

Table 11.5 Safe permissible stresses for Indian timbers

Group	Trade Sl. No.	Trade name of timber	Average unit weight at 12% moisture	All grades modulus of elasticity 10^3 N/m^2	Permissible stress in N/mm^2 for Grade I (Standard)										
					Bendings σ_b and Tension σ_t along grain at extreme fibre			Shear τ		Compression parallel to grain			Compression perpendicular to grains,		
					Inside location	Outside location	Wet location	*Horizon- at all location	Along grain all location	Inside location	Outside location	Wet location	Inside location	Outside location	Wet location
			content kN/m^3												
A	1	Kala-siris	7.35	13.6	18.6	15.4	12.6	1.5	2.2	13.4	12.0	9.4	7.2	5.6	4.6
	2	Sal	8.65	12.7	16.8	14.0	11.2	0.9	1.3	10.6	9.4	7.8	4.5	3.5	2.9
B	1	Babul	7.85	10.8	18.2	15.4	12.4	1.5	2.2	11.2	10.2	8.0	6.5	5.0	4.1
	2	Koko	6.40	11.2	13.4	11.2	8.8	1.1	1.5	8.8	8.0	6.6	4.4	3.4	2.8
	3	Eucalyptus	8.50	11.5	16.6	13.8	10.8	1.2	1.7	11.2	10.2	8.0	7.6	5.9	4.8
	4	Padauk	7.20	11.2	17.2	14.4	11.2	1.0	1.4	12.0	10.6	8.8	5.5	4.3	3.5
	5	Bijasal	8.00	10.3	14.8	12.4	9.8	0.9	1.3	9.2	8.0	6.6	4.1	3.1	2.6
	6	Teak	6.40	9.6	14.0	11.6	9.4	1.0	1.4	8.8	7.8	6.4	4.0	3.1	2.5
C	1	Deodar	5.45	9.5	10.2	8.8	7.0	0.7	1.0	7.8	7.0	5.6	2.6	2.1	1.7
	2	Cypress	5.15	8.4	8.8	7.8	6.4	0.6	0.8	7.0	6.4	5.0	2.3	1.8	1.5
	3	Mango	6.90	9.1	12.4	10.2	8.0	0.9	1.4	7.4	6.6	5.2	3.1	2.4	1.9
	4	Kail	5.15	6.8	6.6	5.6	5.0	0.6	0.8	5.2	4.6	3.8	1.7	1.3	1.0
	5	Chir	5.75	9.8	8.4	7.0	6.0	0.6	0.9	6.4	5.6	4.6	2.2	1.7	1.4
	6	Hollock	6.10	9.6	12.0	9.8	8.0	0.8	1.2	7.8	6.6	6.0	2.9	2.2	1.8

* The values of horizontal shears to be used for beams only.

In all other cases shear along grains to be used.