African Mahogany

Khaya ivorensis A. Chev. Syn. - *K. klainei* Pierre, *Khaya anthotheca* C. DC, *Khaya grandifoliola* C. DC, *Khaya* spp.

Note: K. Senagalensis (calceidrat) is a wood with a much higher density that should not be confused with African mahogany; nevertheless, some sources include it in the same denomination.

Commercial names:

English:	African mahogany, Red khaya, Grand Bassam mahogany.
Spanish:	Caoba africana, Samanguila.
French:	Acajou d'Afrique, Acajou Grand Bassam, N'gollon.
Italian:	Mogano africano, Mogano Grand Bassam.
German:	Afrikanisches Mahagoni, Khaya Mahagoni.

Common names:

Ivory Coast:	Acajou Bassam (K. ivorensis), Acajou Blanc, Acajou Krala (K. anthotheca), Acajou Grandes Feuilles (K. grandifoliola).
Ghana:	Takoradi Mahogany (K. ivorensis), Ahafo (K. anthotheca).
Nigeria:	Ogwango (K. ivorensis), Benin Mahogany (K. grandifoliola).
Cameroon:	N'Gollon (K. ivorensis), Mangona (K. anthotheca).
Equ. Guinea	Caoba del Galón (K. ivorensis).
Gabon:	Zaminguila (K. ivorensis).
Angola:	Undia Nunu (K. ivorensis), N'bola (K. anthotheca).
Congo:	N'Dola (K. anthotheca).
Uganda:	Munyama (K. anthotheca),
	Eri Kire (K. grandifoliola).

Physical properties:

Density:		
K. ivorensis and K. anthotheca	490-520-530 kg/m³	
K. grandifoliola	650-720-800 kg/m³	
Shrinkage:	Moderately unstable	
Shrinkage values:	Total	Unitary
Volumetric:	-	(0.39)
Tangential:	5.5-5.8%	(0.26-0.31)
Radial:	3.7-3.8%	(0.19-0.20)
Hardness:	1.9	Soft

Note 1: The physical properties of K. ivorensis are inferior to the other species.
Note 2: K. grandifoliola is classified as semi-hard.

Mechanical properties (Wood free of defects)

Static bending:	71-102 N/mm²
Modulus of elasticity:	9,000-9,800 N/mm²
Compression parallel to grain:	41-55 N/mm²
Compression perpendicular to grain:	-
Shear:	7.5-8.5 N/mm²
Toughness:	3.1-4.5 J/cm²

Note: The mechanical properties of K. ivorensis are inferior to the other species.

Origin and availability:
This wood is found in the central and western part of West Africa. The forested area, production and export are stable.

Wood description:
The sapwood is a yellowish cream white color and the heartwood is a pale pink or pale red that darkens to a deep brown with a golden sheen. The sapwood is clearly differentiated. The wood is usually straight-grained, but occasionally the grain can be interlocked. The grain is medium-textured. The wood can display internal tensions and a soft pith. The dust from the wood can produce irritation of the mucous membranes. Sometimes the vessels may be filled with black deposits.

Drying:
The drying rate is fast, although K. grandifoliola requires a slower drying time. There are some slight risks of producing warp and checks. Risk of warping can be greater in lumber with tension wood or extremely interlocked grain. The recommended drying schedules are number 5 from the CTFT, number 9 from the CTBA, T2-D4 (4/4) and T2-D3 (8/4) from the FPLM, and schedule F from the PRL.

Natural durability and ease of penetration:
The wood is graded as moderately durable against the action of fungi, resistant to lyctids, susceptible to termites and very susceptible to marine borers. The heartwood is not penetrable, and the sapwood is moderately penetrable.

Technological properties:
Note: K. grandifoliola is often considered separately since it offers technological properties different from those of K. ivorensis and K. anthotheca.
The wood is easy to saw. Saws become dull at a normal rate, and saws made of ordinary steel or steel alloys can be used. Wood with internal tensions has a tendency to splinter during sawing. This is a suitable wood for obtaining both rotary-cut and sliced veneers. K. grandifoliola is less suitable for rotary cutting.
Machining is difficult because of the presence of raised grain. During machining splintering may occur, and therefore reducing the cutting angle to 15-20º is recommended. Tools dull at a normal rate, and conventional tools can be used. Gluing, nailing and screwing present no problems. Before applying finishing products, a pretreatment with filler is necessary.

Applications:
Exterior carpentry./ Interior carpentry./ Plywood./ Decorative veneers./ Furniture and cabinetwork./ Naval construction./ Docks./ Boats: small craft./ Flooring./
It can replace Utile and Sapele in some applications.