SAPELI, SAPELE

Botanical name: *Entandrophragma cylindricum,* Syn.: *E. tomentosum,* family: MELIACEAE

Distribution: Tropical Africa

Other important trade names: Sapelli (D, F, B), sapele, sapele mahagany (GB, WAN), sapeli Mahonie (NL), aboudikro (CI, F, D.)

Abbreviation as per DIN EN 13556: ENCY

Colour and structure of the wood:

Heartwood brown and red. Clear colour contrast between sapwood and heartwood, medium width. Sap is light grey to yellowish, heartwood is initially pink to light red. After drying, it often darkens to deep reddish brown. Growth zone boundaries marked by narrow marginal parenchyma bands, which do not always stand out. The banded parenchyma sometimes causes a fine raised “cathedral effect” formed by innermost growth rings on the tangential surfaces. Smell of the wood is distinctive (fresh wood has an acidic and later a long-lasting smell). Cross grain present (generally very distinctive, causing a striking glossy stripe on radial surfaces).

Properties:

Weight fresh [kg/m³]		690 – 890 – 1065
Bulk density air-dry (12-15 % u) [g/cm³]		0.59 – 0.65 – 0.73
Compression strength $u_{12\text{-}15}$ [N/mm²]		51 – 60
Bending strength $u_{12\text{-}15}$ [N/mm²]		90 – 104
Modulus of elasticity (bending) $u_{12\text{-}15}$ [N/mm²]		10000 – 13800
Toughness [kJ/m²]		45 – 67
Hardness (BRINELL) ⊥ to the grain $u_{12\text{-}15}$ [N/mm²]		23 – 27
Drying shrinkage (fresh up to $u_{12\text{-}15}$)	radial [%]	2.5
	tangential [%]	4.5
Differential shrinkage [%/%]	radial	0.19 – 0.24
	tangential	0.26 – 0.32
pH value (suspension)		4.4
pH value (surface)		5.1
Durability class (EN 350:2016)	from natural forests	DC 3

Workability:

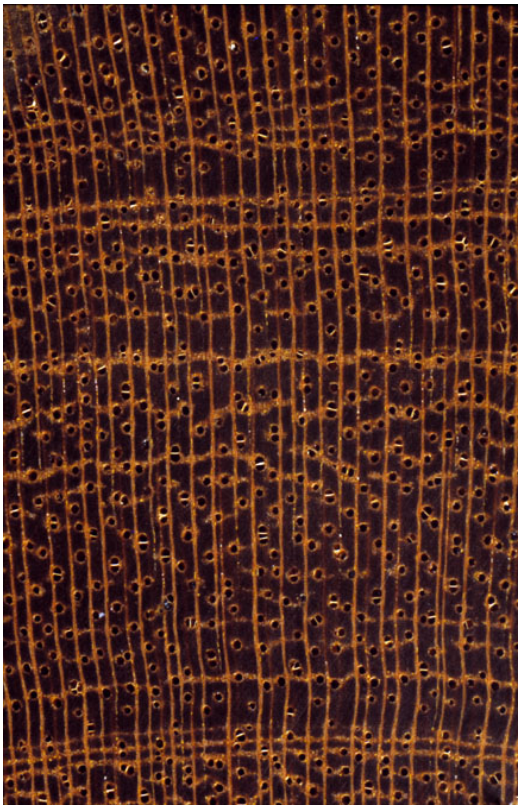
Sapeli is easily worked using all tools. The radial surfaces are only prone to tearing with strongly pronounced cross grain. Sapeli is easy to slice and cut. Nail and screw joints hold well, pre-drilling is recommended. Bonding good.

Drying:

The wood dries relatively fast, drying should be carefully controlled because the wood tends to warp.

Use:

Outdoor or indoor use. Especially suitable for: Outdoor construction with no ground contact, decorative veneer (preferably radial cut veneer, quarter cut), rotary cut veneer (for plywood), frame structure (windows, house doors, conservatories), wall and ceiling coverings (internal), furniture.



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

Wood surface of Sapeli (radial section)

Surface treatment:

Sapeli is a problem-free wood and can be coated easily. Discolouring possible in contact with iron ions (iron/tannin reaction).

Coating systems:

The coating systems illustrated here are examples developed to ensure utmost durability and lasting quality.

Alternative systems are also available; however, these must be confirmed by Teknos. Please contact your local Teknos representative for further details.

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

Windows, doors, conservatories, and folding shutters:

System coating	Translucent
Wood preservative*	TEKNOL AQUA 1412-01 / TEKNOL AQUA 1410-01 / TEKNOL AQUA 1415-01
Primer	AQUAPRIMER 2900-X2
Intermediate	AQUAFILLER 6500-01
Topcoat	AQUATOP 2600 translucent topcoat

System coating	Opaque
Wood preservative*	TEKNOL AQUA 1412-01 / TEKNOL AQUA 1410-01 / TEKNOL AQUA 1415-01
Primer	ANTISTAIN AQUA 2901-52
Intermediate	ANTISTAIN AQUA 2901-52
Topcoat	AQUATOP 2600-2X

System coating	Colourless
Wood preservative*	TEKNOL AQUA 1412-01 / TEKNOL AQUA 1410-01 / TEKNOL AQUA 1415-01
Intermediate	AQUAFILLER 6500-01
Topcoat	AQUATOP 2600-6X
Topcoat	AQUATOP 2600-6X

*The use of biocidal products within EU is only allowed if the product has been authorized according to BPR for the country in question. Use biocides safely. Always read the label and product information before use.

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.