WACAPOU

Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)
Scientific name(s): Vouacapoua americana
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: dark brown
Sapwood: clearly demarcated
Texture: medium
Grain: straight
Interlocked grain: absent

LOG DESCRIPTION

Diameter: from 40 to 100 cm
Thickness of sapwood: from 2 to 3 cm
Floats: no
Log durability: good

Note: Wood dark brown, with thin light brown lines, which produce an attractive aspect. Presence of internal stresses.

PHYSICAL PROPERTIES

MECHANICAL AND ACOUSTIC PROPERTIES

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

	Mean	Std dev.
Specific gravity *:	0,92	0,05
Monnin hardness *:	6,9	1,5
Coeff. of volumetric shrinkage:	0,65 %	0,06 %
Total tangential shrinkage (TS):	6,5 %	0,8 %
Total radial shrinkage (RS):	4,2 %	0,5 %
TS/RS ratio:	1,5	
Fiber saturation point:	22 %	

Stability: moderately stable

	Mean	Std dev.
Crushing strength *:	82 MPa	5 MPa
Static bending strength *:	148 MPa	12 MPa
Modulus of elasticity *:	19780 MPa	1662 MPa

(*: at 12% moisture content, with 1 MPa = 1 N/mm²)

Musical quality factor: 129,9 measured at 2928 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 1 - very durable
Dry wood borers: durable - sapwood demarcated (risk limited to sapwood)
Termites (according to E.N. standards): class D - durable
Treatability (according to E.N. standards): class 3 - poorly permeable
Use class ensured by natural durability: class 4 - in ground or fresh water contact
Species covering the use class 5: Yes

Note: This species naturally covers the use class 5 (end-uses in marine environment or in brackish water) due to its high specific gravity and its repulsive extracts content.
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 attacks: does not require any preservative treatment
In case of risk of temporary humidification: does not require any preservative treatment
In case of risk of permanent humidification: does not require any preservative treatment

DRYING

Drying rate: normal to slow
Risk of distortion: slight risk
Risk of casehardening: no
Risk of checking: slight risk
Risk of collapse: no
Note: Initial surface drying prior to kiln drying is recommended.

Possible drying schedule: 5

M.C. (%)	Temperature (°C) dry-bulb	wet-bulb	Air humidity (%)
30	42	41	94
25	42	39	82
20	48	43	74
15	48	43	74

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: fairly high
Sawteeth recommended: stellite-tipped
Cutting tools: tungsten carbide
Peeling: no information available
Slicing: nood
Note: Requires power. Veneers quite brittle.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: correct (for interior only)

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to NHLA grading rules (January 2007)
Possible grading: FAS, Select, Common 1, Common 2, Common 4
In French Guiana, the local name of this species is "WACAPOU". Grading is done according to local rules "Bois guyanais classés".
Possible grading: Choix 1, choix 2, choix 3, choix 4

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.

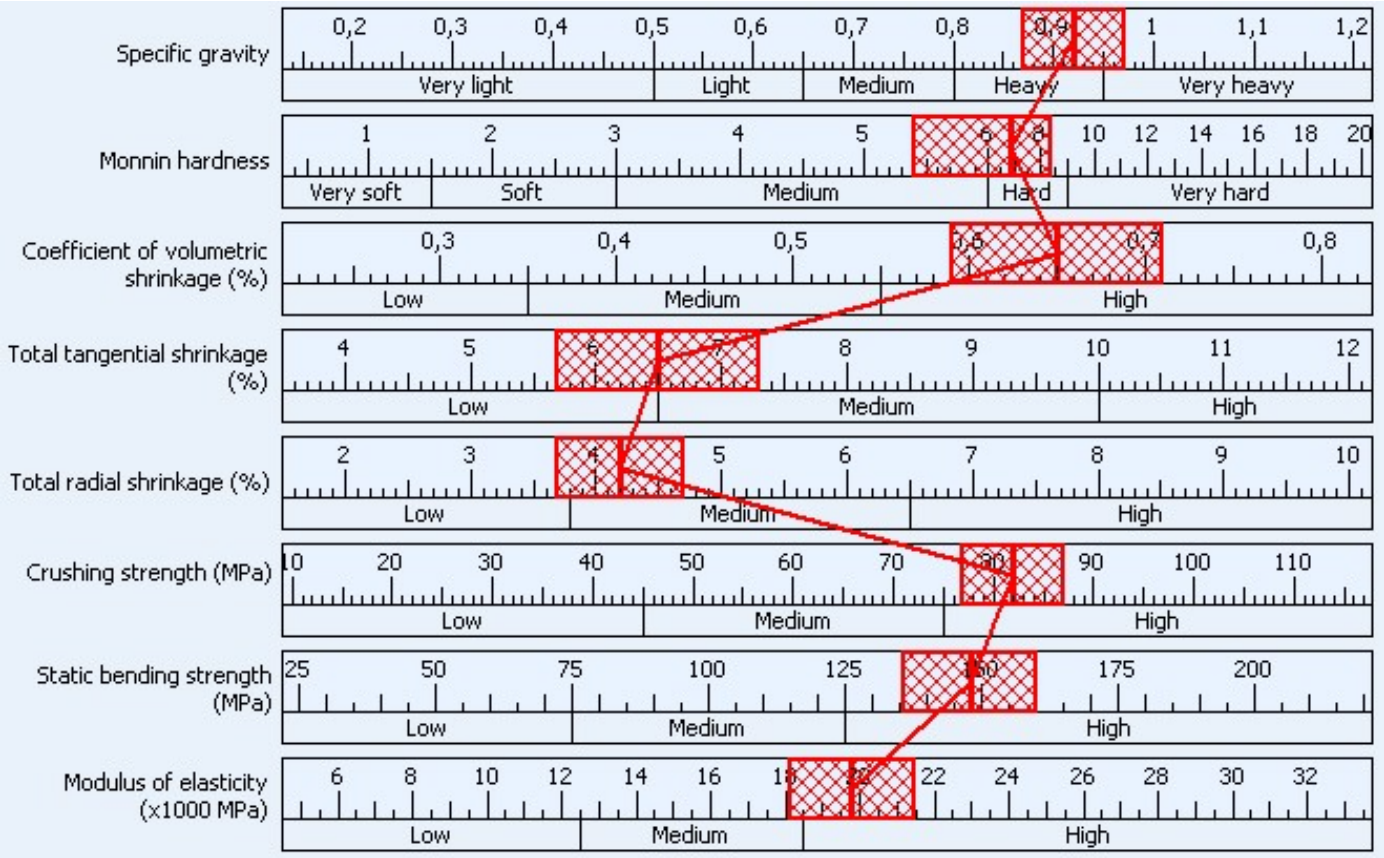
END-USES

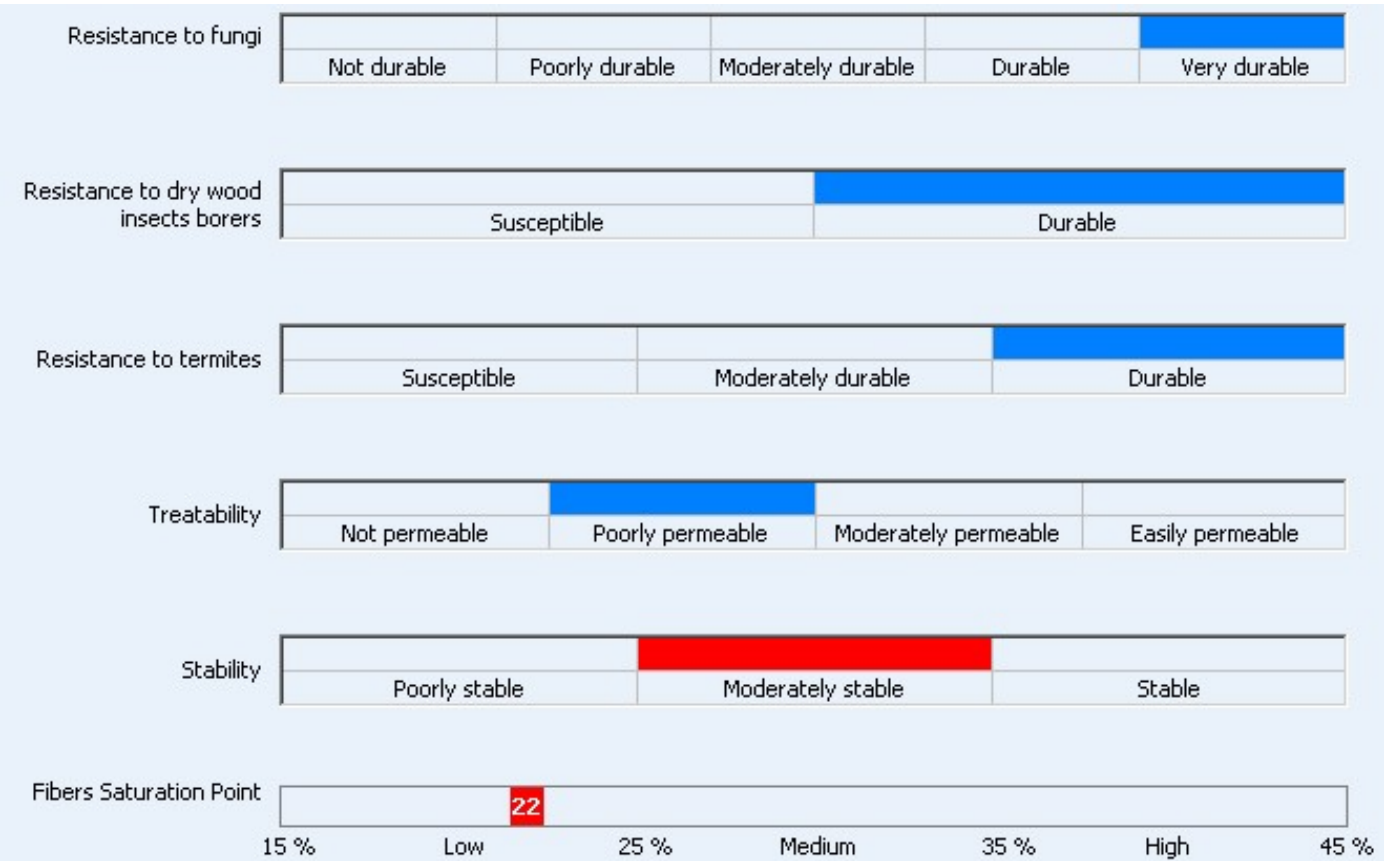
Cabinetwork (high class furniture)
Interior panelling
Sliced veneer
Turned goods
Poles
Hydraulic works (seawater)
Heavy carpentry
Exterior joinery
Bridges (parts not in contact with water or ground)
Current furniture or furniture components
Interior joinery
Flooring
Stairs (inside)
Bridges (parts in contact with water or ground)
Ship building (planking and deck)
Sleepers
Wood-ware

Note: Due to its beauty and its low availability, this wood should be used for decorative end-uses or in small quantities.

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Brazil (Amazon)	ACAPU	Brazil (Amazon)	RITANGUEIRA
Guyana	SARA	Guyana	SARABEBEBALLI
Guyana	TATBU	French Guiana	BOIS PERDRIX
French Guiana	BOUNAATI	French Guiana	EPI DE BLE
French Guiana	WACAPOU	Suriname	BRUINHART
Suriname	WACAPOE	United Kingdom	TATBU
United States of America	PARTRIDGEWOOD		


Specific gravity
0,2 0,3 0,4 0,5 0,6 0,7 0,8 0,9 1 1,1 1,2
Very light
Light
Medium
Heavy
Very heavy
Monnin hardness
1 2 3 4 5 6 8 10 12 14 16 18 20
Very soft
Soft
Medium
Hard
Very hard
Coefficient of volumetric shrinkage (%)
0,3 0,4 0,5 0,6 0,7 0,8
Low
Medium
High
Total tangential shrinkage (%)
4 5 6 7 8 9 10 11 12
Low
Medium
High
Total radial shrinkage (%)
2 3 4 5 6 7 8 9 10
Low
Medium
High
Crushing strength (MPa)
10 20 30 40 50 60 70 90 100 110
Low
Medium
High
Static bending strength (MPa)
25 50 75 100 125 150 175 200
Low
Medium
High
Modulus of elasticity (x1000 MPa)
6 8 10 12 14 16 22 24 26 28 30 32
Low
Medium
High


Resistance to fungi
Not durable
Poorly durable
Moderately durable
Durable
Very durable
Resistance to dry wood insects borers
Susceptible
Durable
Resistance to termites
Susceptible
Moderately durable
Durable
Treatability
Not permeable
Poorly permeable
Moderately permeable
Easily permeable
Stability
Poorly stable
Moderately stable
Stable
Fibers Saturation Point
22
15 %
Low
25 %
Medium
35 %
High
45 %