

Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)

Scientific name(s): *Apuleia leiocarpa*

Commercial restriction: no commercial restriction

Note: The variety "molaris" is found in the Amazonian forest, mainly in flooded areas. The main species, *Apuleia leiocarpa* is found mainly in the South of Brazil, in the Atlantic coast forests, easily colonizing cleared areas.

WOOD DESCRIPTION

Color: yellow
 Sapwood: clearly demarcated
 Texture: medium
 Grain: straight or interlocked
 Interlocked grain: marked

Note: Lemon-yellow becoming light brown with age. Slight ribbon like aspect, a bit moiré. Irregular interlocked grain.

LOG DESCRIPTION

Diameter: from 60 to 90 cm
 Thickness of sapwood: from 5 to 11 cm
 Floats: no
 Log durability: good

PHYSICAL PROPERTIES

Physical and mechanical properties are based on mature heartwood specimens. These properties can vary greatly depending on origin and growth conditions.

	<u>Mean</u>	<u>Std dev.</u>
Specific gravity *:	0,79	0,06
Monnin hardness *:	6,7	1,8
Coeff. of volumetric shrinkage:	0,52 %	0,05 %
Total tangential shrinkage (TS):	7,5 %	1,4 %
Total radial shrinkage (RS):	4,2 %	0,9 %
TS/RS ratio:	1,8	
Fiber saturation point:	22 %	
Stability: moderately stable to stable		

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	63 MPa	8 MPa
Static bending strength *:	116 MPa	21 MPa
Modulus of elasticity *:	15880 MPa	1850 MPa
(*: at 12% moisture content, with 1 MPa = 1 N/mm ²)		
Musical quality factor:	133,7 measured at 2403 Hz	

NATURAL DURABILITY AND TREATABILITY

Fungi and termite resistance refers to end-uses under temperate climate. Except for special comments on sapwood, natural durability is based on mature heartwood. Sapwood must always be considered as non-durable against wood degrading agents.

E.N. = Euro Norm

Funghi (according to E.N. standards): class 3 - moderately durable

Dry wood borers: durable - sapwood demarcated (risk limited to sapwood)

Termites (according to E.N. standards): class M - moderately durable

Treatability (according to E.N. standards): class 3 - poorly permeable

Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)

Species covering the use class 5: Yes

Note: The natural durability of *Grapia* is very variable. In some cases, this variability can be observed inside the same piece of wood. This species cannot be used without appropriate preservative treatment for end-uses under use class 3 except for some parts of a work such as windows, less exposed than others (entrance doors, shutters, ...).

This species naturally covers the use class 5 (end-uses in marine environment or in brackish water) due to its high silica content. However, it is not recommended to use it in case of strong structural constraints due to its medium mechanical properties; it is most suitable for end-uses like shipbuilding.

REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: does not require any preservative treatment

In case of risk of temporary humidification: requires appropriate preservative treatment

In case of risk of permanent humidification: use not recommended

DRYING

Drying rate: slow

Risk of distortion: slight risk

Risk of casehardening: no

Risk of checking: slight risk

Risk of collapse: no

Possible drying schedule: 2

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
Green	50	47	84
40	50	45	75
30	55	47	67
20	70	55	47
15	75	58	44

This schedule is given for information only and is applicable to thickness lower or equal to 38 mm.

It must be used in compliance with the code of practice.

For thickness from 38 to 75 mm, the air relative humidity should be increased by 5 % at each step.

For thickness over 75 mm, a 10 % increase should be considered.

SAWING AND MACHINING

Blunting effect: high

Sawteeth recommended: stellite-tipped

Cutting tools: tungsten carbide

Peeling: not recommended or without interest

Slicing: not recommended or without interest

Note: Slicing is very difficult due to the high silica content. In machining, due to the irregular interlocked grain, it is recommended to reduce the feed rate and the cutting angle.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary

Gluing: correct

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to NHLA grading rules (January 2007)

Possible grading: FAS, Select, Common 1, Common 2, Common 3

FIRE SAFETY

Conventional French grading: Thickness > 14 mm : M.3 (moderately inflammable)

Thickness < 14 mm : M.4 (easily inflammable)

Euroclasses grading: D s2 d0

Default grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2009). It concerns structural graded timber in vertical uses with mean density upper 0.35 and thickness upper 22 mm.

END-USES

Exterior joinery

Heavy carpentry

Ship building (ribs)

Turned goods

Wood frame house

Industrial or heavy flooring

Ship building

Vehicle or container flooring

Tool handles (resilient woods)

Boxes and crates

Note: Finishing is easy but filling is recommended.

Light carpentry

Hydraulic works (seawater)

Cooperage

Current furniture or furniture components

Flooring

Interior joinery

Stairs (inside)

Cabinetwork (high class furniture)

Formwork

Wood-ware

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Argentina	IBIRA PERE	Bolivia	ALMENDRILLO
Bolivia	AMARILLO	Brazil	AMARELAO
Brazil	BARAJUBA	Brazil	FERRO
Brazil	GARAPA	Brazil	GEMA-DE-OVO
Brazil	GRAPIA	Brazil	JATAI-AMARELO
Brazil	MUIRAJUBA	Brazil	MUIRATAUA
Colombia	COBRE	Paraguay	GRAPIA
Paraguay	YVIRA-PERE	Peru	ANA
Venezuela	GATEADO	Venezuela	MAPURITE

