MURPHY'S LAW OF INSTALLING TRUSSES

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The best way to beat Murphy is to make sure that everything you have control over is done correctly, even those things that will "never be needed".

Temporary bracing of trusses during installation is one of those things that may never really be needed because in most cases the roof has the battens and roofing fixed, and may even be occupied before any significant wind is encountered.

The photos here show the result of a big wind!

The temporary bracing recommendations in AS4440 is designed to avoid events like this.

The fact that installers may have used other temporary bracing methods in the past and never had any problems, is no guarantee that problems will not be experienced in the future.

In the past there may not have been a wind event to challenge the alternate method. AS4440 clearly states the size of braces to be used and the required spacing.

To save you looking it up - the details in Appendix C are:

- Braces are to be a minimum 50 x 25 for truss spacing up to 900 mm and minimum 70 x 35 for truss spacing up to 1200 mm.

- The top chord is to be braced at 3m maximum spacing, and the bottom chord 4m maximum.

I have seen on some recent site inspections a "nogging" system used on the top chords of large span and tall trusses.

This system may help get the trusses spaced correctly, and possibly gives something to stand on for fixing battens and roofing materials, but this will not work as a bracing system.

If two trusses try to pull away from each other, due to buckling or because of a strong wind, then the only thing holding them in place is the nails into the end grain of the noggings.

This is not as strong as nailing through a batten into the edge of the top chord.

It should also be noted that the bracing on the bottom chords is not designed to support the load of a person using them as a catwalk.

It is also not common for this "temporary bracing" to ever be removed, but they are redundant once tile battens and ceiling system are in place.

Another practice is to use metal brace or "Speeedbrace" as temporary brace, which works well as a tension brace but has no compressive capacity so is the opposite problem to the nogging system.

When wind load pushes the trusses towards each other, failure may result if the Speedbrace is not tied back to a rigid part of the building at each end. This is difficult, if not impossible, to achieve during installation.

The most critical time for a roof truss is the handling and bracing during installation.

Due attention to the lifting, temporary bracing and the fixing of permanent bracing can avoid very expensive rectification work and the subsequent litigation costs that accompanies events like that depicted in the photographs.

Although as designers and suppliers of trusses we do not usually get involved in the actual installation of trusses, we have a responsibility to ensure that all of the required information is in the hands of the builder/installer.

All nailplate companies produce fixing and bracing guidelines for timber roof trusses for this purpose.

Make sure you supply your builder with this document along with any other special instructions, so that you minimize your exposure to litigation should the unspeakable happen to one of your jobs.