



USDA Forest Service
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Wood Technical Fact Sheet

Intsia bijuga and I. palembanica

Merbau

Ipil

Family: Leguminosae

Other Common Names: Tat-talun (Burma), Lumpha, Lumpho (Thailand), Kwila (New Guinea Vesi (Fiji Islands), Ipil (Philippines), Merbau (Malaya).

Distribution: Indo-Malayan region, Indonesia, Philippines, and many of the western Pacific islands as well as Australia. May be locally common in lowland forests, transition zones behind mangroves.

The Tree: A large tree often with a rather short, thick bole, sometimes to 50 ft, often fluted; trunk diameters to 5 ft above large spreading buttresses.

The Wood:

General Characteristics: Heartwood yellowish to orange brown when freshly cut, turning brown or dark red brown on exposure; sapwood pale yellow to light buff, sharply demarcated from the heartwood. Texture rather coarse; grain straight to interlocked or wavy; luster variable; has a characteristic odor when dry material is worked, and an astringent taste.

Weight: Basic specific gravity (ovendry weight/green volume) 0.68; air-dry density 50 pcf.

Mechanical Properties: (First two sets of data based on the 2-in. standard; third set on the 2-cm standard.)

Moisture content Bending strength Modulus of elasticity Maximum crushing strength

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

Green (37) 12,850 2,020 6,770

15% 16,810 2,230 8,440

Green (7) 15,000 2,150 8,040

12% 21,300 2,610 11,700

12% (51) 20,000 2,320 9,500

Janka side hardness 1,500 to 1,925 lb for dry material. Forest Products Laboratory toughness about 190/in.-lb average for wet and dry material (5/8-in. specimen).

Drying and Shrinkage: Seasons well with little degrade. Kiln schedule T3-C2 is suggested for 4/4 stock and T3-C1 for 8/4. Shrinkage green to oven-dry: radial 2.7%; tangential 4.6%; volumetric 7.8%. Movement in service is rated as small.

Working Properties: Rather difficult to saw because of gumming of teeth and dulling of cutting edges, dresses smoothly in most operations, finishes well. Stains black in the presence of iron and moisture.

Durability: Heartwood has an average service life of 6 years in Malayan stake tests but generally reputed to have good durability; highly resistant to termite attack. Sapwood prone to powder-post beetle attack.

Preservation: Heartwood is impermeable, but sapwood is treatable.

Uses: Flooring, furniture, paneling, fine joinery, decorative turnery, cabinetmaking, musical instruments, specialty items. The wood is also a dye source.

Additional Reading: (7), (9), (11), (37), (51)