

# FTMA TECH TALK

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## PRECISION MATTERS

We are constantly reminded that “Speed Kills” whenever we get behind the wheel. The same applies when fixing metal connectors, as we are all prone to being too hasty under time pressure.

Engineered Building Products (EBP) are carefully designed structural components that have been laboratory tested and certified by qualified engineers to comply with the NCC/BCA. Their specifications include detailed installation requirements that should be adhered to for conformance. For example, the nail gauge (commonly 30x2.8 mm diameter HD galvanized reinforced head nail) is typically consistent with deemed-to-comply hand-driven nails in AS1684. However, in some parts of the country, it is becoming common practice to use nail guns instead. Consequently, these guns use a different nail gauge, such as 32x2.5 mm diameter electrogalvanized screw shank nails, which are not only smaller in diameter but also have a thinner zinc coating.

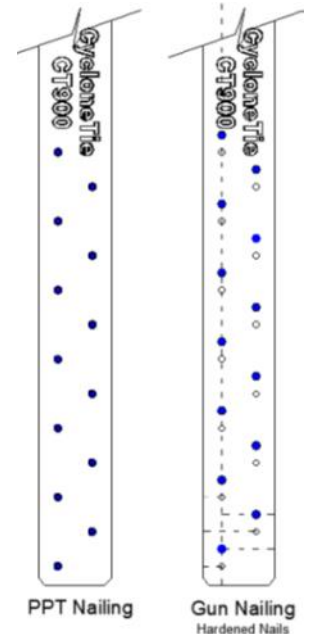
A few years ago, poor installation practices were called out by the Queensland Building Construction Commission, leading to a ban on the use of gun nails in small connectors in 2015. The intent was to curb non-conforming nailing practices that had begun pervading the state. This was subsequently moderated in 2016 after industry consultation, permitting the use of gun nails only for cyclone ties, tie-down straps, and creeper connectors under strict conditions.

They cannot be used in Trip-L-Grips, Joist Hangers, and other small framing anchors. Let's look at some of these critical conditions. If pneumatic gun nails are to be used, they need to be:

- Spaced at least 40mm along the grain and staggered 15mm across the grain, AND
- At least 10mm from the timber edge and 40mm from the end grain, AND
- Located at least 5mm away from steel edges and any pre-punched holes, AND
- If 2.5mm diameter nails are used where 2.8mm diameter nails are specified, at least 20% more nails\*\* need to be installed.

\*\*Note: MiTek Building products do not require the additional 20% nails.

These are very difficult conditions to meet on small connectors, and if complied with, may not make installation any faster than driving nails by hand. If ignored or done carelessly, as seen in the following photos, they risk severely compromising the connector and timber capacities. The connector should be rejected by the building inspector or engineer, resulting in the connector needing to be removed and re-installed.



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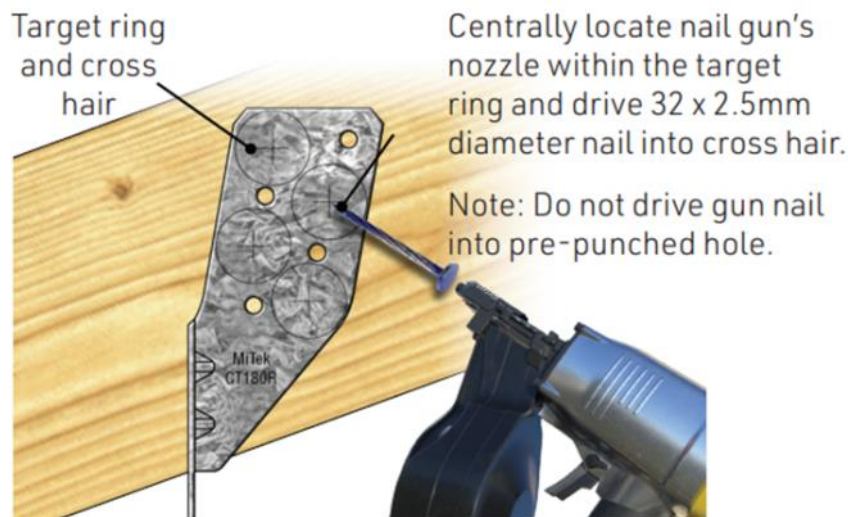


So, how can we properly speed things up without compromising quality or structural integrity?

**Screws** Some connectors allow for either nail or screw fixing. It is often less strenuous to drive screws than to manually hammer nails. Because screws are stronger, the number of fixings is usually reduced. Modern cordless drivers are also easier to handle (especially when working at height) than lugging a coil nail gun with an air hose attached.

**Positive Placement Tools (PPT)** Rather than the traditional coil clout pneumatic gun, Positive Placement Tools allow for the tip of the nail to be accurately placed into the pre-punched holes in metal building products. This ensures the nail pattern is followed, and the connector will achieve full capacity. However, caution: nails used can vary between tool manufacturers, and the metal building product manufacturer must test and verify the suitability of the nail in the pre-punched holes. If the nail is too large or too small, the capacity of the building product may be compromised.

**Designated Gun Nail Connectors** There is a range of designated connectors that accommodate coil nails. These brackets have much more unpunched steel surfaces in which to aim the nail gun without compromising the critical installation requirements. The better ones include imprinted target rings and crosshairs for the installer to aim their guns for accurate spacing and positioning. However, care is still required to maintain nail spacing.



The next time you feel like speeding through your current job to get to your next job, remember that "Speed Kills," and think of the possible consequences and ramifications of your actions. Coming back to fix an inadequately completed job will cost you time, money, and reputation, and possibly other people's safety. Always use the manufacturer's recommended fixings in the correct manner.



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