



Brazilian Mahogany

Swietenia humilis Zucc., *Swietenia macrophylla* King, *Swietenia mahogani* Jack

Commercial names:

English:	Cuban mahogany, San Domingo mahogany, West indian mahogany, Spanish mahogany (S. mahogani), Central America mahogany (S. macrophylla), Mexican mahogany, Pacific-coast mahogany (S. humilis), Mahogany.
Spanish:	Caoba americana, Caoba americana, Aguano de Tabasco (S. macrophylla), Caoba mejicana (S. humilis).
French:	Acajou de Cuba, Acajou des Antilles (S. mahogani), Acajou d'Amerique centrale (S. macrophylla), Acajou du Mexique (S. humilis).
Italian:	Mogano americano, M. di Cuba (S. mahogani), Mogano americano (S. macrophylla), Mogano messicano (S. humilis).
German:	Kuba Mahagoni, Westindisches Mahagoni (S. mahogani), Zentralamerikanisches Mahagoni (S. macrophylla), Mexikamisches Mahagoni (S. humilis).

Common names:

Central Am.:	Caoba, Caoba del Sur, Caoba atlántico.
Bolivia:	Caoba, Mara.
Brazil:	Aguano, Mogno, Araputanga, Acajou.
Colombia:	Caoba.
Guatemala:	Chacalte.
Peru:	Aguano, Caoba.
Venezuela:	Caoba, Oruna.
Cuba:	Caoba.
Mexico:	Cobano, Palo Zopilote, Zopilote gateado.

Physical properties:

Density:	510-550-580 Kg/m ³ (S. macrophylla, S. humilis) 700-720-770 Kg/m ³ (S. mahogani)	
Shrinkage:	Moderately unstable	
Shrinkage values:	Total	Unitary
Volumetric:	-	(0.40)
Tangential:	3.7%	(0.23-0.24)
Radial:	2.6%	(0.15-0.18)
Hardness:	2.7	Semi-hard

Mechanical properties (Wood free of defects)

Static bending:	74-96 N/mm ²
Modulus of elasticity:	7,400-10,600 N/mm ²
Compression parallel to grain:	30-55 N/mm ²
Compression perpendicular to grain:	6.4 N/mm ² (ASTM)
Shear:	8.0-11.5 N/mm ²
Toughness:	5.0-5.3 J/cm ²

Origin and availability:

This wood is found in Central America, in the tropical zone of South America, and in the Caribbean. *S. humilis* is found in the western part of Central America; *S. macrophylla* in the eastern part of Central America and the tropical zone of South America (except in the Guianas and in the central and lower Amazon River basin).

S. mahogani is a species that is only found in the Caribbean and the West Indies, and it has almost disappeared. This wood is included in the list of species of the CITES. The species *S. humilis* in Appendix II-1, *S. macrophylla* in Appendix III-5+218, and *S. mahogani* in Appendix II-5. There are few forested areas of the species *S. mahogani*. Production and export of the other species is considered to be important.

Wood description:

The color of the sapwood is whitish or yellowish white, and the heartwood is pink when newly cut and turns to reddish brown with the passage of time. The sapwood is clearly differentiated. The wood frequently displays attractive figures in the grain. The growth rings are notably visible. The wood rays are fine and visible and are distributed in a stratified manner. The wood is straight-grained, although sometimes it may be slightly interlocked. The texture of the grain varies from fine to medium. This wood can display internal tensions. *S. mahogani* has a bitter taste. *S. macrophylla* may display dark colored resin or white deposits in the pores. Contact with the wood can produce skin irritation.

Drying:

The drying rate is fast. There are some slight risks of warping and checking. The presence of tension in the wood can cause significant longitudinal shrinkage. The recommended kiln drying schedules for *S. macrophylla* are T-6-D4 (4/4) and T3-D3 (8/4) from the FPLM.

Technological properties:

This wood is easy to saw. There is normal dulling of saws, and saws made of ordinary steel and steel alloys can be used. It is a suitable wood for obtaining rotary-cut veneer and sliced veneer.

Machining presents no problems. Tools are dulled at a normal rate, and conventional equipment can be used. Gluing, nailing, screwing and finishing present no problems. However, there can be alterations in color after gluing, and polyester varnishes can cause problems in the finish.

Natural durability and ease of penetration:

The wood is graded as durable against the attack of fungi, fairly resistant to insects and susceptible to termites. The heartwood is not penetrable, and sapwood varies from moderately penetrable to slightly penetrable.

Applications:

Furniture and cabinetwork./ Decorative veneer./ Exterior carpentry./ Interior carpentry: mouldings./ Naval construction./ Turnery./ Carving and sculpting./ Sports equipment and tool handles./ Plywood./ Musical instruments./ Rifle stocks.

For more than 250 years throughout the world this was the most highly valued wood for cabinetwork. At present it is more important historically than commercially.