

<i>Back & Side Woods</i>	<i>Stiffness¹</i>	<i>Strength²</i>	<i>Hardness³</i>	<i>Weight (lb/ft³)</i>
Cypress, Monterey: <i>Cupressus macrocarpa</i> ⁴	840	12.7	770	34
Myrtle: <i>Umbellularia californica</i>	940	8	1270	40
Walnut, Peruvian: <i>Juglans neotropica / olanchana</i> ⁵	1050	9.7	1080	34 to 38
Monkey Pod: <i>Pithecellobium saman</i>	1090	9.1	920	42
Primavera: <i>Tabebuia donnell-smithii</i>	1040 to 1133	9.5-10.2	660-740	28 to to 30
Maple, Silver/Soft: <i>Acer saccharinum</i>	1140	8.9	700	35
Lacewood: <i>Cardwellia sublimis</i>	1290	9.5	710	33
Mahogany, Honduras: <i>Swietenia macrophylla</i>	1390	11.7	800 to 900	31 to 41
“Mahogany,” Khaya/African: <i>Khaya ivorensis</i>	1380	11 to 12	830 to 900	31 to 43
Makore: <i>Mimusops heckelii</i>	1400	12.7	980	37
Maple, Bigleaf: <i>Acer macrophyllum</i>	1450	10.7	850	34
Maple, European (Sycamore): <i>Acer pseudoplanatus</i>	1450	13 to 14	1090	36
Koa: <i>Acacia koa</i>	1570	11.2	1110	42
Ziricote: <i>Cordia dodecandra</i>	1580	15.7	2200	56
Sipo: <i>Entandrophragma utile</i>	1584	15.3	1260	40

1 Stiffness represents a wood's resistance to FLEXING under load. Presented in 1k psi. Stiffer woods tend to have higher tap tones.

In a thin board such as a soundboard/back/sides, wood (curly, quilt, etc) will almost certainly lower this value due to the alternating grain direction. In a thick board, the difference is usually less significant.

2 Strength represents a wood's resistance to BREAKING under load. Presented in 1k psi.

Much like stiffness, strength of thin boards is greatly affected by wood figure.

3 Janka hardness, measured in psi. Harder woods tend to have higher tap-tones.

4 Data for this wood seems inaccurate, but I have yet to find conflicting information.

5 LMII's assertion that this wood is more dense than other walnuts is absolutely false. I have confirmed this myself with wood in hand.

Unfortunately, their description of the wood has been copied and pasted onto many luthiers' websites, and is now taken as gospel.

Data compiled by Bryce Ennis. Last updated March 30, 2011.

Spruce, Sitka: <i>Picea sitchensis</i> ⁶	1600 to 1650	10.3	510	28
Narra: <i>Pterocarpus indicus</i>	1650	12.8	1046	40
Cherry, Black: <i>Prunus serotina</i>	1655	13.3	660	36
Maple, Red/Soft: <i>Acer rubrum</i>	1640	13.4	950	34 to 39
“Mahogany,” Sapele: <i>Entandrophragma cylindricum</i>	1700	16 to 18	1500	42 to 46
Padauk: <i>Pterocarpus soyauxii</i>	1700	16.8	1970	46
Walnut, Black & Claro: <i>Juglans nigra / californica</i>	1680 to 1790	14.8	1010	40
Rosewood, East Indian: <i>Dalbergia latifolia</i> ⁷	1740 to 1780	17	1720 to 3170?	53 to 57
Bocote: <i>Cordia spp.</i>	1790	17	2200	59
Pau Ferro, Santos “Rosewood”: <i>Machaerium spp.</i>	1810	18.3	2140	55
Maple, Sugar/Hard: <i>Acer saccharum</i>	1830	15.8	1450	39-44
Rosewood, Honduran: <i>Dalbergia stevensonii</i> ⁸	?	?	2200	62
Cocobolo: <i>Dalbergia retusa</i> ⁹	1880 and up?	19 and up?	3200?	62 to 75
“Walnut”, Mayan?: <i>Lysiloma spp.</i> ¹⁰	1900	12.8	1400	48
Zebrawood: <i>Microberlinia brazzavillensis</i> ¹¹	1800-2340?	13.9 to 20	2097?	46-54
Birch: <i>Betula alleghaniensis</i> ¹²	2010	16.6	1260	43

6 Used by some luthiers inside the guitar to make laminated sides.

7 Hardness figures are inconsistent for this wood. I would speculate that it is *nearer* the higher figure, though perhaps not quite that high.

8 Stiffness and hardness of this wood are unknown, but I would speculate that it belongs about here.

9 There is much disagreement on the internet regarding Cocobolo. The question-mark values are “best guesses.”

10 Unlike Peruvian walnut, Mayan “walnut” (aka Tzalam or False Tamarind) actually *is* a bit denser than most walnuts. Perhaps LMII got their descriptions mixed up so many years ago?

11 Published information for this wood varies wildly. This may be because there is a marked difference between its light and dark stripes in terms of hardness and stiffness, which means that the structural quality of a board is greatly affected by the ratio of how much light:dark grain it contains. This interplay between hard and soft grain also makes the wood hard to work with.

Black Acacia: <i>Acacia melanoxylon</i>	2130	15.2	1100	40 to 45
Wenge: <i>Millettia laurentii</i>	2360	22	2240	57
Bloodwood/Satine: <i>Brosimum paraense</i>	2360	21.6	2900	63 to 75
Tigerwood/Goncalo Alves: <i>Astronium graveolens</i>	2400	18.4	2250	62
Ovangkol: <i>Guibourtia ehie</i>	2420	18.2	1330	53
Ebony, Macassar: <i>Diospyros celebica</i> ¹³	?	?	3250	69
Machiche: <i>Andira inermis</i>	2515	18.6	1675	54
Purple Heart: <i>Peltogyne spp.</i>	2590	22	2390	61
Bubinga: <i>Guibourtia spp.</i>	2700	25.1	2610	58

12 Used on some Martin sustainable wood series guitars.

13 Stiffness and hardness of this wood are unknown, but I would speculate that it belongs about here.