Guideline

October 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.

NZS 3640:2003 and approved micronised copper timber treatments

Clarification of coverage

The recently completed *Talking Timber* seminar covered, among many other things, appropriate standards and levels of timber treatment for framing and timber weatherboards.

Seminar content omitted the inclusion of micronised copper azole and copper quaternary treatments in NZS 3640:2003 *Chemical preservation of round and sawn timber* as a result of Amendment 5 to the standard. These treatments are suitable for treating timber to hazard classes H3.1, H3.2, H4 and H5.

H3.2 micronised copper azole and copper quaternary treatment of timber weatherboards (as well as decking and deck framing) are acceptable under NZS 3640:2003 to meet minimum durability requirements of the New Zealand Building Code.

These are the treatment identification numbers for the micronised treatments:

- Micronised copper azole (copper 95.8–96.4%, azole 4.2–3.6%) – 88.
- Micronised copper quaternary (copper 56–67%, DDAX 33–44%) – 89.

Horizontal timber weatherboard laps

Please leave them unsealed

BRANZ weathertightness research has found that, for horizontal timber weatherboards (bevel-back and rusticated profiles), a significant amount of ventilation occurs through the board laps as the laps open and close with movement in the timber.

The laps may let in some water, but they also allow that water and any water present on the back of the weatherboard to drain out.

To make use of this drainage and drying, the laps of timber bevel-back and rusticated profiled weatherboards installed as a direct-fixed cladding or over a drained and vented cavity **must not** be sealed.

Building Code-compliant residential ventilation

Fresh outdoor air a must

Building Code clause G4 *Ventilation* paragraph G4.3.1 states: "Spaces within buildings shall have means of ventilation with outdoor air that will provide an adequate number of air changes to maintain air purity." In most cases, opening windows will be enough to meet this requirement. Where mechanical ventilation is required, however, systems must supply fresh external air to the spaces within the building. Ventilation systems that draw air from a roof space do not comply with G4.3.1.

While such systems can pressurise the space below and remove some stale air by exfiltration, they may:

- transmit (unless appropriately filtered with quality filters) air containing dust and fibres into the habitable spaces
- on cold nights, reduce air temperature (increase heating load) in the habitable space as the air within the roof space is likely to be colder than that in the rooms below
- increase energy bills where the system incorporates heating to warm incoming (cold) air.

The requirements for compliant mechanical ventilation systems are given in G4/AS1:

- section 1.4 for combined natural ventilation and mechanical ventilation
- section 1.5 for mechanical ventilation generally
- section 2.2 for mechanical ventilation of space containing gas appliances.

Disabled access – accommodation

These are the rules

Access for people with disabilities into motels, hotels and halls of residence is covered in section 119 of the Building Act 2004, which references NZS 4121:2001 *Design for access and mobility: Buildings and associated facilities*. Section 14 of the standard covers accessible accommodation.

The standard can be downloaded at no cost from www.standards.govt.nz/sponsored-standards/building-standards.

Opaque materials and thermal performance

The unknown becomes known if you use R0.18

NZS 4218:2009 *Thermal insulation – Housing and small buildings* is cited by H1/AS1 and H1/VM1. It covers (in clause 4.2.9) the use of opaque materials (such as translucent sheet materials) that have an unknown R-value. The standard says that an R-value of R0.18 should be entered for the opaque material in heat loss calculations.

This standard can also be downloaded at no cost from www.standards.govt.nz/sponsored-standards/building-standards.

Flashing materials and E2/AS1

What and where

When using E2/AS1 as a means of compliance for flashing materials the key references are:

- Table 7 Metal flashings – general dimensions
- Table 20 Material selection
- Table 21 Compatibility of materials in contact
- Table 22 Compatibility of materials subject to run-off.

Table 20 covers:

- the influence of exposure zones with respect to 15-year or 50-year minimum durability
- flashing location – hidden or sheltered. For steel-based claddings, all situations are considered as sheltered.

The notes to Table 20 are important, particularly:
- Note 2 – "The term 'hidden' means concealed behind another element such that no part is visible. Hidden elements require a 50-year durability under the NZBC. The term 'exposed' means having surfaces exposed to rain washing. The term 'sheltered' means being visible, but not rain washed ..."
- Note 9 – "Hidden steel coated elements in ventilated cavities in zones D and E (exposure to salt air) must be considered as 'sheltered'."

Shapes and dimensions of E2/AS1-compliant flashings are incorporated into individual cladding material details.

This month's quote
From a homeowner

"This house is eco-friendly: it is built for the sun. We use solar power to heat the water and the tile floors, and concrete walls create a great thermal mass that holds the heat. Deep eaves keep the house cooler in summer."

BRANZ Seminars 2018
Passive Fire Protection Risk Assessment

This is repeat of our popular seminar presented in March 2018, after questionable fire and smoke stopping in New Zealand buildings had been widely reported.

Determining the extent of the problem has been difficult. Many components of passive fire protection (PFP) are typically not easy to access or assess. Poor performance of PFP will not be apparent until a fire occurs.

This problem has been brought to a head in buildings currently undergoing extensive weathertightness remediation work. Consent for weathertightness remediation work falls under section 112 of the Building Act 2004, which requires the building to comply as nearly as is reasonably practicable with the Building Code provisions for means of escape from fire. PFP plays a key role in maintaining a safe means of escape during a fire.

The cost of making the PFP compliant is significant and on the same order of magnitude as the weathertightness work itself.

This seminar aims to deliver information and tools to make good decisions on what is reasonable and practicable when addressing fire and smoke stopping deficiencies in existing buildings. The seminar will describe the research (including testing) to date to develop a process for assessing whether it is reasonable and practicable to address PFP non-compliance. Examples of a risk analysis tool already used in industry for this purpose will be provided.

You will take away an understanding of the options for determining fire and smoke-stopping compliance, what kind of information should be collected and have tools to technically evaluate proposed options.

Presenters
Kevin Frank – BRANZ Fire Research Engineer
Greg North – Fire Engineer, Beca

Dates and venues

Monday 29 October	Auckland – Central	Crowne Plaza Auckland
Tuesday 30 October	Hamilton	Claudelands Event Centre
Wednesday 31 October	Tauranga	Trinity Wharf Tauranga
Thursday 8 November	Queenstown	Venue to be confirmed
Friday 9 November	Nelson	Rutherford Hotel Nelson

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

Online registration is now available.

BRANZ Answers Junctions – advance notice

Development work is under way for this seminar series to be delivered at 21 centres during February/March 2019.