Mahogany

Flat sawn

Quarter sawn

Family. Meliaceae

Botanical Name(s).

Swietenia humilis
Swietenia krukovii
Swietenia macrophylla
Swietenia candollei (synonymous)
Swietenia tessmannii (synonymous)
Swietenia mahagoni

Continent. Latin America

CITES. The three main species of Swietenia (S. macrophylla, S. humilis and S. mahagoni) are listed in CITES (Convention on International Trade in Endangered Species of wild fauna and flora, November 2023), Appendix II. Parts of wood and wood-made products which are regulated are defined by notes: S. humilis (all parts and products), S. mahagoni (logs, sawn woods and veneers), S. macrophylla (logs, sawn woods, veneers and plywoods).

Description of logs

Diameter. From 60 to 130 cm

Thickness of sapwood. From 2 to 5 cm

Floats. Yes

Log durability. Moderate (treatment recommended)

Description of wood

Colour reference. Red brown

Sapwood. Clearly demarcated

Texture. Medium

Grain. Straight or interlocked

Interlocked grain. Slight

Notes. Sometimes, internal stresses.

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]	0.60
Monnin hardness[1]	3.4
Coefficient of volumetric shrinkage	0.40 % per %
Total tangential shrinkage (St)	3.7 %
Total radial shrinkage (Sr)	2.6 %
Ratio St/Sr	1.4
Fibre saturation point	23 %
Thermal conductivity (λ)	0.20 W/(m.K)
Lower heating value	19,090 kJ/kg

Last update date: 02/22/2024

Crushing strength[1]	54 MPa
Static bending strength[1]	85 MPa
Modulus of elasticity[1]	10,790 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 (see note)

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

Resistance to termites. Class S - susceptible

Treatability. Class 4 - not permeable

Use class ensured by natural durability.

Class 2 to 3.2 subject to sound drainage design (see note)

Notes. This species is mentioned in standard NF EN 350 (2016) with class 2 durability to fungi, but for wood from natural forest. However, knowing, moreover, that this species is a listed in Appendix II of CITES, a majority of the Mahogany marketed internationally today comes from young plantations made up of wood with properties that are often different from those of natural forest provenances. In particular, these juvenile woods have a lower durability than more mature woods. This situation explains the ranges of durability and use classes mentioned above.

Requirement of a preservative treatment

Against dry wood borer. Does not require any preservative treatment

In case of temporary humidification. Sapwood excluded, wood with mature heartwood is suitable for temporary humidification situations (use class 3.1 and 3.2 according to NF EN 335 - 2013), without preservative treatment, provided it is designed to be sound and draining (FD P 20 651 - 2011).

In case of permanent humidification. Use not recommended

Drying

Drying rate. Rapid

Risk of distorsion. Slight risk

Risk of casehardening. No known specific risk

Risk of checking. Slight risk

Risk of collapse. No known specific risk

Suggested drying program.

Last update date: 02/22/2024

Phases	Duration (H)	MC (%) probes	T (°C)	Rh (%)	UGL (%)
Prewarm 1		> 50	55	84	15.5
Prewarm 2	3	> 50	57	83	15.0
Drying		> 50	60	76	12.5
		50 - 40	60	73.0	11.6
		40 - 35	60	69.0	10.7
		35 - 30	60	62.0	9.5
		30 - 27	63	55.0	8.2
		27 - 24	64	50.0	7.5
		24 - 21	65	46.0	6.9
		21 - 18	65	39.0	6.0
		18 - 15	68	32.0	5.0
		15 - 12	70	29.0	4.5
		12 - 9	70	25.0	4.0
		9 - 6	70	24.0	3.9
Conditioning	6		63	(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. Ordinary or alloy steel

Cutting tools. Ordinary

Peeling. Good

Slicing. Good

Assembling

Nailing and screwing. Good

Commercial grading

Appearance grading for sawn timbers.

According to ATIBT grading rules, possible grade: FAS (First And Second), n°1 Common and select, n°2 Common

Visual grading for structural applications

According to French standard NF B 52-001-1 (2018), strength class D18 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

Last update date: 02/22/2024

- Arched goods
- Cabinetwork (high class furniture)
- Current furniture or furniture components
- Exterior joinery
- Exterior panelling
- Interior joinery
- Interior panelling
- Light carpentry
- Moulding
- Musical instruments
- Ship building (planking and deck)
- Sliced veneer
- Turned goods
- Veneer for back or face of plywood
- Veneer for interior of plywood
- Wood-ware

Art Deco style wardrobe – 1928 by René Coulomb – Éric Orsini, Pézenas (France)
© Eric Orsini

Main local names

Country	Local name
Bolivia	Caoba
Bolivia	Mara
Brazil	Aguano
Brazil	Araputanga
Brazil	Mogno
Colombia	Caoba
Cuba	Caoba
Dominican Republic	Mahogany
France (importated tropical timber)	Acajou d'amérique
France (importated tropical timber)	Acajou des Antilles (pour S. macrophylla)
France (importated tropical timber)	Mogno
Germany (importated tropical timber)	Mahonia
Guatemala	Chacalte
Haiti	Mahogany

Last update date: 02/22/2024

Last update date: 02/22/2024

Italia (importated tropical timber)	Mogano
Mexico	Baywood
Mexico	Zopilote
Peru	Aguano
Peru	Caoba
Spain (importated tropical timber)	Caoba
United Kingdom (importated tropical timber)	Mahogany
Venezuela	Orura

Last update date: 02/22/2024

Last update date: 02/22/2024