

Essia

Family. Lecythidaceae

Botanical Name(s).

Petersianthus macrocarpus

Combretodendron africanum (synonymous)

Petersia africana (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 8 to 10 cm

Floats. No

Log durability. Low (treatment necessary)

Description of wood

Colour reference. Red brown

Sapwood. Clearly demarcated

Texture. Medium

Grain. Interlocked

Interlocked grain. Marked

Notes. Unpleasant odour when green. Wood yellowish pink to red brown with variable aspect. Grain straight or wavy.

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	0.80
Monnin hardness ¹	4.0
Coefficient of volumetric shrinkage	0.53 % per %
Total tangential shrinkage (St)	9.2 %
Total radial shrinkage (Sr)	4.7 %
Ratio St/Sr	2.0
Fibre saturation point	36 %
Thermal conductivity (λ)	0.26 W/(m.K)
Lower heating value	
Crushing strength ¹	57 MPa
Static bending strength ¹	103 MPa
Modulus of elasticity ¹	12,870 MPa

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



Quarter sawn



Half-quarter sawn

Natural durability and preservation

Resistance to fungi. Class 3 - moderately durable

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 2 - inside or under cover (dampness possible)

Notes. Wide sapwood sensible to insect attacks.

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. Slow

Risk of distorsion. High risk

Risk of casehardening. No known specific risk

Risk of checking. High risk

Risk of collapse. Yes

Notes. Quartersawn recommended especially for thick dimensions. Kiln drying very difficult. It is recommended to dry thin dimensions.

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.

Sawing and machining

Blunting effect. Normal

Sawteeth recommended. Stellite-tipped

Cutting tools. Tungsten carbide

Peeling. Bad

Slicing. Good

Notes. Machining more or less easy according to interlocked grain, especially in planing (tearing).

Assembling

Nailing and screwing. Good but pre-boring necessary

Notes. Risks of splits with thin dimensions. 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

- Heavy carpentry
- Sliced veneer
- Vehicle or container flooring

Notes. Mottled, striated, veined or moiré wood are in great demand for decorative sliced veneer.

Main local names

Country	Local name
Cameroon	Abing
Central African Republic	Nossoba
Congo	Minzu
Democratic Republic of the Congo	Bossoho
Democratic Republic of the Congo	Wulo
France (importated tropical timber)	Abale
Gabon	Abin
Gabon	Abing
Ghana	Esia
Ghana	Essia
Nigeria	Owewe