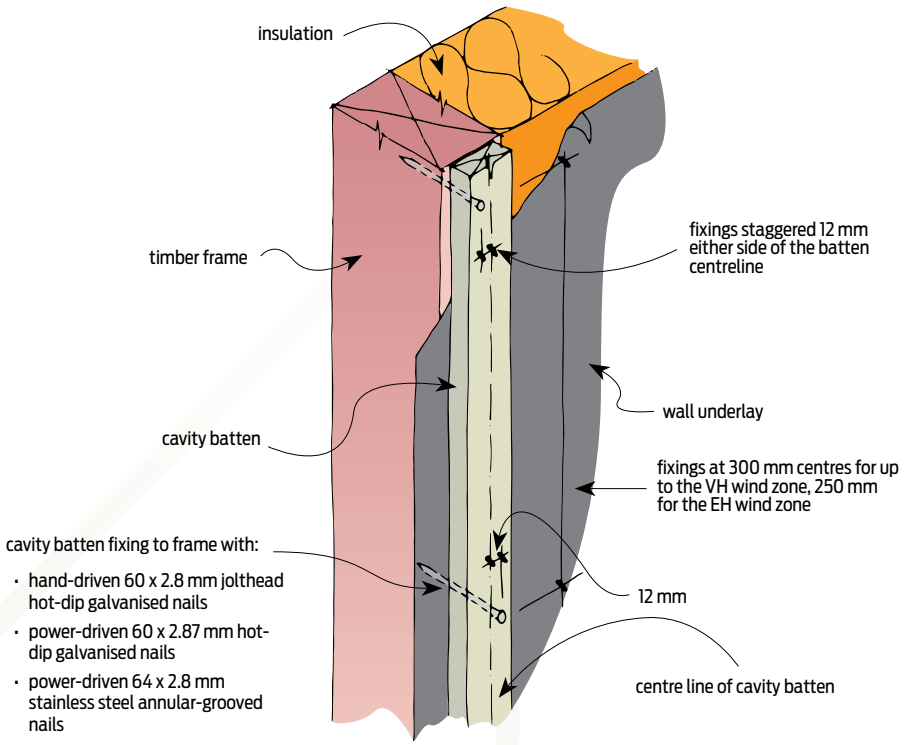

Figure 1. Fixings for structurally fixed cavity battens.

Using a Scala penetrometer

Feedback on the May *Guideline*

Our May *Guideline* article 'Searching for good ground' reported how the definition of 'good ground' had changed. It referred to NZS 3604:2011 *Timber-framed buildings* section 3.3, which covers Scala penetrometers. This prompted feedback from an engineer cautioning against placing too much dependence on Scala penetrometers. "Scala penetrometers should never be used in isolation," he says, and it is a point worth making.

Determining good ground requires much wider investigation, including study of PIM reports and other council records and maps, researching the local geology (including any previous site inspections/test results/reports/maps), careful investigation of the site and its surrounds and using an auger to study the ground (as required in NZS 3604:2011 section 3.3.6). There are many cases where a a geotechnical engineer or engineering geologist should be consulted.

Using a Scala penetrometer itself requires expertise (and ideally advanced education), local knowledge and good judgement.

BRANZ is currently updating and expanding its bulletin about Scala penetrometers. The new edition is due to be published in August.

Deadlines this month for earthquake-prone buildings

Where to from here?

There were two big deadlines for BCAs to meet around earthquake-prone buildings on 1 July:

- In high-risk areas such as Wellington, earthquake-prone buildings (other than priority buildings) must be assessed.
- In medium-risk areas such as Hamilton or Nelson, earthquake-prone buildings in the priority category must be assessed.

What happens now?

- In high-risk areas such as Wellington, from the date owners are notified their non-priority building is earthquake-prone, they must carry out seismic work within 15 years.
- In medium-risk areas such as Hamilton or Nelson, owners of priority buildings must carry out seismic work within 12.5 years.
- Non-priority buildings in medium-risk areas don't need to be assessed until 1 July 2027.

In low-risk areas such as Auckland, buildings don't need to be assessed until 1 July 2032.

The provisions do not apply to individual family homes but do apply to residential buildings that are at least 2 storeys and are a house with three or more household units or are used as a hostel or boarding house.

MBIE has recently issued new advice about vulnerable buildings - see the item in the News section below.

Survey on engineered wood products

Options to help address climate change

With the built environment contributing nearly 40% of global greenhouse gas emissions, demand for more-sustainable materials is increasing. The MBIE-led Building for Climate Change programme proposes setting mandatory reporting and measurement requirements for whole-of-life carbon emissions, with a sinking cap on embodied carbon. This and growing demand for increased sustainability in homes and buildings is driving the industry towards more-sustainable building solutions.

The awareness of mass timber as a construction option is increasing, but there is currently no effective monitoring of the lead and lag indicators of uptake in New Zealand. Your input to this survey will help BRANZ by providing valuable feedback on the current uptake and barriers to the use of engineered wood products and will help us track the construction sector contributions to meeting New Zealand's climate change commitments.

This survey will take about 10 minutes to complete. Your views will remain confidential. Any information collected will be securely stored without any identifying individual responses. Survey results will be shared publicly in the coming months.

Those completing the survey and providing contact information will go in the draw to win one of three $300 Prezzy cards. Thanks to those who have already taken the survey. If you took the survey earlier and wish to be included in the draw, please contact David Carradine at david.carradine@branz.co.nz but please don't take the survey a second time. The survey closes 31 July 2022.

Please use this link or scan the QR code.

A fall in the shower

Getting the right fall for efficient drainage

There are few new house faults as frustrating as water that takes a long time to drain in an open shower because of insufficient fall in the floor. It is not something than can be cheaply or easily rectified.

Acceptable Solution E3/AS1 (3.3.2.3) states that the floor of open showers must have a fall of no less than 1:50 towards the floor waste within a radius of 1,500 mm taken from a point vertically below the shower rose or from any wall within that radius (Figure 2).

The *Code of Practice for Internal Wet Area Membranes* (referenced by E3/AS2) requires that, with floor membranes, "Falls must be formed in the substrate (or in a screed incorporated into the substrate) and not by the membrane itself."

Ensuring that the correct fall is provided will involve good communication between the different teams working in the space at different times. Simply leaving the issue of fall until late in the build is not acceptable. There have been cases where tilers have been expected to provide the fall with the glue under floor tiles.

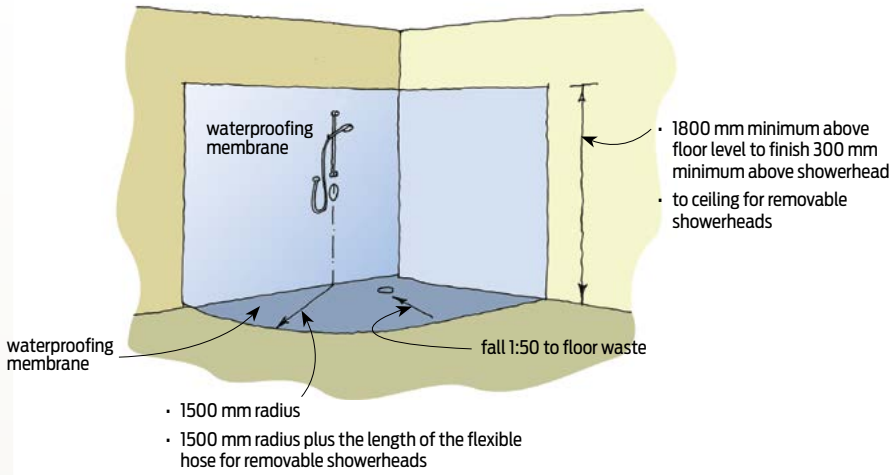

Figure 2. Floor fall requirements in open showers.

News

Pressure to meet intensification deadline

With a deadline looming for Tier 1 councils to comply with the government's housing intensification requirements, a lot of action is taking place.Tier 1 councils must give effect to the law passed last December allowing landowners to build up to three homes of up to 3 storeys on most sites, covering up to 50% of the site, without the need for a resource consent. District plans for Tier 1 councils must meet this and other requirements by 20 August.

Auckland Council activity has included voting to reduce the size of Special Character Areas (which are protected from the new intensification rules) from around 21,000 homes to 15,000. Wellington City Council actions, while allowing greater intensification, have also included reducing the walking catchment to urban centres from 15 minutes' walking distance to 10 minutes and deciding that the Johnsonville train line will no longer be considered a rapid transit line. Both these decisions will allow lower-level housing to continue to be built in the affected areas.

News

BRANZ Guideline

We've looked at how our readers prefer to read BRANZ *Guideline*. From August 2022, we'll continue to send your monthly issue direct to your inbox but will no longer produce a PDF format that is accessed from the BRANZ website.

Webinar – Changes to Building Code clause H1 *Energy efficiency*

4 August 2022 11.30am

Following public consultation in June, MBIE has made the decision to extend the time to comply with new wall, floor, and roof insulation requirements in new homes by a further six months to 1 May 2023.

As part of ongoing information and education about the changes to H1, MBIE will be joined by BRANZ and The New Zealand Green Building Council to present a webinar explaining the recent changes to the energy efficiency documents. They will discuss the H1 compliance pathways, what tools and information are available and some common construction details that can be used to comply.

Register for the webinar here.

Building consents still running hot

A record 51,015 new homes were consented in the year ended May 2022, Stats NZ records show. That figure is nearly 10,000 higher than the year ended March 2021. The boom in multi-unit home consents continues, with 26,479 multi-unit homes consented in the year ended May 2022 compared to 24,536 consents for stand-alone houses.

Stats NZ says that its experimental building indicators "show that in the December 2020 quarter the average length of time for a home consent to reach its final inspection date was 15 months. It took a further two months to receive a code compliance certificate."

New MBIE advice on seismically vulnerable buildings

MBIE has issued new guidance that most seismically vulnerable buildings are not imminently dangerous and can remain occupied while seismic remediation work is planned, funded and undertaken. The new guidance highlights how life safety risk to building users in vulnerable buildings can be mitigated through emergency planning and training as well as restraining building plant, services and contents. It makes the point that there is no legal requirement to close a building based solely on a low NBS rating.

Homeowners miss out on construction guarantee

Consumer NZ says 27 homeowners have lost out when they found that their building firm, which went into liquidation, hadn't registered a guarantee for their property with Master Builders. The industry body told Consumer that a guarantee application must be submitted by the builder and approved.

Internationally, there are some mandatory building warranty insurance schemes that give protection to homeowners, but Amy Moorhead, Manager of Building Policy at MBIE, told Consumer that are no plans to make building guarantees or home warranties compulsory in New Zealand.

Sprinklers recommended for rural houses

After the total loss of a 150-year-old rural Canterbury home, a Fire and Emergency New Zealand fire investigator recommended that rural properties install a sprinkler system to address the problem that it can take firefighters much longer to reach rural properties than urban homes. Sprinkler contractors will usually be able to design and install an appropriate domestic system. Check there is sufficient water supply such as a large water tank. You can find more general information on the threat of rural fires on the Fire and Emergency New Zealand website and the BRANZ resource Maintaining My Home.

Looking ahead

- August 2022 - New Zealand's National Adaptation Plan (for climate change) is due to be published. (A draft was released for comment at the end of April.)
- Late August 2022 - district plans for Tier 1 councils must include density standards (or standards that enable greater development).
- August 2022 - planned release date for MBIE publication *Energy in New Zealand 2022*.
- August 2022 - MBIE will publish amended 5th Editions of Acceptable Solution H1/AS1 and Verification Method H1/VM1
- 1 October 2022 - monetary cap on EQC cover for residential building rises from $150,000 to $300,000 per dwelling (both excluding GST).
- 25 October 2022 - all LBPs must comply with a code of ethics.
- 3 November 2022 - windows and doors in new housing must have a minimum construction R-value of R0.37.
- 6 December 2022 - the Commerce Commission is due to present its final report on residential building supplies.
- Late 2022 - MBIE to consult on adding to the Building Code whole-of-life embodied carbon requirements and new requirements for operational efficiency.
- 1 May 2023 - where building consent applications for housing are submitted before this date, roof, wall and floor insulation levels can be equivalent to the 4th edition H1/AS1, H1/VM1 requirements.
- 1 May 2023 - windows and doors in new housing for climate zones 3-4 in the 5th edition H1/AS1 and H1/VM1 must have a minimum construction R-value of R0.46, and in zones 5-6 a minimum construction R-value of R0.50.
- 2 November 2023 - window and door construction in the upper North Island (climate zones 1 and 2) will require a minimum R-value of R0.46.