

Massaranduba

Family. Sapotaceae

Botanical Name(s).

Manilkara bidentata

Manilkara huberi

Manilkara p.p.

Continent. Latin America

CITES. This species is not listed in the CITES Appendices (Washington Convention 2025).

Description of logs

Diameter. From 60 to 120 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

Interlocked grain. Absent

Notes. Dark red brown with purplish shades.

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	1.10
Monnin hardness ¹	12.9
Coefficient of volumetric shrinkage	0.75 % per %
Total tangential shrinkage (St)	9.4 %
Total radial shrinkage (Sr)	7.1 %
Ratio St/Sr	1.3
Fibre saturation point	27 %
Thermal conductivity (λ)	0.35 W/(m.K)
Lower heating value	19,070 kJ/kg
Crushing strength ¹	89 MPa
Static bending strength ¹	170 MPa
Modulus of elasticity ¹	24,410 MPa

¹ At 12 % moisture content, with 1 MPa = 1 N/mm²



Flat sawn



Quarter sawn

Natural durability and heartwood treatability

Resistance of heartwood to xylophagous fungi. Durability class 1 - very durable

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

Resistance of heartwood to termites. Class D - durable

Heartwood treatability. Class 4 - not permeable

Use class ensured by natural durability of heartwood.

Class 4 - in ground or fresh water contact

Notes. This species is listed in the European standard NF EN 350 (2016). This species 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 hardness. 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. High risk

Risk of casehardening. Yes

Risk of checking. High risk

Risk of collapse. No known specific risk

Notes. Air drying prior to kiln drying is recommended.

Suggested drying program.

Phases	Duration (H)	MC (%) probes	T (°C)	Rh (%)	UGL (%)
Prewarm 1		> 40	35	87	18.0
Prewarm 2	6	> 40	38	85	17.0
Drying		> 40	41	82	15.7
		40 - 35	44	81.0	15.0
		35 - 30	46	80.0	14.5
		30 - 25	48	77.0	13.5
		25 - 20	50	72.0	12.0
		20 - 18	52	63.0	10.0
		18 - 16	54	54.0	8.5
		16 - 14	56	47.0	7.4
		14 - 12	58	41.0	6.5
		12 - 9	60	34.0	5.6
Conditioning	8		55	(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. Fairly high

Sawteeth recommended. Stellite-tipped

Cutting tools. Tungsten carbide

Peeling. Not recommended or without interest

Slicing. Good

Notes. Requires power.

Assembling

Nailing and screwing. Good but pre-boring necessary

Notes. Very high specific gravity: gluing must be especially performed in compliance with the code of practice.

Commercial grading

Appearance grading for sawn timbers.

According to NHLA grading rules (2015) Possible grading: FAS, Select, Common 1, Common 2, Common 3 In French Guiana, the local name of this species is "Balata franc". Grading is done according to local rules "Bois guyanais classés". Possible grading: choix 1, choix 2, choix 3, choix 4

Visual grading for structural applications

According to French standard NF B 52-001-1 (2018), strength class D50 can be provided by visual grading. Strength class D70 can be provided by visual grading according to French standard NF B 52-001-1/A2 (2015).

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 in contact with water or ground)
- Bridges (parts not in contact with water or ground)
- Current furniture or furniture components
- Decking
- Heavy carpentry
- Hydraulic works (fresh water)
- Indoor staircases
- Industrial or heavy flooring
- Poles
- Sculpture
- Shingles
- Ship building (planking and deck)
- Sleepers
- Sliced veneer
- Stakes
- Stringed instruments (bow)
- Tool handles (resilient woods)
- Turned goods
- Wood frame house

Notes. In Brazil, *M. elata* and *M. longifolia* are used for pulpwood.



Floating decks, Port-Louis (France).

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Main local names

Country

Brazil
 Brazil
 Brazil
 Colombia
 Colombia
 French Guiana
 French Guiana
 French Guiana
 French Guiana
 Guyana
 Guyana
 Guyana
 Panama
 Peru
 Peru
 Suriname
 United Kingdom (importated tropical timber)
 United States of America (importated tropical timber)
 United States of America (importated tropical timber)
 Venezuela
 Venezuela

Local name

Maçaranduba
 Maparajuba
 Paraju
 Balata
 Nispero
 Balata franc
 Balata gomme
 Balata rouge
 Bois abeille
 Balata
 Beefwood
 Bulletwood
 Nispero
 Pamashto
 Quinilla colorada
 Bolletrie
 Bulletwood
 Beefwood
 Bulletwood
 Balata
 Massarandu