



**USDA Forest Service  
Forest Products Laboratory  
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#### **Wood Technology Transfer Fact Sheet**

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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

(%) (Psi) (1,000 psi) (Psi)

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 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)