

INFORMATION SHEET

STRUCTURAL DESIGN



DESIGN STRENGTH

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

Design strengths are defined as the product of the relevant strength reduction factor, characteristic stress, section property, and modification factors for the condition expected in service.

In general, the design strength is given by

$$S^* \leq \phi R_n$$

where S^* is the design action from the factored load combinations and

ϕR_n is the design strength

ϕ is the strength reduction factor given in Table 1.

R_n is the nominal strength of the member given by the product of the relevant k factors and the characteristic strength.

Strength reduction factor for design of timber members and connections

	ϕ
Timber, poles and glulam,	0.8
Nails in lateral loading	0.8
Toothed metal plate connection	0.8
Other types of fasteners	0.7
Plywood and LVL	0.9
Actions derived from the strength of ductile elements under large displacements	1.0
Design for fire resistance	1.0