



HAZARD ALERT

Use of Steel Tile Battens on Trussed Roofs

1. Purpose

To inform building owners, designers, builders and contractors, of a potential hazard with the use of some types of steel tile battens with roof trusses.

2. Background

Roof trusses rely on the tile battens to provide lateral restraint to the top chords, which prevents them from buckling sideways when under load. The strength of a truss is determined by the effectiveness of the lateral restraints to the top chords and is an important design consideration. Although trussed roofs also have diagonal top chord bracing, usually in the form of steel “Speedbrace”, the fixing of tile battens to the top chords of trusses is a separate, **critical** element in the roof bracing system

“AS3623 Domestic metal framing” code clause A2.4.1 states that:- “Roof battens are also expected to act as lateral restraints for the top chord of the roof truss. They are also used to transmit the horizontal loads to the bracing system.” If the tile batten or its fixing to the truss top chord is inadequate, the truss may buckle sideways under load, and if not rectified quickly it will continue to buckle, causing damage to building and possible collapse of the roof.

Steel tile battens which are fixed with one nail through the top of the batten (Fig. 1) transfer the load more by bending of the nail rather than by direct shear as is the case for timber battens. The load capacity of a nail in bending is less than the capacity of the same size nail in direct shear. Therefore steel battens fixed in this manner do not offer the same lateral restraint to truss top chords as a timber batten.

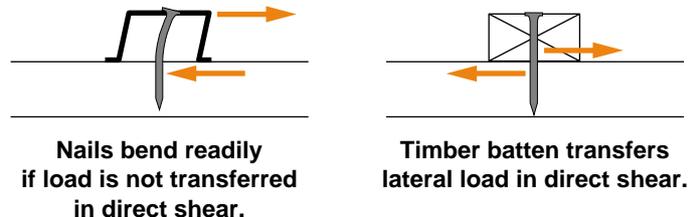


Figure 1.

Strength of a nail is dependant on the manner in which the load is applied.

3. Preventative measures

Where steel battens are used, their capacity to restrain the lateral loads from trusses and the fixing to the truss, should be of at least the equivalent strength of the timber battens that they are replacing. They should also conform to the requirements of the “AS3623 Domestic metal framing” code.

Building owners, designers, builders and contractors should obtain certification from the suppliers of any steel tile batten, confirming that the strength of the product being supplied, and its recommended fixing to the truss, meet these requirements.

4. Further information

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