

# TIMBER CHARACTERISTIC STRENGTH

## NZS 3603:1993 AMENDMENT 4

### Structural Grades (as defined in NZS 3604:2011 Clause 1.3)

Timber properties are for dry in-service conditions m/c = 16%

| Timber Grade | Bending Strength $f_b$ (MPa) | Compress. Strength $f_c$ (MPa) | Tensile Strength $f_t$ (MPa) | Shear Strength $f_s$ (MPa) | Modulus of Elasticity $E$ (GPa) | Lower Bound Modulus of Elasticity $E_{lb}$ (GPa) |
|--------------|------------------------------|--------------------------------|------------------------------|----------------------------|---------------------------------|--|
| SG6          | 10.0                         | 15.0                           | 4.0                          | 3.8*                       | 6.0                             | 4.0  |
| SG8          | 14.0                         | 18.0                           | 6.0                          | 3.8*                       | 8.0                             | 5.4  |
| SG10         | 20.0                         | 20.0                           | 8.0                          | 3.8*                       | 10.0                            | 6.7  |

\* $f_s$  = 3.0MPa for Douglas Fir

### Timber Sizes

| Call Size | Gauged Kiln Dried Size (in mm)<br>(Actual Size) | Rough Sawn (in mm)<br>(Actual Size) |
|-----------|---|-------------------------------------|
| 100 x 50  | 90 x 45   | 100 x 50                            |
| 150 x 50  | 140 x 45  | 150 x 50                            |
| 200 x 50  | 190 x 45  | 200 x 50                            |
| 250 x 50  | 240 x 45  | 250 x 50                            |
| 300 x 50  | 290 x 45  | 300 x 50                            |
| 100 x 100 | 90 x 90   | 100 x 100                           |
| 150 x 100 | 140 x 90  | 150 x 100                           |
| 200 x 100 | 190 x 90  | 200 x 100                           |
| 250 x 100 | 240 x 90  | 250 x 100                           |
| 300 x 100 | 290 x 90  | 300 x 100                           |

Note: It is common now to refer to the timber size as the Kiln Dried Size. Where the Call Size refers to the use of Rough Sawn timber the Actual Size then becomes the Call Size. The Actual Size is the size used in the design calculations.



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