



Balau (Shorea Guiso)

Botanical Name:	Shorea guiso
Other Common Names:	Balau, Red balau, Red selangan, Red selangan batu, Guijo, Balau merah, Membatu
Common Uses:	Boat building, Chairs, Cooperages, Desks, Domestic flooring, Food containers, Framing, Fuelwood, Furniture components, Joinery, Kitchen cabinets, Millwork, Pallets, Paneling , Tables , Veneer, Woodenware, Baskets, Bent Parts, Building materials, Cabinetmaking, Canoes, Chests, Core Stock, Decorative veneer, Dining-room furniture, Drawer sides, Excelsior, Figured veneer, Fine furniture, Flooring, Furniture , Furniture squares or stock, Hatracks, Interior construction, Interior trim, Lifeboats, Living-room suites, Office furniture, Parquet flooring, Plain veneer, Radio, stereo, TV cabinets, Rustic furniture, Shipbuilding, Stools, Sub-flooring, Utility furniture, Wainscotting, Wardrobes
Region:	Oceania and S.E. Asia
Country:	Brunei, Indonesia, Malaysia, Philippines, Thailand
Distribution:	The Balau group of Shorea spp. are found on the Malay Peninsula, Indochina, Indonesia, and the Philippines. The trees are reported to often grow in pure stands. Shorea genus is reported to contain several species that are widely distributed, from India and Sri Lanka in the west and throughout Burma and several countries in Southeast Asia, up to the Philippines in the east. Most of the species are reported to be found in the forests of Borneo, Sumatra, and the Malay Peninsula.

Numerical Values for: Shorea guiso

<u>Category</u>	<u>Green</u>	<u>Dry</u>	<u>Unit</u>
Bending Strength	12442	17896	psi
Crushing Strength (Perp.)	1279	1610	psi
Max. Crushing Strength	6110	9426	psi
Static Bending (FSPL)	7583	11065	psi
Impact Strength	34	36	inches
Stiffness	2040	2444	1000 psi
Work to Maximum Load	10	14	in-lbs/in ³
Hardness		1675	lbs
Shearing Strength		1965	psi
Toughness		501	in-lbs
Specific Gravity	0.69	0.79	
Weight	62	51	lbs/cu.ft.
Density (Air-dry)		53	lbs/cu.ft.
Radial Shrinkage (G->OD)		6	%
Tangential Shrink. (G->OD)		11	%

Tree & Wood Descriptions for: Shorea guiso

Product Sources	<p>Species in the Shorea genus are reported to be a major source of timber from Southeast Asia. They are plentiful, and supplies are reported to be universally available, especially in the form of veneers. This popular wood is reported to be priced in the inexpensive range.</p> <p>Many species in the Shorea genus are also reported to be a source of other economically important non-timber products. Seeds of some species yield fat which is used in the manufacture of chocolate. Others produce nuts, the most common of which is the illipe nuts of commerce produced by <i>S. gysbertisiana</i>. The nuts yield a fat which is similar to cocoa-butter in some of its properties. Shorea trees are also reported to be tapped for oleo-resin, and typical dammar is obtained from <i>S. wiesneri</i> which grows in Java and Sumatra. The tree of <i>S. robusta</i> is reported to produce dammar which is used as a disinfectant and as incense in religious ceremonies in India. Other non-timber products from Shorea are reported to include tannin and fibers.</p>
Tree Data	<p>The tree is reported to be very tall, reaching heights of 200 feet (60 m), with straight cylindrical stems, and trunk diameters of up to 72 inches (180 cm).</p>
Sapwood Color	<p>The sapwood is lighter in color than the heartwood, and is not always clearly differentiated.</p>
Heartwood Color	<p>The heartwood is described as light to deep red brown or yellow-brown to brown or dark reddish-brown.</p>
Grain	<p>Grain is reported to be typically interlocked.</p>
Texture	<p>The texture is described as moderately fine to slightly coarse.</p>
Luster	<p>Wood surface is reported to be typically dull or non-lustrous.</p>
Odor	<p>There is no characteristic odor or taste.</p>
Natural Growth Defects	<p>Hollowed out logs are reported to be a common defect.</p>
Movement in Service	<p>The timber is reported to have moderate dimensional stability after seasoning, and tends to show medium movement after manufacture.</p>

Natural Durability

Heartwood resistance to decay is reported to vary from very low to very high, depending upon species. The sapwood is reported to be vulnerable to attack by powder-post beetle.

Resistance to Impregnation

The heartwood is reported to be extremely resistant to preservative treatment but the sapwood is permeable.

Working Properties for: Shorea guiso

Cutting Resistance	The material is reported to saw cleanly with only moderate blunting of cutting edges.
Blunting Effect	Balau wood is reported to have moderate dulling effect on cutting edges because it is hard, heavy, and very dense and also because of the presence of interlocked grain.
Planing	The material is reported to be rather difficult to plane and machine in most operations because of its high density, but it dresses to a smooth finish. A reduced cutting angle of 20 degrees is recommended in planing to reduce tearing.
Turning	Balau wood is reported to be rather difficult to turn since it is hard, heavy, dense, and contains interlocked grain. It has a moderate blunting effect on cutting edges, and there may be some tearing of grain.
Moulding	Moulding operations are reported to be generally difficult since Balau timbers are usually hard and heavy.
Boring	The timbers bore with some difficulty since they are hard and heavy, and usually contain interlocked grain.
Routing & Recessing	Routing operations are rated as rather difficult.
Mortising	Mortising may produce some torn surfaces in material containing interlocked grain.
Carving	The wood is reported to respond poorly to carving operations.
Gluing	Gluing properties are rated as variable.
Nailing	The timber is reported to be unsuitable for nailing since it splits severely and readily. Pre-boring is necessary.
Screwing	The wood has poor screwing qualities.

Sanding	Sanding properties are reported to be satisfactory.
Polishing	The wood has satisfactory polishing properties.
Staining	The material is reported to be rarely stained.
Steam Bending	The timber is reported to have fair steam bending qualities, but it requires support on the outer surface.
Response to Hand Tools	The wood is reported to be fairly difficult to work with hand tools because of its high density and interlocked grain.

Drying for: Shorea guiso

Ease of Drying	The wood is reported to dry very slowly, and is rather difficult to dry. Air-drying before kiln-drying is recommended.
Drying Defects	Warping is common but variable. The wood may end split and check and existing shakes may open up.
Kiln Schedules	T8 - B3 (4/4); T5 - B1 (8/4) US Schedule G (4/4) United Kingdom
T/R Ratio	1.83 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).

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