

Douglas Fir

Latin Name:	Pseudotsuga Menziesii														
Origin:	USA and Canada. Also planted in the UK, New Zealand and Australia.														
Strength Class:	C24														
Weight:	Approx 530 kg/m ³														
Durability:	Moderately Durable														
Description:	Heartwood is a light reddish-brown shade. Normally straight grained, but can show a wavy or spiral grain. Has a uniform, medium texture.														
Mechanical Properties:	High crushing strength with medium resistance to shock loads and a high bending strength. Dries rapidly, without much checking or warping, but knots tend to split and loosen.														
Main Uses:	<table> <tr> <td>Plywood</td> <td>Paper Pulp</td> </tr> <tr> <td>Veneer</td> <td>Vats & Tanks</td> </tr> <tr> <td>Roof Trusses</td> <td>Marine Piling</td> </tr> <tr> <td>Laminated Arches</td> <td>Ship Building</td> </tr> <tr> <td>Interior Joinery</td> <td>Railway Sleepers</td> </tr> <tr> <td>Exterior Joinery</td> <td>Mining Timber</td> </tr> <tr> <td>Piles</td> <td></td> </tr> </table>	Plywood	Paper Pulp	Veneer	Vats & Tanks	Roof Trusses	Marine Piling	Laminated Arches	Ship Building	Interior Joinery	Railway Sleepers	Exterior Joinery	Mining Timber	Piles	
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Grade Stresses for timber graded in accordance with BS 5268 rules: for service classes 1 and 2									
Standard Name	Grade	Bending parallel to grain ^a	Tension parallel to grain ^a	Compression		Shear parallel to grain	Modulus of elasticity		Approx Weight Kg/m ³
				Parallel to grain	Perpendicular to grain ^b		Mean	Minimum	
		N/mm ²	N/mm ²	N/mm ²	N/mm ²	N/mm ²	N/mm ²	N/mm ²	
Balau	D70	23.4	14.1	23.0	5.3	2.8	20 900	16 700	850
Beech	D30	22.8	22.8	15.2	4.5	3.1	11 400	7 200	710
Douglas Fir	C24	4.4	2.6	5.2	2.1	0.8	9 500	6 000	530
Ekki	D70	25.0	15.0	24.6	5.6	3.0	18 500	15 500	1050
Greenheart	D70	26.1	15.6	23.7	5.9	2.6	21 600	18 000	1030
Iroko	D40	12.6	7.5	12.6	2.8	1.6	10 600	8 500	660
Jarrah	D40	13.8	8.2	14.2	3.1	2.0	12 400	8 700	835
Kapur	D60	18.1	10.9	18.0	4.1	1.9	19 200	15 800	770
Keruing	D50	16.2	9.7	16.0	3.6	1.7	19 300	16 100	745
Larch	C24	5.3	3.2	6.8	1.8	0.8	9 000	6 000	575
Oak	D40	20.7	20.1	15.2	4.5	3.1	9 700	5 200	700
Opepe	D50	17.0	10.2	17.6	3.8	2.1	14 500	11 300	740

^a Stresses applicable to timber 300mm deep (or wide)
^b When the specifications specifically prohibit wane at bearing areas, the HS grade compression perpendicular to the grain stress may be multiplied by 1.33