JULY 2013

Imported plywoods

Imported plywoods that are manufactured using timber species that are unusual for New Zealand are readily available. However, when proposing to specify an imported plywood, be aware that they may:

- not meet New Zealand Building Code requirements for treatment (where treatment is required)
- not comply with the standard AS/NZS 2269:2012 *Plywood – Structural* when used in structural applications such as flooring or bracing (has bracing performance been verified using the BRANZ P21 bracing test?)
- not be manufactured from timbers that are sourced from a sustainable resource
- not have a verified durability, particularly for external applications such as cladding
- incorporate glues of unknown performance
- not be timber that is not commonly used for plywood in New Zealand (such as willow-faced plywood)
- not perform as expected.

It has been brought to BRANZ's notice that these imported products may not be suitable for use under roofing membranes or asphaltic shingles – reported problems have included extensive surface checking (veneer splitting) and excessive movement. They may also perform poorly when used behind plasterboard linings.

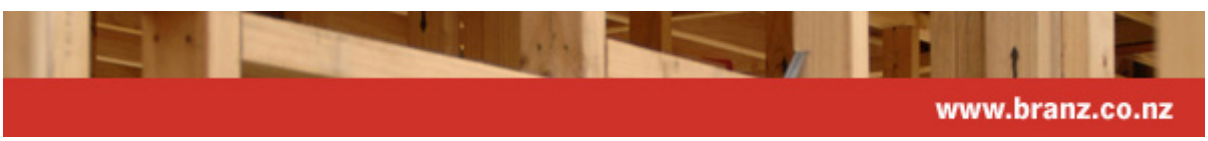
- It is also worth satisfying yourself that:
- the supplier is reputable – there is an advantage in staying with suppliers who are known and who back their products
- there is adequate and competent technical information and support for the product
- fixing and installation instructions are available and applicable to the end use and New Zealand conditions
- the product will be compatible with or suitable for use with adjacent building materials
- a warranty is available.

While these comments cover plywood, in essence, it is a cautionary tale for all imported products, and being aware of a product's provenance is critical before the product is specified and/or installed. In the plywood example, replacement of a complete roof cladding system to address the performance issues reported with the plywood will be an expensive process.

Remember the saying: "Nobody ever made any money doing a job twice and being paid for it once."

Profiled metal wall claddings and E2/AS1

E2/AS1 places limits on the profiles that can be direct-fixed vertically. Corrugated (curved with a minimum crest height of 16.5 mm minimum) can be direct-fixed up to a weathertightness risk matrix score of 20 while symmetrical trapezoidal profile (with a minimum crest height of 19 mm) can only be direct-fixed up to risk score matrix score of 6. Crest or trough fixings are permitted.



For horizontal installation of corrugate and trapezoidal profile metal claddings:

- for designs to E2/AS1, a drained and vented cavity is required
- cavity battens are at maximum 600 mm centres – where stud spacings exceed 450 mm centres, restraint of the flexible wall underlay is required to prevent insulation bulging into the cavity
- fixing is required to each stud and at the ends of sheets to external and internal corners as well as around penetrations
- crest or trough fixings are permitted – trough fixings offer some shelter to the head of the fixing
- a gap of at least 5 mm is required at the ends of horizontal sheets to allow for thermal movement – details published by BRANZ typically allow 10 mm.

Fixings for metal claddings:

- are a minimum of AS 3566 Class 4 or Class 5 12-gauge hex-head self-drilling screws for timber studs with a penetration minimum of 30 mm into the framing (i.e. for cavity installations, that is 30 mm beyond the cavity battens and into the studs)
- have sealing washers of neoprene (having a carbon black content of 15% or less by weight) or EPDM
- are spaced at every second trough/crest for corrugate and for trapezoidal – where the rib centres for trapezoidal exceed 150 mm, the fixings are to be through every trough.

E2/AS1 does not give fixing centres for either vertically or horizontally installed profiled metal cladding. Metal cladding must be separated form timber treated with a copper-based treatment.

Calculating thermal mass from NZS 4218:2009

As NZS 4218:2009 *Thermal insulation – Ho*using and small buildings is not cited in the H1 compliance documents, designers using it as a means of compliance must submit their thermal calculations in their consent documentation as an alternative method – currently the H1 cited standard is NZS 4218:2004.

Design rules in the 2009 version of NZS 4218 are more definitive than the 2004 version.

When using the 'buildings with high thermal mass' provisions of Table 4 of NZS 4218:2009, calculations for the thermal mass can only be used where:

- the thermal mass is exposed to the interior
- the thermal mass material has a surface density of at least 215 kg/m2.

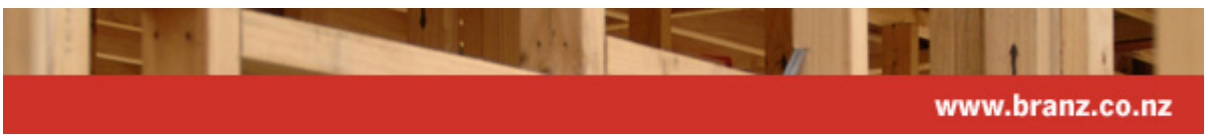
For wall construction, this means that the wall insulation must be located on the external surface of the wall. This means that heavy mass walls that are strapped and lined with insulation on the inside cannot be used to provide a thermal mass. The thermal performance required of such walls must be determined using Table 2 of NZS 4218:2009 'any wall type'. When using a bulk insulation such as glass fibre, wool or polyester with strapping, the strapping will need to be at least 75 mm deep to meet the 'any wall type' schedule method requirements.

***Build* magazine online**

BRANZ's flagship magazine *Build* is now available online on the BRANZ website. The latest edition of the magazine can be read online, and there is a new updated search function to locate articles that featured in previous editions.

To access *Build*, click on www.branz.co.nz/welcome_to_build. Once in this section, the latest edition can be accessed as can the index.

If looking for an earlier article, locate the date or edition number in the index, then look on the right-hand side of the page, click on 'Browse previous issues' and scroll back to the issue required.



Choosing building materials for projects

Two common sources of information when choosing an appropriate cladding system for weathertightness, exposure and the like:

- E2/AS1 gives a selection of wall and roof cladding materials that are deemed to comply with the New Zealand Building Code when used exactly as detailed in the compliance document and within the appropriate risk score, wind zone and height limitations.
- BRANZ Appraisals that cover cladding systems. For the weathertightness component of the Appraisal, the cladding systems are tested to the requirements of E2/VM1 – a pass of this test is also a deemed-to-comply solution for weathertightness. Cladding systems that are outside the scope of E2/AS1 systems must be submitted for consent as an alternative method, with the current Appraisal used as supporting information. When using BRANZ-appraised cladding systems, it is important that the intended use is within the scope of the appraised system and details referenced in the Appraisal are followed.

BRANZ Appraisals, which are independently audited, also cover bracing systems, sealants, insulation materials, roofing and deck membranes, interior waterproofing membranes, roof claddings and fixings. To see current Appraisals, go to www.branz.co.nz/appraisals.

New hub for universal design

Universal design is a new website resource for the design of new and alteration of existing homes in New Zealand. Universal design, sometimes known as 'design for life' and 'barrier-free design', is the principle of incorporating features into buildings and their immediate surrounds to ensure that they are widely accessible to all ages and abilities while minimising compromise. It's about making homes accessible, safe and functional, while not compromising on aesthetics.

The website is the result of an initiative spearheaded by ACC with the goal of providing an online library of 'how to' and promotional resources for architects, designers, which is complementary to New Zealand-specific websites and information such as BRANZ's publication Homes Without Barriers. A survey of the design community was conducted in early 2013 to ensure that the resources provided were well targeted to the needs of the users. The web 'hub' includes a gallery of generic dimensioned drawings, a tailored costing calculator, a gallery of design photos and links to the best international resources available.

BRANZ sees this as a 'living' website to ensure on-going relevance. We invite your feedback – please visit www.branz.co.nz/universal_design.

Upcoming BRANZ seminars – advance notice

Building Seismic Resilience

The Canterbury earthquakes highlighted the importance of achieving seismically resilient building construction and have brought about a paradigm shift in building design philosophy. This is driving the development and uptake of new low-damage seismically resisting technologies that can withstand major earthquakes and require little or no post-earthquake structural repair. This seminar will introduce options to improve the seismic resilience of buildings.

Location	Date	Time
Tauranga	26 August 2013	1–4pm
Hamilton	27 August 2013	1–4pm
Auckland – North Shore	28 August 2013	1–4pm
Auckland – Central and South	29 August 2013	1–4pm
Dunedin	2 September 2013	1–4pm
Christchurch	3 September 2013	1–4pm
Wellington	4 September 2013	1–4pm
Napier	5 September 2013	1–4pm

Fire Zone Modelling (BRANZ-SFPE seminar)

This half-day seminar will cover the use of fire zone models for fire safety design with emphasis on using the B-RISK computer model to meet the requirements of Building Code compliance document C/VM2. The seminar is intended for fire safety engineers with some previous zone modelling experience and has been organised in conjunction with the New Zealand Chapter of the Society of Fire Protection Engineers (SFPE). Content will include updated guidance on assessing suitable compartment size and shape for zone models, shafts and long corridors, appropriate use of vertical and horizontal flow vents, predicting smoke detector response, using spill plumes and modelling fully developed fires in accordance with C/VM2.

Location	**Date**	**Time**
Auckland – North Shore	23 September 2013	1–5pm
Auckland – Central NZ Fire Service rooms	24 September 2013	1–5pm
Rotorua	25 September 2013	1–5pm
Wellington	26 September 2013	1–5pm
Christchurch	27 September 2013	1–5pm