Guideline

June 2018

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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Drilling bearers

Tooooo much

We have just taken a helpline call regarding 190 x 45 mm doubled bearers that have had a 50 mm hole drilled through them to run a pipe. Our first response was why were the bearers drilled in the first place? Drilling or notching of bearers or lintels is not permitted under NZS 3604:2011 *Timber-framed buildings*. Also of concern is the weakening of the structure if multiple bearers are drilled.

Our helpline caller wanted to identify the options to remedy the situation. Here are some possible approaches:

- Install a new row of piles supporting a 75 mm minimum wide bearer located directly under the pipe run to support the drilled bearer at the point under the holes. The bearer should be H3.2 treated if close to the ground.
- Remove the pipe, fix it to the underside of the bearer and apply an engineered strengthening solution (durable metal brackets, flitch plate) to all of the drilled members. (It may also be possible to do this and leave the pipe in place.) BRANZ Appraised metal brackets that can be used to strengthen timber have only been appraised for use with wall framing and joists.
- Rerun the pipe under the bearers and replace all drilled bearers with new members (not easy or cheap).

Timber-framed garage floors

Can 3 kPa load tables be used?

The short answer is no. The 3 kPa tables in NZS 3604:2011 are not designed to accommodate point loads (from wheels or jacks) and the dynamic loads applied when the vehicle enters and stops within the garage. However, the floors can be specifically engineered to accommodate these requirements.

NZIOB Awards

Finalists announced

The finalists have been announced for the 2018 New Zealand Building Industry Awards, with 42 entries being short-listed to go through to the final judging round. NZIOB and awards programme sponsor GIB® congratulates all 42 finalists – details are now on the awards website.

What does the future hold?
Looking good!

From www.engineeringnews.co.nz:

> According to the Building and Construction in New Zealand 2017–2022 report, the total value of building authorised (including residential and non-residential) is expected to peak in the financial year ending March 2017 and will remain above $10 billion in the next two years before activity levels off. The slight decline in 2017/18 is expected to be the first year of negative growth in the overall sector for five years, while dwelling construction is forecast to continue growing until 2019/20, representing seven years of consecutive growth.

How big is big?
Where does property sit?

According to Property Council New Zealand, property is New Zealand's most significant industry, contributing nearly $30 billion per annum towards GDP and employing over 160,000 people. But what are the constraints on the sector in terms of performance? The Property Council New Zealand Manifesto 2017 *Building New Zealand's Cities of Tomorrow, Today* outlines the Property Council's policy recommendations. They call for a bold step change in how we develop, build, regulate and invest in our cities by:

- reforming the planning system and infrastructure funding
- increasing productivity
- adopting a transformative agenda as outlined by BRANZ for the wider building and construction industry
- simplifying the supply chain
- addressing skill levels
- a revised approach to taxation.

To read the full document, click here.

Wind speeds
Hierarchy applies

BRANZ Maps is an easy-to-use online tool that gives a theoretically derived wind zone for a specific site address. When using the tool, it is advisable to always look at the wider picture in terms of the wind zones for adjacent sites. For a large site, the attributed wind zone for the address will be the worst case, and this may not be applicable over the entirety of the site.

Where the wind zone is questioned, the following documents are listed in their order of preference or hierarchy:

- AS/NZS 1170.2.2011 *Structural design actions – Part 2: Wind actions*.
- NZS 3604:2011.
- Territorial authority wind maps (if current to the above standards).
- BRANZ Maps.

As a reminder, maximum applicable design wind speeds for each wind zone in NZS 3604:2011 are:

- low – 32 m/sec (115 km/hr)
- medium – 37 m/sec (133 km/hr)
- high– 44 m/sec (158 km/hr)
- very high – 50 m/sec (180 km/hr)
- extra high – 55 m/sec (198 km/hr)
- specific engineering design – over 55 m/sec.

Vertical timber shiplap cladding and wind zone
Risk score increases with wind zone

Under Acceptable Solution E2/AS1, vertical timber shiplap profile timber cladding can be direct-fixed to the framing for building with a weathertightness risk score of up to 6.

When using the E2/AS1 risk matrix, the points attributed to each wind zone are:
- low – 0
- medium – 0
- high – 1
- very high – 2
- extra high – 2.

In the absence of other risk factors such as waterproof decks, limited eaves width (which may be very unlikely), shiplap can be direct-fixed in all wind zones. One cavity based-shiplap system has a BRANZ Appraisal that says it is suitable for use for a risk score of up to 20 when used within the scope of the Appraisal.

For good shiplap installations:
- face lap joints away from the prevailing wind direction
- boards should be single lengths between horizontal flashings
- single nail at each board fixing point
- use a light-coloured paint finish to minimise the amount of timber movement after installation.

BRANZ Seminars 2018
Talking Timber

This *Talking Timber* seminar will travel along the path of timber as it is prepared for a career in the building industry.

Starting off in the forest, we will explore the influences on timber as it grows and how this will impact on its properties as sawn timber. Once felled, the timber starts its processing journey where it is again subject to many influences.

Once in its sawn forms – framing and wall cladding – we will then traverse the treatment options for the end use, drying, storage (during transport and on site), installation and post-installation care. For timber weatherboard claddings, we will cover the requirements for a good installation including storage and transport, defects, suitable species, treatment, applicable codes and standards, installation and fixing, as well as appropriate coatings for the treatment and finally maintenance.

Topics the seminar will cover will include:
- history of timber use
- timber properties including:
    - influences on growing trees – root stock, pruning, wind, soils
    - sustainability, carbon sequestration
    - log characteristics – compression wood, corewood/outerwood, density, grain
    - moisture in newly sawn timber
    - shrinkage – when it occurs
    - minimising timber variation
    - certification
- applicable Code clauses (B1, B2, E2) and standards (NZS 3604:2011, NZS 3602:2003, NZS 3640:2003)

- framing including:
    - impacts on performance
    - species, durability, treatment options and hazard classes
    - benefits of kiln drying
    - grades and marking
    - moisture content (and correctly measuring this)
    - installation
    - permitted defects
    - care on site
- cladding including:
    - reported cladding issues
    - durability – treatment options and hazard classes
    - species – radiata pine, cedar, redwood
    - profiles and samples
    - vertical versus horizontal
    - finger jointed versus clears
    - moisture content
    - timber surface finishes
    - coating options
    - care and handling on site
    - installation
    - maintenance
- new developments.

Dates and venues

Wed 1 Aug	Invercargill	Ascot Park Hotel
Thu 2 Aug	Queenstown	Mercure Resort Queenstown
Fri 3 Aug	Dunedin	Dunedin Centre
Wed 8 Aug	Tauranga	Trinity Wharf Tauranga
Thu 9 Aug	Rotorua	Millennium Rotorua
Fri 10 Aug	Hamilton	FMG Stadium Waikato
Wed 15 Aug	Christchurch	Sudima Christchurch Airport
Thu 16 Aug	Hokitika	Order of St John Hokitika
Fri 17 Aug	Nelson	Rutherford Hotel Nelson
Wed 22 Aug	Auckland – North Shore	QBE Stadium
Thu 23 Aug	Napier	Napier Conference Centre
Fri 24 Aug	Upper Hutt	Silverstream Retreat
Wed 29 Aug	Palmerston North	Distinction Hotel and Conference Centre
Thu 30 Aug	Kerikeri	Woodlands Motel and Conference Centre
Fri 31 Aug	Auckland – Central	Crowne Plaza Auckland
Wed 5 Sep	Timaru	Landing Service Conference Centre
Thu 6 Sep	Christchurch	Addington Events Centre
Fri 7 Sep	Blenheim	Scenic Hotel Marlborough
Wed 12 Sep	Auckland – South	Ellerslie Events Centre
Thu 13 Sep	New Plymouth	TSB Showplace
Fri 14 Sep	Wellington	Museum of New Zealand Te Papa Tongarewa

All seminars are 3 hours and run from 1.00 pm to 4.00 pm.

Online registration will be available from 4 July.