

Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)

Scientific name(s): Swartzia ingifolia
Swartzia grandifolia
Swartzia leiocalycina
Swartzia panacoco

Commercial restriction: no commercial restriction

Note: CORAÇÃO DE NEGRO includes all the species with black heart belonging to the genus Swartzia in South America.

WOOD DESCRIPTION

Color: dark brown
Sapwood: clearly demarcated
Texture: medium
Grain: straight or interlocked
Interlocked grain: slight

LOG DESCRIPTION

Diameter: from 40 to 60 cm
Thickness of sapwood: from 3 to 8 cm
Floats: no
Log durability: good

Note: Logs have a small diameter with a wide light yellow sapwood. Heartwood deep dark brown with lighter thin streaks.

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 *:	1,20	0,07
Monnin hardness *:	18,4	4,1
Coeff. of volumetric shrinkage:	0,82 %	0,06 %
Total tangential shrinkage (TS):	8,3 %	0,6 %
Total radial shrinkage (RS):	6,3 %	1,2 %
TS/RS ratio:	1,3	
Fiber saturation point:	23 %	
Stability:	moderately stable to poorly stable	

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	110 MPa	14 MPa
Static bending strength *:	202 MPa	23 MPa
Modulus of elasticity *:	32700 MPa	2673 MPa

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

Musical quality factor: 136,7 measured at 2799 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 4 - not permeable

Use class ensured by natural durability: class 4 - in ground or fresh water contact

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: does not require any preservative treatment

DRYING

Drying rate: slow

Risk of distortion: slight risk

Risk of casehardening: no

Risk of checking: high risk

Risk of collapse: no

Note: Drying must be done slowly and carefully.

Possible drying schedule: 4

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
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: fairly high

Sawteeth recommended: stellite-tipped

Cutting tools: tungsten carbide

Peeling: not recommended or without interest

Slicing: nood

Note: Requires power. Difficulties due to hardness.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary

Gluings: poor

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

Musical instruments

Stringed instruments (bow)

Cabinetwork (high class furniture)

Wood-ware

Sculpture

Sliced veneer

Wind instruments

Flooring

Turned goods

Current furniture or furniture components

Interior panelling

Arched goods

Note: Similar to EBONY (Diospyros spp.). End-uses are limited by the small size of logs.

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Brazil	CARRAPATINHO	Brazil	CORAÇÃO DE NEGRO
Brazil	GOMBEIRA	Guyana	AGUI
Guyana	BANYA	Guyana	WAMARA
French Guiana	BOIS PERDRIX	French Guiana	FERREOL
French Guiana	PANACOCO	Suriname	GANDOE
Suriname	IJZERHART	Suriname	ZWART PARELHOUT
Germany	WAMARA	United Kingdom	IRONWOOD
United Kingdom	WAMARA		

