



Kapur (Dryobalanops Aromatica)

Botanical Name:	Dryobalanops aromatica
Other Common Names:	Kapur, Borneo camphorwood, Kapor, Kapoer, Keladan, Borneo teak, Mahoborn teak
Common Uses:	Boat building, Construction, Core Stock, Exterior uses, Flooring, Furniture , Furniture components, Heavy construction, Interior construction, Interior trim, Joinery, Shingles, Wharf construction
Region:	Oceania and S.E. Asia
Country:	Indonesia, Malaysia
Distribution:	One of several species in the genus Dryobalanops which are reported to occur from Malaysia to Borneo, including the island of Sumatra. The trees are reported to thrive on well-drained soils, and are seldom found in pure stands.

Numerical Values for: *Dryobalanops aromatica*

<u>Category</u>	<u>Green</u>	<u>Dry</u>	<u>Unit</u>
Bending Strength	12150	16480	psi
Crushing Strength (Perp.)	610	800	psi
Max. Crushing Strength	6740	8940	psi
Static Bending (FSPL)	7740	9390	psi
Impact Strength	28	36	inches
Stiffness	2310	2710	1000 psi
Work to Maximum Load	11	16	in-lbs/in ³
Hardness		1250	lbs
Shearing Strength		1525	psi
Specific Gravity	0.65	0.75	
Weight	65	50	lbs/cu.ft.
Density (Air-dry)		49	lbs/cu.ft.
Radial Shrinkage (G->OD)		5	%
Tangential Shrink. (G->OD)		10	%

Tree & Wood Descriptions for: *Dryobalanops aromatica*

Product Sources	<p>Supplies in the form of wide, clear boards are reported to be plentiful at the moment. The material is reported to be comparable to the Lauans in price, but it is more difficult to locate on the US market.</p> <p>Although the wood is sometimes referred to as "Borneo camphorwood", it is not related to the true Camphorwood.</p> <p>Kapur timber imported from Malaysia is reported to be somewhat heavier than supplies from Borneo.</p> <p>Apart from timber, Kapur trees are also reported to yield Borneo camphor. The material is reported to be found as deposits in inter-cellular spaces or pockets along with oleo-resin and appears as clear or light yellow crystals. Camphor from Kapur is reported to be crystalline in the natural state and is rare and more expensive than those obtained after wounding the tree. Borneo camphor is reported to have been used in the past to preserve the bodies of dead high dignitaries. Essential oils such as dipentene, camphene, borneol are also reported to be isolated from the resin or oil produced by Kapur trees. The bark of the tree is reported to be removed in large sizes and used for walls, roofs, floors, beds, and occasionally for making baskets.</p>
Tree Data	<p>This large tree is reported to reach maximum heights of 250 feet (76 m), with trunk diameters normally between 4 and 6 feet (1.2 and 1.8), although 10 feet (3 m) diameters have been recorded. Clear, straight, and cylindrical boles are reported to measure about 100 feet (30 m) between the buttress and lowest branches.</p>
Sapwood Color	<p>The sapwood which is narrow and clearly delineated from the heartwood is described as light yellowish brown in color.</p>
Heartwood Color	<p>The heartwood is reddish brown in color. Kapur is reported to be often confused with Keruing (from the <i>Dipterocarpus</i> genus), but the latter is much more resinous and has been known to exude resin even after it has been dried and worked.</p>
Grain	<p>The grain is straight to shallowly interlocked. Fine resin ducts are reported to be present.</p>
Texture	<p>Texture is reported to be fairly coarse but even. The texture is reported to be slightly finer than that of a typical Lauan, but pore arrangement and figure are reported to be very similar in the two species.</p>
Odor	<p>Freshly-cut wood is reported to have a distinct camphor-like odor. The scent is not as permanent as in true Camphorwood.</p>
Luster	<p>Kapur is reported to be more lustrous than the softer Lauans.</p>

Movement in Service	The material is reported to show medium movement in service.
Natural Durability	<p>Kapur heartwood is reported to have high natural resistance to attack by fungi, but is readily attacked by termites. The sapwood is susceptible to attack by powder-post beetle.</p> <p>Resistance to Impregnation The heartwood is reported to be highly resistant to impregnation.</p> <p>Weathering Characteristics Kapur is reported to have very good weathering qualities.</p>
Resin Content	<p>The wood contains resin ducts, but there is typically no resin exudation.</p> <p>Corrosive and Staining Properties</p> <p>Yellow compound in sapwood may stain fabrics under damp conditions. The wood is acidic and may corrode some metals, and the wood is liable to stain in contact with iron and iron compounds under moist conditions.</p>
Silica Content	Kapur is reported to contain silica at levels that are high enough to dull cutters in machining operations. Silica content of 0.12 to 0.91% of oven-dry weight has been reported.
Veneering Qualities	Some Kapur logs are reported to be sliced into decorative veneers for paneling. Plywood bonded with phenolic adhesives are reported to perform poorly in external applications.
Strength Properties	The density of Kapur is reported to vary between those of Sugar maple and the Hickories. The timber is reported to be very similar to Teak (<i>Tectona grandis</i>) in strength properties, except that it is slightly more elastic.

Working Properties for: *Dryobalanops aromatica*

Cutting Resistance	Saws are reported to gum slightly during sawing operations. There is a tendency for the material to break out at the bottom of cuts in cross-cutting and narrow band sawing.
Blunting Effect	Blunting effect on cutting tools is reported to be generally moderate, but can be severe in material containing interlocked grain.
Planing	Working properties of Kapur are reported to be generally good. It responds to most machine tools readily in most operations. Its working properties are, however, reported to be inferior to those of Camphorwood, since it is harder and less stable.
Nailing	Nailing characteristics are reported to be satisfactory.
Screwing	The wood is reported to have satisfactory screwing properties.
Polishing	The timber is reported to take a good polish.
Staining	Staining qualities are reported to be fair.
Steam Bending	Steam bending qualities are rated as only moderate. Resin exudation is common during steaming operations.

Drying for: *Dryobalanops aromatica*

Ease of Drying	The timber is reported to dry slowly, but well. High tangential to radial shrinkage ratio generally results in high drying stresses.
Drying Defects	There is a slight tendency to cup and twist since the wood is dense and somewhat resinous.
T/R Ratio	2.00 This indicator is more meaningful if it is used together with other drying information and actual shrinkage data in the tangential and radial directions. (Refer to the Numerical Values window).

*Credits for information:
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