Guideline

February 2021

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.

Materials supply stresses

Early planning required

We are hearing about major problems with the supply of construction materials from many parts of the country. The key problem is international shipping delays and port congestion as a result of the pandemic. Contributing factors are reduced production as a result of lockdowns overseas and local demand much higher than forecasts.

The best advice is for builders, designers and clients to make no assumptions about product availability and to contact suppliers as early as possible to check on the materials they need.

Where materials specified in consented work are not available when required, contractors should contact the designer and client to discuss the options and then get in touch with the building consent authority (BCA) as early as possible, certainly before the work is actually done.

While a change to materials in consented work may be possible, this requires either a formal amendment to the building consent (which can result in higher costs and delays) or a minor variation. Whether a change meets the definition of a minor variation and whether it can be granted are the responsibility of the BCA.

Carbon budgets and construction

Big changes likely in building regulations

On 31 January, the Climate Change Commission released three draft greenhouse gas emissions budgets covering 2022–2025, 2026–2030 and 2031–2035. The budgets propose annual average reductions of total gross emissions from 2018 levels of 5.6% in the first time period, 14.7% in the second and 25.9% in the third.

The Commission says that, for New Zealand to meet its emissions targets:

- existing homes' energy intensity must improve by 6% by 2035
- newly built homes must be 35% more energy efficient compared to today's performance
- all new space heating or hot water systems installed after 2025 should be either electric or biomass

- no new natural gas grid connections or bottled LPG connections after 2025
- the Building Code should be strengthened – raising the minimum requirements is critical to transition away from fossil fuels for space and water heating, improving building thermal envelopes and ensuring buildings are resilient
- we need to change the way we plan and build our cities to make it faster and easier to get around.

Chapter 4b of the separate evidence report covers transport, buildings and urban form. The emissions associated with building materials are partially accounted for under Chapter 4a. Waste including construction/demolition waste, wastewater treatment and refrigerants are covered in Chapter 4d.

Public consultation on the draft advice runs until Sunday 14 March. The final documents will be published 31 May.

Protecting waterproof membranes

Use the right materials

An architect had a site meeting with a contractor recently. The contractor was not far from back-filling free-draining metal behind a concrete block basement wall. A liquid waterproof membrane had been applied to the back surface of the wall, and the contractor had laid sheets of retrieved plasterboard against the wall with the intention that this would protect the membrane from damage.

The architect rightly rejected this option. In this situation, waterproof membranes should be protected with either proprietary drainage mat/protection sheets (usually PVC or polyethylene sheet, often 'dimpled' sheets) or foamed plastics such as polyurethane or expanded polystyrene.

Materials such as MDF or plasterboard that may break down do not give sufficient protection in the long term. Potential ground and building movement can lead to damage to the membrane, with subsequent water ingress into the building once these 'protective' materials have deteriorated.

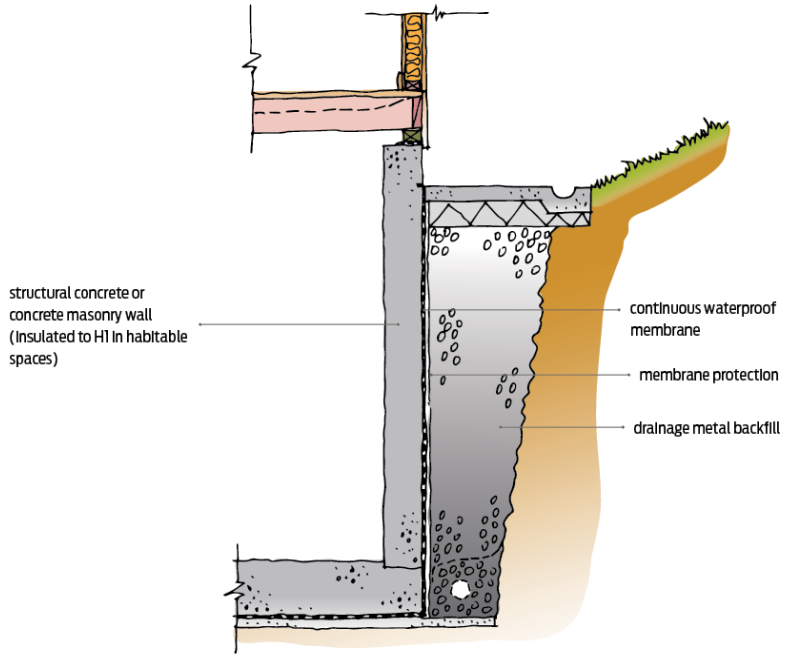

Figure 1. Waterproof membranes on the outside of a wall need durable protection.

Window fixings and seals
The right spacing is crucial

A BRANZ investigation of houses under construction a few years ago found frequent problems with window installation. Two issues still crop up sometimes – reveals not fixed at the required spacings and the gap between jamb and framing too large or too small for a properly installed seal.

Most aluminium windows are secured in the rough opening by fixing through timber reveals into framing (Figure 2). This is described in Acceptable Solution E2/AS1 and in the Guide to Window Installation produced by the Window and Glass Association NZ (WGANZ). Other options require consent as an alternative method.

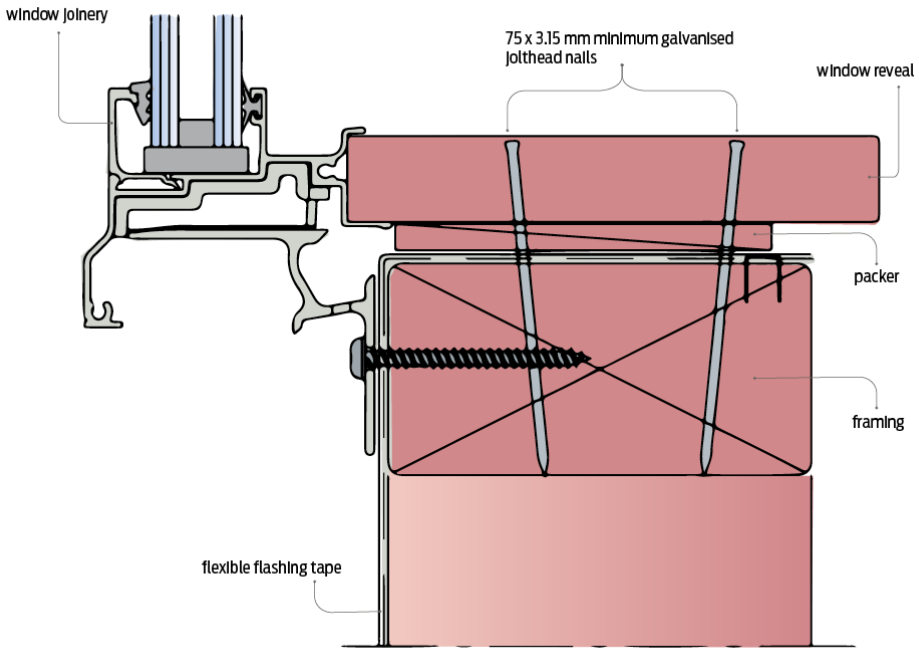

Figure 2. Fixing through window reveal into framing (based on Detail 12 from the WGANZ Guide to Window Installation.)

E2/AS1 clause 9.1.10.8. requires fixing (pairs of minimum 75 x 3.15 mm galvanised jolthead nails or 8 gauge x 65 mm stainless steel screws) through reveals into surrounding framing at maximum 450 mm centres along sills, jambs and heads and a maximum 150 mm from reveal ends. As WGANZ notes, larger windows and windows subject to higher wind loads may need additional fixing.

E2/AS1 calls for packers at all fixing points between reveals and framing except between head reveals and lintels. WGANZ and some manufacturers say the packers must be flat, not wedges, and suggest removing packers from the head of the unit after fixing to allow for building settlement.

An installed window should typically have an 8–10 mm gap between the back of the reveal and the framing trimming the opening. This spacing allows the window to be fitted into the opening and allows sufficient space for the air seal. Sealing is usually a polyurethane foam over a PEF backing rod installed at the inner face of the framed opening.

However, this method does not allow the improved thermal benefits of thermally broken aluminium window systems to be realised. BRANZ and WGANZ are currently testing the weathertightness of different window installation options that do offer improved thermal performance. BRANZ will also shortly publish test methods specifically to assess the

weathertightness and thermal performance of window installation methods, which will offer alternative compliance paths to those noted above.

Big year for construction standards
But no decision on two key timber standards

Standards NZ has confirmed that standards to be published this year include:

- NZS 1720.1 *Timber structures – Part 1: Design methods*
- NZS 3104 *Specification for concrete production*
- NZS 4512 *Fire detection and alarm systems in buildings*
- NZS 4514 *Interconnected smoke alarms for houses*

A number of joint standards managed from Australia are effectively complete and are also expected to be published in the next year:

- AS/NZS 1604.1 *Preservative-treated wood-based products – Part 1: Products and treatment*
- AS/NZS 1604.2 *Specification for preservative treatment – Part 2: Reconstituted wood-based products*
- AS/NZS 1604.3 *Specification for preservative treatment – Part 3: Plywood*
- AS/NZS 3500.1 *Plumbing and drainage – Part 1: Water services*
- AS/NZS 3500.2 *Plumbing and drainage – Part 2: Sanitary plumbing and drainage*
- AS/NZS 3500.3 *Plumbing and drainage – Part 3: Stormwater drainage*
- AS/NZS 3500.4 *Plumbing and drainage – Part 4: Heated water services*

It is still to be determined if the long-awaited NZS 3640 *Chemical preservation of round and sawn timber* and NZS 3602 *Timber and wood-based products for use in building* will be published this year.

You can find more details on the Standards New Zealand website.

The Building Code is not a quality mark
Tackling a common misconception

A recent media promotion for a South Island affordable homes development included the comment that "the homes will meet Building Code standards". The wider piece implied that, by meeting Building Code requirements, the homes had somehow achieved a quality mark. This is a common misconception among the general public that BRANZ has found in a number of different pieces of research.

Property promotions, where they mention the Building Code, should always make it clear that complying with minimum requirements is compulsory and in no way implies a tick of good quality. A house that just meets minimum Code requirements is the poorest-performing house you are legally able to build.

News

Public housing plan announcements
The government has announced the intended locations for new state homes under the Public Housing Plan 2021–2024.

EECA reviews water heating policy
Interested parties can give feedback on a discussion paper outlining a proposed method for evaluating the performance of hot water systems. The deadline is 1 March 2021.

New Zealand compares poorly on housing affordability
The OECD has released a report Building for a better tomorrow: Policies to make housing more affordable. The report finds that, of 32 countries assessed, New Zealand has the highest proportion of low-income people spending more than 40% of disposable income on housing.

Water Services Bill open for comment
The Bill addresses regulation and performance of drinking water, wastewater and stormwater systems. The Bill is currently in select committee, with a closing date for submissions of 2 March 2021.

Building Act amendment progressing
A report on The Building (Building Products and Methods, Modular Components, and Other Matters) Amendment Bill is due from the select committee on 4 March 2021. The Bill addresses different building methods such as prefabricated housing, strengthens regulation of building products and building methods, strengthens the CodeMark scheme, updates maximum penalties and changes public notification requirements.

More workers, more consents
Stats NZ data shows a big increase in people employed in the construction sector over 2020 – an additional 15,200 men and 5,800 women.

In the year ending November 2020, Auckland issued 16,290 building consents for dwellings (compared to 14,866 for the previous 12 months) and 12,054 Code Compliance Certificates for dwellings (compared to 10,456 for the previous 12 months).

Climate change
If you want a sense of how the industry sees its role in dealing with climate change, some results from industry feedback to the Government's Building for Climate Change programme have been made available.

BRANZ seminar: Answers 2021

This nationwide BRANZ Answers seminar series gives answers to a wide range of practical questions relating to new ways of doing things in the residential building and construction industry. We cover new types of buildings, new types of products and systems, new ways to increase the performance of buildings and upcoming regulatory changes.

You can register and pay online here.

See dates below:

Day	Date	Location	Venue
Wed	17-Feb	Hamilton	FMG Stadium Waikato
Thurs	18-Feb	Tauranga	Trinity Wharf Tauranga
Fri	19-Feb	Taupo	Millennium Hotel & Resort Manuels Taupo
Wed	24-Feb	Christchurch 1	Addington Events Centre
Thurs	25-Feb	Greymouth	West Coast Events Centre
Fri	26-Feb	Nelson	Rutherford Hotel Nelson
Wed	3-Mar	Kapiti	The Kapiti Pavillion
Thurs	4-Mar	Whangarei	Barge Showgrounds Events Centre
Fri	5-Mar	Auckland-North Shore	North Harbour Stadium
Wed	10-Mar	Invercargill	Ascot Park Hotel
Thurs	11-Mar	Queenstown	Crowne Plaza Queenstown
Fri	12-Mar	Dunedin	Dunedin Centre
Wed	17-Mar	Napier	Napier Conference Centre
Thurs	18-Mar	Upper Hutt	Silverstream Retreat
Fri	19-Mar	Auckland - Ellerslie	Ellerslie Events Centre
Wed	24-Mar	Timaru	Comfort Hotel Benvenue
Thurs	25-Mar	Christchurch 2	Addington Events Centre
Fri	26-Mar	Blenheim	Scenic Hotel Marlborough
Tues	30-Mar	New Plymouth	The Devon Hotel & Conference Centre
Wed	31-Mar	Palmerston North	Distinction Hotel & Conference Centre Palmerston North
Thurs	1-Apr	Wellington	InterContinental Wellington
Thurs	1-Apr	Live Webstream	