



# Ipe

Scientific Name(s)	Family	Commercial Restriction
<i>Handroanthus spp.</i> <i>Tabebuia spp. (synonymous)</i>	BIGNONIACEAE (angiosperm)	No commercial restriction

**Note:** Woods called IPE belong actually to Handroanthus genus. Previously, they belong to Tabebuia genus (heavy species only).

Ipe decking is a premium and highly sought-after outdoor decking material known for its exceptional durability, natural beauty, and rich brown colour.

Ipe decking is renowned for its remarkable strength and hardness, making it one of the toughest and most resilient decking options available. It has a dense grain structure that contributes to its superior durability, making it resistant to rot, decay, insects, and even fire. These qualities make Ipe decking well-suited for outdoor use, withstanding heavy use and various weather conditions with minimal maintenance.

The wood's deep brown colour, ranging from reddish-brown to dark brown, lends a timeless and sophisticated look to any outdoor space.

Over time, if left untreated, Ipe naturally weathers to a silver-grey patina, adding an elegant and rustic charm to the deck. Ipe decking is also prized for its excellent dimensional stability. It has minimal shrinkage and expansion rates, allowing it to resist warping, cupping, and twisting due to changes in temperature and humidity. This stability ensures that the deck remains level and structurally sound for years to come.

In summary, Ipe decking offers a combination of strength, durability, natural beauty, and low maintenance, making it a popular choice for those seeking a premium outdoor decking and creating a stunning and long-lasting outdoor living space.

## Wood Description

**Color:** red 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 100cm  
**Thickness of sapwood:** from 3 to 9cm  
**Floats:** no  
**Log durability:** good



## Physical, 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.

**Stability:** moderately stable

**Musical quality factor:** 166,9 measured at 2346 Hz

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

	Mean	Std dev.
Specific gravity *:	1,04	0,09
Monnin hardness *:	14,6	3,1
Coeff. of volumetric shrinkage:	0,68%	0,09%
Total tangential shrinkage (TS):	6,40%	0,90%
Total radial shrinkage (RS):	5,10%	0,50%
TS/RS ratio:	1,30%	-
Fiber saturation point:	20%	-
Crushing strength *:	95MPa	10MPa
Static bending strength *:	166MPa	28MPa
Modulus of elasticity *:	22760MPa	2244MPa

## 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

## 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.

## 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:** 5

**Note:** A slow kiln drying is recommended in order to reduce defects, especially with 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.

M.C. (%)	Temperature (°C)		
	Dry-bulb	Wet-bulb	Air humidity (%)
30	42	41	94
25	42	39	82
20	48	43	74
15	48	43	74

## 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.

## 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

## End-uses

- Cabinetwork (high class furniture)
- Current furniture or furniture components
- Bridges (parts in contact with water or ground)
- Ship building (planking and deck)
- Stakes
- Moulding
- Stairs (inside)
- Turned goods
- Tool handles (resilient woods)
- Hydraulic works (seawater)
- Sliced veneer
- Sleepers
- Industrial or heavy flooring
- Poles
- Hydraulic works (fresh water)
- Bridges (parts not in contact with water or ground)
- Heavy carpentry
- Musical instruments
- Vehicle or container flooring

**Note:** tFilling is recommended to obtain a good finish.

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## Assembling

**Nailing / screwing:** good but pre-boring necessary

**Gluing:** correct (for interior only)

**Note:** Gluing must be done with care (very dense wood).

## 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.

## Main Local Names

Country	Local Name
Argentina	Lapacho
Bolivia	Lapacho
Brazil	Ipe
Brazil	Pau d'arco
Colombia	Polvillo
Guyana	Hakia
French Guiana	Ebene Verde
Peru	Ebano Verde
Suriname	Groenhart
Trinidad and Tobago	Yellow Pouï
Venezuela	Araguaney
Bolivia	Lapacho
Bolivia	Lapacho
Brazil	Ipe
Colombia	Pau d'arco
Colombia	Polvillo
Guyana	Hakia
Paraguay	Ebene Verde
Peru	Ebano Verde
Trinidad and Tobago	Groenhart
Venezuela	Yellow Pouï
Venezuela	Araguaney