

Family: BURSERACEAE (angiosperm)

Scientific name(s): Protium spp.

Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: light brown
 Sapwood: not demarcated
 Texture: medium
 Grain: straight or interlocked
 Interlocked grain: slight
 Note: Presence of shakes in some logs.
 Heartwood light brown to pinkish brown.

LOG DESCRIPTION

Diameter: from 40 to 60 cm
 Thickness of sapwood:
 Floats: yes
 Log durability: low (must be treated)

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 *:	0,64	0,04
Monnin hardness *:	2,7	0,5
Coeff. of volumetric shrinkage:	0,57 %	0,06 %
Total tangential shrinkage (TS):	10,0 %	0,6 %
Total radial shrinkage (RS):	5,5 %	0,4 %
TS/RS ratio:	1,8	
Fiber saturation point:	28 %	
Stability:	moderately stable	

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	57 MPa	3 MPa
Static bending strength *:	85 MPa	13 MPa
Modulus of elasticity *:	14350 MPa	510 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: susceptible - sapwood not or slightly demarcated (risk in all the wood)
 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: requires appropriate 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: normal to slow

Risk of distortion: high risk

Risk of casehardening: no

Risk of checking: slight risk

Risk of collapse: no

Note: Drying must be done with care in order to reduce the risks of distortion and prevent the extension of original shakes. Sometimes, risks of casehardening.

Possible drying schedule: 6

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

Slicing: not recommended or without interest

Note: Logs should be debarked prior to sawing in order to avoid resin accumulation. Blunting effect quite important due to silica.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary

Gluings: correct

Note: Tends to split when nailing.

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 "ENCENS". 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

Veneer for interior of plywood

Boxes and crates

Interior panelling

Blockboard

Veneer for back or face of plywood

Current furniture or furniture components

Formwork

Fiber or particle boards

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Bolivia	CARANO	Brazil	ALMECEGA
Brazil	ARURU	Brazil	BREU
Colombia	ANIME	Colombia	CARANO
Colombia	CURRUCAY	Ecuador	ANIME BLANCO
Guyana	HAIAWA	Guyana	KUOKAY
Guyana	POROKAY	French Guiana	ENCENS BLANC, GRIS, ROUGE
French Guiana	TINGUIMONI	Peru	COPAL-CASPI
Suriname	TINGUIMONI	Venezuela	ANIME
Venezuela	AZUCARITO	Venezuela	CARANO

