COPAIBA

Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)

Scientific name(s): Copaifera duckei
Copaifera guianensis
Copaifera langsdorffii
Copaifera multijuga
Copaifera reticulata

Commercial restriction: no commercial restriction

Note: Other species are commercialized under the name COPAIBA.

WOOD DESCRIPTION

Color: red brown

Sapwood: clearly demarcated

Texture: medium

Grain: straight or interlocked

Interlocked grain: slight

LOG DESCRIPTION

Diameter: from 45 to 80 cm

Thickness of sapwood: from 2 to 3 cm

Floats: no

Log durability: low (must be treated)

Note: Heartwood varies from pink to red brown with copper-coloured veins. Resin exudation. Grain sometimes wavy.

PHYSICAL 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 *:	0,50	0,03
Monnin hardness *:	2,6	1,4
Coeff. of volumetric shrinkage:	0,40 %	0,03 %
Total tangential shrinkage (TS):	5,9 %	0,5 %
Total radial shrinkage (RS):	3,1 %	0,2 %
TS/RS ratio:	1,9	
Fiber saturation point:	26 %	

Stability: moderately stable to stable

MECHANICAL AND ACOUSTIC PROPERTIES

	Mean	Std dev.
Crushing strength *:	38 MPa	2 MPa
Static bending strength *:	85 MPa	4 MPa
Modulus of elasticity *:	12450 MPa	1116 MPa

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

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 5 - not durable

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

Termites (according to E.N. standards): class S - susceptible

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

Use class ensured by natural durability: class 1 - inside (no dampness)

Species covering the use class 5: No

REQUIREMENT OF A PRESERVATIVE TREATMENT

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

In case of risk of temporary humidification: use not recommended

In case of risk of permanent humidification: use not recommended

DRYING

Drying rate: rapid
Risk of distortion: no risk or very slight risk
Risk of casehardening: yes
Risk of checking: no risk or very slight risk
Risk of collapse: no

Possible drying schedule: 3

	Temperature (°C)		
M.C. (%)	dry-bulb	wet-bulb	Air humidity (%)
Green	60	56	81
30	68	58	61
20	74	60	51
15	80	61	41

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: normal
Sawteeth recommended: ordinary or alloy steel
Cutting tools: ordinary
Peeling: good
Slicing: nood
Note: Fuzzy surface. Keep sharp tools.

ASSEMBLING

Nailing / screwing: poor
Gluing: correct
Note: Variable nails holding according to the species.

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)

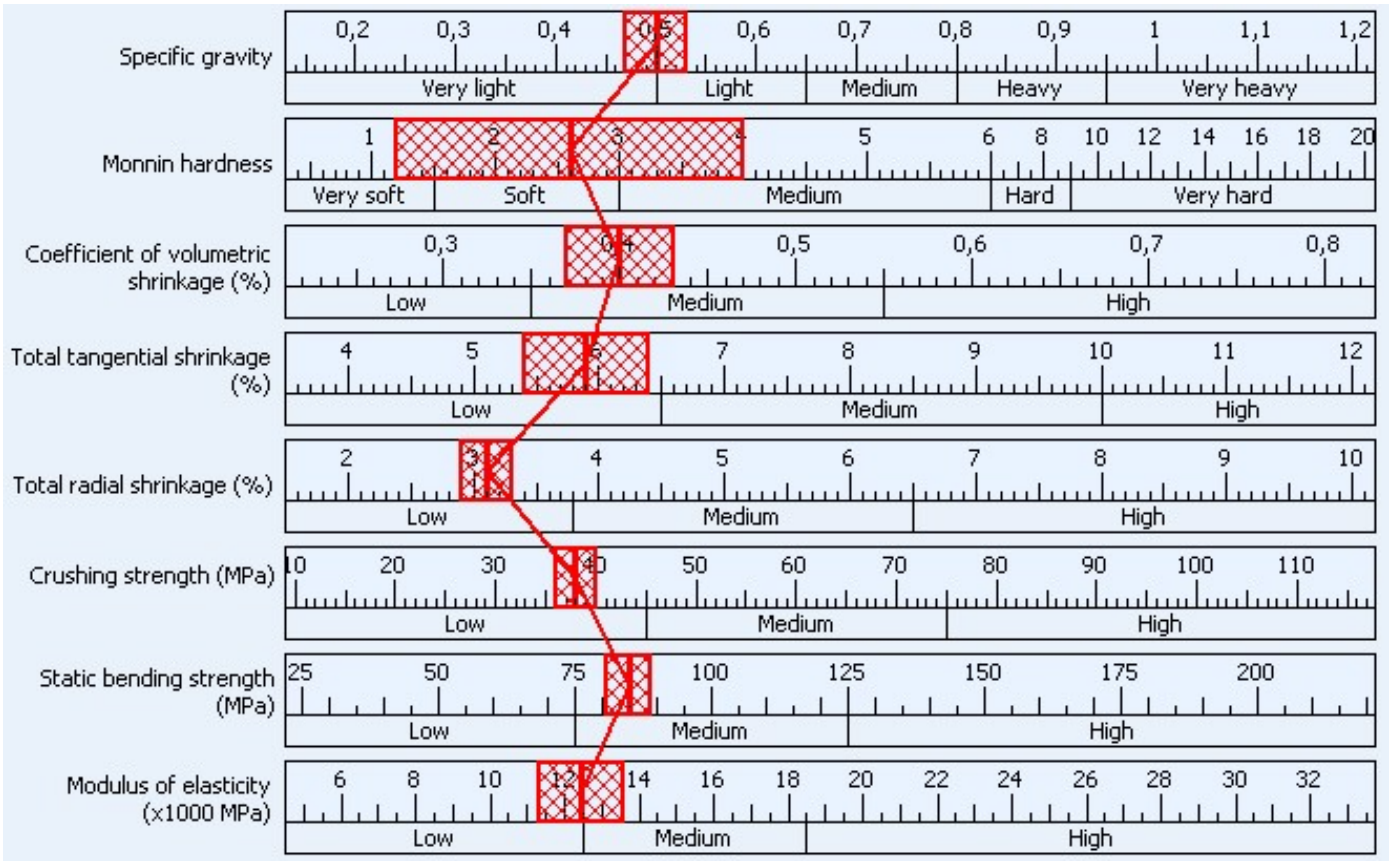
Euroclasses grading: D s2 d0
Default grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2009). It concerns structural graded timber in vertical uses with mean density upper 0.35 and thickness upper 22 mm.

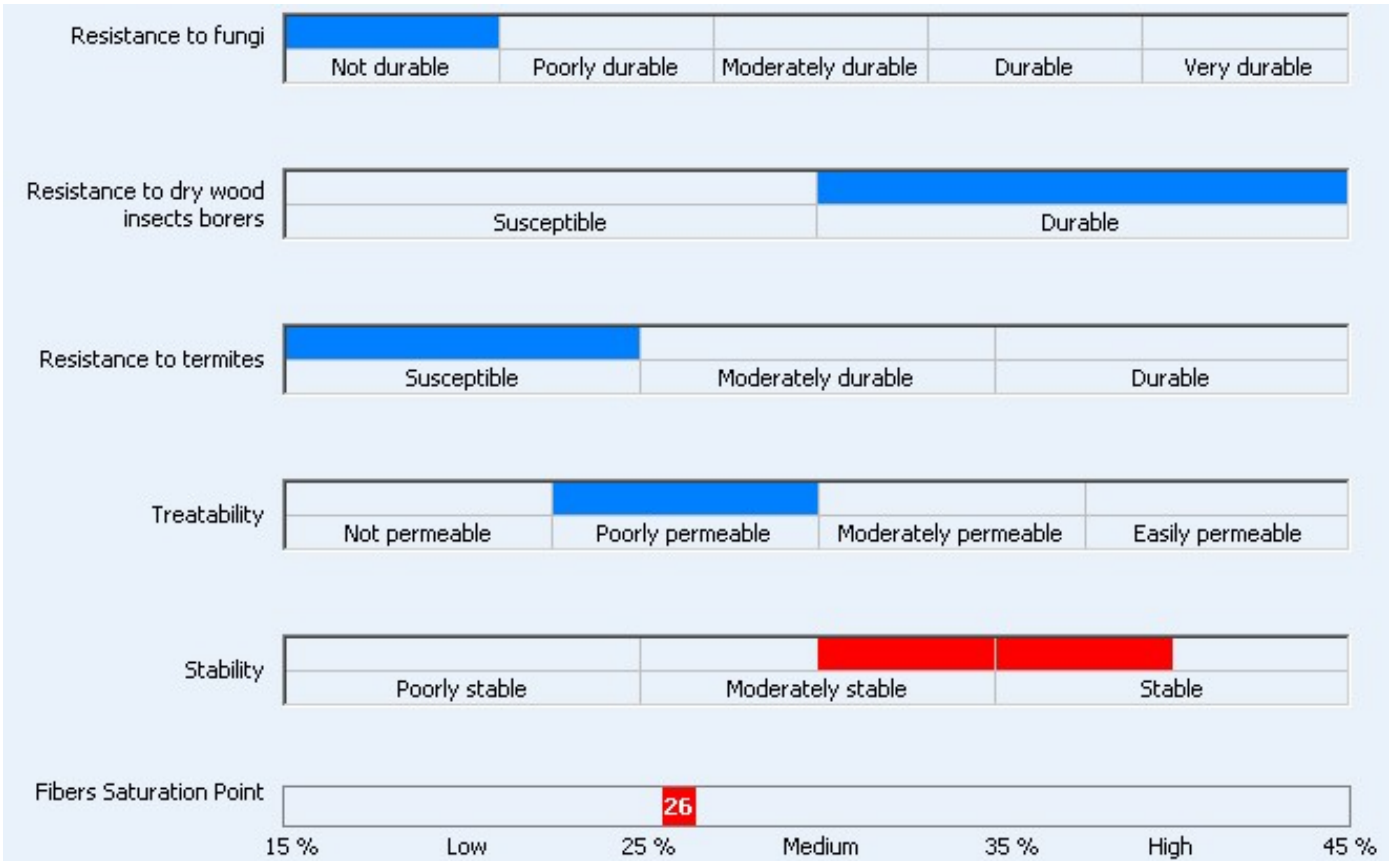
END-USES

Interior joinery
Flooring
Turned goods
Veneer for interior of plywood
Light carpentry
Sliced veneer
Fiber or particle boards
Formwork
Interior panelling
Moulding
Boxes and crates
Veneer for back or face of plywood
Current furniture or furniture components
Seats
Blockboard

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Belize	COPAIBA	Bolivia	COPAIBO
Brazil	COPAIBA	Brazil	PAU-D'OLEO
Colombia	CANIME	Guyana	BALSAM
Guyana	MARAM	French Guiana	PANCHIMOUTI
Panama	CANIVA	Panama	CUPAY
Peru	COPAIBA	Suriname	HOEPELHOUT
Suriname	KOEPAJOEWA	Venezuela	ACEITE
Venezuela	CABIMO		


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 80 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 18 20 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
26
15 %
Low
25 %
Medium
35 %
High
45 %