

Kosipo

Family. Meliaceae

Botanical Name(s).

Entandrophragma candollei

Continent. Africa

CITES. This species is not listed in the CITES Appendices (Washington Convention 2023).

Description of logs

Diameter. From 60 to 150 cm

Thickness of sapwood. From 4 to 8 cm

Floats. No

Log durability. Moderate (treatment recommended)

Description of wood

Colour reference. Red brown

Sapwood. Clearly demarcated

Texture. Coarse

Grain. Straight or interlocked

Interlocked grain. Slight

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

Physics and mechanics

The properties indicated are for mature wood. These properties may vary significantly depending on the origin and growing conditions of the wood.

Property	Average value
Specific gravity ¹	0.69
Monnin hardness ¹	3.3
Coefficient of volumetric shrinkage	0.42 % per %
Total tangential shrinkage (St)	6.7 %
Total radial shrinkage (Sr)	4.8 %
Ratio St/Sr	1.4
Fibre saturation point	32 %
Thermal conductivity (λ)	0.23 W/(m.K)
Lower heating value	18,640 kJ/kg
Crushing strength ¹	53 MPa
Static bending strength ¹	87 MPa
Modulus of elasticity ¹	11,190 MPa

¹ At 12 % moisture content, with 1 MPa = 1 N/mm

Natural durability and preservation

Resistance to fungi. Class 2 to 3 - durable to moderately durable



Quarter sawn



Flat sawn

Resistance to dry wood borers. Class D - durable (sapwood demarcated, risk limited to sapwood)

Resistance to termites. Class M - moderately durable

Treatability. Class 3 - poorly permeable

Use class ensured by natural durability.

Class 3 - not in ground contact, outside

Notes. This species is listed in the European standard NF EN 350 (2016). 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. Does not require any preservative treatment

In case of temporary humidification. Requires appropriate preservative treatment

In case of permanent humidification. Use not recommended

Drying

Drying rate. Normal to slow

Risk of distorsion. High risk

Risk of casehardening. No known specific risk

Risk of checking. No risk or very slight risk

Risk of collapse. No known specific risk

Notes. The drying of backsawn is more difficult and slower with higher risks of distortion. Quartersawn well dry is recommended for end-uses in exterior.

Suggested drying program.

Phases	Duration (H)	MC (%) probes	T (°C)	Rh (%)	UGL (%)
Prewarm 1		> 50	50	87	17.0
Prewarm 2	4	> 50	50	86	16.5
Drying		> 50	53	83	15.2
		50 - 40	53	80.0	14.1
		40 - 35	54	80.0	13.9
		35 - 30	55	75.0	12.5
		30 - 27	57	70.0	11.0
		27 - 24	58	61.0	9.4
		24 - 21	59	51.0	7.9
		21 - 18	60	47.0	7.3
		18 - 15	61	39.0	6.1
		15 - 12	62	35.0	5.6
		12 - 9	62	30.0	5.0
		9 - 6	62	26.0	4.4
Conditioning	8		55	(3)	(2)
Cooling	(1)		Stop	(3)	(2)

(1)) Cooling: until the temperature inside the kiln no longer exceeds external temperature by more than 30 °C.

(2) UGL = final H% x 0,8 to 0,9.

(3) Subtract RH from the UGL determined in (2) and temperature, using the Hailwood-Horrobin equation.

Sawing and machining

Blunting effect. High

Sawteeth recommended. Stellite-tipped

Cutting tools. Tungsten carbide

Peeling. Good

Slicing. Good

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

Assembling

Nailing and screwing. Good

Commercial grading

Appearance grading for sawn timbers.

According to the ATIBT grading rules (2017), the main choices are: FAS (First And Second), n°1 Common and select, n°2 Common (see details of these rules on the ATIBT website).

Visual grading for structural applications

No visual grading for structural applications

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+A1 (August 2019). It concerns structural graded timber in vertical uses and ceiling with mean density upper 0.35 and thickness upper 22 mm.

End-uses

- Cabinetwork (high class furniture)
- Current furniture or furniture components
- Exterior joinery
- Exterior panelling
- Flooring
- Glued laminated
- Indoor staircases
- Interior joinery
- Interior panelling
- Light carpentry
- Shingles
- Sliced veneer
- Veneer for back or face of plywood

Notes. 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.



Triangular structure in Kosipo and posts in Tali – By J.Y. Riaux - Mindourou (Cameroon).

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Main local names

Country	Local name
Angola	Lifuco
Cameroon	Atom-assié
Central African Republic	Bakanga
Congo	Diamuni
Côte d'Ivoire	Kosipo
Democratic Republic of the Congo	Impompo
Gabon	Étom
Germany (importated tropical timber)	Kosipo-mahogany
Ghana	Kosipo
Ghana	Penkwa-akowaa
Nigeria	Heavy sapele
Nigeria	Omu
United Kingdom (importated tropical timber)	Omu