

Family: MELIACEAE (angiosperm)

Scientific name(s): Entandrophragma candollei

Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: red brown
Sapwood: clearly demarcated
Texture: coarse
Grain: straight or interlocked
Interlocked grain: slight

Note: Red brown with purplish glints. Darkens with light. Deposits of black resin in the pores. Ribbon like aspect on quartersawn.

LOG DESCRIPTION

Diameter: from 60 to 150 cm
Thickness of sapwood: from 4 to 8 cm
Floats: no
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>
Specific gravity *:	0.69	0.07
Monnin hardness *:	3.3	0.6
Coeff. of volumetric shrinkage:	0.42 %	0.07 %
Total tangential shrinkage (TS):	6.7 %	1.3 %
Total radial shrinkage (RS):	4.8 %	0.5 %
TS/RS ratio:	1.4	
Fiber saturation point:	32 %	
Stability:	stable	

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	53 MPa	6 MPa
Static bending strength *:	87 MPa	14 MPa
Modulus of elasticity *:	11190 MPa	1380 MPa

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

Musical quality factor: 97.6 measured at 2410 Hz

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

Fungi (according to E.N. standards): class 2-3 - durable to moderately durable

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

Termites (according to E.N. standards): class M - moderately durable

Treatability (according to E.N. standards): class 3 - poorly permeable

Use class ensured by natural durability: class 3 - not in ground contact, outside

Species covering the use class 5: no

Note: This species is listed in the European standard NF EN 350-2.

The French standard NF P 23-305 (December 2014) indicates that this species covers the use class 3.1 for untreated heartwood. However, Kosipo and Utile, that covers the use class 3.2 for untreated heartwood, have the same class of natural durability against fungi. In practice, Kosipo and Utile have the same uses for exterior joinery. Therefore, Kosipo can be considered covering the use class 3.2 for untreated heartwood.

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: normal to slow

Risk of distortion: high risk

Risk of casehardening: no

Risk of checking: no risk or very slight risk

Risk of collapse: no

Note: The drying of backsawn is more difficult and slower with higher risks of distortion. Quartersawn well dry is

POSSIBLE DRYING SCHEDULE

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
Green	40	37	82
40	44	38	68
30	44	36	59
20	46	36	52
15	49	37	46

recommended for end-uses in exterior.



This drying 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: high

Sawteeth recommended: stellite-tipped

Cutting tools: tungsten carbide

Peeling: good

Slicing: good

Note: Requires power. Sometimes difficulties due to interlocked grain (tearing). Blunting effect varies from quite high to very high (silica).

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 : M3 (moderately inflammable)

Thickness < 14 mm : M4 (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

Exterior joinery

Sliced veneer

Interior panelling

Veneer for back or face of plywood

Stairs (inside)

Shingles

Glued laminated

Interior joinery

Cabinetwork (high class furniture)

Current furniture or furniture components

Flooring

Exterior panelling

Light carpentry

Note: The adherence of finishing product may be difficult due to the presence of resin. Sanding must be done with care. Filling is necessary to obtain a good finish.



This list presents main known end-uses; they must be implemented according to the code of practice. Important remark: some end-uses are mentioned for information (traditional, regional or ancient end-uses).

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Angola	LIFUCO	Cameroon	ATOM-ASSIÉ
Congo	DIAMUNI	Ivory Coast	KOSIPO
Gabon	ÉTOM	Ghana	KOSIPO
Ghana	PENKWA-AKOWAA	Nigeria	HEAVY SAPELE
Nigeria	OMU	Central African Republic	BAKANGA
Democratic Republic of the Congo	IMPOMPO	Germany	KOSIPO-MAHOGANY
United Kingdom	OMU		

