Guideline

April 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.

In this issue: Combination piles ● Smoke detection in dwellings ● Decks close to the ground ● Loop bars in flange-hung double-tees ● Splashback clearances – electric cooktops ● Vacancy: Technical Writer and Helpline Advisor

Combination piles

Afraid not

A recent question to the helpline regarding anchor and braced piles asked: "Can a brace (as part of a braced pile combo) be attached to the top or bottom of an anchor pile?"

The short answer is no. While a suspended floor foundation design can use both anchor and braced piles, they are to be constructed as separate units. The risk is that a brace attached to an anchor pile may overload the anchor pile when wind or earthquake loads are applied.

Smoke detection in dwellings

A cause for alarm

For all building work (new and alterations to existing) that requires a consent, it is mandatory to ensure smoke alarms are properly installed. In rental properties, installing photoelectric smoke alarms that have a long-life battery (minimum 8 years) or are hard wired is mandatory. It is also recommended practice that they be installed in all existing dwellings.

The next step is to determine what should be specified or installed. There are two main types of smoke alarm available:

- Photoelectric, which are typically better at detecting slow (smouldering) fires as they detect smoke when it affects the light levels in a sensor chamber.
- Ionisation, which are better at detecting fast flaming fires as they detect smoke when the particles block the stream of ions (electrically charged particles) in a sensor chamber.
- Combination ionisation/photoelectric.

Domestic smoke alarms must be Type 1, which must have:

- a hush button so the alarm can be cleared for a short period of time without shutting off power (i.e. by removing the battery)
- a test button.

For optimum smoke detection and notification of occupants (particularly when sleeping), photoelectric smoke alarms should be installed in bedrooms, living areas and hallways. An absolute

minimum is the installation of a long-life photoelectric smoke alarm in the hallway closest to the bedrooms.

Photoelectric units should be installed:
- on (preferably) or near the ceiling – if it must be located on a wall, install it 100 mm from the ceiling and 600 mm from a corner to avoid dead air pockets
- on the escape route of each floor level of a household unit
- in every sleeping space or within 3.0 m of a sleeping space door
- in sleepouts.

Fire and Emergency New Zealand (FENZ) recommends installing smoke alarms in every sleeping and living space.

In kitchens, bathrooms and laundries, use a heat alarm instead as smoke alarms will be prone to false alarms. Heat detectors are not typically used in single dwellings but may be installed in larger residential complexes as a component of a building fire alarm system.

Other selection considerations:
- Stand-alone or inter-connected: If one inter-connected smoke alarm activates, they all activate, making the alarm more likely to be heard throughout the building irrespective of fire location. The linking may be wireless of through the wiring when hard wired.
- Battery or mains power: Alarms are now available with up to 10 years' battery life (5 years if wirelessly connected). Mains powered alarms still have a battery for times the power is out.
- Battery life: The device may need a new battery each year.
- Cost: While there are very cheap units available, it is better to pay a bit more if you can.
- Durability: Smoke alarms generally have a maximum life of 10 years – there should be an expiry date on the back of the unit.

For recommendations on individual units, see Consumer NZ.

For more details, see New Zealand Building Code clause F7 *Warning systems* and Acceptable Solution F1/AS1.

Information on location of smoke alarms is also given in NZS 4514:2009 *Interconnected smoke alarms for houses* and *Build* article Placing smoke alarms correctly.

Decks close to the ground
Attention to detail required

For many modern buildings that use slab-on-ground construction, timber-framed and timber-slatted decks will be relatively close to the ground. This means they may be subject to higher residual moisture contents than a deck structure that is, say, 1 metre off the ground.

Factors that need to be considered:
- Ground contour: Is the land shaped to drain surface water away from the building?
- Ground conditions: Is the ground well draining such as sand or a heavy, poorly draining soil or clay?
- Timber treatment: For timber framing close to poor-draining soil, consider using H4 treated timber as a minimum.
- Fixing durability: As the timber is likely to be damper in use due to the proximity to the ground, specify stainless steel.
- Water rising up a short timber or concrete pile: Always isolate the pile from the bearer with a DPC.

- Grain pattern for timber decking: Selecting quarter-sawn boards will reduce the risk of the decking cupping.
- Edge detail adjacent to the building: There should always be a 10–12 mm gap adjacent to the cladding to allow drainage.

Where a low-level deck is proposed, owners need to be made aware of the potential issues.

Loop bars in flange-hung double-tees
Warnings issued

MBIE has issued a warning about the use of loop bar details in flange-hung double-tee precast concrete floor units. On 3 April, it published an amendment to Verification Method B1/VM1 that took effect immediately, with a temporary transition period.

B1/VM1 Amendment 16 includes:
- an updated reference to the latest version of NZS 3101.1&2:2006 *Concrete structures standard* Amendment 3
- modifications to NZS 3404 Parts 1 and 2:1997 *Steel structures standard* to update design and construction requirements.

The amendment ensures that current engineering practice is reflected in the Verification Method.

B1/VM1 Amendment 15 or Amendment 16 will be accepted as a means of compliance during the 3-month transition period from 3 April to 30 June 2018. After 30 June 2018, only Amendment 16 will be accepted.

An exception has been made for the use of cast iron anchors and couplers, which will continue to be compliant under B1/VM1 Amendment 16 until 1 November 2018. This is to allow for continuity of anchor/coupler supply by giving suppliers extra time to stock up on alternative couplers and anchors.

The warning only applies to building consent applications for new building work. It does not mean that existing buildings with loop bar details are unsafe. The expected performance of loop bar details depends on a number of other building design and construction characteristics. If building owners are concerned their building may potentially contain the loop bar design detail, they should seek advice from a structural engineer or discuss their concerns with their building consent authority.

Splashback clearances – electric cooktops
Minimums apply

The required clearance between an electric element, ceramic glass or induction hob and the splashback depends on the hob manufacturer's recommendation and the splashback material. Clearances to a non-combustible surface can be as little as 30 mm, but 50 mm is recommended for some reconstituted stone materials. Depending on the front detail, this means that benches containing a cooktop will typically need to be at last 600 mm wide.

Manufacturers of the units may also have specific requirements for side clearances, clearances under the unit and a minimum clear height above the unit to extracts and adjacent overhead cupboards. For example, AS/NZS 4386.2:1996 *Domestic kitchen assemblies – Installation* requires a minimum 600 mm between any cooktop and a combustible overhead surface over the whole cooktop area.

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