

Framing Lumber

BASE VALUES FOR WESTERN DIMENSION LUMBER¹

Table 1

Nominal Sizes: 2" to 4" thick by 2" and wider²

Use with appropriate Adjustments, Tables A through G

Grades described in *Western Lumber Grading Rules*, Sections 40.00, 41.00, 42.00 and 62.00. Also Stress-Rated Boards, see Section 30.60

Species or Group	Grade	Extreme Fiber Stress in Bending		Tension Parallel to Grain F_t	Horizontal Shear F_v	Compression		Modulus of Elasticity E
		Single Member F_b				Perpendicular $F_{c\perp}$	Parallel to Grain F_c	
Douglas Fir-Larch	Select Structural	1500	1000	180	625	1700	1,900,000	
	No. 1 & Btr.	1200	800	180	625	1550	1,800,000	
	No. 1	1000	675	180	625	1500	1,700,000	
	<i>Douglas Fir</i>	No. 2	900	575	180	625	1350	1,600,000
	<i>Western Larch</i>	No. 3	525	325	180	625	775	1,400,000
	Construction	1000	650	180	625	1650	1,500,000	
	Standard	575	375	180	625	1400	1,400,000	
	Utility	275	175	180	625	900	1,300,000	
	Stud	700	450	180	625	850	1,400,000	
Douglas Fir-South	Select Structural	1350	900	180	520	1600	1,400,000	
	No. 1	925	600	180	520	1450	1,300,000	
	No. 2	850	525	180	520	1350	1,200,000	
	<i>Douglas Fir-South</i> (grown in AZ, CO, NV, NM and UT)	No. 3	500	300	180	520	775	1,100,000
	Construction	975	600	180	520	1650	1,200,000	
	Standard	550	350	180	520	1400	1,100,000	
	Utility	250	150	180	520	900	1,000,000	
	Stud	675	425	180	520	850	1,100,000	
Hem-Fir	Select Structural	1400	925	150	405	1500	1,600,000	
	No. 1 & Btr.	1100	725	150	405	1350	1,500,000	
	<i>Western Hemlock</i>	No. 1	975	625	150	405	1350	1,500,000
	<i>Noble Fir</i>	No. 2	850	525	150	405	1300	1,300,000
	<i>California Red Fir</i>	No. 3	500	300	150	405	725	1,200,000
	<i>Grand Fir</i>	Construction	975	600	150	405	1550	1,300,000
	<i>Pacific Silver Fir</i>	Standard	550	325	150	405	1300	1,200,000
	<i>White Fir</i>	Utility	250	150	150	405	850	1,100,000
	Stud	675	400	150	405	800	1,200,000	
Spruce-Pine-Fir (South)	Select Structural	1300	575	135	335	1200	1,300,000	
	No. 1	875	400	135	335	1050	1,200,000	
	No. 2	775	350	135	335	1000	1,100,000	
	<i>Western Species:</i>	No. 3	450	200	135	335	575	1,000,000
	<i>Engelmann Spruce</i>	Construction	875	400	135	335	1200	1,000,000
	<i>Sitka Spruce</i>	Standard	500	225	135	335	1000	900,000
	<i>White Spruce</i>	Utility	225	100	135	335	675	900,000
	<i>Lodgepole Pine</i>	Stud	600	275	135	335	625	1,000,000
Western Cedars	Select Structural	1000	600	155	425	1000	1,100,000	
	No. 1	725	425	155	425	825	1,000,000	
	<i>Western Red Cedar</i>	No. 2	700	425	155	425	650	1,000,000
	<i>Incense Cedar</i>	No. 3	400	250	155	425	375	900,000
	<i>Port Orford Cedar</i>	Construction	800	475	155	425	850	900,000
	<i>Alaskan Cedar</i>	Standard	450	275	155	425	650	800,000
	Utility	225	125	155	425	425	800,000	
	Stud	550	325	155	425	400	900,000	
Western Woods (and White Woods⁴)	Select Structural	900	400	135	335	1050	1,200,000	
	No. 1	675	300	135	335	950	1,100,000	
	No. 2	675	300	135	335	900	1,000,000	
	No. 3	375	175	135	335	525	900,000	
	<i>Any of the species in the first four species groups above plus any or all of the following:</i>	Construction	775	350	135	335	1100	1,000,000
	<i>Idaho White Pine</i>	Standard	425	200	135	335	925	900,000
	<i>Ponderosa Pine</i>	Utility	200	100	135	335	600	800,000
	<i>Sugar Pine</i> <i>Alpine Fir</i> <i>Mountain Hemlock</i>	Stud	525	225	135	335	575	900,000

¹ Design values in pounds per square inch.

² Standard surfaced sizes are tabulated in Table 13.

³ All horizontal shear values are assigned in accordance with ASTM standards, which include a reduction to compensate for any degree of shake, check or split that might develop in a piece.

⁴ White Woods species group includes any species or combination of true firs, spruces, hemlocks or pines. Design values are the same as those assigned to Western Woods.