KHAYA, AFRICAN MAHOGANY

Botanical name: *Khaya* spp., family MELIACEAE

Other important species: *K. ivorensis, K. anthotheca; K. grandifoliola*

Distribution: Tropical Africa

Other important trade names: Afrikanisches Mahagoni, acajou d'Afrique (F), African mahogany (GB)

Abbreviation as per DIN EN 13556: KHXX

Colour and structure of the wood:

Heartwood brown and red, no colour stripes. Clear colour contrast between sapwood and heartwood, narrow. The sap is yellowish grey to pink grey, the fresh heartwood pale pink to light reddish brown, part of the sap only slightly different. Dry wood darkens quickly and clearly when exposed to light, without losing its gloss. The golden-brown colour that is typical of American mahogany (*Swietenia spp.)* is only rarely seen with Khaya. The pores are visible to the naked eye on all cut surfaces, also due to the often dark content. Growth zone boundaries are indicated by smaller and denser pores in individual cases. Cross grain present (to varying degrees, producing an attractive glossy stripe).

Properties:

Weight fresh [kg/m³]		650 – 750
Bulk density air-dry (12-15 % u) [g/cm³]		0.52
Compression strength $u_{12\text{-}15}$ [N/mm²]		43
Bending strength $u_{12\text{-}15}$ [N/mm²]		75
Modulus of elasticity (bending) $u_{12\text{-}15}$ [N/mm²]		9500
Toughness [kJ/m²]		38
Hardness (BRINELL) ⊥ to the grain $u_{12\text{-}15}$ [N/mm²]		14
Drying shrinkage (fresh up to $u_{12\text{-}15}$)	radial [%]	2.5
	tangential [%]	4.5
Differential shrinkage [%/%]	radial	0.12
	tangential	0.22
pH value (suspension)		5.2
pH value (surface)		4.1
Natural durability (DIN-EN 350-2)	from natural forests	category 3

Additional information:

Skin irritations can be triggered by volatile wood substances.

Workability:

Khaya can be worked without major problems. Fibrous surfaces when planing only occur with very light qualities or woods with pronounced cross grain. Screw and nail joints generally hold well. Cutting (decorative veneer) and slicing (for plywood) is possible without any problems. Bonding good.

Drying:

Khaya is fast and easy to dry despite changes in humidity with only a low tendency to crack and warp.

Use:

Outdoor or indoor use. Especially suitable for: Outdoor construction with no ground contact, decorative veneer, rotary cut veneer (for plywood) (predominantly in boat building), frame structure (windows, house doors, conservatories), wall and ceiling coverings (inside), furniture (almost equal substitute for genuine mahogany (*Swietenia macrophylla*), especially in the reproduction of period furniture, e.g. Biedermeier, Chippendale, Empire), other uses: often applied in boat building, solid or laminated, for almost all components except wooden frames bent using steam.

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

Wood surface of Khaya (radial section)

Surface treatment:

No known problems. Treatability very poor (sapwood moderate; 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
Wood preservative	GORI 356 / TEKNOL AQUA 1410-01
Primer	AQUAPRIMER 2900-22
Intermediate	AQUAFILLER 6500-01
Topcoat	AQUATOP 2600-9X

System coating	Opaque
Wood preservative	GORI 356 / TEKNOL AQUA 1410-01
Primer	ANTISTAIN AQUA 2901-52
Intermediate	ANTISTAIN AQUA 2901-52
Topcoat	AQUATOP 2600-2X

System coating	Colourless
Wood preservative	GORI 356 / TEKNOL AQUA 1410-01
Intermediate	AQUAFILLER 6500-01
Topcoat	AQUATOP 2600-6X

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.