BRANZ
BUILDING ON KNOWLEDGE

GUIDELINE

FEBRUARY 2005

FREE MONTHLY UPDATE ON BUILDING ISSUES PREPARED BY BRANZ
AND FUNDED BY THE BUILDING RESEARCH LEVY

SUPPORTED BY THE BUILDING RESEARCH LEVY

CLADDING FIXINGS AND BACK FLASHINGS

Many published BRANZ details show the fixings of the cladding material also penetrate a flashing installed behind the cladding. Questions have been raised about the wisdom of putting a hole in the back flashing. In the published details, the flashing is back-up or secondary protection, with the cladding providing the primary protection. Fixing through a back flashing has not been identified to BRANZ as a source of water entry, therefore we are satisfied that our details do not pose a risk to weathertightness. However, if designers wish to further improve the robustness of details, installing additional vertical framing and battens may allow the cladding fixings to be located clear of the flashing or located on the dry or inner side of any profile seal.

WINDOWS AND DOORS, SILL TRAYS AND E2/AS1

When using E2/AS1 third edition as the basis of the design, sill trays are required where the cladding is direct fixed to the framing. Where a drained and vented cavity is installed, E2/AS1 does not require a sill tray flashing. In these situations it is believed that the cavity, along with the wrapping of the sill trimmer with flexible flashing tape, will cope with any water that might leak through the window section.

Recently published BRANZ window details which have passed the E2/VM1 test for cavity claddings have a partial or short (150 mm long) sill tray as part of the design. The reason being that if the window does leak, or if water does end up draining off a head flashing, then that water is caught and disposed of by the partial tray or soaker. BRANZ's aim was to make the detail as robust as possible. During testing we also removed scribers and airseals and loosened facings. While water did enter around the cladding during the retest it dripped down to the sill, was caught by the sill tray and drained to the outside – the water did not bridge the cavity.

Installing a partial sill tray within a cavity cladding system, while not required by E2/AS1 does improve the robustness of the detail. A sill tray would, BRANZ believes, be an essential feature of any Alternative Solution where specific weathertightness design is required.

AIR SEALS E2/AS1 AND WHAT'S HAPPENING ON-SITE

The details for windows in E2/AS1 are based on the concept of pressure equalisation – if we equalise the pressure on both sides of a potential weathertightness weak point then water is unlikely to be drawn through by differences in air pressure. In most New Zealand wall construction the internal lining provides the main air seal. However, we need to seal around any penetrations that puncture the wall lining.

E2/AS1 asks for either sealant or expanding foam installed over a back-up rod. The reason for the back-up rod is to regulate the depth of the air seal and prevent it filling all of the void volume around the window. If the void becomes overfilled then the benefits of pressure equalisation can be lost, the seal itself exposed to moisture, or a capillary path that allows water to be carried in from the outside created. Back-up rods used without expanding foam or sealant have been promoted in the past. However, the air seal ability may be lost where the rod is compressed further after installation (and therefore was not included by the E2/AS1 working group).

Observed site practice is that air seals are routinely installed without a back-up rod with variable application skills, particularly in the regulation of the amount of foam injected into the trim cavities. Therefore, the consenting authority (during site inspections) must be informally allowing the installation of air seals differing from E2/AS1, as an Alternative Solution. Provided the performance requirements of Clause E2 are being met this should not cause a problem, but the approval of an Alternative Solution for an air seal should be given at consent stage or as a formal and approved amendment to the consent documents.

The revision to the Building Act 2004 strengthens the processes by which any amendment to the consent documents is to be dealt with and approved by the consenting authority – informal approval onsite is not a recognised option.

BRANZ CITE

The following BRANZ CITE courses are being held in first half of 2005. Spaces are still available for the **Christchurch Weathertight Design** course so register now. Don't forget early-bird discounts may apply!

- **Weathertight Design**
  Cost: *$4,000 plus GST* ***($4,500 incl. GST)***

Christchurch:	Week 1: March 7-11	Week 2: April 11-15
Auckland:	Week 1: May 2-6	Week 2: June 13-17
Wellington:	Week 1: May 16-20	Week 2: July 4-8

- **Building Compliance for IQPs**
  Cost: *$1,200 plus GST* ***($1,350 incl. GST)***

Christchurch:	April 5-7
Auckland:	April 18-20 **(note changed date)**

- **Building Controls**
  Cost: *$3,500 plus GST* ***($3,937.50 incl. GST)***

Auckland:	Week 1: May 23-27	Week 2: June 20-24

Please contact Fiona McColl, CITE Education Officer, on 04 238 1291 or email branzcite@branz.co.nz for more information or visit the website: www.branz.co.nz (CITE Industry Training).

BRANZ SEMINAR SERIES

BRANZ and DBH present the Building Act 2004.

February: Blenheim 28
March: Nelson 1, Westport 2, Hokitika 3, Wellington 7 (am), Kapiti 8, Palmerston North 9, Masterton 10, Auckland 14, Hamilton 16, Tauranga 17, Rotorua 18, Christchurch 21 (am/pm), Timaru 22, Oamaru 23, Dunedin 24
April: See – branz.co.nz (seminars)

Please contact Gail King, BRANZ Seminars, on 04 237 1170 or email gailking@branz.co.nz for more information or visit the website: www.branz.co.nz (Seminars). Note: The Wellington pm and the Ellerslie (Mar 15) sessions are fully booked.