ACAJOU D'AFRIQUE

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, presence of tension wood and brittleheart.
Wood pink brown to deep red with copper reflection.

LOG DESCRIPTION

Diameter: from 80 to 120 cm

Thickness of sapwood: from 3 to 8 cm

Floats: yes

Log durability: moderate (treatment recommended)

PHYSICAL PROPERTIES

MECHANICAL AND ACOUSTIC PROPERTIES

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

	Mean	Std dev.
Specific gravity *:	0,57	0,08
Monnin hardness *:	2,5	0,4
Coeff. of volumetric shrinkage:	0,39 %	0,03 %
Total tangential shrinkage (TS):	5,5 %	0,5 %
Total radial shrinkage (RS):	3,7 %	0,8 %
TS/RS ratio:	1,5	
Fiber saturation point:	28 %	

	Mean	Std dev.
Crushing strength *:	46 MPa	7 MPa
Static bending strength *:	77 MPa	13 MPa
Modulus of elasticity *:	11820 MPa	1261 MPa

(*: at 12% moisture content, with 1 MPa = 1 N/mm²)

Musical quality factor: 110,9 measured at 2646 Hz

Stability: moderately stable

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

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

Funghi (according to E.N. standards): class 3 - moderately durable

Dry wood borers: durable - sapwood demarcated (risk limited to sapwood)

Termites (according to E.N. standards): class S - susceptible

Treatability (according to E.N. standards): class 4 - not permeable

Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)

Species covering the use class 5: No

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

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

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 or interlocked grain occasionnally high.

Possible drying schedule: 2

M.C. (%)	Temperature (°C) dry-bulb	wet-bulb	Air humidity (%)
Green	50	47	84
40	50	45	75
30	55	47	67
20	70	55	47
15	75	58	44

This schedule is given for information only and is applicable to thickness lower or equal to 38 mm.
It must be used in compliance with the code of practice.
For thickness from 38 to 75 mm, the air relative humidity should be increased by 5 % at each step.
For thickness over 75 mm, a 10 % increase should be considered.

SAWING AND MACHINING

Blunting effect: normal

Sawteeth recommended: ordinary or alloy steel

Cutting tools: ordinary

Peeling: good

Slicing: nood

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

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to SATA grading rules (1996)
For the "General Purpose Market":
Possible grading for square edged timbers: choix I, choix II, choix III, choix IV
Possible grading for short length lumbers: choix I, choix II
Possible grading for short length rafters: choix I, choix II, choix III
For the "Special Market":
Possible grading for strips and small boards (ou battens): choix I, choix II, choix III
Possible grading for rafters: choix I, choix II, choix III

FIRE SAFETY

Conventional French grading: Thickness > 14 mm : M.3 (moderately inflammable)
Thickness < 14 mm : M.4 (easily inflammable)

Euroclasses grading: D s2 d0
Default grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2009). It concerns structural graded timber in vertical uses with mean density upper 0.35 and thickness upper 22 mm.

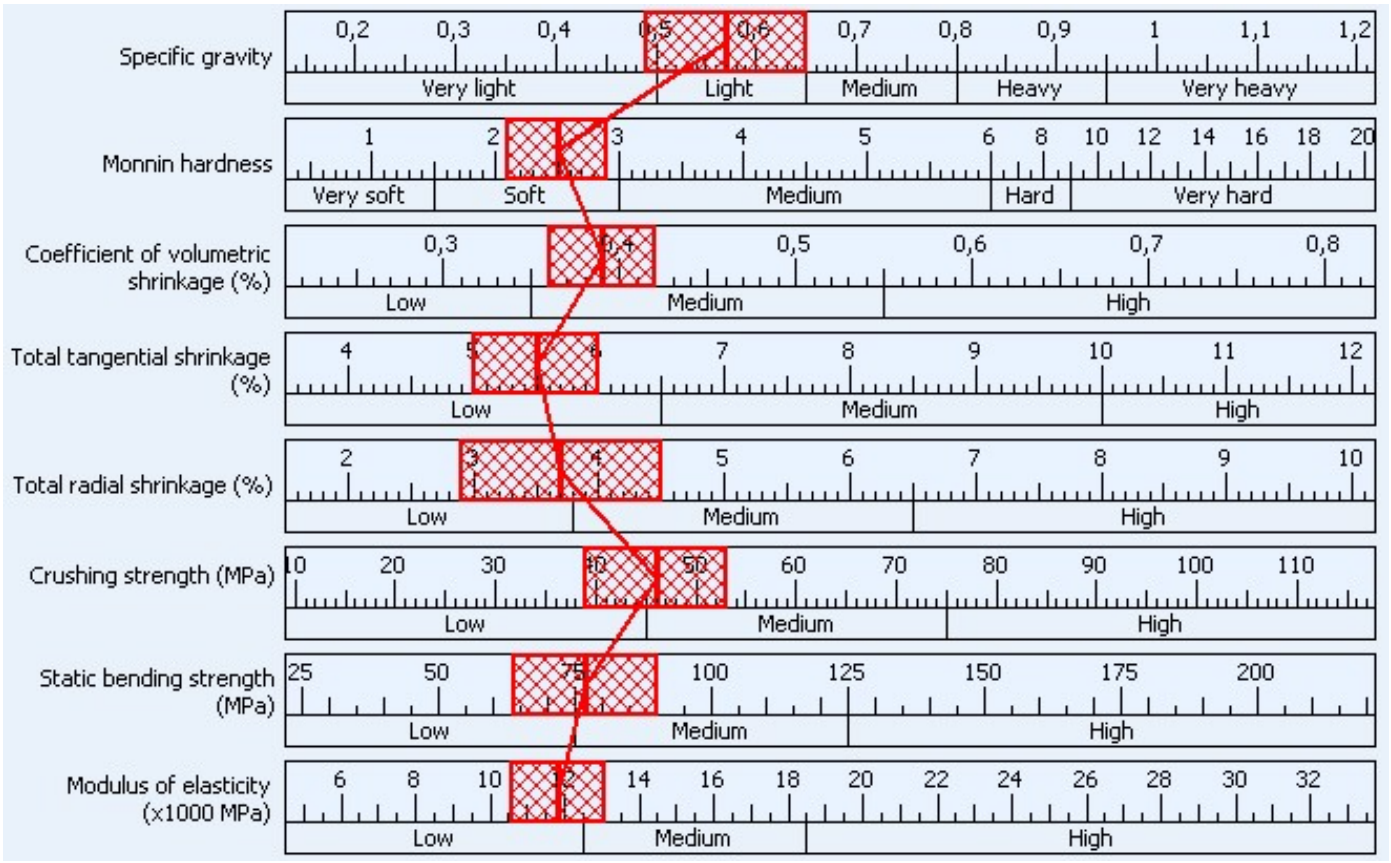
END-USES

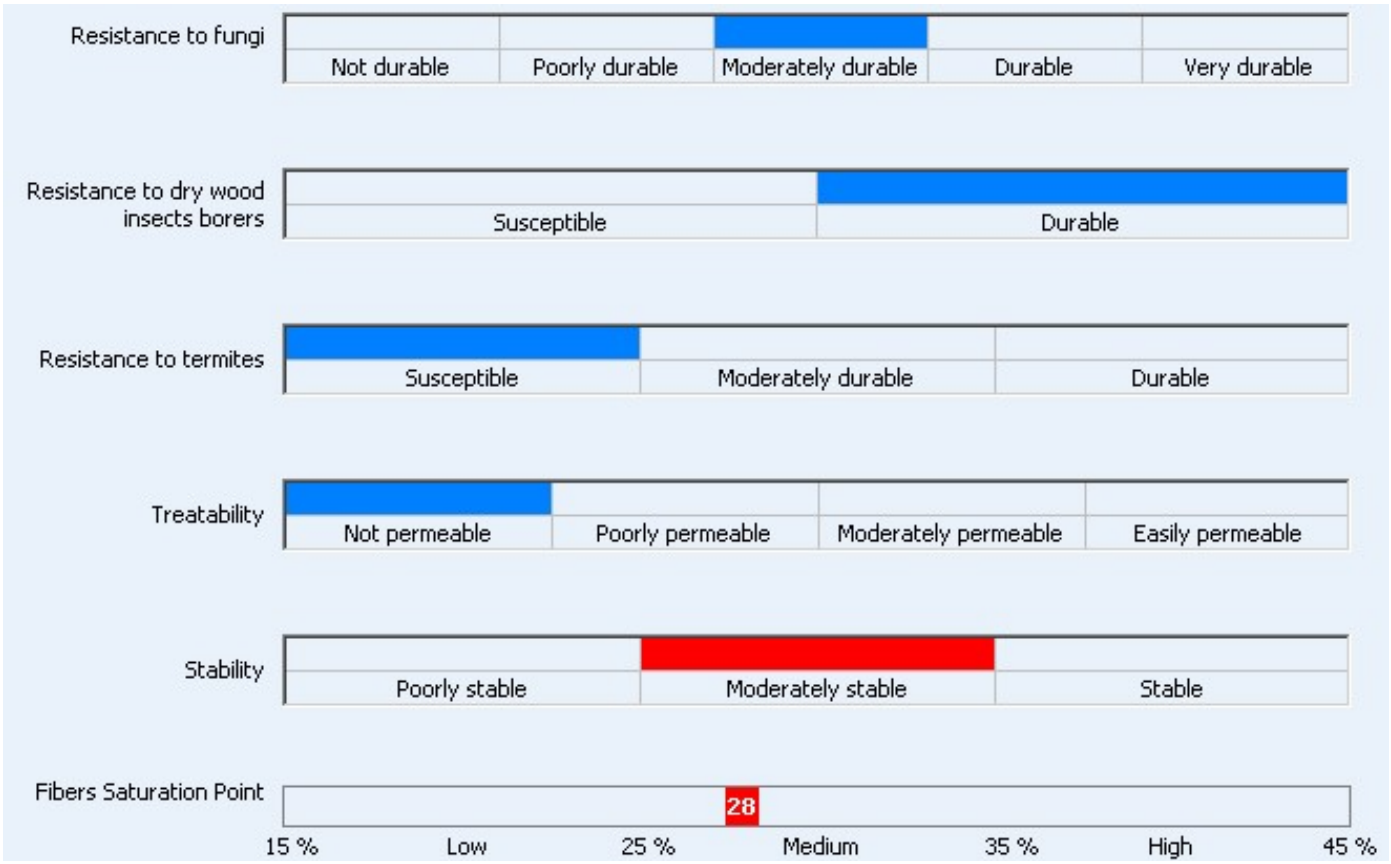
Cabinetwork (high class furniture)
Sliced veneer
Ship building (planking and deck)
Veneer for back or face of plywood
Interior joinery
Light carpentry
Current furniture or furniture components
Interior panelling
Open boats
Exterior joinery
Exterior panelling

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

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Angola	N'DOLA	Angola	UNDIA NUNU
Benin	KAJU	Cameroon	MANGONA
Cameroon	N'GOLLON	Congo	N'DOLA
Ivory Coast	ACAJOU BASSAM	Ivory Coast	ACAJOU BLANC
Ivory Coast	KRALA	Gabon	ZAMINGUILA
Ghana	AFRICAN MAHOGANY	Ghana	AHAFO
Ghana	TAKORADI MAHOGANY	Equatorial Guinea	CAOBA DEL GALON
Equatorial Guinea	ZAMANGUILA	Nigeria	AKUK
Nigeria	OGWANGO	Uganda	ERI KIRE
Uganda	MUNYAMA	Central African Republic	DEKE
Germany	KHAYA MAHOGANI	France	ACAJOU BASSAM
France	ACAJOU BLANC	United Kingdom	HEAVY AFRICAN MAHOGANY
United Kingdom	AFRICAN MAHOGANY		


Specific gravity
0,2 0,3 0,4 0,5 0,6 0,7 0,8 0,9 1 1,1 1,2
Very light
Light
Medium
Heavy
Very heavy
Monnin hardness
1 2 3 4 5 6 8 10 12 14 16 18 20
Very soft
Soft
Medium
Hard
Very hard
Coefficient of volumetric shrinkage (%)
0,3 0,4 0,5 0,6 0,7 0,8
Low
Medium
High
Total tangential shrinkage (%)
4 5 6 7 8 9 10 11 12
Low
Medium
High
Total radial shrinkage (%)
2 3 4 5 6 7 8 9 10
Low
Medium
High
Crushing strength (MPa)
10 20 30 40 50 60 70 80 90 100 110
Low
Medium
High
Static bending strength (MPa)
25 50 75 100 125 150 175 200
Low
Medium
High
Modulus of elasticity (x1000 MPa)
6 8 10 12 14 16 18 20 22 24 26 28 30 32
Low
Medium
High


Resistance to fungi
Not durable
Poorly durable
Moderately durable
Durable
Very durable
Resistance to dry wood insects borers
Susceptible
Durable
Resistance to termites
Susceptible
Moderately durable
Durable
Treatability
Not permeable
Poorly permeable
Moderately permeable
Easily permeable
Stability
Poorly stable
Moderately stable
Stable
Fibers Saturation Point
28
15 %
Low
25 %
Medium
35 %
High
45 %