you asked

by Eddie Bruce, BRANZ Advisory Helpline

Edge sealing of acrylic shower wall liners

BRANZ has offered an 0800 helpline for the building industry since 1993. If you phone 0800 80 80 85 (and press 1) you will invariably speak to Eddie Bruce, who fields more than 4,000 calls a year. These are some of the queries he deals with.

Q What is the correct method of installing acrylic shower wall liners in bathrooms? When inspecting a job recently I noticed that the top edge of the panel was not sealed along its length. I thought this was necessary to prevent condensation on the wall above the liner running in behind it.

A The typical practice seems to be that the adhesive is kept just free of the outer edge of the liner and is applied in vertical strips at intervals across the width of the liner. This means some gaps will be left with quite distinct vertical paths for moisture to follow all the way down the wall between the glue lines. Given that the substrate to which the panel is adhered is usually a gypsum-based material without any protective coating, it is a 'failure waiting to happen'.

BRANZ recommends applying adhesive right round the perimeter to eliminate any possibility of moisture migrating into any area behind the wall liner.

Solid plaster over masonry

Q We used a concrete masonry veneer as a substrate for a solid plaster finish to a new house. The architect specified all work to comply with NZS 4251.1: 1998 *Solid plastering – Cement plasters for walls, ceilings and soffits*. Now the plaster surface has significant cracks.

NZS 4210: 2001 *Masonry construction: Materials and workmanship* applies to the construction of the masonry veneer and it seems to differ from NZS 4251 with respect to control joints. Can you please clarify the requirements for control joints for solid plaster over masonry substrates?

A There are a number of reasons why plaster coatings may crack, other than a failure to make adequate provision for movement control. NZS 4251 is reasonably clear on the requirements for control joints for solid plaster systems but a few technical points need to be understood. NZS 4251 deals with two solid-plaster options:

- those applied to a *solid substrate*, referred to as *solid plastering*
- those applied on a background of galvanised mesh or lath over rigid or non-rigid backing fixed to light timber or steel framing, referred to as *stucco*.

The key point is that the requirements for control joints differ for each, and in the case of solid substrates, will vary between substrate types. Dealing with *solid plastering* first, NZS 4251: 1998 clause 2.1.9.1 states that control joints shall be formed to coincide with all locations and joints in the structure where movement is likely to occur. Further, clause 2.1.9.2 states that where temperature and humidity movements are insignificant, the only other essential joints in the plaster will be those that occur at the end of a day's work.

Control joints for *stucco* on the other hand are covered in 2.1.9.3, which says that control joints shall not be spaced greater than 4 m vertically and horizontally, and shall be located above and below the sides of door and window openings, and at inter-storey level at the underside of floor joists.

Whether or not a *solid substrate* will need shrinkage control joints at openings will depend on the materials used, and information should be sought from the manufacturer. This is made clear in 2.10.1.2 of NZS 4210, which spells out that *all* masonry materials undergo some movement changes and since each material has its own characteristics, it is appropriate for manufacturers to stipulate requirements for their products. Generally, clay bricks won't need shrinkage control joints, whereas natural stone and concrete products are more likely to. Advice should be obtained from the manufacturer.

Plaster on a solid substrate is effectively restrained everywhere by its bond to the substrate, and therefore does not have to cope with differential shrinkage around penetrations. But it is important for the plaster to be sufficiently weak so it can accommodate shrinkage tensile stresses by micro-cracking. If the plaster coat is too strong, cracks are likely to be large, wide-spaced and very obvious, rather than small, closely spaced and unobtrusive. It is also more likely to fail by debonding and falling off in large sheets. ›‹