Concrete slabs – shrinkage control joints
Saw cutting of shrinkage control joints must be carried out within:

- 24 hours of pouring the slab where the average ambient temperature is above 20°C or
- 48 hours of pouring the slab where the average ambient temperature is below 20°C.

Drying rates may also be accelerated by stronger winds.

The saw cuts should be no deeper than one-quarter of the slab thickness (cuts are usually 5 mm wide and 25 mm deep).

NZS 3604 recommends placing the saw cuts beneath a wall where possible. Where this is done, the length of bottom plate fixings will need to be increased by the depth of the cut – that is 25 mm longer than other bottom plate fixings. This may also require an increase in concrete thickness under the cut to accommodate the fixing length, which then reduces the effectiveness of the saw cut.

To avoid the need to increase the length of the fixings, it is preferable to locate the saw cuts along one side of the frame so that the cut can still be covered by the lining and skirting but allows the same fixing length to be used for all the bottom plates.

For slab thickenings under loadbearing walls as described in NZS 3604, shrinkage control joints can cross the thickening at right angles to it. Cuts must not be formed along the line of the thickening.

Using ALF for designs with a multiple concrete slabs on ground
The ALF 3.2 online thermal design tool only has provision for a single unitary concrete slab floor. Follow these steps where a design of a ground floor consists of two separated slabs on ground:

1. Design the first section of the slab using the floor section to input the data for the floor design and take a screen shot of the data that has been entered. Use the R-value calculated in the screen shot and go to the suspended floors tab on the left side of the floor section. Once there, select the custom R-value option and enter the calculated R-value.
2. Now clear the data in the concrete floor slab section and enter the data for the second slab. After completing this calculation, save it and proceed to the next section as normal.
3. When the calculation is completed, attach the screen shot as verification of the custom R-value used to show the calculated value was generated by the programme.

Timber baseboards to piles – minimum treatment
Where timber baseboards are used to provide ventilation and finish the exterior of piled foundations, the treatment required is H3.2 as they are within150 mm of the ground. Using a lower grade of treatment with a paint finish, particularly for the boards closest to the ground, is unlikely to remain durable, as the bottom edges and backs are in a situation that is conducive to decay and more difficult to effectively maintain.

NZS 3604 requirements for floor joists under loadbearing walls
Clause 7.1.3.1 of NZS 3604:2011 requires the installation of double joists (either close-butted or with a maximum gap between the joists of 50 mm or half the width of the frame) under loadbearing walls parallel to the joist. Where joists are not close-butted, packers or spacers must be fitted between the joists at 600 mm maximum centres.

Clause 7.1.3.2 requires that, where double joists support a wall containing trimming stud(s) that is supporting the roof, the trimming stud(s) must be within 300 mm of the end of the span of the doubled floor joists. If the trimming stud lands more than 300 mm from the end of the joists, specific engineering design is required. This is to avoid large concentrated loads on the joist.

Clause 7.1.3.3 requires loadbearing walls at right angles to the joist to be within 200 mm (measured centre to centre) of the bearer or subfloor loading wall below.

Joists under braced non-loadbearing walls
Clause 7.1.3.5 requires non-loadbearing braced walls that run parallel to the floor joists to have a joist under the wall or be supported by solid 90 x 45 mm blocking at 1200 mm centres along the joist span (Figure 7.5 of 3604). In both situations, the bracing system manufacturer's requirements for stud fixings must be followed.

NZS 4243:2007.1 *Energy efficiency – Large buildings – Building thermal envelope*
In NZS 4243, compliance with the minimum building thermal envelope performance requirements can be demonstrated by using the schedule method, calculation method or modelling method. The calculation method must be used where window-to-wall ratio is more than 50% or different wall types are proposed. However, there is some ambiguity in the standard when using the calculation method, as at first glance, it appears to only require consideration of the walls and windows.

When using the calculation method, the total heat loss for the reference building (walls roofs and floors) must be calculated by using the values in Table 1 (see Note 1 to the Table). Then the total heat loss for the proposed building is calculated (roof, floor and walls plus glazing), and this total heat loss must not exceed that of the reference building.

New recessed downlight requirements for homes now in force
The requirements for installing recessed downlights changed on 10 May 2012. Amendment A of AS/NZS 60598.2.2 *Luminaires – Particular requirements – Recessed luminaires* published in July 2011 becomes a mandatory requirement of AS/NZS 3000 *Electrical installations* (The wiring rules) through an amendment to the Electricity (Safety) Regulations 2010 (Regulation 18A).

From 10 May 2012, recessed downlight manufacturers are required to specify in their instructions the types and characteristics of thermal insulation that is safe to use with the fittings. Recessed downlight fittings must be specified so that they are compatible with insulation that is already installed or that is specified to be installed. When insulation is being retrofitted, the insulation must be compatible with any existing downlights.

Only **CA 80**, **CA 135**, **IC** or **IC-F** downlights are permitted in private or rental residential buildings. (Note that IC downlights can only be used with insulation that passes the needle flame test of AS/NZS 60598 2.2 clause 11.5.) Recessed downlights that are not labelled as above are not permitted to be installed into residential buildings.

For more information:
- Energy Safety website
- BRANZ Bulletin 539 *Recessed downlights*
- AS/NZS 60598.2.2 *Luminaires – Particular requirements – Recessed luminaires*

Sustainable Housing Summit, 27–28 June (master classes), Viaduct Events Centre, Auckland
The inaugural Sustainable Housing Summit is your opportunity to hear the latest in national and international thinking on green homes. Programme highlights:
- State of the nation address from Warwick Quinn, Registered Master Builders Association.
- Keynote address from Bill Dunster, The ZEDFactory, United Kingdom.
- Rethinking residential growth, with Tim Horton, Integrated Design Commission, South Australia, and Adam Beck, Green Building Council of Australia.
- A panel discussion about future product technologies for sustainable homes.
- Case study: Stonewood Homes 7 Homestar show home in Christchurch.
- Case study: Zero Energy House, Point Chevalier, Auckland.
- Market insights and how to sell sustainable homes, with Alistair Helm, realestate.co.nz, and Nick Jones, Market Insights Manager, IAG.
- Beyond marble benchtops – shifting notions of quality, from Jane Henley, World Green Building Council.

For more information, see www.nzgbc.org.nz.

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