

A NOTE ON THE DENSITY OF PAKISTANI TIMBERS

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Density is the best single criterion of wood. There is a close correlation between density and strength properties of timber (Kollmann, 1968 and Williams and Hamilton, 1961) and therefore, needs to be correctly determined. Available information on the density of Pakistani timbers is very old and is based on the works carried out in India before partition and the reported figures of density for different timbers are mostly from those areas which are located in that country. These density values often differ with observed density of timbers collected locally due to the differences of locality conditions in the two countries. Density determination of authentic wood samples of Pakistani origin was undertaken in the Forest Products Research Division, Pakistan Forest Institute, Peshawar. This note represents the results of the work carried out.

Each wood sample measured of approximately 15 x 10 x 4.5 cm in size and were prepared after sufficient air drying of timber specimens. The average moisture content of the timbers was found to be $8.9\% \pm 0.71$ as determined by oven dry method (Kollmann, 1968). Since density is also affected by growth rate (Kollmann, 1968) and in those timbers in which the rings were clear, average number of rings/cm was also obtained. Density was calculated (Kollmann, 1968) by dividing air dry weight by air day volume of the samples and the values are reported as gm/cm³, and lb./ft³ in the table. The density value are mostly the average of more than one sample for each species. Some of the timbers originating from more than one locality. The density values in such cases represent both the average for the species and the average for each locality.

Table Showing the density figures of Pakistani Timbers.

Sl. No.	Botanical Name	Trade and Local Name	Locality	Av. No. of rings/cm	Av. density for the locality		Av. density for the species	
					gm/cm ³	lb./ft. ³	gm/cm ³	lb./ft. ³
1.	<i>Abies pindrow</i>	Fir, Partal, paludar.	Kaghan	4.6	0.499	31	0.499	31
2.	<i>Acacia arabica</i>	Babul, kikar	Hyderabad Sind	—	0.745	47	0.745	47
3.	<i>Acacia catechu</i>	Khair	Rawalpindi	—	1.037	65	1.037	65

*The author is Assistant Wood Technology Officer at the Pakistan Forest Institute, Peshawar.

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					gm/cm ³	lb./ft. ³	gm/cm ³	lb./ft. ³
✓ 4.	<i>Acacia modesta</i>	Phulai	Fateh-Jhang	—	0.963	60	0.963	60
5.	<i>Acer caesium</i>	Maple, trekhan.	Swat	—	0.669	42	0.634	40
	" "	"	Murree	—	0.599	37		
6.	<i>Aesculus indica</i>	Horse-chest-nut, bankhor.	Kaghan	4.1	0.543	34	0.543	34
7.	<i>Alnus nitida</i>	Sharol	Siran	0.5	0.38	24	0.38	24
8.	<i>Cedrela serrata</i>	Drawi	Kaghan	2.4	0.497	31	0.492	31
	" "	"	Murree	7.9	0.487	30		
9.	<i>Cedrus deodara</i>	Deodar, diar.	Swat	7.7	0.533	33	0.574	36
	" "	"	Kaghan	4.0	0.614	38		
10.	<i>Cornus macrophylla</i>	Kandar	Murree	2.3	0.669	42	0.669	42
✓ 11.	<i>Dalbergia sissoo</i>	Shisham, tali.	Changa-Manga	—	0.819	51	0.819	51
12.	<i>Diospyros lotus</i>	Amluk	Murree	4.2	0.728	45	0.728	45
13.	<i>Fraxinus excelsior</i>	Ash, sum	Kaghan	3.4	0.798	50	0.798	50
14.	<i>Fraxinus xanthoxyloides</i>	Hanuz	Zhob	4.7	0.729	46	0.729	46
15.	<i>Juglans regia</i>	Walnut, akhrot	Kaghan	6.4	0.552	34	0.612	38
	" "	"	Swat	2.0	0.672	42		
16.	<i>Juniperus excelsa</i>	Juniper, ubusht	Sibi	17.0	0.465	29	0.465	29
✓ 17.	<i>Mangifera indica</i>	Mango, am	Peshawar	—	0.554	35	0.554	35
✓ 18.	<i>Melia azedarach</i>	Bakain, drek	Mardan	1.0	0.628	39	0.592	37
	" "	" "	Changa-Manga	1.9	0.555	35		

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19.	✓ <i>Morus alba</i>	Mulberry, tut	Mardan	2.0	0.723	45		
	" "	"	Changa-Manga.	0.9	0.651	41	0.687	43
20.	✓ <i>Olea cuspidata</i>	Kao, zaitun	Fateh-Jhang	—	1.10	69		
	" "	" "	Zhob	—	1.112	69		
	" "	" "	(Baluchistan)				1.125	70
	" "	" "	Loralai	—	1.191	74		
	" "	" "	Kohat	—	1.098	69		
21.	<i>Parrotia jacquemontiana</i>	Passer	Kaghan	—	0.875	55	0.875	55
22.	<i>Picea smithiana</i>	Spruce, kachal, partal	Kaghan	6.7	0.463	29	0.463	29
23.	<i>Pinus roxburghii</i>	Chir	Murree	6.2	0.53	33		
	" "	"	Siran	1.4	0.524	33	0.527	33
24.	<i>Pinus wallichiana</i>	Kail, biar	Kaghan	3.7	0.451	28		
	" "	" "	Swat	5.4	0.508	32	0.480	30
25.	<i>Pistacia integririma</i>	Kangar	Murree	7.5	0.683	43	0.683	43
26.	<i>Pistacia khinjak</i>	Khanjak	Zhob	5.4	1.083	68	1.083	68
27.	<i>Platanus orientalis</i>	Chinar	Siran	0.4	0.586	37	0.586	37
28.	<i>Populus ciliata</i>	Poplar, plachh.	Kaghan	3.0	0.408	25	0.408	25
29.	<i>Populus euphratica</i>	Bahan	Hyderabad	1.6	0.414	26	0.414	26
✓ 30.	<i>Prosopis spicigera</i>	Jhand, kandi	Nawab Shah	—	0.61	38	0.61	38
31.	<i>Prunus padus</i>	Bird cherry, kalakat.	Swat	4.8	0.617	39		
	" "	"	Murree	3.0	0.705	44	0.661	41

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32.	<i>Pyrus pashia</i>	Batangi	Murree	2.8	0.683	43	0.683	43
33.	<i>Quercus dilatata</i>	Oak, barungi	Murree	—	0.946	59	0.946	59
34.	<i>Quercus incana</i>	Oak, rin.	Kaghan	—	1.032	64		
	" "	" "	Swat	—	0.899	56		
35.	<i>Quercus ilex</i>	Oak, balut.	Swat	—	0.939	59	0.939	59
36.	<i>Salix tetrasperma</i>	Willow, bed	Peshawar	0.9	0.491	31	0.491	31
✓ 37.	<i>Salvadora oleoides</i>	Pilu	Sind	—	0.618	39	0.618	39
✓ 38.	<i>Tamarix aphylla</i>	Farash, gaz	Mardan	—	0.658	41		
	" "	" "	Hyderabad	—	0.719	45	0.0681	43
39.	<i>Tamarix dioca</i>	Lei	Nawab Shah	—	0.682	43	0.682	43
40.	<i>Taxus baccata</i>	Yes, birmi	Kaghan	17.6	0.728	45	0.728	45
✓ 41.	<i>Tecoma undulata</i>	Lahura	Hyderabad	—	0.575	36	0.575	36
42.	<i>Ulmus Wallichiana</i>	Kain	Swat	3.9	0.672	42	0.672	42
43.	<i>Xylosoma longifolium</i>	Chopra	Murree	4.7	0.653	41	0.653	41
✓ 44.	<i>Zizyphus Mauritana</i>	Ber	Multan	—	0.716	45	0.716	45