

Family: PINACEAE (gymnosperm)

Scientific name(s): Pinus pinaster

Commercial restriction: no commercial restriction

Note: Naturally growing west of the Mediterranean basin, MARITIME PINE is largely used in plantations (in the Landes area).

WOOD DESCRIPTION

Color: yellow
 Sapwood: clearly demarcated
 Texture: coarse
 Grain: straight
 Interlocked grain: absent

Note: The abundant sapwood is pale yellow. The heartwood is yellow with reddish brown veins. The resin (and turpentine) odour is strong on green woods.

LOG DESCRIPTION

Diameter: from 20 to 60 cm
 Thickness of sapwood: from 6 to 12 cm
 Floats: pointless
 Log durability: moderate (treatment recommended)

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 *:	0,55		Crushing strength *:	39 MPa	
Monnin hardness *:	2,3		Static bending strength *:	80 MPa	
Coeff. of volumetric shrinkage:	0,45 %		Modulus of elasticity *:	8800 MPa	
Total tangential shrinkage (TS):	9,0 %				
Total radial shrinkage (RS):	4,5 %				
TS/RS ratio:	2,0				
Fiber saturation point:	32 %				

Stability: moderately stable to poorly stable

Note: Density of tapped woods is higher (till 0,75).

European standard EN 14081-1 "Timber structures - Strength graded structural timber with rectangular cross-section" gives the scope of the requirements found in NF B 52001 and applying to timber structures for visual grading of French timbers.

(*: 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 3-4 - moderately to poorly durable

Dry wood borers: durable - sapwood demarcated (risk limited to sapwood)

Termites (according to E.N. standards): class S - susceptible

Treatability (according to E.N. standards): class 4 - not permeable

Use class ensured by natural durability: class 3 - not in ground contact, outside

Species covering the use class 5: No

Note: This species is listed in the European standard NF EN 350-2.

Use class 3 is only for wood components without sapwood.

According to the European standard NF EN 335, performance length might be modified by the intensity of end-use exposition.

Sapwood of MARITIME PINE is permeable to preservative products.

REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: does not require any preservative treatment

In case of risk of temporary humidification: requires appropriate preservative treatment

In case of risk of permanent humidification: use not recommended

DRYING

Drying rate: rapid to normal

Risk of distortion: high risk

Risk of casehardening: yes

Risk of checking: slight risk

Risk of collapse: no

Possible drying schedule: 3

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
Green	60	56	81
30	68	58	61
20	74	60	51
15	80	61	41

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: normal

Sawteeth recommended: ordinary or alloy steel

Cutting tools: ordinary

Peeling: good

Slicing: good

ASSEMBLING

Nailing / screwing: good

Gluing: correct

Note: Difficult gluing for woods with a high percentage of resin. But drying over 70°C practically eliminates this problem.

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to European standard EN 1611-1 (October 1999)

Possible grading (on 2 sides): G2-0, G2-1, G2-2, G2-3, G2-4

Possible grading (on 4 sides): G4-0, G4-1, G4-2, G4-3, G4-4"

Visual grading for structural applications: Traded timber with CE marking. Possible strength classes: C14, C18, C24 or C30 related to the European standard EN 14081 (May 2006).

FIRE SAFETY

Conventional French grading: Thickness > 18 mm : M.3 (moderately inflammable)

Thickness < 18 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

Interior panelling

Veneer for back or face of plywood

Moulding

Glued laminated

Light carpentry

Boxes and crates

Poles

Exterior panelling

Flooring

Current furniture or furniture components

Interior joinery

Wood frame house

Heavy carpentry

Formwork

Exterior joinery

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Germany (temperate timber)	SEEKIEFER	Spain (temperate timber)	PINO MARITIMO
France (temperate timber)	PIN MARITIME	Italia (temperate timber)	PINO MARITTIMO
Portugal (temperate timber)	PINHIERO BRAVO	United Kingdom (temperate timber)	MARITIME PINE

