Moabi

Quarter sawn

Half-quarter sawn

Family. Sapotaceae

Botanical Name(s).

Baillonella toxisperma
Mimusops djave (synonymous)

Continent. Africa

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

Description of logs

Diameter. From 60 to 100 cm

Thickness of sapwood. From 4 to 6 cm

Floats. No

Log durability. Good

Description of wood

Colour reference. Red brown

Sapwood. Clearly demarcated

Texture. Fine

Grain. Straight or interlocked

Interlocked grain. Slight

Notes. Wood pink brown to red brown more or less dark and finely veined. Satin 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]	0.87
Monnin hardness[1]	6.8
Coefficient of volumetric shrinkage	0.64 % per %
Total tangential shrinkage (St)	8.7 %
Total radial shrinkage (Sr)	6.5 %
Ratio St/Sr	1.3
Fibre saturation point	23 %
Thermal conductivity (λ)	0.28 W/(m.K)
Lower heating value	19,610 kJ/kg
Crushing strength[1]	74 MPa
Static bending strength[1]	143 MPa
Modulus of elasticity[1]	21,040 MPa

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

Notes. Moabi wood is moderately stable (ref. standard NF NF B 54-040 Lames de platelages extérieurs en bois - Caractéristiques, December 2018).

Last update date: 04/23/2024

Natural durability and preservation

Resistance to fungi. Class 1 - very durable

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

Resistance to termites. Class D - durable

Treatability. Class 3-4 - poorly or not permeable

Use class ensured by natural durability.

Class 4 - in ground or fresh water contact

Notes. This species is listed in the European standard NF EN 350 (2016). It naturally covers the use class 5 (wood permanently or regularly submerged in salt water, sea water or brackish water) due to its high specific gravity and a high silica content. According to the European standard NF EN 335 (2013), performance length might be modified by the intensity of end-use exposition.

Requirement of a preservative treatment

Against dry wood borer. Does not require any preservative treatment

In case of temporary humidification. Does not require any preservative treatment

In case of permanent humidification. Does not require any preservative treatment

Drying

Drying rate. Slow

Risk of distorsion. Slight risk

Risk of casehardening. No known specific risk

Risk of checking. High risk

Risk of collapse. No known specific risk

Notes. Surface drying under cover. Kiln drying must be handled with care. It is recommended to dry until a low moisture content (10. 12 %) because of its shrinkage.

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	85	15.7
		50 - 40	53	82.0	14.6
		40 - 35	54	78.0	13.4
		35 - 30	55	77.0	12.9
		30 - 27	57	73.0	11.9
		27 - 24	58	68.0	10.7
		24 - 21	60	61.0	9.3
		21 - 18	62	52.0	7.9
		18 - 15	64	43.0	6.6
		15 - 12	65	39.0	6.0
		12 - 9	65	31.0	5.0
		9 - 6	65	28.0	4.5
Conditioning	8		58	(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.

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Sawing and machining

Blunting effect. High

Sawteeth recommended. Stellite-tipped

Cutting tools. Tungsten carbide

Peeling. Good

Slicing. Good

Notes. Requires power. Blunting effect fairly high to high (silica). Sawdust can irritate mucous membranes.

Assembling

Nailing and screwing. Good but pre-boring necessary

Notes. Tends to split when nailing. High specific gravity: gluing must be especially performed in compliance with the code of practice.

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

- Arched goods
- Bridges (parts not in contact with water or ground)
- Cabinetwork (high class furniture)
- Current furniture or furniture components
- Decking
- Exterior joinery
- Flooring
- Heavy carpentry
- Indoor staircases
- Industrial or heavy flooring
- Interior joinery
- Interior panelling
- Rolling shutters
- Sculpture
- Sleepers
- Sliced veneer
- Turned goods
- Veneer for back or face of plywood
- Veneer for interior of plywood

Notes. Substitute for MAKORE (Tieghemella spp.).

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Door in Moabi, posts in Tali, framework in Kosipo, vertical thin timber cladding in Mukulungu – J.Y. Riaux, Mindourou (Cameroon).

Main local names

Country	Local name
Angola	Moabi
Cameroon	Adjap
Cameroon	Ayap
Congo	Dimpampi
Congo	Moabi
Democratic Republic of the Congo	Muamba jaune
Equatorial Guinea	Adjap
Equatorial Guinea	Ayap
Gabon	Adza
Gabon	M'foi
Nigeria	Oko uku
United Kingdom (importated tropical timber)	African pearwood

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