

Family: FABACEAE (angiosperm)

Scientific name(s): Dipteryx spp.

Coumarouna spp. (synonymous)

Commercial restriction: no commercial restriction

## WOOD DESCRIPTION

Color: red brown  
 Sapwood: clearly demarcated  
 Texture: medium  
 Grain: interlocked  
 Interlocked grain: marked

## LOG DESCRIPTION

Diameter: from 50 to 90 cm  
 Thickness of sapwood: from 2 to 3 cm  
 Floats: no  
 Log durability: good

Note: Unpleasant odour when green. Heartwood varies from yellow brown to reddish brown with darker thin veins.

## PHYSICAL PROPERTIES

Physical and mechanical properties are based on mature heartwood specimens. These properties can vary greatly depending on origin and growth conditions.

## MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>		<u>Mean</u>	<u>Std dev.</u>
Specific gravity *:	1.07	0.05	Crushing strength *:	103 MPa	8 MPa
Monnin hardness *:	13.1	2.5	Static bending strength *:	170 MPa	23 MPa
Coeff. of volumetric shrinkage:	0.73 %	0.09 %	Modulus of elasticity *:	26610 MPa	3224 MPa
Total tangential shrinkage (TS):	7.7 %	1.2 %			
Total radial shrinkage (RS):	5.5 %	0.9 %			
TS/RS ratio:	1.4				
Fiber saturation point:	22 %				
Stability: moderately stable to stable					

(\*: at 12% moisture content, with 1 MPa = 1 N/mm<sup>2</sup>)

## 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: class D - 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

Possible drying schedule: 1

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
Green	40	37	82
40	44	38	68
30	44	36	59
20	46	36	52
15	49	37	46

Note: Drying must be done with care and slowly. Risks of casehardening for thick boards.

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: good  
 Note: Sawing and machining are difficult due to hardness and interlocked grain. Requires power.

## 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 "GAIAC DE CAYENNE". 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 : M3 (moderately inflammable)  
 Thickness < 14 mm : M4 (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

Sleepers	Bridges (parts in contact with water or ground)
Bridges (parts not in contact with water or ground)	Hydraulic works (fresh water)
Industrial or heavy flooring	Wood frame house
Poles	Stakes
Ship building (planking and deck)	Cooperage
Heavy carpentry	Sliced veneer
Tool handles (resilient woods)	Turned goods
Hydraulic works (seawater)	

Note: Slicing: only for decorative veneer.

## MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Bolivia	ALMENDRILLO	Brazil	CHAMPANHA
Brazil	CUMARU	Brazil	CUMARU FERRO
Brazil	CUMARURANA	Colombia	SARRAPIA
Guyana	KUMARU	Guyana	TONKA BEAN
French Guiana	GAÍAC DE CAYENNE	French Guiana	TONKA
Honduras	EBO	Peru	CHARAPILLA
Peru	SHIHUAHUACO AMARILLO	Suriname	KOEMAROE
Suriname	TONKA	Venezuela	SARRAPIA



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Overseas Hardwoods Co.  
sales@ohc.net  
1-800-999-7616