

Goncalo alves

Family. Anacardiaceae

Botanical Name(s).

Astronium balansae

Astronium fraxinifolium

Astronium graveolens

Astronium lecointei

Astronium urundeuva

Continent. Latin America

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

Description of logs

Diameter. From 60 to 80 cm

Thickness of sapwood. From 4 to 10 cm

Floats. No

Log durability. Good

Description of wood

Colour reference. Dark brown

Sapwood. Clearly demarcated

Texture. Fine

Grain. Straight or interlocked

Interlocked grain. Slight

Notes. Pinkish brown to yellow brown, becoming red brown to dark brown, with very irregularly spaced black brown veins.

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	0.80
Monnin hardness ¹	6.1
Coefficient of volumetric shrinkage	0.56 % per %
Total tangential shrinkage (St)	7.9 %
Total radial shrinkage (Sr)	4.3 %
Ratio St/Sr	1.8
Fibre saturation point	22 %
Thermal conductivity (λ)	0.26 W/(m.K)
Lower heating value	
Crushing strength ¹	76 MPa
Static bending strength ¹	96 MPa
Modulus of elasticity ¹	16,500 MPa

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



Half-quarter sawn



Quarter sawn

Natural durability and preservation

Resistance to fungi. Class 1 - very 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. Normal

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.

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. Fairly high

Sawteeth recommended. Stellite-tipped

Cutting tools. Tungsten carbide

Peeling. Not recommended or without interest

Slicing. Good

Assembling

Nailing and screwing. Good but pre-boring necessary

Notes. 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

- Cabinetwork (high class furniture)
- Decking
- Exterior joinery
- Flooring
- Heavy carpentry
- Interior joinery
- Interior panelling
- Musical instruments
- Sculpture
- Sliced veneer
- Tool handles (resilient woods)
- Turned goods
- Wood-ware

Main local names

Country	Local name
Brazil	Aderno-preto
Brazil	Baracatiara
Brazil	Gonçaleiro
Brazil	Gonçalo-alvez
Brazil	Guaribu-preto
Brazil	Guarita
Brazil	Mirueira
Brazil	Muiracatiara
Brazil	Sanguessugueira
Colombia	Gusanero
Ecuador	Guasango
Mexico	Palo de culebra
Paraguay	Urunday-para
Venezuela	Gateado