

Family: FAGACEAE (angiosperm)

Scientific name(s): Castanea sativa

Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: light yellow
Sapwood: clearly demarcated
Texture: medium
Grain: straight
Interlocked grain: absent
Note: Light yellow wood to yellowish brown.

LOG DESCRIPTION

Diameter: from 25 to 60 cm
Thickness of sapwood:
Floats: pointless
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 *:	0,64	
Monnin hardness *:	2,9	
Coeff. of volumetric shrinkage:	0,42 %	
Total tangential shrinkage (TS):	6,9 %	
Total radial shrinkage (RS):	4,2 %	
TS/RS ratio:	1,6	
Fiber saturation point:	30 %	
Stability:	moderately stable	

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	46 MPa	
Static bending strength *:	71 MPa	
Modulus of elasticity *:	13300 MPa	
(*: at 12% moisture content, with 1 MPa = 1 N/mm ²)		
Musical quality factor:	95,8 measured at 2546 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 2 - durable

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

Termites (according to E.N. standards): class M - moderately durable

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.

Durability is linked to the presence of water soluble tanins. It decreases with tanins washing in case of harsh exposition.

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: use not recommended

DRYING

Drying rate: normal to slow

Risk of distortion: slight risk

Risk of casehardening: no

Risk of checking: high risk

Risk of collapse: yes

Note: Risk of humidity pockets.

Possible drying schedule: 6

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
Green	42	41	94
50	48	43	74
30	54	46	63
20	60	51	62
15	60	51	62

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: Wood easy to split (manufacturing of split shingles).

ASSEMBLING

Nailing / screwing: good but pre-boring necessary

Gluing: correct

Note: Must be careful for nailing and screwing because of the wood's great tendency to split (small nail diameter, no nail near the ends and need for pre-holes in case of screwing).

Nail or screw corrosion if in contact with humidity.

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

Flooring

Interior panelling

Exterior joinery

Exterior panelling

Cooperage

Stakes

Interior joinery

Cabinetwork (high class furniture)

Sliced veneer

Heavy carpentry

Shingles

Fiber or particle boards

Note: Tanins create a risk of smudges on woods if not well dried or if processed in a non protected area or if no product is used for protection or finish.

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Germany (temperate timber)	EDELKASTANIE	Germany (temperate timber)	KASTANIENBAUM
Spain (temperate timber)	CASTAÑO	France (temperate timber)	CHÂTAIGNIER
Italia (temperate timber)	CASTAGNO	United Kingdom (temperate timber)	CHESTNUT
United Kingdom (temperate timber)	SWEET CHESTNUT		

