



Chestnut

Castanea sativa Mill. Syn.- *C. vesca* Gaertn. = *C. vulgaris* Lam.

Commercial names:

English:	Sweet chestnut, Spanish chestnut, European chestnut.
Spanish:	Castaña.
French:	Châtaigner.
Italian:	Castagno, Castagno domestico.
Portugués:	Castenheiro.
German:	Edelkastanie, Esskastanie.

Common names:

Catalonia:	Castanyer.
Basque Country:	Gaztaña, Caztañondo.
Galicia:	Castiñeiro.

Physical properties:

Density:	540-590-650 kg/m ³	
Shrinkage:	Stable	
Shrinkage values:	Total	Unitary
Volumetric:	8.2-11.9%	(0.31-0.41)
Tangential:	4.9-6.6%	(0.17-0.26)
Radial:	3.2-4.3%	(0.11-0.15)
Hardness:	2.1	Soft

Mechanical properties (Wood free of defects)

Static bending:	63-79 N/mm ²
Modulus of elasticity:	8,200-12,600 N/mm ²
Compression parallel to grain:	40-52 N/mm ²
Compression perpendicular to grain:	7.8 N/mm ²
Shear:	7.8-9.3 N/mm ²
Toughness:	5.5-5.9 J/cm ²

Structural lumber:

Bending tests have been carried out with structural-sized specimens resulting in a mean modulus of elasticity value of 10,400 N/mm² and a bending strength value of 3.9 N/mm² with a coefficient of variation of 37.5%.

Origin and availability:

This wood is found in the Mediterranean basin of Europe and Asia. Some authors claim that it is also native to Japan, China and even North America. The forested area, production and export are stable.

Wood description:

The color of the sapwood is yellowish white, which with aging becomes more intense until it reaches the color of old gold. The heartwood is a toasted brown. Sapwood is clearly differentiated from heartwood. The growth rings are clearly differentiated. In flat-sawn (plainsawn) lumber, vessels with a large diameter give the wood a vivid flame-like appearance. The grain is slightly-wavy and medium-textured. Owing to its acid content this wood tends to accelerate metal corrosion. This effect is increased by moisture. In addition, due to the presence of tannins, dark blue discoloration can appear when the wood is in contact with ferric materials.

Drying:

The drying rate is slow, with a marked tendency for collapse and honey-combing (internal checks).

The recommended kiln drying schedules are number 3 from the CTBA and schedule D from the PRL.

Natural durability and ease of penetration:

The wood is classified as durable against the action of fungi, susceptible to anobiids and Hesperophanes (Cerambycids) and moderately durable against termites. The heartwood is not penetrable, and the sapwood is moderately penetrable.

Technological properties:

Green wood can be worked well although it has a certain tendency to blunt the saw. The wood is suitable for making sliced veneer.

Machining presents no problems. The dulling rate of equipment is normal. Gluing, nailing and screwing offer no problems. Before applying finishing products, a prior treatment with filler is necessary.

Applications:

Carpentry: doors, windows, floors./ Cabinetwork../ Cooperage./ General construction./ Naval construction./ Decorative veneer: from selected roundwood. The bark is employed in the preparation of tannin extracts used in the tanning industry.