

INFORMATION SHEET

STRUCTURAL CONNECTIONS

SCREW HEAD TYPES

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

SCREW HEAD TYPES

Screws are made with a variety of head types but these have little effect on structural performance.



Flat head: The most common screw head type – used for general fastening where the screw head will be either flush with the surface or countersunk and the hole plugged.



Oval head: Used primarily for trim work or anywhere a smooth top is required and appearance is important. The slightly rounded head projects above the finished surface and prevents the snags that occur when a flat head screw is not fully countersunk.



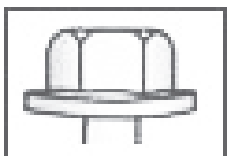
Truss head: Has a low, rounded top surface with a flat bearing surface underneath. Its diameter is relatively large. For a given screw size, the head is larger than the corresponding round head. Sometimes called 'oven head' or 'stove head'.



Pan head: Provides a flat bearing surface under the head, which is useful for attaching cabinet hardware, such as hinges. The top surface is flat but has rounded sides.



Round head: Has a semi-elliptical top surface and a flat bearing surface underneath.



Hexagonal head: Allows a high torque when driving.

The following head geometries are available for driving screws:

- Allen
- Phillips
- slotted or square rebates
- hexagonal.

Screws installed with powered drivers will usually have a flat, countersunk head with a Phillips or square rebate.

Larger screws, called lag screws, are made with a hexagonal head because the torque required is too great for other types of driver.

The range of screw sizes is limited in the case of collated screws because the usual application is the fixing of lining materials to timber or light gauge steel framing.

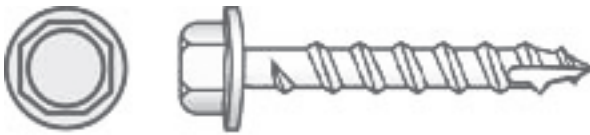
Type 17 screws are becoming popular for timber connections. These have a hexagonal head, a wood-cutting tip, and come in a variety of lengths, with diameters of 10 g, 12 g and 14 g.

Note that the gauge–diameter relationship for type 17 screws is different from other screws, with common sizes as follows:

12 g (4.2 mm) x 25, 35, 40, 45, 50, 65, 75 mm

14 g (4.5 mm) x 25, 35, 50, 65, 75, 100, 125, 150, 200 mm.

Type 17 screw with hexagonal head



Source: Timber Design Guide.