



## Birmanian Teak

*Tectona grandis* L.f.

### Commercial names:

English:	Teak.
Spanish:	Teca.
French:	Teck.
Italian:	Teck.
German:	Teak, Burma-Rangoon, Java Teck.

### Common names:

Indonesia:	Tek, Jati.
Laos:	May sak.
Thailand:	Teak, May sak.
India:	Sagwan, Teak, Reku, Teka.
Burma:	Kyun.
Vietnam:	Gia Thi.

### Physical properties:

Density:	650-680-750 Kg/m <sup>3</sup>	
Shrinkage:	Stable.	
Shrinkage values:	Total	Unitary
Volumetric:	7.9%	(0.34)
Tangential:	2.5-5.0%	(0.24-0.29)
Radial:	1.5-2.7%	(0.13-0.15)
Hardness:	4.0-4.2	Semi-hard

### Mechanical properties (Wood free of defects)

Static bending:	85-110 N/mm <sup>2</sup>
Modulus of elasticity:	10,000-13,700 N/mm <sup>2</sup>
Compression parallel to grain:	52-80 N/mm <sup>2</sup>
Compression perpendicular to grain:	6 N/mm <sup>2</sup> (ASTM)
Shear:	8.2-9.4 N/mm <sup>2</sup>
Toughness:	3.2-4.9 J/cm <sup>2</sup>

### Structural lumber:

The HS grade of the BS 5756 - 1980 standard corresponds to the D 40 strength grade.

### Origin and availability:

The natural origin of teak is southwest Asia - India, Cambodia, Laos and Vietnam. It also comes from other regions where it has been planted extensively: the tropical zones of West Africa and the tropical zones of Central America (Guyana, Puerto Rico, Cuba, Haiti, Jamaica, etc.) The latter plantations date from the twentieth century. The forested area and wood production are stable and export is limited. (It is only exported as roundwood in Burma and Indonesia, where it is state controlled.) Export is prohibited in Thailand, Indonesia and India.

### Wood description:

The color of the sapwood varies from whitish yellow to light grey, and the heartwood from a yellow-brown to a dark brown, becoming darker and displaying copper highlights when exposed to light. Sapwood is clearly differentiated, and in roundwood it occupies a thickness measuring from 2 to 5cm. Sometimes the wood has dark spots due to darkened areas in the parenchyma caused by climatic changes. The growth rings are quite distinct, but they range considerably from bands of two or three layers of large pores to a few scattered large pores that do not form a defined band. The grain is usually straight, although very occasionally it can be wavy. Wavy-grained wood from India is the norm. The texture of the grain is coarse (open). The wood is oily to the touch. Silica content is variable. Teak can cause skin irritations, eczema and asthma in some people. Freshly cut wood has a strong aroma of old leather which disappears to a great extent when the wood has been dried. The wood is resistant to some acids.

### Drying:

The drying rate is slow, but it can vary according to density. There are almost no risks of warping or checks. The recommended drying schedules are number 4 from the CTFT, number 9 from the CTBA, T10-D4S (4/4) and T8-D3S (8/4) from the FPLM, and schedule H (4/4) from the PRL.

### Natural durability and ease of penetration:

Wood from Asia, Indonesia etc. is graded as very durable against the decaying action of fungi and moderately durable against termites. Wood grown in other countries ranges from moderately durable to very durable against fungi and susceptible to or moderately durable against termites. With reference to ease of penetration, heartwood from Asia, Indonesia etc. is not penetrable and sapwood is slightly penetrable. Information about wood from other areas is not available.

### Technological properties:

Sawing is relatively easy. Saws dull very quickly and stellite saws are recommended. The wood is suitable for rotary-cut veneer and sliced veneer. Machining is not difficult. This wood dulls tools rapidly, and tungsten carbide tools are recommended. The wood is moderately suited to curving. Gluing is not a problem if neutral or acid glues, such as urea-formaldehyde glues, are employed. However, before gluing, small quantities of wetting agents must be added, or wood surfaces must be washed. Holes need to be drilled before using screws or nails. Pretreatment of the wood surface is necessary before applying finishing products, and sometimes, due to the oily nature of the wood, the wood surface should be sealed with a blocking agent (linseed based). Despite its oily nature, this wood can be varnished or polished satisfactorily.

### Applications:

Decorative veneers./ Furniture and cabinetwork./ Interior carpentry: floors, friezes, stairs./ Exterior carpentry: siding./ Naval construction: light vessels./ Bridges: elements in contact with the ground or in contact with water./ Turnery./ Cooperage./ Posts./ Curved pieces./ Acid-resistant containers.