

TEAK

Botanical name:	<i>Tectona grandis</i> , family: VERBENACEAE
Distribution:	India, Pakistan, Sri Lanka, Burma, Thailand, Laos, Vietnam, Cambodia, Tropical Africa (cultivated), Mexico and Central America (cultivated), South America (cultivated)
Other important trade names:	Teak (D, GB, NL, WAN), India-, Burma-, Java-, Laos-, Thailand-, Rangoon-Teak (D)

Abbreviation as per DIN EN 13556: TEGR

Colour and structure of the wood:

Heartwood brown and yellow, with colour stripes. Clear colour contrast between sapwood and heartwood, narrow. Sap white to light grey, fresh heartwood greenish yellow, when drying darkens to light brown or golden brown. The wood pattern sometimes varies from wide dark brown to black stripes. The ring-shaped earlywood pores embedded in light axial parenchyma create a clear raised “cathedral effect” formed by innermost growth rings (tangential) on longitudinal surfaces and clear colour striping (radial). The pores can contain dark or also light components. Distinctive smell of the wood (like rubber).

Properties:

Weight fresh [kg/m ³]		800 – 900
Bulk density air-dry (12-15 % u) [g/cm ³]		0.59 – 0.70
Compression strength u ₁₂₋₁₅ [N/mm ²]		52 – 60
Bending strength u ₁₂₋₁₅ [N/mm ²]		85 – 110
Modulus of elasticity (bending) u ₁₂₋₁₅ [N/mm ²]		10000 – 13700
Toughness [kJ/m ²]		32 – 49
Hardness (BRINELL) ⊥ to the grain u ₁₂₋₁₅ [N/mm ²]		23 – 39
Drying shrinkage (fresh up to u ₁₂₋₁₅)	radial [%]	1.5
	tangential [%]	2.5
Differential shrinkage [%/%]	radial	0.13 – 0.16
	tangential	0.24 – 0.29
pH value (suspension)		5.1
pH value (surface)		4.7
Natural durability (DIN-EN 350-2) from plantations		Category 1
		Category 3

Workability:

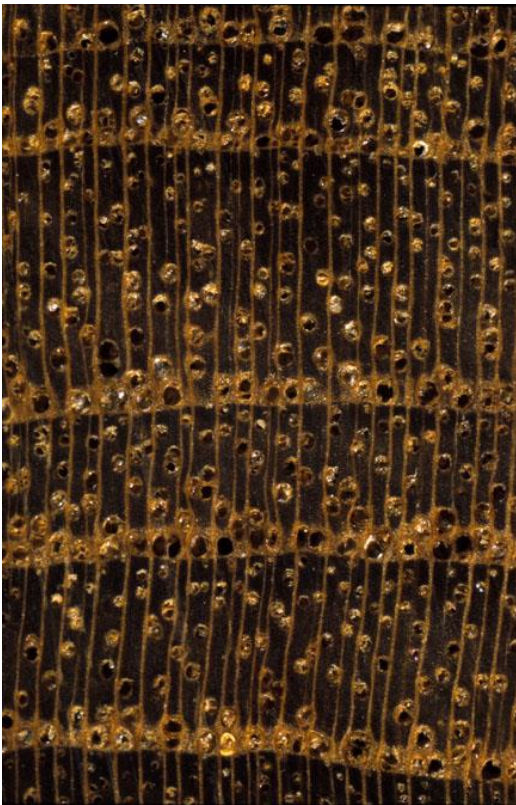
Teak is generally easy to work with all manual and machine tools. Mineral deposits (silicic acid) in the vessels cause the tools to blunt, which is why carbide tipped blades should be used. Nails and screws hold well, however pre-drilling is recommended. Bonding good.

Drying:

Teak dries very slowly, yet without major problems because the wood has only a low tendency to crack and warp. Determining initial and final moisture requires a high degree of care because the moisture in fresh wood can be very unevenly distributed.

Use:

Outdoor or indoor use. Especially suitable for: Outdoor construction with ground contact, outdoor construction with no ground contact (predominantly in ship building: constructive as well as for decks and superstructures), hydraulic engineering (seawater) (of medium resistance against parasites in seawater), horticulture and landscaping, children's play areas and equipment, frame structure (window, house doors, conservatories), furniture, sanitary products.



Macroscopic cross-section of Teak
(10 times magnification lens)



Wood surface of Teak (radial section)

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Surface treatment:

Polyterpene (fatty content) can lead to delayed film formation. Plantation teak is susceptible to blue staining. Treatability very poor (sapwood poor; EN 350–2, 1994).

Coating systems:

The coating systems selected here are variants which ensure utmost durability and lasting quality.

Other coating systems are basically possible; however, they must be coordinated with Teknos.

Details on processing can be found in the technical data sheets for each product.

Windows, doors, conservatories and folding shutters:

System coating	Translucent
Primer	AQUAPRIMER 2900-42*
Intermediate	ANTISTAIN AQUA 2901-62
Intermediate	ANTISTAIN AQUA 2901-62
Topcoat	AQUATOP 2600-9X

* Use AQUA PRIMER 2907-02 for plantation wood.

System coating	Opaque*
Primer	ANTISTAIN AQUA 2901-52
Intermediate	ANTISTAIN AQUA 2901-52
Topcoat	AQUATOP 2600-2X

*Add AQUA PRIMER 2907-02 to the system build up for plantation wood.

System coating	Colourless*
Primer	ANTISTAIN AQUA 2901-62
Intermediate	ANTISTAIN AQUA 2901-62
Topcoat	AQUATOP 2600-6X

*Add AQUA PRIMER 2907-02 to the system build up for plantation wood.

Further information:

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Wood is a unique, beautiful and very versatile material

The features and properties of wood vary greatly and therefore individual attention is required in processing and surface finishing.

With this Teknos wood data sheet we would like to go into detail on the features and range of applications in the coating of important wood species.

The data sheet originated from a collaboration with the Johann Heinrich von Thünen-Institute in Hamburg.

The pH values of wood have been determined as important chemical variables for the first time.

The concentration dependence of extracts such as tannic acids or tannins to the pH value is important.

A good surface coating and targeted selection of system structures shall be safer based on these variables determined by Thünen-Institute and demonstrate wood-related problem solving.

All system structures named in the data sheet are selected according to utmost durability and quality and are considered to be relevant systems. However, a practical test is always necessary.

Due to different application possibilities and stresses of parts to be coated, variations are required.

To select individual systems easily, the Teknos technical department will be happy to assist you.

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