

INFORMATION SHEET

DOUGLAS-FIR



DESIGN STRESSES

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

NZS3603:1999 Basic Working Stresses from the “Timber Design Guide” (2007) for dry (16% MC) timber:

| Grade | Bending (MPa) | Compression parallel (MPa) | Tension (MPa) | Shear in beams (MPa) | Compression perpendicular (MPa) | MOE (GPa) | Lower bound MOE (GPa) |
|--------------------------------|---------------|----------------------------|---------------|----------------------|---------------------------------|-----------|-----------------------|
| VSG 10 | 20 | 20 | 8 | 3 | 8.9 | 10 | 6.7 |
| VSG 8 | 14 | 18 | 6 | 3 | 8.9 | 6 | 5.4 |
| MSG 12 | 28 | 25 | 14 | 3 | 8.9 | 12 | 9 |
| MSG 10 | 20 | 20 | 8 | 3 | 8.9 | 10 | 7.5 |
| MSG 8 | 14 | 18 | 6 | 3 | 8.9 | 8 | 5.4 |
| MSG 6 | 10 | 15 | 4 | 3 | 8.9 | 6 | 4 |
| Naturally round timbers – HOD* | 52 | 25 | 31 | 3.5 | 9 | 11 | |
| Naturally round timbers – NOD* | 38 | 21 | 23 | 3.1 | 8.8 | 8.7 | |

* HOD = High Outer zone Density (>450 kg/m³); N = Normal Outer zone Density (>350kg/m³). These relate to timbers in the green condition.

MOR shall be taken as: $G = MOE / 15$