

Macucu de paca

Family. Leguminosae (Caesalpiniaceae)

Botanical Name(s).

Aldina heterophylla

Continent. Latin America

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

Notes. MACUCU DE PACA is commercialized blended with ANGELIM (*Hymenolobium spp.*).

Description of logs

Diameter. From 60 to 100 cm

Thickness of sapwood. From 5 to 8 cm

Floats. No

Log durability. Good

Description of wood

Colour reference. Yellow brown

Sapwood. Not clearly demarcated

Texture. Coarse

Grain. Interlocked

Interlocked grain. Marked but not frequent

Notes. Risk of shakes on logs. Grain sometimes 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	0.88
Monnin hardness ¹	7.6
Coefficient of volumetric shrinkage	0.61 % per %
Total tangential shrinkage (St)	7.6 %
Total radial shrinkage (Sr)	4.9 %
Ratio St/Sr	1.6
Fibre saturation point	24 %
Thermal conductivity (λ)	0.29 W/(m.K)
Lower heating value	19,920 kJ/kg
Crushing strength ¹	64 MPa
Static bending strength ¹	109 MPa
Modulus of elasticity ¹	18,170 MPa

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

Natural durability and preservation



Half-quarter sawn



Quarter sawn

Resistance to fungi. Class 1 - very durable

Resistance to dry wood borers. Class D - durable (heartw. durable but sapw. not clearly demarcated)

Resistance to termites. Class D - durable

Treatability. Class 3 - poorly permeable

Use class ensured by natural durability.

Class 4 - in ground or fresh water contact

Notes. The possible presence of few demarcated sapwood in sawnwoods may have an influence on the expected durability. According to the European standard NF EN 335, performance length might be modified by the intensity of end-use exposition.

Requirement of a preservative treatment

Against dry wood borer. Requires appropriate 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. Normal

Risk of distorsion. High risk

Risk of casehardening. No known specific risk

Risk of checking. Slight risk

Risk of collapse. No known specific risk

Notes. Drying must be handled with care in order to reduce the risks of distortion.

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. Ordinary or alloy steel

Cutting tools. Ordinary

Peeling. Not recommended or without interest

Slicing. Good

Notes. Filling is recommended in order to obtain a good finish.

Assembling

Nailing and screwing. Good but pre-boring necessary

Notes. Pre-boring necessary in presence of highly interlocked grain. Risks of end checks. High specific gravity: gluing must be especially performed in compliance with the code of practice.

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

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

- Bridges (parts in contact with water or ground)
- Bridges (parts not in contact with water or ground)
- Decking
- Exterior joinery
- Exterior panelling
- Heavy carpentry
- Hydraulic works (fresh water)
- Industrial or heavy flooring
- Poles
- Sleepers
- Sliced veneer
- Stakes
- Vehicle or container flooring

Main local names

Country	Local name
Brazil	Macucu da catinga
Brazil	Macucu de paca
Brazil	Macucu do baixo