JANUARY 2015

D1/AS1 requirements for accessible ramps

- The maximum permissible slope for a ramp that provides access for people with disabilities is 1:12 – this equates to an 83 mm rise per 1 metre of run of the ramp.
- A minimum clear width of the ramp of 1.2 metres.
- A kerb height of at least 75 mm or a low barrier is required where the ramp surface is more than 25 mm above adjacent ground to prevent drop-off.
- The maximum height the ramp may extend to before a landing is required is 750 mm (giving a maximum length of an accessible ramp of 9 metres before a landing is required).
- Minimum landing length depends on the location of the landing (mid-ramp or at the top) and the location and swing of any door opening off the landing (Figure 9 in D1/AS1). Mid-ramp landings without a door must be at least 1200 mm long. Landings adjacent to a door must be:
    - at least 1500 mm long where the door opening is at right angles to the line of the ramp
    - at least 1200 mm where the door opens inwards in the line of the ramp
    - at least 2000 mm where the door opens outwards in the line of the ramp (a minimum of 1200 mm clearance to the edge of the fully open door is required).
- Level landings are required at the top and bottom of all ramps.
- Handrails are required on both sides of ramps at between 900 mm and 1 metre high. Handrails must run continuously over the ramp length and must extend 300 mm minimum horizontally over the landings at each end (Figures 9 and 25 in D1/AS1).
- Acceptable slip resistance requirements are given in Table 2 and clause 3.1.4 of D1/AS1 for ramp surfaces (sloping surfaces that may be wet or dry as applicable).

Click here to access D1/AS1.

Straightening studs as permitted in NZS 3604:2011

When dealing with timber studs, there are always one or three that bend a bit after the frames have been erected. NZS 3604:2011 *Timber-framed buildings* allows studs that have crooks (curves) in them to be straightened on site. This is on the basis that the crook in the stud is no greater than that permitted in NZS 3631:1988 *New Zealand timber grading rules*.

The maximum permitted crooks in NZS 3631:1998 for 90 x 45 mm studs are:

- up to 3.0 metres long – 10 mm
- up to 3.6 metres long – 15 mm
- up to 3.9 metres long – 20 mm
- up to 4.5 metres long – 25 mm
- up to 4.8 metres long – 30 mm.

Studs with the above crooks may be straightened with a saw cut in one edge, no deeper than the centre line of the stud, with no more than two cuts per stud. Studs are usually pulled from the uncut side towards the cut side with a wedge being driven into the cut(s) in the stud to straighten it. When straight, nail 19 mm (minimum) thick timber fishplates (the width of the stud) to each side of the stud. Both fishplates must extend 225 mm minimum above and below the cut(s) (Figure 8.6 in NZS 3604:2011). No more than a quarter of the studs in any run of wall are permitted to be partially cut to allow them to be straightened. No two adjacent studs are permitted to be partially cut and straightened. Cutting and straightening of trimming studs (single or double) is not permitted.

Durability and serviceability requirements for flashings

Determining the minimum durability requirements for roof and wall flashings can be tricky. Minimum durability requirements are placed on flashings dependent on their location and ease of replacement by Building Code clause B2 *Durability*. However, flashings also need to remain serviceable for the life of the cladding.

B2/AS1 Table 1 requires that hidden flashings, such as behind brick veneer, stucco or a spandrel panel, must have a durability of not less than 50 years. Flashings that require the removal of cladding (stucco, EIFS and sheet materials) above the roof to allow flashing replacement must also have a durability of not less than 50 years.

Difficult to replace or hidden flashings must have at least the same durability as that of the element that covers them. Where flashings are behind brick veneer, the expected life of the flashing is likely to be a minimum 50 years. For flashings behind profiled metal or weatherboard wall cladding, a minimum of 15 years as is required.

Where claddings perform a structural function such as wall bracing, which has a minimum 50-year durability, the flashings are required to be just as durable.

Flashings that are exposed or partially exposed or are readily accessible are required to meet a minimum 15-year durability.

Two-part flashings as shown in E2/AS1 Figure 7 could be used to allow a lesser durability to the lower easily replaced section. The upper section would require greater durability when behind stucco and other claddings that would be damaged should the flashing need replacing.

For an E2/AS1 scope cladding that has been BRANZ Appraised, the flashing durability must equal the serviceable life of the cladding (assuming that the flashing is not easily replaced).

Site-laminated or made-up bearers

Bearers that have been constructed on site from shorter lengths of two thinner members are permitted when constructed in accordance with NZS 3604:2011 clause 2.4.4.7. For example, a bearer may be constructed from 2 x 90 x 45 mm lengths of timber instead of a 90 x 90 mm member.

However, the laminations must be the same length as each other and their ends must be coincident. This means that both members of the laminated bearer must be the same length as the solid bearer that it replaces. This stops the possibility that the bearer is only half its cross-section area where a pile crossing coincides with a staggered joint in the laminated members. In this situation, the laminated bearer could not carry the bending load like the solid case.

NZS 3604:2011 does not permit the jointing of bearers over braced or anchor piles.

Holes in trimming studs

NZS 3604:2011 (clause 8.5.2.3) **does not permit** any holes for wires or pipes, notching, checking or cuts in the middle third of the height of trimming studs.

Risk of fire

Build 144 article Alert to any alarms covers an often overlooked fire hazard that may be present when carrying out building and maintenance work. Solvents being used on buildings, particularly when used near sources of ignition (pilot lights on gas appliances or power tools arcing on armatures, electrical switches etc.), are a potential hazard.

When using flammable solvents, make sure all gas is turned off at the mains and there is plenty of ventilation. Also ensure that all the supplier's handling requirements in the product data and material safety sheets are followed.

Vertical shiplap weatherboard wall cladding

This cladding material is within the scope of E2/AS1 when direct fixed and used on walls that have a weathertightness risk matrix score of up to 6. E2/AS1 does not cover the use of vertical shiplap with a cavity or where faces of the building have a weathertightness risk matrix scope above 6. In these situations, the cladding will be an alternative method and will require:

- weathertightness testing of the cladding installed over a cavity as detailed to E2/VM1
- sufficient evidence being presented with the consent application that supports the use of the cladding as detailed – weathertightness, durability and structural considerations will need be addressed. For example, a current BRANZ Appraisal may be used where the installation of the cladding is in accordance with the Appraisal conditions and scope.

New from BRANZ

BRANZ Good Repair Guide *Timber Floorboards*

BRANZ seminars 2015: Building Science at Work

BRANZ performs research that helps support all aspects of the building industry – but have you ever wondered what actually occurs in our laboratories and test facilities? This seminar for architects, engineers, designers, builders and BCAs brings some of that research to the fore and demystifies it.

The aim of this seminar, delivered by experienced BRANZ researchers, is to provide an insight into:

- how research priorities are determined and how you can get involved
- recently completed projects such as:
    - the Window Energy Efficiency Rating System (WEERS)
    - Up-Spec – data for home performance improvements
    - the building quality survey
    - the updated BRANZ Maps tool
- current research programmes including:
    - durability
    - materials performance, with a focus on corrosion
    - building resilience to seismic and flooding hazards
    - weathertightness and indoor air quality research
- new research projects for the coming year
- the National Science Challenge and the opportunity for the industry
- overseas research and where we might be in 10 or more years.

Seminar dates and venues are:

Monday 16 March	Queenstown	Crowne Plaza
Tuesday 17 March	Dunedin	Dunedin Centre
Wednesday 18 March	Christchurch	Addington Events Centre
Thursday 19 March	Auckland – North Shore	QBE Stadium
Monday 23 March	Hamilton	Claudelands Conference & Exhibition Centre
Tuesday 24 March	Tauranga	ASB Baypark
Wednesday 25 March	Auckland – Central	Rydges Auckland
Thursday 26 March	Wellington	Amora Hotel

Online registration will be available from 9 February 2015.

Passive house design

The South Pacific Passive House Conference is being held in Auckland on 14–15 February – see www.passivehouse.org.nz for more information.