Jatoba

Flat sawn

Quarter sawn

Family. Leguminosae (Caesalpiniaceae)

Botanical Name(s).

Hymenaea courbaril
Hymenaea intermedia
Hymenaea oblongifolia
Hymenaea davisii (synonymous)
Hymenaea p.p.

Continent. Latin America

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

Description of logs

Diameter. From 50 to 80 cm

Thickness of sapwood. From 3 to 12 cm

Floats. No

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. Slight internal stresses. The colour can vary from purple brown or orangey brown to red brown slightly veined.

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]	0.94
Monnin hardness[1]	10.5
Coefficient of volumetric shrinkage	0.59 % per %
Total tangential shrinkage (St)	7.5 %
Total radial shrinkage (Sr)	3.9 %
Ratio St/Sr	1.9
Fibre saturation point	23 %
Thermal conductivity (λ)	0.30 W/(m.K)
Lower heating value	18,920 kJ/kg
Stability	Stable to moderately stable wood
Crushing strength[1]	97 MPa
Static bending strength[1]	160 MPa

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Modulus of elasticity[1]	23,460 MPa

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

Notes. H. intermedia and H. parvifolia are heavier and more resistant.

Natural durability and heartwood treatability

Resistance of heartwood to xylophagous fungi. Durability class 2 to 3 - durable to moderately durable

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

Resistance of heartwood to termites. Class M - moderately durable

Heartwood treatability. Class 4 - not permeable

Use class ensured by natural durability of heartwood.

Class 3 - not in ground contact, outside

Notes. This species is listed in the European standard NF EN 350 (2016). Resistance to fungi and to termites is variable according to the species. 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. Use not recommended

Drying

Drying rate. Normal

Risk of distorsion. Slight risk

Risk of casehardening. No known specific risk

Risk of checking. Slight to medium risk

Risk of collapse. No known specific risk

Notes. Initial air drying under cover prior to kiln drying is recommended. Risks of cracks more or less important according to specific gravity.

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Suggested drying program.

Phases	Duration (H)	MC (%) probes	T (°C)	Rh (%)	UGL (%)
Prewarm 1		> 50	45	86	17.0
Prewarm 2	4	> 50	45	86	16.5
Drying		> 50	48	84	15.7
		50 - 40	48	80.5	14.6
		40 - 35	49	77.0	13.4
		35 - 30	50	75.0	12.9
		30 - 27	51	70.0	11.5
		27 - 24	53	62.0	9.9
		24 - 21	54	53.0	8.4
		21 - 18	55	48.5	7.7
		18 - 15	55	40.0	6.6
		15 - 12	55	35.0	5.9
		12 - 9	60	30.0	5.0
		9 - 6	60	28.0	4.7
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

Notes. Due to hardness, the use of stellite is recommended for industrial production.

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 NHLA grading rules (2015) Possible grading: FAS, Select, Common 1, Common 2, Common 3 In French Guiana, the local name of this species is "Courbaril". 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.

Fire safety

Conventional French grading.

Thickness > 14 mm: M3 (moderately inflammable)
Thickness < 14 mm: M4 (easily inflammable)

Euroclasses grading. D-s2, d0

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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
- Cabinetwork (high class furniture)
- Cooperage
- Current furniture or furniture components
- Decking
- Exterior joinery
- Exterior panelling
- Flooring
- Indoor staircases
- Industrial or heavy flooring
- Interior panelling
- Moulding
- Musical instruments
- Sculpture
- Ship building (ribs)
- Sliced veneer
- Tool handles (resilient woods)
- Turned goods
- Vehicle or container flooring
- Wood frame house
- Wood-ware

Notes. End-uses under permanent humidification (contact with water or with ground) are possible with the species presenting a very good durability.

Main local names

Country	Local name
Brazil	Jatai
Brazil	Jatoba
Brazil	Jutai
Brazil	Jutai açu
Brazil	Jutai roxo
Colombia	Algarrobo
France (importated tropical timber)	Courbaril
France (importated tropical timber)	Jatoba
French Guiana	Courbaril
Guyana	Locust
Peru	Azucar-huayo
Suriname	Rode lokus
United Kingdom (importated tropical timber)	Locust
Venezuela	Algarrobo

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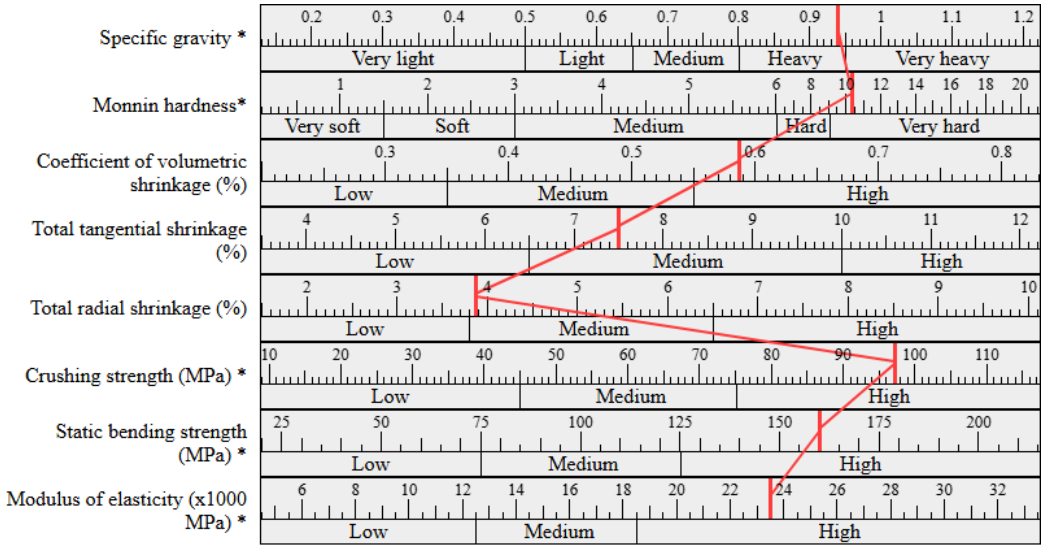
Physical and mechanical properties chart



*: at 12% moisture content

Deck elements – Ebata Produtos Florestais Ltda, Bélem (Pará, Brazil).

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