

(The Code clause and table references given below apply to Part 2 and Part 3 unless specifically noted)

Background

AS 1684 Parts 2 and 3 provide nominal and (where required) specific fixing details for various wind classifications. Some confusion has arisen, as to if specific fixings are required, what nominal fixings are required in addition to the specific fixings.

The key to this issue is given in Clause 9.6.1, first paragraph, second sentence that states:- "Unless otherwise specified, the details provided are in addition to nominal nailing (see Clause 9.5)"

Discussion

The intent of this requirement is to ensure that even if specific fixings are required to resist uplift forces (tie-down connections), that other forces and actions due to gravity, shear and construction loads are not overlooked.

Example:

A strap over a rafter may be required for tie-down of roof uplift forces, but this alone does not provide shear resistance to lateral wind pressure that acts on the side of the wall.

The nominal nailing requirements (usually 2 skew nails through the rafter into the top plate) can however resist this lateral load.

For some other situations, the addition of the minimum nominal nailing requirements would be redundant because the specific tie-down fixings provide far greater capacity to handle the other forces and actions (other than uplift).

Example:

There are no nominal connections specified for roof battens to rafters/trusses, but specific tie-down is required (nails, screws, etc). The last sentence of the first paragraph in Clause 9.5 states that:- "Unless otherwise specified herein, not less than two nails shall be provided at each joint."

As a minimum, battens are nailed by one nail to rafters/trusses. This is still the minimum requirement even when a specific fixing is required and obviously the "catch all" minimum 'two nail' rule is excessive for roof battens.

On the other hand, if we consider another specific batten tie-down that may be required such as a strap over the batten, the detail shown in Table 9.25 (f) and (g) does not indicate the need for an additional nail.

It is obvious in this case that for construction purposes alone, at least one nail should fix the batten to the rafter/truss prior to the fixing of the strap.

Some Other Examples:

1. Table 9.17 (a) 2/75x3.05 dia nails are given an uplift capacity and therefore they may be used as specific connections for tie-down and at the same time provide the nominal nailing.
2. Table 9.17 (g) Nominal nailing would not be required if the joist hangers were the initial connections installed, however it would be usual practice to skew nail the joist in position prior to attaching the joist hangers in which case 2/75x3.05 dia nails would be required.
3. Table 9.19 (d) Nominal nailing of studs to plates is required.
4. Table 9.21 (c) Nominal nailing of rafter/truss to top plate is required.

Recommendation

Let commonsense prevail! If the first fixing used to connect one member to another is a specific fixing, and it also caters for construction, and gravity loads, then the additional nominal nailing requirements are not required.

Technical Advice

Further technical information and assistance is available from the following Timber Advisory Services.

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