GUIDELINE

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IN-SLAB HEATING

A question about the specific durability requirements for in-slab heating has been raised with the BRANZ Helpline. Table 1 of NZBC B2/AS1 specifies a durability of not less than 50 years for heating coils buried within a concrete floor slab. Alternatively the installation may be consented on the basis of a specified minimum durability.

LINTELS AND BEAMS

The BRANZ publication Lintels and beams was withdrawn from the market some time ago because of the changes in the strength grading of timber.

A new web-based calculation tool is currently being developed to take account of the revised timber grades and should be available early next year.

ACTUAL OR CALL

There are a number of ways to describe the size of a piece of timber. In the past, we have specified timber sizes as call or nominal, rough sawn, gauged and finished or dressed.

Amendment 2 of NZS 3604 increased the number of framing selection tables to accommodate the different timber strength grades. The tables were also changed to give the actual or finished size of the dry timber e.g. 90 x 45 (note that a number of NZS 3604 drawings were not changed and still refer to call sizes, as does Table 8.15 Sill and head trimmers).

How should the designer be identifying timber members in the consent documents? BRANZ believes that designers should use actual timber sizes to accurately define the available space within a framed wall for the insulation and allow, particularly for CAD, drawings to accurately represent the actual timber sizes and allow more accurate set out on site.

Designers should check that specified framing grades are readily available locally before finalising sizes and spacings. They should also provide a timber schedule which will make it easier for the builder.

Builders and pre-nail fabricators must build using the framing grades specified. Where a timber grade is unavailable at the time of construction, builders should refer back to the designer for guidance. It is usually possible to substitute (with approval) an equivalent or higher grade of timber and maintain framing centres – designers may consider including acceptable alternatives in the timber schedule.

THERMAL PERFORMANCE OF REFLECTIVE FOIL INSULATION

Although reflective foil insulation products (sometimes called reflective foil laminates or RFL) do not have any thermal resistance, they can reduce the heat transfer through a building component by reducing the amount of radiation heat transfer across an airspace. Common practice is to refer to an equivalent R-value for a component containing an RFL. While this effectively assumes that the RFL is behaving like bulk insulation (providing resistance to conductive and convective heat transfer as well radiant heat transfer) it is not correct to assign a thermal resistance to the foil on its own.

We are aware of claims of a system R-value of R 2.5 for foil insulation when installed along the bottom of joists. BRANZ believes insulation installed this way would only give performance similar to that for draped foil and an enclosed subfloor space (an R-value of R 1.5 in the BRANZ House Insulation Guide). Using NZS 4214, the calculated R-value for a suspended timber floor will be 2.5 if R1.9 bulk insulation is installed between the joists. This would be expected to perform significantly better in practice than foil fixed along the bottom of the joists.

ENGINEERING BASIS OF NZS 3604

The engineering basis of NZS 3604 is described in BRANZ Study Report 168, (not 166 as reported in the last Guideline). There is also a small typo in the report regarding the load figure used for the balustrade – the correct figure is 0.054 kPa (not 0.54).

DRY BEDDING

Dry bedding of veneer ties, where the tie is placed onto the top of the masonry course with the mortar laid over it, is outside the scope of the current NZS 4210 which is called up as the Acceptable Solution.

Dry bedding must be specified and consented as an Alternative Solution and NOT decided on site by the mason. BRANZ Study report SR 152 is available for free download from www.branz.co.nz – click on free information.

SR 152 reports on a research project confirming that dry bedding of veneer ties meets the performance requirements of AS/NZS 2699.1:2000, provided that:

- for concrete bricks and blocks, contact surfaces are wetted before placing
- ties used to support 90 mm thick hollow concrete block veneers have sufficient length to bind them to the mortar on both block flanges.

The study report may be used to support a consent application where dry bedding is specified, providing the conditions above are met.

VALIDATING BRACING PERFORMANCE

For non-specific design light timber framed buildings, NZS 3604 is used to determine the bracing demand. Since there is no provision for generic rating in the current version of NZS 3604, the demand must be satisfied by either specific engineering design or a proprietary system.

Performance of a bracing system may be verified by an appraisal or a structural test report.

However, we are aware of bracing systems using generic bracing ratings that are being accepted on the basis of historical performance, rather than being backed by either a current appraisal or a test report.

Where a withdrawn appraisal or an old test report is being used, designers and consent authorities must be satisfied that the information in the supporting documentation is consistent with the bracing system proposed.

PLYWOOD SARKING UNDER ASPHALT SHINGLES

Should plywood sarking installed to support an asphalt shingle roof be treated? NZS 3602 does not identify a specific level of treatment. BRANZ believes that the 'good' practice solution is to use treated plywood. Designers and specifiers should always check with the shingle supplier that the treatment proposed is compatible with the shingle underlay and the shingles and is consistent with their requirements and/or a product appraisal.

CITE COURSES

The Building Officials Institute of New Zealand and BRANZ are pleased to announce that we have entered into an agreement to deliver CITE courses for at least the next six months.

For further information regarding course dates and enrolments please refer to the Institute's website at www.boinz.org.nz or contact Fiona Street on training@boinz.org.nz.