

# KHAYA/AFRICAN MAHOGANY



**Family:** MELIACEAE (angiosperm)  
**Scientific name(s):** *Khaya anthotheca*  
*Khaya ivorensis*  
*Khaya grandifoliola*  
**Commercial restriction:** no commercial restriction

## WOOD DESCRIPTION

**Color:** red brown  
**Sapwood:** clearly demarcated  
**Texture:** medium  
**Grain:** interlocked  
**Interlocked Grain:** slight

### Note:

Sometimes tension wood and brittle heart is present. Wood is pinkish brown to deep red with copper reflection.

## LOG DESCRIPTION

**Diameter:** 31.5 – 47 inches  
**Thickness of Sapwood:** 1.2– 3.15 inches  
**Floats:** yes  
**Log Durability:** moderate (treatment recommended)

## PHYSICAL PROPERTIES

Physical and mechanical properties are based on mature heartwood specimens. These properties can vary greatly depending on origin and growth conditions.

	<u>Mean</u>	<u>Std. Dev.</u>
<b>Specific Gravity*:</b>	0.57	0.08
<b>Janka Hardness (lbs):</b>	1,070	
<b>Volumetric Shrinkage:</b>	0.39%	0.03%
<b>Total Tangential Shrinkage (TS):</b>	5.5%	0.5%
<b>Total Radial Shrinkage (RS):</b>	3.7%	0.8%
<b>TS/RS Ratio:</b>	1.5	
<b>Fiber Saturation Point:</b>	28%	

**Stability:** Moderately stable

**Note:** *K. grandifoliola* is fairly hard. Physical and mechanical properties of *K. ivorensis* are lower than other species.

## MECHANICAL/ACOUSTIC

	<u>Mean</u>
<b>Crushing Strength*:</b>	6,671 lbf
<b>Static Bending Strength*:</b>	11,167 lbf
<b>Modulus of Elasticity*:</b>	1,714,346 lbf

**Musical Quality Factor:** 110.9 measured at 2646 Hz

*\*At 12% moisture content.*

## NATURAL DURABILITY AND TREATABILITY

Fungi and termite resistance refers to end-uses under temperate climate. Except for special comments on sapwood, natural durability is based on mature heartwood. Sapwood must always be considered as non-durable against wood degrading agents. E.N. = Euro Norm

<b>Funghi (According to E.N. standards):</b>	class 3 – moderately durable
<b>Dry Wood Borers:</b>	class D - durable (sapwood demarcated, risk limited to sapwood)
<b>Termites (According to E.N. standards):</b>	class S - susceptible
<b>Treatability (according to E.N. standards):</b>	class 4 - not permeable
<b>Use class ensured by natural durability:</b>	class 2 – inside or under cover (dampness possible)
<b>Species covering the use class 5:</b>	no

### Note:

This species is listed in the European standard NF EN 350-2. AFRICAN MAHOGANY cannot be used without appropriate preservative treatment for end-uses under use class 3, except for some parts of work such as windows, less exposed than others (entrance doors, shutters, etc...)

## REQUIREMENT OF A PRESERVATIVE TREATMENT

**Against dry wood borer attacks:** does not require any preservative treatment

**In case of risk of temporary humidification:** requires appropriate preservative treatment

**In case of risk of permanent humidification:** use not recommended

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## DRYING

**Drying Rate:** rapid  
**Risk of Distortion:** slight risk  
**Risk of Casehardening:** no  
**Risk of Checking:** slight risk  
**Risk of Collapse:** no

**Note:** Risks of distortion may increase in presence of tension wood and interlocked grain is occasionally high.

**Possible Drying Schedule:** 2

M.C. (%)	Temperature (°F)		Air Humidity (%)
	Dry-Bulb	Wet-Bulb	
Green	122	116.6	84
40	122	113	75
30	131	116.6	67
20	158	131	47
15	167	136.4	44

This schedule is given for information only and is applicable to thickness lower or equal to 1.5 in. It must be used in compliance with the code of practice. For thickness from 1.5 to 3 in, the air relative humidity should be increased by 5% at each step. For thickness over 3 in, a 10% increase should be considered.

## SAWING AND MACHINING

**Blunting Effect:** normal  
**Sawteeth Recommended:** ordinary or alloy steel  
**Cutting Tools:** ordinary  
**Peeling:** good  
**Slicing:** good

**Note:** Tendency to woolliness (tension wood) in sawing. Risks of tearing (interlocked grain) in planing. Ribbon-like aspect on quartersawn.

## ASSEMBLING

**Nailing / screwing:** good  
**Gluing:** correct  
**Note:**

Gluing must be done carefully: wood may be easily stained.

## END-USES

**Cabinetwork (high class furniture)**  
**Sliced veneer**  
**Ship building (planking and deck)**  
**Veneer for back or face of plywood**  
**Interior joinery**  
**Light carpentry**

**Note:** Pores sometimes filled with black deposits. Sawdust may cause irritation. Filling is recommended to obtain a better finish.

## MAIN LOCAL NAMES

<u>Country</u>	<u>Local Name</u>
<b>Cameroon</b>	N'Gollon, Mangona
<b>Ivory Coast</b>	Acajou Bassam, Krala, Acajou Blanc
<b>Ghana</b>	Takoradi Mahogany, Acajou Blanc
<b>France</b>	Acajou Blanc
<b>Congo</b>	N'Dola
<b>Central African Republic</b>	Deke
<b>Benin</b>	Kaju
<b>Nigeria</b>	Ogwango, Akuk
<b>Uganda</b>	Munyama, Eri Kire

### Works Cited:

CIRAD'S *Biomass, Wood, Energy, Bioproducts Research Unit (BioWooEB)*  
Meier, E. (2015), Wood, United States of America