

Family: SALICACEAE (angiosperm)

Scientific name(s): Populus spp.

Commercial restriction: no commercial restriction

Note: POPLARS come from the temperate area of the northern hemisphere. They have a rapid growth and numerous outlets. These characteristics point them out as planted trees far from their original growing area. For these plantations, several cultivars are used (variety obtained by culture).

WOOD DESCRIPTION

Color: white
Sapwood: not demarcated
Texture: fine
Grain: straight
Interlocked grain: absent

Note: Wood is white, often greyish or very pale brown. Sapwood is not much separate to not separate at all according to species. Grain is sometimes slightly wavy.

LOG DESCRIPTION

Diameter: from 30 to 60 cm
Thickness of sapwood:
Floats: pointless
Log durability: low (must be treated)

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 *:	0,45	
Monnin hardness *:	1,3	
Coeff. of volumetric shrinkage:	0,45 %	
Total tangential shrinkage (TS):	8,3 %	
Total radial shrinkage (RS):	4,8 %	
TS/RS ratio:	1,7	
Fiber saturation point:	30 %	
Stability:	moderately stable	

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	35 MPa	
Static bending strength *:	62 MPa	
Modulus of elasticity *:	9800 MPa	

(*: 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 5 - not durable

Dry wood borers: heartwood durable but sapwood not clearly demarcated

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

Treatability (according to E.N. standards): class 3 - poorly permeable

Use class ensured by natural durability: class 1 - inside (no dampness)

Species covering the use class 5: No

Note: This species is listed in the European standard NF EN 350-2. Heartwood permeability to preservative products is variable, that of sapwood is variable too but good.

REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: requires appropriate 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

Possible drying schedule: 3

Risk of distortion: slight risk

Risk of casehardening: yes

Risk of checking: slight risk

Risk of collapse: yes

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

Note: Tools must be tightly sharpened otherwise the sawed or cutted surfaces may be fuzzy.

ASSEMBLING

Nailing / screwing: good

Gluing: correct

Note: Low tendency to split when nailing, rather absorbing when gluing.

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to European standard EN 975-2 (November 2004)

Possible grading for square edged timbers: grade 1, grade 2, grade 3, grade 4

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

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.

END-USES

Veneer for interior of plywood

Boxes and crates

Current furniture or furniture components

Matches

Fiber or particle boards

Note: The high tendency of POPLAR to be wooly makes its finish delicate.

Veneer for back or face of plywood

Light carpentry

Moulding

Pulp

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Germany (temperate timber)	PAPPEL	Spain (temperate timber)	ALAMO
France (temperate timber)	PEUPLIER	Italia (temperate timber)	PIOPPO
United Kingdom (temperate timber)	POPLAR	United States (temperate timber)	COTTONWOOD

