

Family: BIGNONIACEAE (angiosperm)

Scientific name(s): Handroanthus spp.

Tabebuia spp. (synonymous)

Commercial restriction: no commercial restriction

Note: Woods called IPE belong actually to Handroanthus genus.

Previously, they belong to Tabebuia genus (heavy species only).

WOOD DESCRIPTION

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

Note: Some species have a medium texture. Heartwood is yellowish brown to dark olive brown, sometimes with thin veins. Canals contain a greenish yellow deposit (lapachol).

LOG DESCRIPTION

Diameter: from 60 to 100 cm
Thickness of sapwood: from 3 to 9 cm
Floats: no
Log durability: good

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 *:	1,04	0,09
Monnin hardness *:	14,6	3,1
Coeff. of volumetric shrinkage:	0,68 %	0,09 %
Total tangential shrinkage (TS):	6,4 %	0,9 %
Total radial shrinkage (RS):	5,1 %	0,5 %
TS/RS ratio:	1,3	
Fiber saturation point:	20 %	
Stability:	moderately stable	

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	95 MPa	10 MPa
Static bending strength *:	166 MPa	28 MPa
Modulus of elasticity *:	22760 MPa	2244 MPa

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

Musical quality factor: 166,9 measured at 2346 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: Yes

Note: This species naturally covers the use class 5 (end-uses in marine environment or in brackish water) due to its high specific gravity and hardness.

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	Possible drying schedule: 5			
Risk of distortion: slight risk		Temperature (°C)		
Risk of casehardening: no	M.C. (%)	dry-bulb	wet-bulb	Air humidity (%)
Risk of checking: slight risk	30	42	41	94
Risk of collapse: no	25	42	39	82
Note: A slow kiln drying is recommended in order to reduce defects, especially with thick boards.	20	48	43	74
	15	48	43	74

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: Sawdust may cause dermatosis. Some difficulties due to interlocked grain.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
 Gluing: correct (for interior only)
 Note: Gluing must be done with 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 "EBENE VERTE". 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
 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)	Sliced veneer
Current furniture or furniture components	Sleepers
Bridges (parts in contact with water or ground)	Industrial or heavy flooring
Ship building (planking and deck)	Poles
Stakes	Hydraulic works (fresh water)
Moulding	Bridges (parts not in contact with water or ground)
Stairs (inside)	Heavy carpentry
Turned goods	Musical instruments
Tool handles (resilient woods)	Vehicle or container flooring
Hydraulic works (seawater)	

Note: Filling is recommended to obtain a good finish.

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Argentina	LAPACHO	Bolivia	IPE
Bolivia	LAPACHO	Bolivia	TAJIBO
Brazil	IPE	Brazil	IPE ROXO
Brazil	PAU D'ARCO	Colombia	CANAGUATE
Colombia	POLVILLO	Colombia	ROBLE MORADO
Guyana	HAKIA	Guyana	IRONWOOD
French Guiana	EBENE VERTE	Paraguay	LAPACHO NEGRO
Peru	EBANO VERDE	Peru	TAHUARI
Suriname	GROENHART	Trinidad and Tobago	PUY
Trinidad and Tobago	YELLOW POUI	Venezuela	ACAPRO
Venezuela	ARAGUANAY	Venezuela	PUY

