

Ariella

Family. Leguminosae (Caesalpiniaceae)

Botanical Name(s).

Brachystegia laurentii

Brachystegia mildbraedii

Brachystegia nzang (synonymous)

Brachystegia zenkeri

Brachystegia p.p.

Continent. Africa

CITES. This species is not listed in the CITES Appendices (Washington Convention 2023).

Description of logs

Diameter. From 80 to 120 cm

Thickness of sapwood. From 10 to 15 cm

Floats. No

Log durability. Moderate (treatment recommended)

Description of wood

Colour reference. Light brown

Sapwood. Clearly demarcated

Texture. Medium

Grain. Straight or interlocked

Interlocked grain. Slight

Notes. Sapwood very wide and easily attacked by insects. Wood light brown, with copper brown veins. Possibility of wind shakes.

Physics and mechanics

The properties indicated are for mature wood. These properties may vary significantly depending on the origin and growing conditions of the wood.

Property	Average value
Specific gravity ¹	0.56
Monnin hardness ¹	2.9
Coefficient of volumetric shrinkage	0.40 % per %
Total tangential shrinkage (St)	6.0 %
Total radial shrinkage (Sr)	3.7 %
Ratio St/Sr	1.6
Fibre saturation point	28 %
Thermal conductivity (λ)	0.19 W/(m.K)
Lower heating value	19,200 kJ/kg
Crushing strength ¹	49 MPa
Static bending strength ¹	85 MPa
Modulus of elasticity ¹	12,400 MPa

¹ At 12 % moisture content, with 1 MPa = 1 N/mm



Quarter sawn



Flat sawn

Notes. Hardness varies from soft to fairly hard.

Natural durability and preservation

Resistance to fungi. Class 3 - moderately durable

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

Resistance to termites. Class M - moderately durable

Treatability. Class 3 - poorly permeable

Use class ensured by natural durability.

Class 2 - inside or under cover (dampness possible)

Notes. A preservative treatment is recommended as sawnwoods often contain sapwood.

Requirement of a preservative treatment

Against dry wood borer. Does not require any preservative treatment

In case of temporary humidification. Requires appropriate preservative treatment

In case of permanent humidification. Use not recommended

Drying

Drying rate. Slow

Risk of distortion. High risk

Risk of casehardening. No known specific risk

Risk of checking. High risk

Risk of collapse. Yes

Suggested drying program.

Phases	Duration (H)	MC (%) probes	T (°C)	Rh (%)	UGL (%)
Prewarm 1		> 50	50	86	16.5
Prewarm 2	3	> 50	52	85	16.0
Drying		> 50	55	82	14.7
		50 - 40	55	80.0	13.8
		40 - 35	55	75.0	12.6
		35 - 30	56	73.0	12.0
		30 - 27	58	67.0	10.5
		27 - 24	60	58.0	8.9
		24 - 21	62	50.0	7.5
		21 - 18	64	45.0	6.8
		18 - 15	65	37.0	5.7
		15 - 12	65	34.0	5.3
		12 - 9	65	28.0	4.5
		9 - 6	65	24.0	4.0
Conditioning	6		58	(3)	(2)
Cooling	(1)		Stop	(3)	(2)

(1)) Cooling: until the temperature inside the kiln no longer exceeds external temperature by more than 30 °C.

(2) UGL = final H% x 0,8 to 0,9.

(3) Subtract RH from the UGL determined in (2) and temperature, using the Hailwood-Horrobin equation.

Sawing and machining

Blunting effect. Normal

Sawteeth recommended. Ordinary or alloy steel

Cutting tools. Ordinary

Peeling. Good

Slicing. Good

Assembling

Nailing and screwing. Good

Commercial grading

Appearance grading for sawn timbers.

According to the ATIBT grading rules (2017), the main choices are: FAS (First And Second), n°1 Common and select, n°2 Common (see details of these rules on the ATIBT website).

Visual grading for structural applications

According to French standard NF B 52-001-1 (2018), strength class D24 can be provided by visual grading.

Fire safety

Conventional French grading.

Thickness > 14 mm: M3 (moderately inflammable)

Thickness < 14 mm: M4 (easily inflammable)

Euroclasses grading. D-s2, d0

Default grading for solid wood, according to requirements of European standard EN 14081-1+A1 (August 2019). It concerns structural graded timber in vertical uses and ceiling with mean density upper 0.35 and thickness upper 22 mm.

End-uses

- Blockboard
- Boxes and crates
- Cabinetwork (high class furniture)
- Cooperage
- Current furniture or furniture components
- Fiber or particle boards
- Flooring
- Glued laminated
- Indoor staircases
- Interior joinery
- Interior panelling
- Light carpentry
- Sliced veneer
- Veneer for back or face of plywood
- Veneer for interior of plywood
- Wood frame house

Main local names

Country	Local name
Cameroon	Ékop-évène
Cameroon	Ékop-léké
Congo	Bomanga
Democratic Republic of the Congo	Bomanga
France (importated tropical timber)	Ariella

France (importated tropical timber)

Gabon

Gabon

United Kingdom (importated tropical timber)

Bomanga

Nzang

Yegna

Ariella