

Caribbean pine

Family. Pinaceae

Botanical Name(s).

Pinus caribaea

Continent. Latin America

CITES. This species is not listed in the CITES Appendices (Washington Convention 2023).

Notes. Native to Central America and the West Indies, this fast-growing species has been widely planted in all tropical and subtropical regions. The timber currently on the market comes almost exclusively from plantations.

Description of logs

Diameter. From 25 to 50 cm

Thickness of sapwood. From 5 to 10 cm

Floats. Yes

Log durability. Low (treatment necessary)

Description of wood

Colour reference. Yellow brown

Sapwood. Not clearly demarcated

Texture. Fine

Grain. Straight

Interlocked grain. Absent

Notes. Pale yellow to yellow brown wood. When the wood has a high resin content, there is often a reddish-brown, star-shaped area at the heart of the log, which can be very extensive.

Physics and mechanics

The properties indicated are for mature wood. These properties may vary significantly depending on the origin and growing conditions of the wood.

Property	Average value
Specific gravity ¹	0.58
Monnin hardness ¹	3.5
Coefficient of volumetric shrinkage	0.39 % per %
Total tangential shrinkage (St)	7.1 %
Total radial shrinkage (Sr)	3.8 %
Ratio St/Sr	1.9
Fibre saturation point	28 %
Thermal conductivity (λ)	0.20 W/(m.K)
Lower heating value	19,070 kJ/kg
Crushing strength ¹	45 MPa
Static bending strength ¹	85 MPa



Flat sawn



Quarter sawn

Modulus of elasticity ¹	11,600 MPa
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¹ At 12 % moisture content, with 1 MPa = 1 N/mm

Notes. Physical and mechanical properties of Caribbean Pine vary greatly according to the origin and age of the trees. Specific gravity varies from less than 0.4 to over 0.8.

Natural durability and preservation

Resistance to fungi. Class 3 - moderately durable

Resistance to dry wood borers. Class D - durable (sapwood demarcated, risk limited to sapwood)

Resistance to termites. Class S - susceptible

Treatability. Class 3-4 - poorly or not permeable

Use class ensured by natural durability.

Class 2 - inside or under cover (dampness possible)

Notes. This species is listed in the European standard NF EN 350 (2016). But this standard refers to woods from natural forest whose durability is higher than that of planted trees, especially when they are young. Wood is most often used with sapwood, which is permeable to preservative products, like sapwood of most wood species (treatability class 1 according to NF EN 350, of October 2016). As a reminder, the treatability class mentioned in the "Natural durability and preservation" section above concerns HEARTWOOD.

Requirement of a preservative treatment

Against dry wood borer. Does not require any preservative treatment

In case of temporary humidification. Requires appropriate preservative treatment

In case of permanent humidification. Requires appropriate preservative treatment

Drying

Drying rate. Rapid to normal

Risk of distortion. High risk

Risk of casehardening. No known specific risk

Risk of checking. Slight risk

Risk of collapse. No known specific risk

Notes.

Suggested drying program.

Phases	Duration (H)	MC (%) probes	T (°C)	Rh (%)	UGL (%)
Prewarm 1		> 50	60	81	14.0
Prewarm 2	3	> 50	65	76	12.0
Drying		> 50	68	64	10.0
		50 - 40	70	63.0	9.1
		40 - 35	70	61.0	8.7
		35 - 30	70	56.0	7.9
		30 - 27	72	50.0	7.0
		27 - 24	72	44.0	6.3
		24 - 21	75	39.0	5.5
		21 - 18	75	34.0	4.9
		18 - 15	75	29.0	4.3
		15 - 12	80	28.0	3.9
		12 - 9	80	24.0	3.4
		9 - 6	80	22.0	3.2
Conditioning	6		73	(3)	(2)
Cooling	(1)		Stop	(3)	(2)

(1)) Cooling: until the temperature inside the kiln no longer exceeds external temperature by more than 30 °C.

(2) UGL = final H% x 0,8 to 0,9.

(3) Subtract RH from the UGL determined in (2) and temperature, using the Hailwood-Horrobin equation.

Sawing and machining

Blunting effect. Normal

Sawteeth recommended. Ordinary or alloy steel

Cutting tools. Ordinary

Peeling. Not recommended or without interest

Slicing. Not recommended or without interest

Notes. Clogging of saw blades, tools, work surfaces and feeding devices due to resin.

Assembling

Nailing and screwing. Good but pre-boring necessary

Notes. Resin exudations: to be taken into account when gluing.

Commercial grading

Appearance grading for sawn timbers.

Different grading rules applied according to wood origin.

Visual grading for structural applications

According to European standard EN 1912 (2012) and associated national standards, strength classes C18 and C24 can be provided by visual grading.

In New Caledonia, these two strength classes are also available with a specific visual grading (https://www.fcba.fr/wp-content/uploads/2020/09/pt_ctbnc_sr.pdf).

In the same way, in French Polynesia, Caribbean pine sawn timber is subject to specific grading rules (<http://lexpol.cloud.pf/LexpolAfficheTexte.php?texte=517120>).

Fire safety

Conventional French grading.

Thickness > 18 mm: M3 (moderately inflammable)

Thickness < 18 mm: M4 (easily inflammable)

Euroclasses grading. D-s2, d0

Default grading for solid wood, according to requirements of European standard EN 14081-1+A1 (August 2019). It concerns structural graded timber in vertical uses and ceiling with mean density upper 0.35 and thickness upper 22 mm.

End-uses

- Blockboard
- Boxes and crates
- Current furniture or furniture components
- Exterior panelling
- Formwork
- Heavy carpentry
- Interior joinery
- Interior panelling
- Light carpentry
- Poles
- Turned goods
- Wood frame house



Mesh cladding on Hienghène city hall – By: Les Charpentiers du Nord - New Caledonia
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Main local names

Country

Cuba
 France (importated tropical timber)
 Honduras
 Honduras
 New Caledonia
 Nicaragua
 Nicaragua
 Polynesia
 United States of America (importated tropical timber)

Local name

Pino macho
 Pin des Caraïbes
 Pino veta
 Pitchpin
 Pinus
 Ocote
 Pitchpin
 Pin de Polynésie
 Caribbean pine