

# INFORMATION SHEET

## STRUCTURAL CONNECTIONS

### METAL PLATE FIXINGS AVAILABILITY

The information provided below has been taken from the New Zealand Timber Design Guide 2007, published by the Timber Industry Federation and edited by Professor A H Buchanan. To purchase a copy of the Timber Design Guide, visit [www.nztif.co.nz](http://www.nztif.co.nz)

#### NAIL- AND SCREW-ON FIXINGS

Brand names are Lumberlok (by MiTek) and Pryda. These fixings are typically light gauge (about 1 mm thick) pre-galvanised steel, although hot dipped galvanised and stainless steel is also available.

These connectors tend to be used when a high-strength, low-cost joint is required, but visual attractiveness is not a high priority for example the connector may be hidden by the linings.

#### Joist hanger nail-on fixing (note the provision for screws as well as nails)

#### BOLT-ON FIXINGS

Brand names are Bowmac (by MiTek) and Pryda. These fixings are usually manufactured from 3, 5 or 6 mm thick steel and hot dip galvanised during the manufacturing process.

Stainless steel and powder coating finishes are available. Bolts are typically 12 mm hot dip galvanised.

#### Bolt-on pole brace bracket

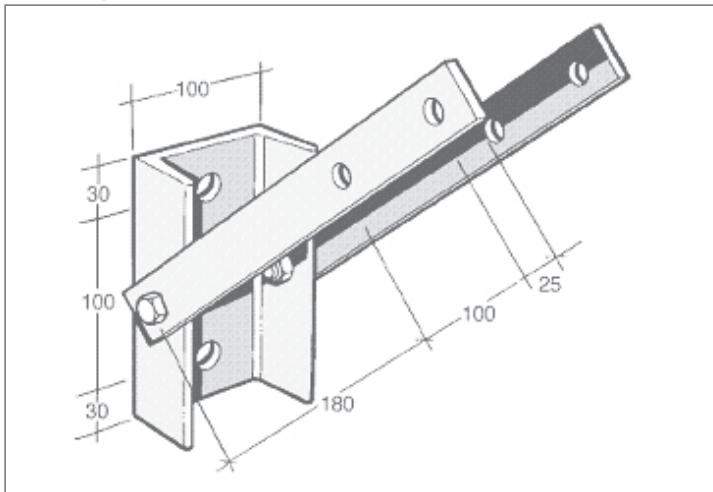


Illustration: Courtesy Timber Design Guide, 2007

### TOOTHED METAL CONNECTOR PLATES

There are two types of connector plates: truss connector plates and 'grasshopper' tooth connector plates.

#### Truss connector plates:

- Plates are manufactured in light gauge galvanised steel and used for the manufacture of timber trusses, typically for residential house construction.
- Plates are inserted using hydraulic or pneumatic presses in a controlled factory environment and are not available for sale retail.
- Brand names are Gang-Nail (by MiTek), Pryda and Multinail.
- Manufacturers of timber trusses are called fabricators and are normally associated with a building merchant and include Carters, PlaceMakers and ITM as well as other independent fabricators.
- Design and detailing of components is usually undertaken by the fabricator. (MiTek and Pryda publish lists of fabricators see: [www.mii.com/page/open.asp?pid=741](http://www.mii.com/page/open.asp?pid=741) and [www.pryda.co.nz/index.php?sectionid=8](http://www.pryda.co.nz/index.php?sectionid=8)).
- In New Zealand, because of the efficiency and maturity of the prefabrication system, use of metal connector plates and timber trusses is prevalent.

#### Grasshopper-type toothed connector plates:

- Plates are manufactured in light gauge galvanised steel.
- Plates are able to be hand hammered into timber
- Brand names are Tylok (by MiTek) and Pryda Knuckle nailplates.
- Design data is available on the MiTek and Pryda websites: [www.mii.com/page/open.asp?pid=1470](http://www.mii.com/page/open.asp?pid=1470) and [www.pryda.co.nz/catalog.php?sectionid=20&type=Nailplates](http://www.pryda.co.nz/catalog.php?sectionid=20&type=Nailplates).
- These plates are less efficient than truss connector plates but their availability and ease of use means they are used frequently on site.

Another type of timber fixing that uses the same technology is the Gang-Nail Posi-STRUT or Pryda span parallel chord truss web. This is a v-shaped, folded metal web with nailplate-type connector ends.

The metal web is attached to timber chords on both sides to form a parallel chord truss.