

Diania

Family. Cannabaceae (Ulmaceae)

Botanical Name(s).

Celtis adolfi-friderici

Celtis tessmannii

Celtis brieiyi (synonymous)

Celtis p.p.

Continent. Africa

CITES.

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

Notes. Diania and Ohia are two different groups of *Celtis* species. Sometimes they are grouped together under the name of African *Celtis*.

Description of logs

Diameter. From 70 to 90 cm

Thickness of sapwood. -

Floats. Yes

Log durability. Low (treatment necessary)

Description of wood

Colour reference. Light yellow

Sapwood. Not clearly demarcated

Texture. Medium

Grain. Straight or interlocked

Interlocked grain. Slight

Notes. Yellowish white with greenish veins in the innermost part of the logs. Particularly unpleasant odour when green or rewetted. Sometimes greenish discoloration in the innermost part of the logs.

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	0.72
Monnin hardness ¹	5.0
Coefficient of volumetric shrinkage	0.45 % per %
Total tangential shrinkage (St)	7.4 %
Total radial shrinkage (Sr)	4.0 %
Ratio St/Sr	1.9 %
Fibre saturation point	26
Thermal conductivity (λ)	0.24 W/(m.K)
Lower heating value	18,920 kJ/kg



Half quarter sawn



Quarter sawn

Crushing strength ¹	59 MPa
Static bending strength ¹	111 MPa
Modulus of elasticity ¹	16,200 MPa

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

Natural durability and preservation

Resistance to fungi. Class 5 - not durable

Resistance to dry wood borers. Class S - susceptible (risk in all the wood)

Resistance to termites. Class S - susceptible

Treatability. Class 1 - easily permeable

Use class ensured by natural durability.

Class 1 - inside (no dampness)

Notes. Very prone to blue stain.

Requirement of a preservative treatment

Against dry wood borer. Requires appropriate 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 distortion. High risk

Risk of casehardening. No known specific risk

Risk of checking. High risk

Risk of collapse. No known specific risk

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)		Arrêt	(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. Fairly high

Sawteeth recommended. Stellite-tipped

Cutting tools. Tungsten carbide

Peeling. Good

Slicing. Good

Notes. Possible sawing and machining difficulties if there is interlocked grain. In this case, special tools are recommended. Sometimes, high silica content for *Celtis tessmanii*.

Assembling

Nailing and screwing. Good but pre-boring necessary

Notes. Tends to split with nailing.

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

According to French standard NF B 52-001-1 (2018), strength class D35 can be provided by visual grading.

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

- Boxes and crates
- Current furniture or furniture components
- Flooring
- Formwork
- Heavy carpentry
- Interior joinery
- Interior panelling
- Matches
- Moulding
- Sliced veneer
- Stairs (inside)
- Turned goods
- Vehicle or container flooring
- Veneer for back or face of plywood
- Veneer for interior of plywood

Main local names

Country	Local name
Benin	Bawe

Cameroon	Odou vrai
Central African Republic	Balzé
Congo	Diania
Congo	Édou
Congo	Kiliakamba
Côte d'Ivoire	Celtis
Côte d'Ivoire	Lohonfé
Democratic Republic of the Congo	Bolundé
Democratic Republic of the Congo	Diania
Democratic Republic of the Congo	Kayombo
Gabon	Engo
Ghana	Esa-biri
Ghana	Esa-kokoo
Ghana	Esa-kosua
Kenya	Shiunza
Liberia	Lokonfi
Nigeria	Dunki
Nigeria	Ita
Nigeria	Zuwo
Uganda	Ekembe bakaswa
Uganda	Namanuka