Wenge

Family. Fabaceae

Botanical Name(s).

Millettia laurentii
Millettia stuhlmannii

Continent. Africa

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

Half-quarter sawn

Flat sawn

Description of logs

Diameter. From 60 to 100 cm

Thickness of sapwood. From 2 to 3 cm

Floats. No

Log durability. Good

Description of wood

Colour reference. Dark brown

Sapwood. Clearly demarcated

Texture. Coarse

Grain. Straight

Interlocked grain. Absent

Notes. Sometimes, brittleheart and grub hole. Wood yellow when fresh, becoming dark brown to black brown with light. Presence of alternate light and dark stripes.

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]	9.1
Coefficient of volumetric shrinkage	0.69 % per %
Total tangential shrinkage (St)	9.1 %
Total radial shrinkage (Sr)	5.9 %
Ratio St/Sr	1.5
Fibre saturation point	22 %
Thermal conductivity (λ)	0.28 W/(m.K)
Lower heating value	
Crushing strength[1]	85 MPa
Static bending strength[1]	144 MPa
Modulus of elasticity[1]	21,050 MPa

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

Notes. Hardness varies from hard to very hard.

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Natural durability and preservation

Resistance to fungi. Class 2 - durable

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

Resistance to termites. Class D - durable

Treatability. Class 4 - 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). 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. Usually, few risks of distortion except with thick material.

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

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Blunting effect. Fairly high

Sawteeth recommended. Stellite-tipped

Cutting tools. Tungsten carbide

Peeling. Not recommended or without interest

Slicing. Good

Notes. Requires power. Difficult to polish. Apply preferably a finishing wax.

Assembling

Nailing and screwing. Good but pre-boring necessary

Notes. Risks of splits when nailing. High specific gravity and wood tends to stain: 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

- Cabinetwork (high class furniture)
- Current furniture or furniture components
- Exterior joinery
- Exterior panelling
- Flooring
- Interior joinery
- Interior panelling
- Resistant to one or several acids
- Sculpture
- Sliced veneer
- Turned goods

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Interior design elements - Maison Décoret (Vichy - France).
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Main local names

Country	Local name
Cameroon	Awoung
Congo	Wengé
Democratic Republic of the Congo	Wengé
France (importated tropical timber)	Panga-panga
France (importated tropical timber)	Wengé
Gabon	Awong
Germany (importated tropical timber)	Panga-panga
Germany (importated tropical timber)	Wenge
Mozambique	Jambire
Tanzania	Mpande
United Kingdom (importated tropical timber)	Panga-panga
United Kingdom (importated tropical timber)	Wenge

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