BRANZ

June 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.

H1 6-month delay

Waiting for a decision

As we go to press, MBIE has not yet released a decision on its proposal for a 6-month extension of the transition period for the H1 insulation requirements in new housing. The 5th edition of H1/AS1 and H1/VM1 were due to replace the 4th edition in November 2022. The proposal was to extend the transition period for 6 months to 1 May 2023.

In this issue:

Self-supporting underlay isn't always!

Support required on low-pitch roofs

The article about repairing damage to wall and roof underlay in the April Guideline prompted a reader to suggest we explain a bit more about self-supporting roof underlay. This type of underlay is defined in standards as "Roof underlay material with the ability to support its own weight across a minimum span of 1200 mm under normal working conditions".

"Unfortunately, self-supporting underlay is not self-supporting at low roof pitches," the reader told us, "but I see numerous cases of architects/designers/builders assuming that underlay called 'self-supporting' is self-supporting, when in many cases it is not!"

He is completely right. Manufacturers (and BRANZ Appraisals) often recommend that, when self-supporting underlays are used for roof pitches of less than 10°, they are fully supported with a corrosion-resistant roof underlay support. In some cases, there are different requirements depending on whether the underlay is installed vertically or horizontally.

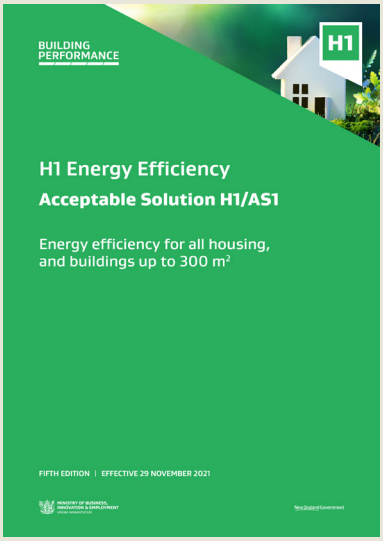
Our reader points out that the whole issue of roof underlay installation and support becomes more important when the updated H1/AS1 compliance paths come into effect. The new requirements mean significantly thicker insulation in roofs, and there must still be a minimum 25 mm gap between the insulation and the flexible underlay.

Concrete floor slabs and H1 (5th edition)

It's polystyrene, Jim, but not as we know it

While we're mentioning the new H1/AS1 and H1/VM1, here are two points to be aware of around concrete slab-on-ground floors:

- For the calculations of slab R-value in the new compliance documents, the polystyrene pods in a concrete raft foundation floor are not considered to be insulation. Raft foundation floors that have polystyrene pods but no additional insulation (no edge insulation and no continuous insulation that also runs under the concrete ribs) are regarded as uninsulated.
- The increases in thermal performance required of slabs are actually greater than might appear at first glance because the background calculation method has changed. For example, the minimum construction R-value for slab-on-ground floors has gone from R1.3 to R1.5 in the new climate zones 1–4, which seems very little. Under the old calculation method, however, the change would be closer to going from R1.3 to R2.0.



Lintel or head trimmer under a gable end?

The answer is in the roof truss

Is a lintel over an opening in a wall under a gable end strictly necessary, or can a head trimmer do the job? The options depend on how the gable is formed. If the gable is formed with a standard loadbearing roof truss, the lintel will not be required to support any loads and may be just a head trimmer selected from Table 8.15 in NZS 3604:2011 *Timber-framed buildings* (Figure 1). If the gable is formed as a gable truss or is stick-framed, the lintel will be loadbearing and is selected from Table 8.9 in NZS 3604:2011 (Figure 2).

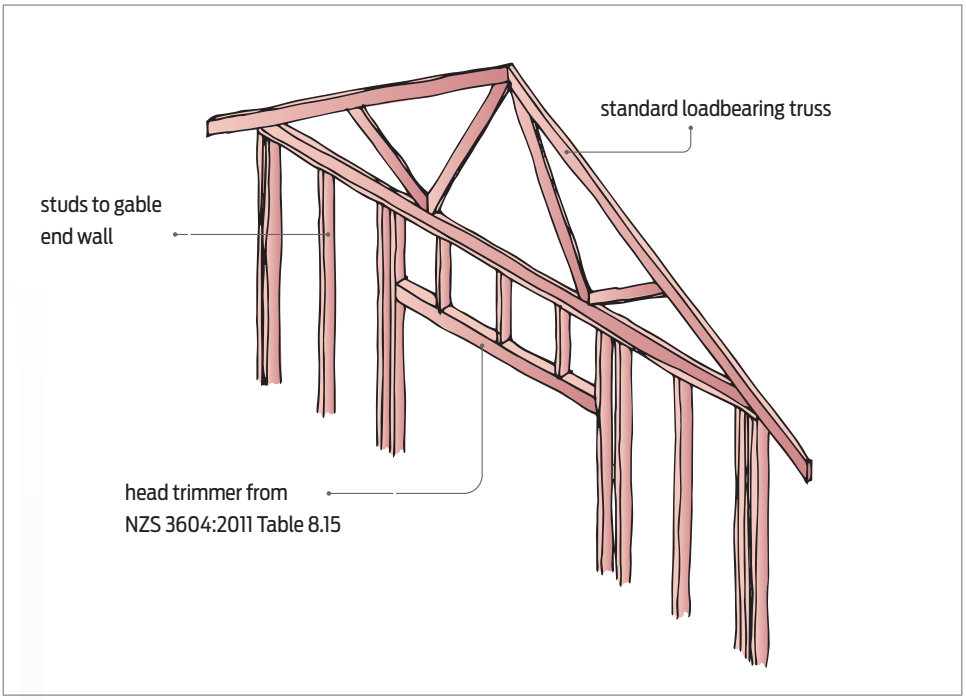


Figure 1. Head trimmer under a loadbearing roof truss.

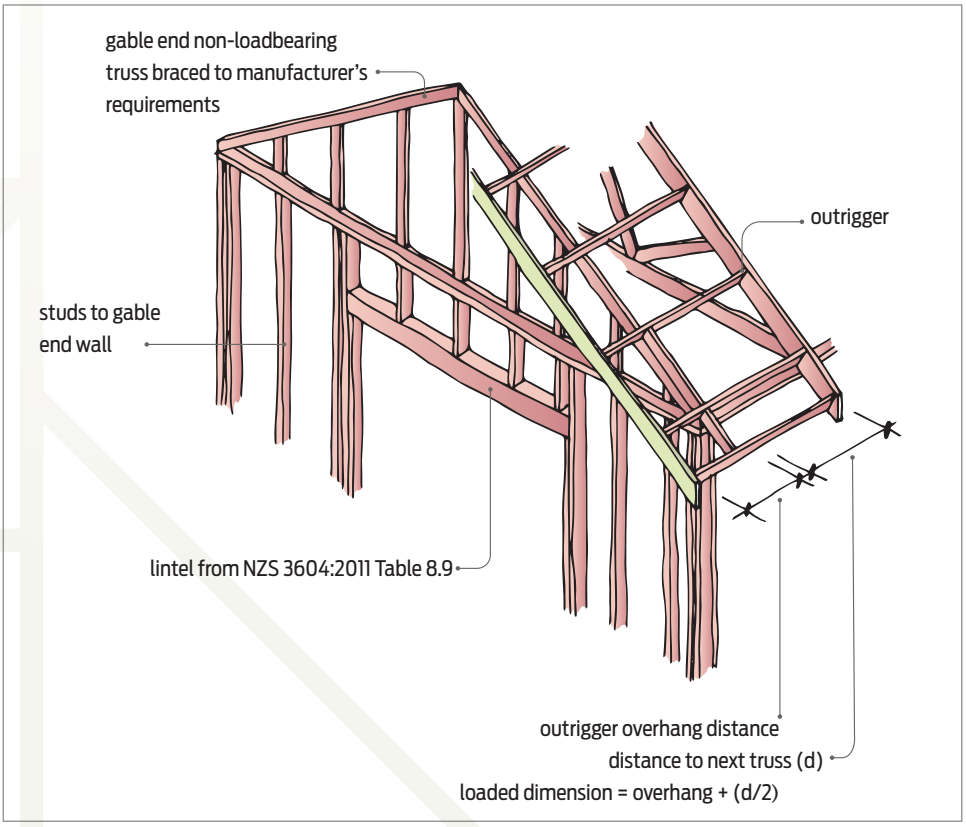


Figure 2. Loadbearing lintel.

Relocating rather than demolishing old buildings

An oldie but a goodie

The move to housing intensification has seen heated debates about the value of heritage buildings, some potentially at risk as older suburbs of villas are opened to new medium-density housing. Whichever side you take, one thing is clear: if an old house is occupying a site that is required for more-intensive housing, it should be removed and relocated wherever possible rather than simply being demolished and the rubble trucked to a landfill.

Giving old buildings new lives in new locations means less waste taken to landfills and fewer greenhouse gas emissions. It also ensures a home is saved - an important consideration in a time of housing shortages. Kāinga Ora has lifted old houses off site at some locations where it is developing more housing. Houses can be bought/sold through building relocation companies, privately or through services such as Trade Me (which frequently has hundreds of 'house for removal' properties listed).

BRANZ has a range of resources that can help with repurposing and renovating olTder homes, including the website Renovate. A slightly different resource is Saving the Town, produced by Heritage New Zealand Pouhere Taonga.

Keeping subfloor air out of wall cavities

A BRANZ detail for the bottom of the cavity

The increasing thermal performance required in our buildings means that greater attention needs to be paid to prevent moisture moving into wall cavities and roof spaces. The Building Code already says (in E2.3.5): "Concealed spaces and cavities in buildings must be constructed in a way that prevents external moisture being accumulated or transferred and causing condensation, fungal growth, or the degradation of building elements." Acceptable Solution E2/AS1 doesn't say how this can be done at the base of cavity walls, however.

BRANZ has a solution that could help with new houses on suspended floors or recladding existing homes (Figure 3). Installing a flashing along the bottom of the bearers underneath the wall underlay (as shown in the drawing) will provide additional separation between the drained cavity and the subfloor space.

Where horizontal timber boards are used to close off the subfloor space, they must be installed with continuous gaps between boards (10 mm minimum, ensuring that the total ventilation is at least 3,500 mm²/m² of floor).

An alternative where a sheet cladding is used is to install sufficient vents.

Requirements around minimum clearances for claddings, the cavity closure and so on can be found in E2/AS1 (sections 9.1.3 and 9.1.8).

Care also needs to be paid to the top of the cavity to prevent air and moisture movement from the wall cavity into the roof space. This can be achieved with appropriate detailing of the soffit (which retains the maximum drying capability in the cavity) or use of a horizontal solid batten.

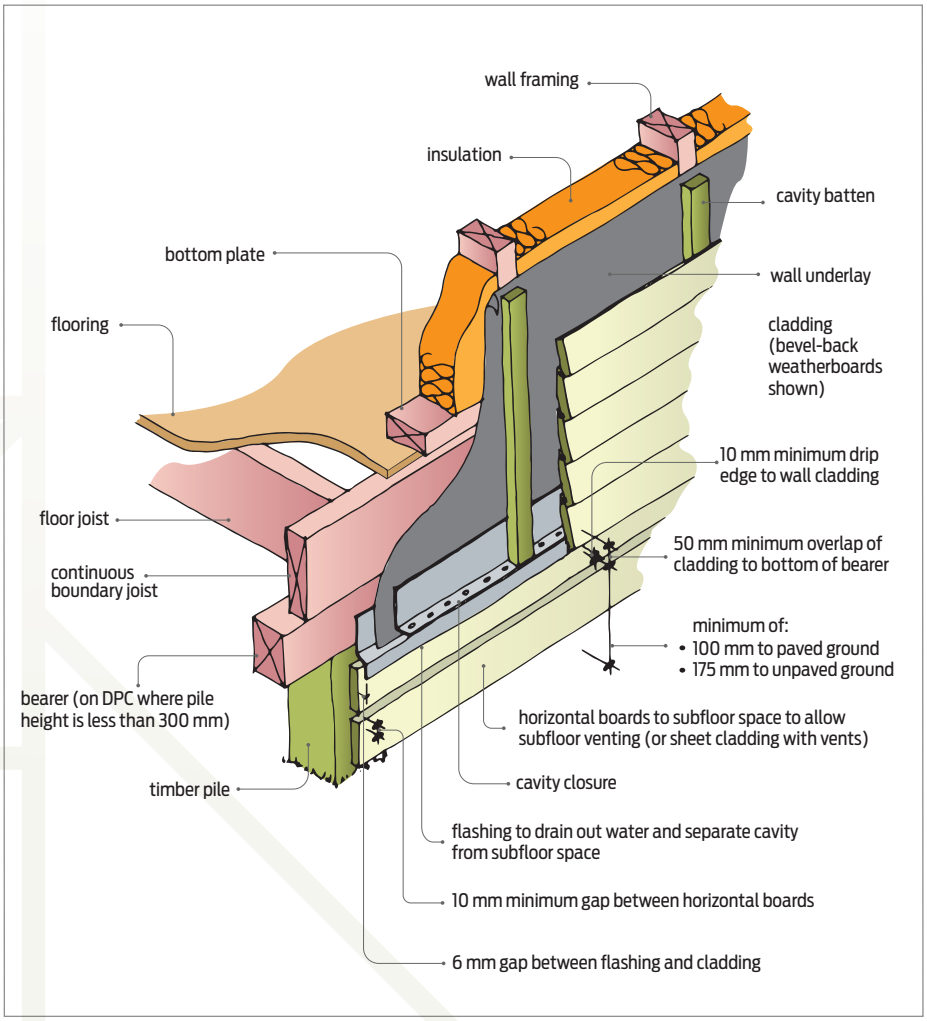


Figure 3. Closing the base of a drained cavity on a piled foundation.

The carbon target that time forgot

Paris Agreement target for 2030

The focus on action to achieve New Zealand's target of being a net-zero carbon country by 2050 has crowded out discussions around another important target. Under the United Nations Paris Agreement, New Zealand committed itself to a "Nationally Determined Contribution" for reducing greenhouses gases by 2030. Updated on 31 October 2021, the Contribution sets a headline target of a 50% reduction of net emissions below our gross 2005 level by 2030.

New Zealand's Greenhouse Gas Inventory 1990-2020, which the government published in April this year, shows that, over the last 15 years, New Zealand's net emissions have been largely unchanged and nowhere near falling to the level required by the Paris Agreement.

New Zealand doesn't expect to achieve its target of 50% reduction of net emissions by 2030 by actually cutting emissions generated in New Zealand by half. A large part of the reduction is expected to come from global offsetting. The government says this will include working to reduce emissions in other parts of the world. "The priority here will be to support developing countries in the Asia-Pacific to meet their Sustainable Development Goals."

Swimming pool barriers

Can an Alternative Solution be used?

Swimming pool barriers are a major cause of dispute, with over 20 MBIE determinations on the topic alone. One of the most recent, Determination 2021/024, considered a pool barrier incorporating an existing boundary fence. It considered whether compliance with Building Code clause F9 *Restricting access to residential pools* can be achieved with an Alternative Solution.

On the pool side, the top of the boundary fence is 1,705 mm from ground level and 1,605 mm on the neighbour's side. Under the Acceptable Solution for F9, the minimum height of the boundary fence would need to be 1,800 mm on the pool side.

The owners applied for a building consent for the pool, stating that barrier compliance was to be achieved using NZS 8500:2006 *Safety barriers around swimming pools, spas and hot tubs*. The standard specifies that barriers should be at least 1,200 mm high.

The determination points out several things:

- The standard is not cited as a means of compliance.
- "I do not consider that it is open to the owners in this case to claim that because the fence conforms with the Standard, it necessarily also complies with clause F9."
- An Alternative Solution can be used, but it must be assessed against the performance requirements of F9.
- The barrier does not have to keep all young children out, it must be a barrier that most children under 5 will not be able to get over and will slow down or deter the most able.
- The fence has detailing that provides hand and foot holds that a child could use to climb it.
- In this case, the boundary fence does not comply with F9.

Determination 2020/028 also has some useful comments on boundary fence compliance with F9.

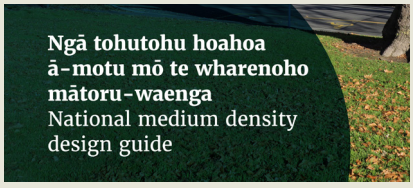
News

Fire protection guide updated

BRANZ has just published (as a PDF) a second edition of its Guide to Passive Fire Protection in Buildings. It describes good practice for the specification, approval, installation and verification of passive fire protection.

New design guide published for 3-storey, 3 unit blocks

The Government has published a National medium density design guide to encourage inclusive and integrated housing under the new Medium Density Residential Standards (MDRS). The focus of the non-statutory guide is on three-unit developments up to three storeys in height that are permitted under the MDRS.

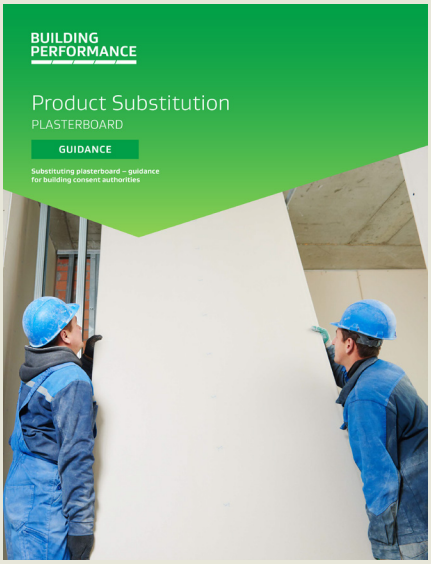


New Standards NZ publications

Recent publications from Standards NZ include:

- AS/NZS 2845.1:2022 Water supply - Backflow prevention devices - Part 1: Materials, design and performance requirements
- NZS 4431:2022 Engineered fill construction for lightweight structures (MBIE has sponsored access to view and print a single downloadable PDF copy of this standard at no charge.)

News



Plasterboard substitution guidance released

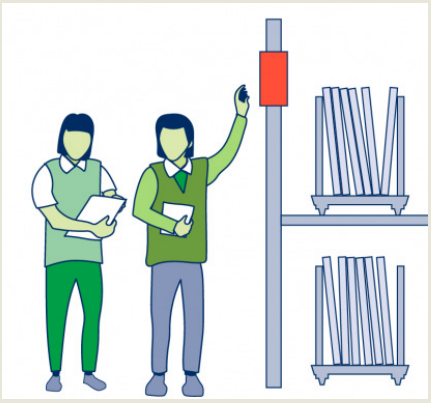
As the industry grapples with plasterboard supply problems, many are looking at substituting products from an alternative supplier. MBIE has published a guidance document, Product Substitution - Plasterboard, to help promote clarity around dealing with minor variations involving plasterboard. This guidance must be read in conjunction with the more general Product Substitution Guidance from December 2021. MBIE says that, while the new guidance is published for BCAs, it understands that it will be of interest to designers, builders and others.

Consultation open on Modular Component Manufacturer Scheme

MBIE is consulting on the introduction of the Modular Component Manufacturer Scheme. This new voluntary certification scheme will provide manufacturers who meet certain requirements access to a streamlined pathway for building consent. Modular components produced by certified and registered manufacturers will be deemed to comply with the Building Code. The rules aim to provide certainty to scheme participants about their roles and responsibilities, the operating process and the evaluation criteria. Submissions must be made by 7 July 2022.

New regulations on building product information

New regulations have been developed that will require certain product information to be provided publicly by building product manufacturers and importers. The move is to improve confidence in the use of products and to help product buyers find the right products for the job. The regulations will come into effect on 11 December 2023 and apply to designated building products manufactured in or imported into Aotearoa New Zealand on or after 11 December 2023.



Recycled construction board plant officially opened

The Hamilton-based factory of saveBOARD, the company that converts packaging waste to a range of construction boards, has been officially opened. The company says the new plant is operating 24 hours a day, 3 days a week producing 400 boards a day. Production will divert up to 4,000 tonnes of waste from landfill annually. Products include internal linings, ceiling tiles, roofing substrates and rigid air barriers.

Looking ahead

- 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.
- 1 July 2022 - waste levy of $20 per tonne to be introduced for construction and demolition fill (Class 2).
- Around July 2022 - the Commerce Commission will publish a draft report with its preliminary findings about competition for residential building supplies.
- 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.)
- August 2022 - district plans for Tier 1 councils must include density standards (or standards that enable greater development).
- 1 October 2022 - monetary cap on EQC cover for residential building rises from $150,000 to $300,000 per dwelling (both excluding GST).
- 2 November 2022 - due date for the end of the 1-year transition period for Building Code compliance changes announced 29 November 2021, with the possible exception of H1 for houses (see separate story).
- 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.