

## GUNS & ROSES - THE NEED FOR SPEED



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The use of preformed metal connectors in the building industry is of course widespread and when fitted correctly with 30 x 2.8mm diameter reinforced head nails, a quality job is always guaranteed.

However, some builders, in order to meet construction deadlines, have resorted to pneumatically driven nails as a quicker solution. From my observations extreme care should be taken when using this sort of equipment as often the integrity of the joint will suffer.

### Reinforced Head Nails

The Australian Standard for truss installation, AS4440-1997 stipulates the use of hand driven reinforced head nails with Trip-L-Grips, Joist Hangers, Speedbrace and other similar connectors.

The reinforced head nail is a double diameter, single piece nail that is specifically designed to provide a very tight fit at the wider collar under the head while making it easier to drive with a narrower main shank.

The enlarged diameter of the shank reinforces the nail head against embrittlement and separation during installation and load.

### Gun Nail Tests

MiTek Australia Ltd, at the request of

Duo-Fast and Bostitch, conducted tests into the suitability of the use of gun nails with Trip-L-Grips and Joist Hangers. The tests indicated that the required loads can be achieved provided the following specifications and conditions were met.

\* An equal number of Duo-Fast C27/32 (2.7mm shank diameter x 32mm long), or Bostitch FAP32V5 (2.5mm diameter x 32mm long screw shank) nails are used.

\* A Duo-Fast KDN50 or Bostitch N63CP nailing tool issued without the flush drive attachment device;

\* Pressure setting around 600 kPa (87-93 psi) to provide nail flush with steel face;

\* The nails are not to be driven through pre-punched holes but are to be located at least 3mm away from holes and edges;

\* The nails are to be positioned in a similar pattern to that for manually driven nails.

Further, reference should also be made to the nail gun suppliers' procedure booklet and safety recommendations.

Although convenient, nail guns have the potential to cause serious harm if not used strictly as recommended by the manufacturer. This is especially so when attempting to drive a nail through steel.

It is very important that care is taken when using gun nails when fixing connectors like Trip-L-Grips. If not, the connection may not achieve the design load capacity.

The photographs in this article typify some of the potential problems and highlight the need for better quality control on site.

Whilst you, the fabricator, are not directly responsible for these issues, we feel that you should be made aware, so that you can advise your clients on how to correctly fix these connectors using pneumatically driven nails.

*Nails not flush due to inadequate pressure and gun angle results in a slack connection.*



*These nails are much too close together, some missing the connector altogether.*



*The two nails on top have missed the timber plate altogether.*



*Too many nails, too much pressure, too little pressure, too close together, too close to the edge - we have it all here.*



*Attempts to nail too close to the steel edge result in some nails missing the connector altogether.*



*One of the few examples of an acceptable connection.*



*Excessive pressure setting buckles the steel connector, compounded with poor nail pattern, causing the timber to split.*



*Attempts to nail through pre-punched holes only tear the holes and result in loose and weakened connections.*