

Tectona grandis

Teak

Family: Verbenaceae

Other Common Names: Kyun (Burma), Teck (French), Teca (Spanish).

Distribution: Native to India, Burma, Thailand, Indochina, including Indonesia, particularly Java. Extensively cultivated in plantations within its natural range as well as in tropical areas of Africa and Latin America.

The Tree

On favorable sites, may reach 130 to 150 ft in height with clear boles to 80 to 90 ft; trunk diameters usually 3 to 5 ft; older trees fluted and buttressed.

The Wood

General Characteristics: Heartwood dark golden yellow, turning a dark brown with exposure, often very variable in color when freshly machined showing blotches and streaks of various shades; sapwood pale yellowish, sharply demarcated. Grain straight, sometimes wavy; texture coarse, uneven (ring porous); dull with an oily feel; scented when freshly cut. Dust may cause skin irritations. Silica content variable, up to 1.4% is reported.

Weight: Basic specific gravity (ovendry weight/green volume) 0.55; air-dry density 40 pcf.

Mechanical Properties: (First set of data based on the 2-cm standard; second and third sets on the 2-in. standard; third set plantation-grown in Honduras.)

Moisture content	Bending strength	Modulus of elasticity	Maximum crushing strength
	<i>Psi</i>	<i>1,000 psi</i>	<i>Psi</i>
Green (17)	12,200	1,280	6,210
11%	15,400	1,450	8,760
Green (38)	10,770	1,570	5,470
14%	12,300	1,710	6,830
Green (81)	9,940	1,350	4,780
13%	13,310	1,390	6,770

Janka side hardness 1,000 to 1,155 lb for dry material. Forest Products Laboratory toughness 116 in.-lb average for green and dry wood (5/8-in. specimen).

Drying and Shrinkage: Seasons slowly but with little or no degrade, large variations in drying rates reported. Kiln schedule T10-D4S is suggested for 4/4 stock and T8-D3S for 8/4. Shrinkage green to ovendry: radial 2.5%; tangential 5.8%; volumetric 7.0%. Movement in service is rated as small. High resistance to water absorption.

Working Properties: Easily worked with both hand and machine tools and dresses to a very smooth finish if tools are kept sharp; glues moderately well despite its oily nature. Blunting of cutters can be rather severe. As noted, may cause dermatitis in some individuals.

Durability: Heartwood is rated as very durable with respect to decay fungi and termites; not immune to marine borers.

Preservation: Heartwood extremely resistant to preservative treatments, sapwood also of low permeability.

Uses: Shipbuilding, joinery, furniture, flooring, carving, cabinetwork, paneling, turnery, tanks and vats, fixtures requiring high resistance to acids.

Additional Reading

(17), (38), (39), (47), (81)