SATINE

Family: MORACEAE (angiosperm)
Scientific name(s): Brosimum rubescens
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: dark red
Sapwood: clearly demarcated
Texture: fine
Grain: straight or interlocked
Interlocked grain: slight
Note: Very important and perishable sapwood.
Heartwood often presents darker veins.

LOG DESCRIPTION

Diameter: from 50 to 70 cm
Thickness of sapwood: from 4 to 20 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 *:	1,10	0,11
Monnin hardness *:	17,6	4,1
Coeff. of volumetric shrinkage:	0,59 %	0,05 %
Total tangential shrinkage (TS):	5,9 %	0,3 %
Total radial shrinkage (RS):	4,1 %	0,3 %
TS/RS ratio:	1,4	
Fiber saturation point:	21 %	

Stability: stable

	Mean	Std dev.
Crushing strength *:	106 MPa	16 MPa
Static bending strength *:	162 MPa	38 MPa
Modulus of elasticity *:	28130 MPa	1860 MPa

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

Musical quality factor: 152 measured at 2623 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: durable - sapwood demarcated (risk limited to sapwood)
Termites (according to E.N. standards): class D - durable
Treatability (according to E.N. standards): class 4 - not permeable
Use class ensured by natural durability: class 3 - not in ground contact, outside
Species covering the use class 5: No
Note: 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: 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: 6

M.C. (%)	Temperature (°C) dry-bulb	wet-bulb	Air humidity (%)
Green	42	41	94
50	48	43	74
30	54	46	63
20	60	51	62
15	60	51	62

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: bad
Slicing: nood
Note: Requires power. Some difficulties due to hardness. Good finish and beautiful polish.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: correct (for interior only)
Note: Gluing requires care (very dense wood).

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 "SATINE". 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.

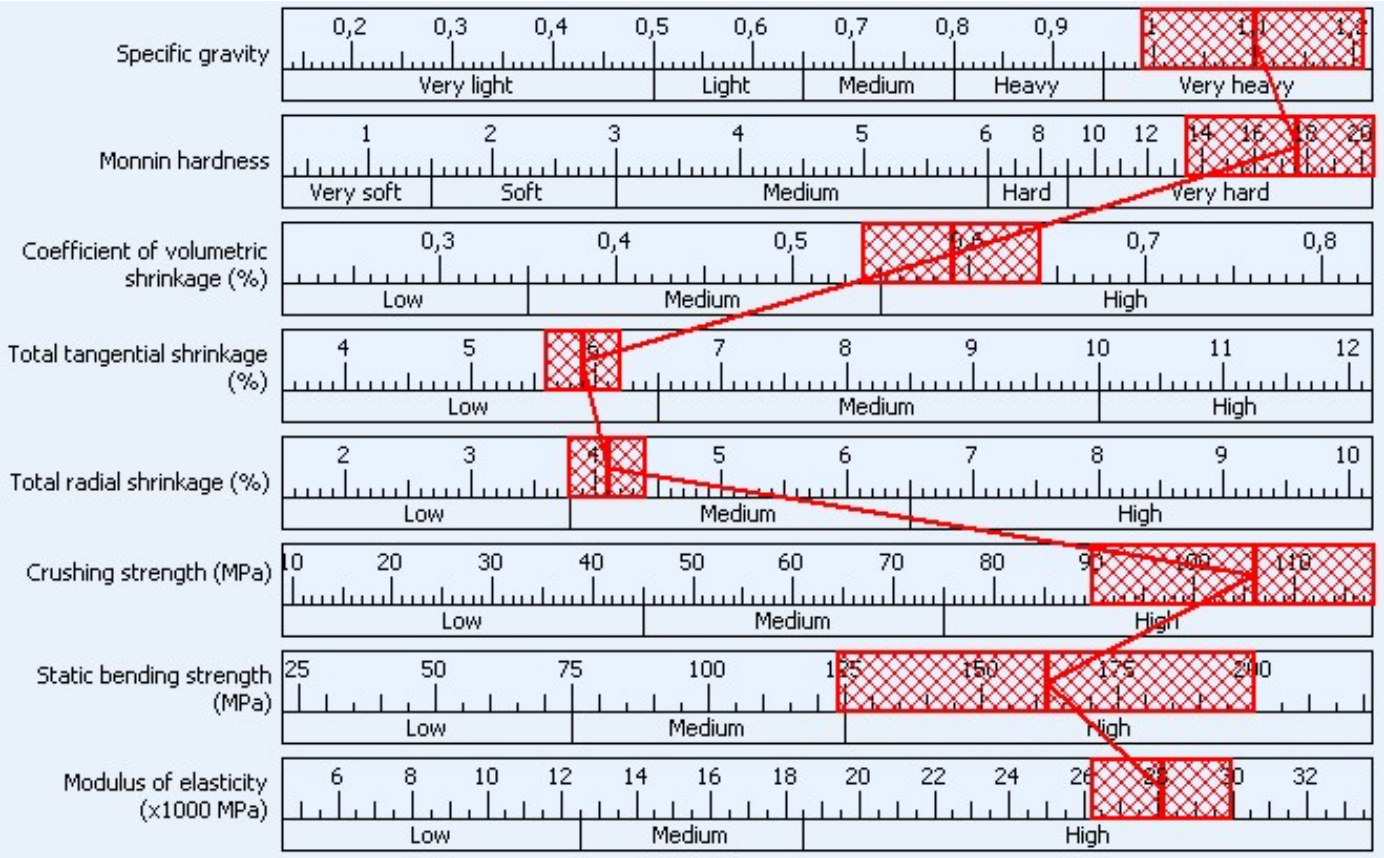
END-USES

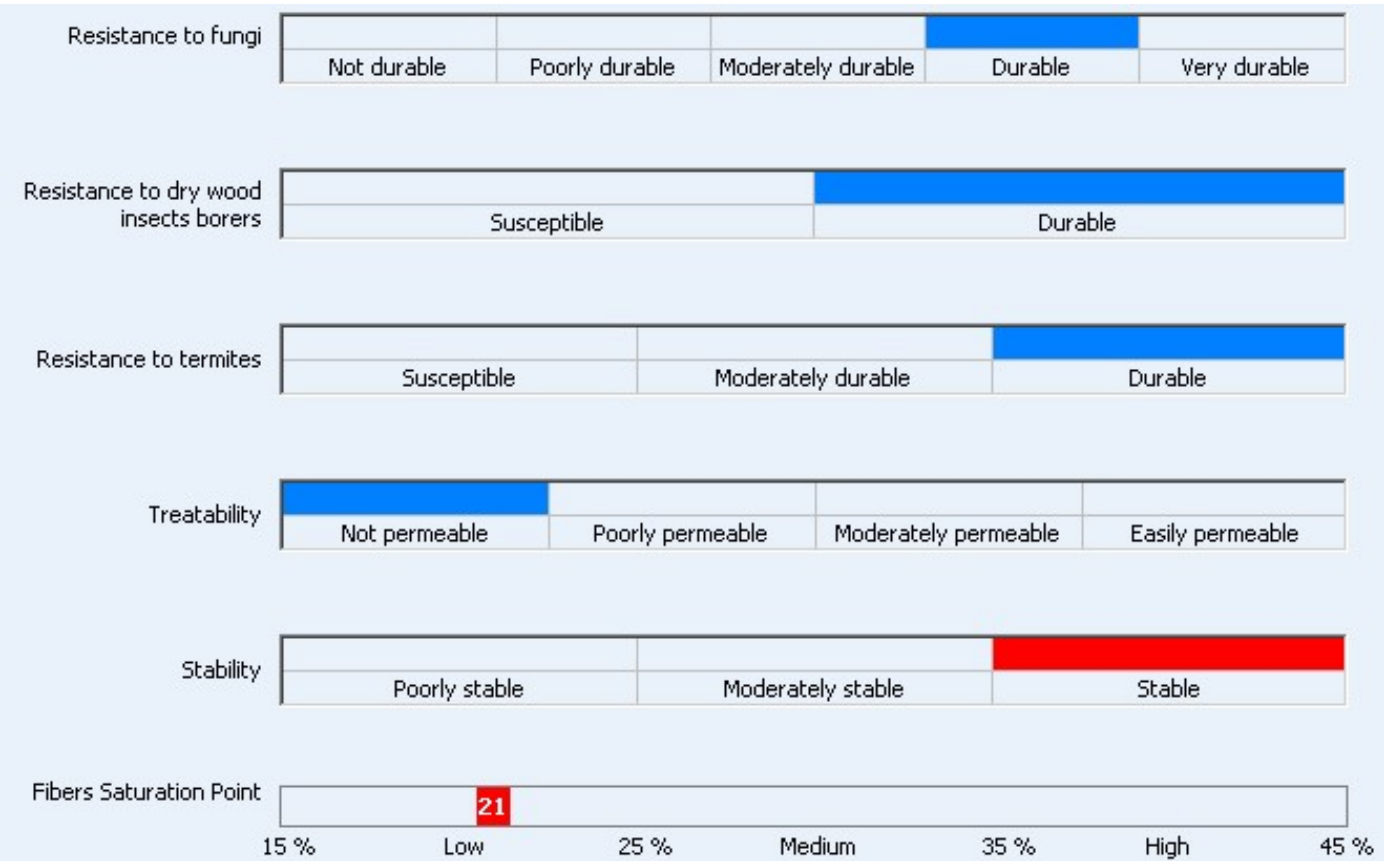
Cabinetwork (high class furniture)
Turned goods
Interior panelling
Stringed instruments (bow)
Heavy carpentry
Tool handles (resilient woods)
Sliced veneer
Stairs (inside)
Flooring
Sculpture
Wood-ware

Note: Wood recommended for high class end-uses.

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Brazil (Amazon)	AMAPA RANA	Brazil (Amazon)	CONDURU
Brazil (Amazon)	FALSO PAO BRASIL	Brazil (Amazon)	MUIRAPIRANGA
Brazil (Amazon)	PAU RAINHA	Guyana	SATINWOOD
French Guiana	SATINE	French Guiana	SATINE ROUGE
French Guiana	SATINE RUBANE	French Guiana	SITON PAYA
Suriname	DOEKALIBALLI	Suriname	SATIJNHOUT
Spain	PALO DE ORO	Italia	FEROLIA
Italia	LEGNO SATINO	United Kingdom	BLOODWOOD
United Kingdom	SATINWOOD		


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
21
15 %
Low
25 %
Medium
35 %
High
45 %