PIQUIARANA

Family: CARYOCARACEAE (angiosperm)
Scientific name(s): Caryocar glabrum
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: yellow brown
Sapwood: not clearly demarcated
Texture: coarse
Grain: interlocked
Interlocked grain: marked
Note: Wood yellow brown to light brown. Presence of internal stresses.

LOG DESCRIPTION

Diameter: from 60 to 100 cm
Thickness of sapwood: from 3 to 5 cm
Floats: no
Log durability: moderate (treatment recommended)

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 *:	0,80	0,06
Monnin hardness *:	5,0	1,3
Coeff. of volumetric shrinkage:	0,58 %	0,11 %
Total tangential shrinkage (TS):	9,6 %	0,5 %
Total radial shrinkage (RS):	5,2 %	1,0 %
TS/RS ratio:	1,8	
Fiber saturation point:	29 %	

Stability: poorly stable

	Mean	Std dev.
Crushing strength *:	64 MPa	6 MPa
Static bending strength *:	109 MPa	15 MPa
Modulus of elasticity *:	17640 MPa	2230 MPa

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

Musical quality factor: 95,2 measured at 2556 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 2 - durable
Dry wood borers: susceptible - sapwood not or slightly demarcated (risk in all the wood)
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 3 - not in ground contact, outside
Species covering the use class 5: No
Note: Wood not resistant to some cubical rot fungi under tropical climate.
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: requires appropriate preservative treatment
In case of risk of temporary humidification: does not require any preservative treatment
In case of risk of permanent humidification: use not recommended

DRYING

Drying rate: slow
Risk of distortion: high risk
Risk of casehardening: yes
Risk of checking: high risk
Risk of collapse: no
Note: The wood must be dried carefully and slowly in order to reduce defects.

Possible drying schedule: 4

M.C. (%)	Temperature (°C) dry-bulb	wet-bulb	Air humidity (%)
Green	42	39	82
50	48	43	74
40	48	43	74
30	48	43	74
15	54	46	63

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: not recommended or without interest
Slicing: not recommended or without interest
Note: Sawing and machining require sharp tools in order to avoid a fuzzy surface due to interlocked grain.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: poor

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 "CHAWARI". 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)

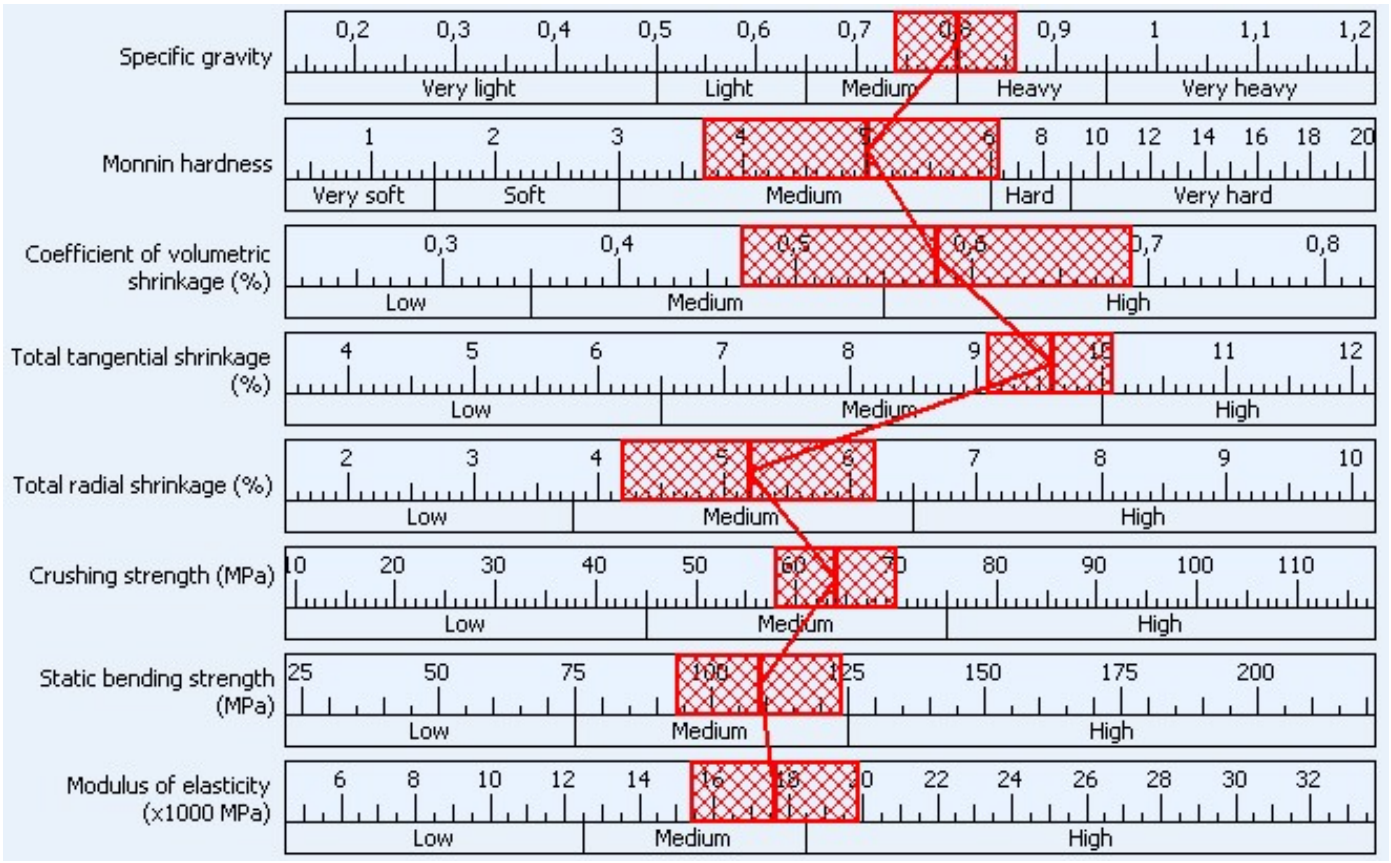
Euroclasses grading: D s2 d0
Default grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2009). It concerns structural graded timber in vertical uses with mean density upper 0.35 and thickness upper 22 mm.

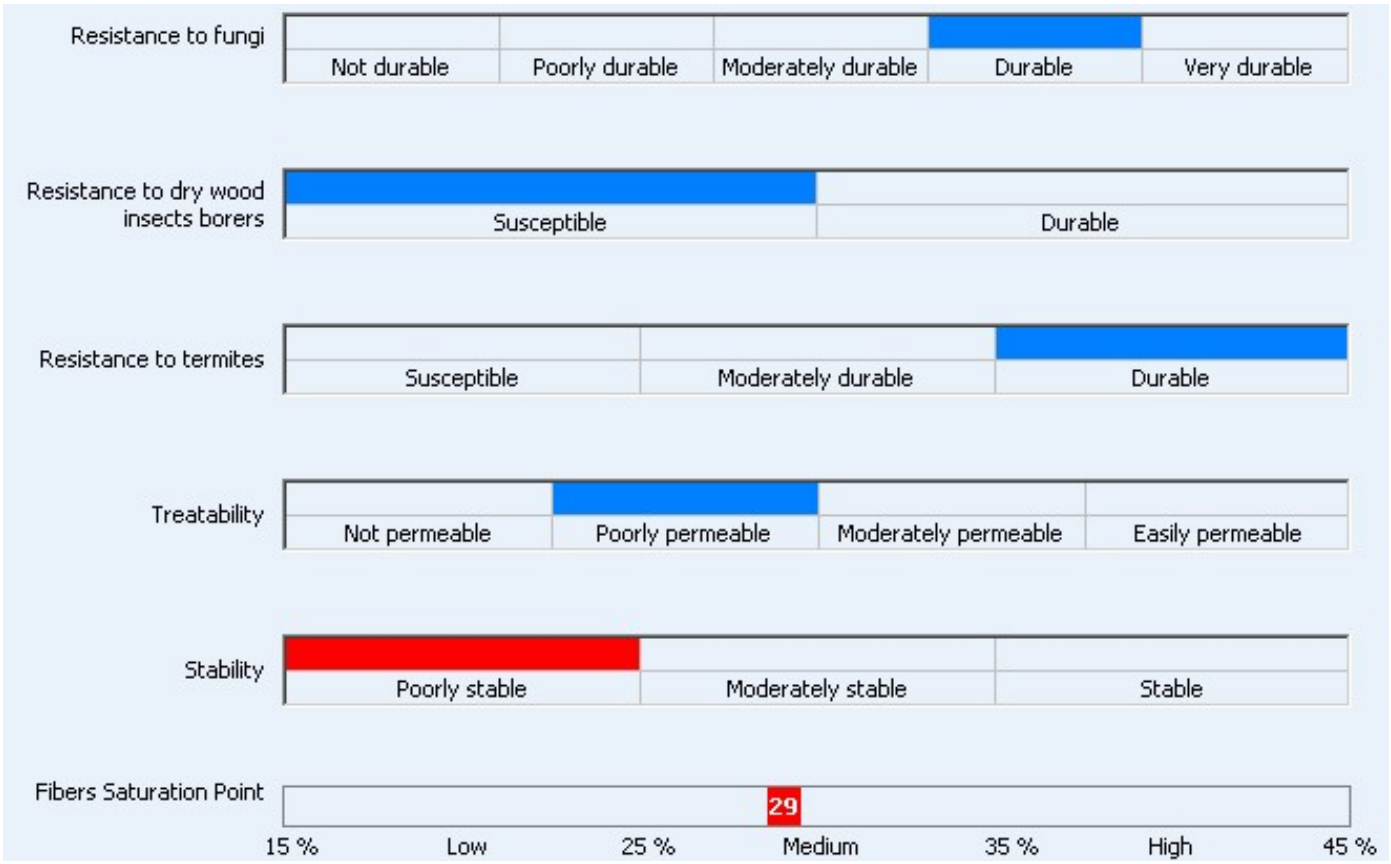
END-USES

Heavy carpentry
Exterior panelling
Vehicle or container flooring
Wood frame house
Cooperage
Industrial or heavy flooring
Current furniture or furniture components
Ship building (planking and deck)
Tool handles (resilient woods)

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Bolivia	BIQUI	Bolivia	HUEVO DE BURRO
Brazil	PEQUI	Brazil	PIQUIA
Brazil	PIQUIA BRAVO	Brazil	PIQUIARANA
Brazil	PIQUIA ROXO	Colombia	ALMENDRON
Guyana	SAWARI	French Guiana	CHAWARI
French Guiana	KASSAGNAN	Peru	ALMENDRA CON ESPINAS
Peru	ALMENDRO	Suriname	SAWARI
Suriname	SOPO OEDOE	Venezuela	ALMENDRA


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
29
15 %
Low
25 %
Medium
35 %
High
45 %