



Taeda Pine

Pinus echinata Mill. Syn.- *P. mitis* Michaux. *Pinus elliottii* Englem. *Pinus palustris* Mill. *Pinus taeda* L.

Nota: Esta denominación comercial se aplica al grupo de especies que se relaciona a continuación, que presentan una estructura anatómica muy similar y que son difíciles de diferenciar.

Commercial names:

Spanish:	Pino amarillo del Sur, Pino del Sur, Pino melis, Pino tea, Pino mobila
English:	Southern pine,, Southern yellow pine
French:	Pins jaunes
Italian:	Pino palustre, Pino pece, Pino grasso, Pino giallo
German:	Sumpfkiefer, Amerikanische terpentinkiefer

Note: There are several denominations for this Group of species, which have provided confusion and imprecision.

*In Spain, the denomination depends on the region; in Cataluña, it is called pino melis, in the Balearic Islands and in the Canary Islands, pino tea, and in Valencia, Valencia pino mobile. In practice, there are few who use or even know the pilot commercial denomination. The etymology for the denomination **pino melis** is the French word *Mélèze d'Europe* (which corresponds to the species *Larix decidua* Mill or Alerce. This wood presents a characteristic texture with a strong differentiation in spring and summer, growth rings reduced thickness (from 8 to 10 per cm), reddish brown coloured heartwood and a variable density ranging between 550 and 610 Kg/m³. In general terms, the cited denomination is used for all those conifers (pines or others), which have all, or part, of said characteristics. Larix Wood shortage favoured the fact that commercially spread wood _such as the Yellow Pine of the South_ had absorbed the denomination, however the aforementioned does not necessarily imply that this kind of wood should be considered as the characteristic pattern or standard for the denomination Pino melis. The reason for this denomination: the **Pino mobila** comes from the South of the United States, and the Port of Mobile is the place where it was shipped.*

*Finally, the denomination **pino tea** adds even more confusion. The UNE 56.504 standard «Nomenclature of the Main Foreign Commercial Conifer Woods», indicates that the nomenclature pino tea is used in Spain to denominate any kind of wood which poses a clear differentiation between the summer and spring wood, predominating the reddish colour, and adds that the import market mainly refers to *Pinus Palustris*. However, there are sources that indicate the pino tea refers to the *Pinus taeda*, and that it is used to refer to the fact that it burns like a torch. Besides, the pino tea denomination is also used for a type of wood belonging to the *Pinus canariensis* (Canary Island Pines) species which has a high content in resin, providing it with a translucent caramel colour.*

Common names:

EEUU:	Longleaf pine (<i>P. palustris</i>), Slash pine (<i>P. elliottii</i>), Shortleaf pine (<i>P. echinata</i>), Loblolly pine (<i>P. taeda</i>)
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*Note: The previous denominations correspond to the following Spanish terms: Pino palustre, pino pantano, pino tea (*P. palustris*), Pino tea (*P. elliottii*), Pino tea americano (*P. echinata*), Pino de incienso (*P. taeda*)*

Physical properties:

Density:	400-450-500 kg/m ³	
Shrinkage:	Moderately nervous	
Shrinkage values (ASTM):	Total	Unitary
	Volumetric:	12% (-)
Tangencial:	7,4-7,7%	(0,29-0,33)
Radial:	4,6-5,1%	(0,18-0,25)
Hardness:	-	Sem-hard

Propiedades mecánicas: (Madera libre de defectos (ASTM))

Static bending:	74-105 N/mm ²
Modulus of elasticity:	11,100-14,500 N/mm ²
Compression parallel to grain:	41-58 N/mm ²
Compression perpendicular to grain:	2,7-3,3 N/mm ² (ASTM)
Shear:	7-12,5 N/mm ²
Toughness:	6,7 J/cm ²

Structural wood:

The qualities J&P Sel y J&P N°1 and N°2 of the NGRDL 1975 standard give rise to the resistant classes C30 and C22. Qualities SS y GS of the BS 4978-1988 standard give rise to the resistant classes C22 and C18.

Origin and availability:

It is located in the southeast of the United States of America (from Virginia to Texas). Its forest, production and export are important.

Description of the wood:

The sapwood's colour ranges from white to pale yellow or light orange. Heartwood is quite well differentiated, since its colour varies from orangey yellow to reddish brown or light brown. The growth rings are visible. Summer wood forms very dark bands, the transition from spring wood to summer wood is abrupt and the contrast striking. The wood rays are very thin, not visible at first sight, except when they are included in a transversal resin reed, forming veining on its surface.

The fibre is straight, even though it is frequently defined as intertwined in the case of the *P. taeda*. The grain is thick or coarse. It presents several resin channels, even though there are sources which affirm they have few of them and that it contains several tannins. It may produce skin irritation. It smells like resin and the smell remains once the wood is dried.

Drying:

The drying process is carried out easily, with scarcely any resulting flaw, even though there's a tendency for deformations to occur, as well as the appearance of cracks in the case of the *Pinus taeda*. Recommended drying schedules are T13-C6 (4/4) and T12-C5 (8/4) from FPLM, and «L» (4/4) from PRL for the *Pinus palustris* normal quality.

Natural durability and ease to penetrate:

This wood is classified as moderately durable or scarcely durable against the action of fungi, susceptible to ceramicydae, anobide and moderately durable or susceptible to termites. The sapwood is not penetrable and heartwood is scarcely -or not penetrable.

Technological properties:

Sawing is carried out easily, even though the high content of resin may dull saws, and in such a case, ordinary precautions should be observed in the case of wood with high content in resin. Long teeth saws reduce the resin's effect.

They are well suited to obtaining veneers through peeling

Easy to mechanize. Tools dulling is normal. It is well suited for milling, turning (lathe) and drilling.

There may be cross grain near the knots during brushing or milling when working at high feeding speed or when using unsharpened tools. Resin may cause problems during mechanising of dry wood. It is not apt for vapour curving because of its high content in resin. Gluing is carried out easily, by means of adhesives whose wet action is not affected by the presence of resin, as alkaline glues (casein glues, hot phenol resins at average temperature) or even with glues which contain a solvent (resorcine glues for instance). On the contrary, those products which are forged in acid, as formol urea glues, must not be used for wood with high content in resin. It is recommended to glue using recently brushed surfaces.

There is no problem using nails or screws. During the finishing process, there may be problems concerning the covering film adherence, in case the wood has high contents of resin. Besides, sun or heat sources' exposure may be translated into resin exudation.

Applications:

Decorative veneers. Plywood boards. Interior carpentry: panelling, doors, staircases, floors.

Assembly carpentry. Naval construction: masts. Posts, sleepers.

Parking (inferior qualities). Paper paste. Kraft Paper.