



Flat sawn

Half-quarter sawn



Azobé / Ekki*

* Common commercial name

Family. Ochnaceae

Botanical names

Lophira alata Banks (Syn. *Lophira procera*)

Continent. Africa

CITES (Washington Convention of 2017)

No trade restrictions

Log description

Diameter. 60 to 100 cm

Thickness of sapwood. 2 to 4 cm

Buoyancy. Does not float

Log conservation. Good

Wood description

Reference colour. Dark red

Sapwood. Clearly demarcated

Texture. Coarse

Grain. Interlocked grain

Interlocked grain. Marked

Notes. Dark red to purple brown wood. Intermediate zone between sapwood and heartwood. White deposits in the pores.

Physical and mechanical properties

Property	Mean value
Density ⁽¹⁾	1.06
Monnin hardness ⁽¹⁾	10.7
Coefficient of volumetric shrinkage	0.69 % per %
Total tangential shrinkage (Ts):	10.3 %
Total radial shrinkage (Rs):	7.3 %
T/R anisotropy ratio	1.4
Fibre saturation point	28 %
Thermal conductivity (λ)	0.34 W/(m.K)
Lower heating value	19,590 kJ/kg
Crushing strength ⁽¹⁾	96 MPa
Static bending strength ⁽¹⁾	162 MPa
Longitudinal modulus of elasticity ⁽¹⁾	21,420 MPa

⁽¹⁾ at 12% moisture content, with 1 MPa = 1 N/mm²

Natural durability and treatability

Resistance to decay. Class 2 - durable

Resistance to dry wood borers. Class D - durable (sapwood demarcated, risk limited to sapwood)

Resistance to termites. Class D - durable

Treatability. Class 4 – non-treatable

Use class covered by natural durability Class 4 - in ground or fresh water contact

Notes. This species is listed in the NF EN 350 standard. Transitional wood has a variable durability. Good resistance to marine borers in temperate water but moderate resistance in tropical water. This species is thus considered as “moderately durable” for marine borers and covers the use class 5 only when used in temperate or cold salt water, sea water or brackish water. According to the European standard NF EN 335 of May 2013, performance length might be modified by conditions in which it is used.

Preservation treatment

Against dry wood borer attacks. This wood does not require any preservation treatment

In case of temporary humidification. This wood does not require any preservation treatment

In case of permanent humidification. This wood does not require any preservation treatment

Drying

Drying rate. Slow

Risk of distortion. High risk

Risk of case hardening. No known specific risk

Risk of checking. High risk

Risk of collapse. No known specific risk

Notes. Air drying period recommended (3 to 4 months under shelter) prior to kiln drying. Drying very difficult for thicknesses > 38 mm.

Suggested drying schedule. Schedule #7 (see explanatory note)

Sawing and machining

Blunting effect. Fairly high

Tooth for sawing. Stellite-tipped

Machining tools. Tungsten carbide

Suitability for peeling. Not recommended or without interest

Suitability for slicing. Not recommended or without interest

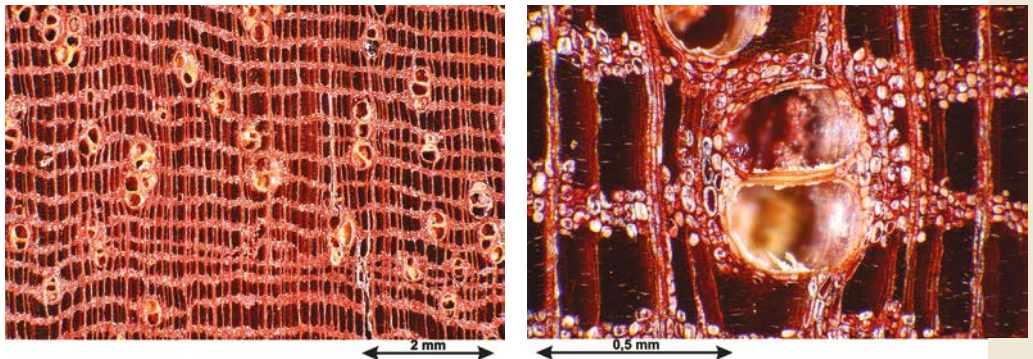
Notes. Log turning sawing recommended (internal stresses). Some difficulties in planing due to interlocked grain.

Assembling

Nailing/screwing. Good but pre-boring necessary

Notes. Very high specific gravity: important that gluing be performed in compliance with the code of practice and instructions for the glue used.

Cross sections of *Lophira alata*



Commercial grading

Sawn timber appearance grading

According to SATA grading rules (1996)

- For the “General Purpose Market”

Possible grading for square-edged timbers: choice I, choice II, choice III, choice IV

Possible grading for short-length lumbers: choice I, choice II

Possible grading for short-length rafters: choice I, choice II, choice III

- For the “Special Market”

Possible grading for strips and small boards: choice I, choice II, choice III

Possible grading for rafters: choice I, choice II, choice III

Visual structure grading

According to European standard EN 1912 (2012) and associated national standards (see explanatory note), strength class D70 can be provided by visual grading. Strength class D50 can also be provided by visual grading according to French standard NF B 52-001-1 (2011).

Fire safety

Conventional French grading

Thickness > 14 mm: M3 (moderately flammable)

Thickness < 14 mm: M4 (readily flammable)

Euroclass grading. D-s2, d0

Default grading for solid wood that meets requirements of European standard NF EN 14081-1 (April 2016): structural graded timber in vertical uses and ceilings with minimal mean density of 0.35 and minimal thickness of 22 mm.

Main end uses

- Heavy carpentry
- Stairs (inside)
- Vehicle or container flooring
- House framing
- Industrial or heavy flooring
- Stakes
- Decking
- Poles
- Bridges (parts in contact with water or ground)
- Bridges (parts not in contact with water or ground)
- Cooperage
- Hydraulic works (fresh water)
- Hydraulic works (seawater)
- Sleepers

Notes. In permanent humidification, transition wood must be eliminated. Resistant to one or several acids.

Common names

Country	Local name
Germany	Bongossi, Bonkole
Benin	Éki
Cameroon	Bongossi, Okoka
Congo	Bonkolé
Côte d'Ivoire	Azobé / Ekki
Gabon	Akoga
Ghana	Kaku
Equatorial Guinea	Akoga
Nigeria	Eba, Ekki
Central African Republic	Kofyo
United Kingdom	Ekki
Sierra Leone	Hendui



“Tillac” on the Calais pier – Design by Bois et loisirs (France).