Guideline

October 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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Inspection delays

Good planning is even more critical

The BRANZ helpline is hearing many comments about long delays waiting to get building consent authority (BCA) site inspections for building work. A delay of 3 weeks is not uncommon, and we have also heard of builders having to wait 4 weeks.

It is crucial for contractors to plan ahead and book in an inspection weeks before it is required. It goes without saying that it is also crucial that the work that is to be inspected is actually finished when the inspection date arrives!

If you haven't heard about our Artisan service, check it out. Artisan helps to streamline the building inspection process.

Laps and bends for reinforcing rods

What are the requirements?

The BRANZ helpline has had a few calls in recent weeks around the correct laps for reinforcing rods and the right diameter for bends.

Horizontal reinforcing steel generally consists of 12 mm diameter deformed (D12) bars and R10 for vertical starter bars. Where horizontal reinforcing bars must be lapped – for example, where they change direction – the overlaps must be a minimum of 500 mm.
Lapped reinforcing is tied together with 1.6 mm black annealed steel tie wire at each end of the lap and at regular spacings in between, sufficient to hold it in place.

At corners, the laps must also be at least 500 mm in each direction (Figure 1). The lapping requirements are found in NZS 3604:2011 *Timber-framed buildings* clause 6.11.7.1 and Figure 6.15(a).

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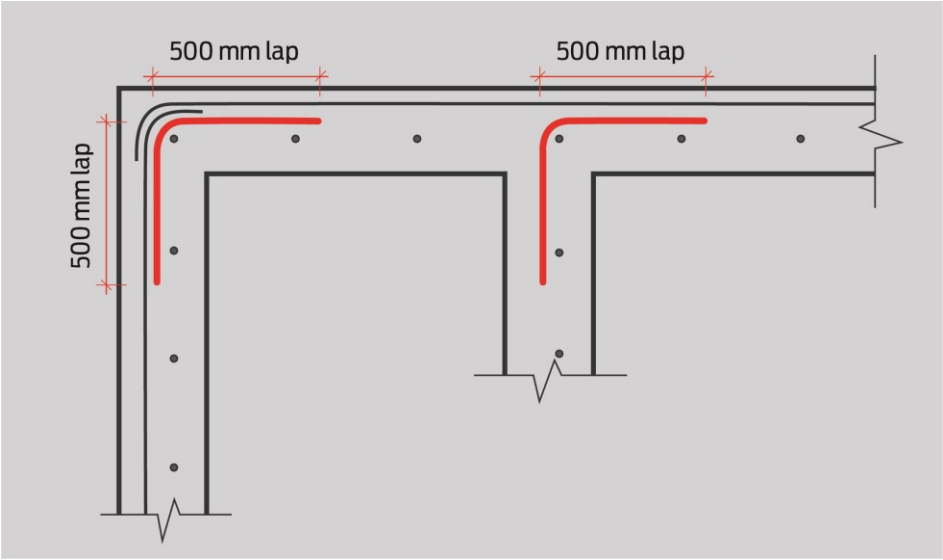

Figure 1. Reinforcing laps at corners.

Minimum bending diameters for reinforcing steel are given in Tables 8.1 and 8.2 of NZS 3101.1&2:2006 *Concrete structures standard* (which can be downloaded for free from here).

According to Table 8.1, the inside bending diameter for 6–20 mm diameter deformed and plain steel reinforcing bars must be at least five times the bar diameter. Therefore, the reinforcing bar minimum bending diameter for:

- R10 is 5 × 10 = at least 50 mm
- D12 is 5 × 12 = at least 60 mm
- D16 is 5 × 16 = at least 80 mm.

Table 8.2 gives the minimum diameter bends for stirrups and ties. For steel 6–20 mm, the minimum is 2 x the diameter for plain bars and 4 x the diameter for deformed bars.

It is also important to consider the cover required for reinforcing steel. When footings and foundations are poured against ground (NZS 3604:2011 clause 6.11.3) or constructed from unprotected masonry blocks, the minimum cover to the steel must be 75 mm.

More timber than expected in timber-framed walls
Thermal bridging likely to impact energy efficiency

Measurements made of 47 new houses in Auckland, Christchurch, Wellington and Hamilton found the average content of timber framing in exterior walls (excluding doors and windows) was 34%. This is much higher than the 14–18% framing content generally assumed by regulators and the industry. In practice, this means a reduction in the wall area available for insulation and that the deemed-to-comply compliance methods in H1/AS1 and E3/AS1 may not be achieving the minimum R-values they are aiming for.

Further research now under way is trying to discover what precisely is behind the high framing ratios. You can find out more in the newly published research report ER53 *Measuring the extent of thermal bridging in external timber-framed walls in New Zealand*.

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The subfloor ventilation trap

Don't fall into it

Suspended floors at ground level are much less common than slab-on-ground floors today, but we still see a few being built. In addition to working with new-build suspended floors, many contractors will carry out renovations on existing houses with suspended floors.

With suspended timber floors, NZS 3604:2011 requires subfloor vent openings at least 3,500 mm^2 per m^2 of floor area. The mistake is to treat this figure as vent dimensions – of course, the requirement actually applies to clear opening space and not vent dimensions (Figure 2). Rodent protection or decorative work on some vents means that the actual open space vents can be less than one quarter of the vent dimensions. If you are buying new vents, ask the supplier about the open space measurement as well as overall dimensions.

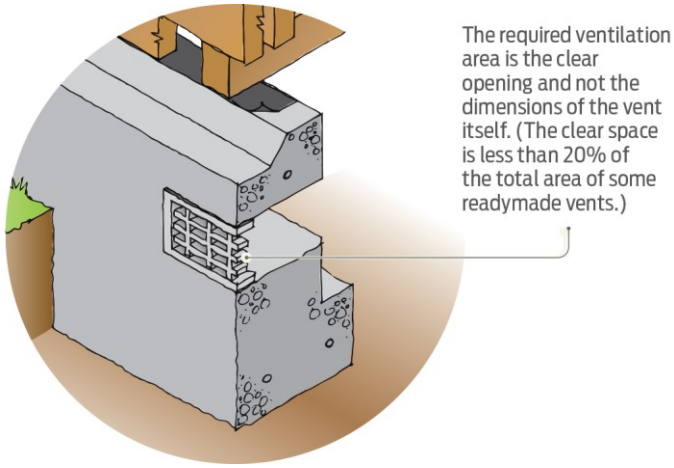

Figure 2. For subfloor ventilation, the area required for vent openings in NZS 3604:2011 is not the dimension of the vents themselves

Storm repairs and building consent exemption

There is another path beyond "repairs and maintenance"

Storms and flooding can cause substantial damage to buildings, but repair work does not always require building consent. The Building Act 2004 (in Schedule 1) provides for exemptions for maintenance and repair work where damage was not the result of durability failure, replacement is made with comparable materials and building performance is not reduced.

However, Schedule 1 offers another option. It gives city, district and regional councils the discretion to exempt any proposed building work from requiring building consent.

To get this exemption, the work must meet one of two requirements:

(a) It must comply with the Building Code.

(b) If it does not comply with the Code, it must be unlikely to endanger people or any building, whether on the same land or other property.

These exemptions should be applied for in writing, and councils typically charge a fee for this (but it will be considerably lower than the cost for building consent). After the work has been done, the authority can record that it has been done correctly. As one council has pointed out, following this process "provides everyone involved with the repairs with some degree of protection and protects the future resale value of properties".

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Building Code changes coming in November
The start of annual November updates

MBIE has produced a document around changes to the Building Code that will be published on 5 November 2020. MBIE is proceeding with changes to clauses C *Protection from fire*, E1 *Surface water*, E2 *External moisture*, E3 *Internal moisture*, G9 *Electricity* and G13 *Foul water*. Existing Acceptable Solutions and Verification Methods will remain in force until 4 November 2021. The next consultation opens in April 2021.

Freebies for you and clients
Reliable guidance at no cost

You probably know that MBIE has provided the funds to allow industry to download a range of important building standards for free. (You can find them here.)

But did you know that government funding makes other well-researched, reliable and independent information on building/housing issues free through bodies such as Consumer New Zealand?

Here are four resources you might like to point out to clients (or even check out yourself):

- How to buy LED bulbs
- Are solar panels right for your home?
- Smoke alarms
- Hazardous waste

News

- Stats NZ figures show that a record 10,063 townhouses, flats and units were consented in the August 2020 year. The rolling annual figure just 2 years earlier in August 2018 stood at 5,980.

- MATES in Construction, a group established by the construction industry, is visiting 34 towns and cities with a free national roadshow with training in suicide prevention. The construction industry has the highest suicide rate of any commercial sector in the country.

- Owner-occupiers of units and apartments in earthquake-prone buildings can now apply for a loan of up to $250,000 to strengthen their homes from the Residential Earthquake-Prone Building Financial Assistance Scheme. Units must have been bought before 1 July 2017 and must be in a building that has been given an earthquake-prone building notice.

- In the newly published Hays Construction & NZIOB Salary Guide for 2020, 28% of survey respondents said they expect to increase permanent headcount over the next year. Over 80% of employers said skills shortages were having an impact on their business.

- Recent BRANZ research has prompted a shift in thinking around airtightness and ventilation. BRANZ now recommends that residential buildings are built to an airtightness target and have mechanical ventilation as the default.

- EECA commissioned testing of 12 electric hot water cylinder models , and six failed to meet energy efficiency requirements. Two suppliers have stopped offering four cylinder models for sale, one manufacturer is being prosecuted and one investigation is continuing.

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- WorkSafe reminds companies that if a worker has to interact with machinery, it must be guarded. A Masterton sawmill was fined $350,000 and ordered to pay reparation of $263,762 after a worker died as a result of being pulled into machinery.

- ASB Bank has updated its housing shortage estimates, taking account of Stats NZ's recently upgraded population estimates. In an October newsletter, it says that there is a shortage of around 60,000–65,000 houses – around twice what was previously assumed.

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