

Ayan

Family. Leguminosae (Caesalpiniaceae)

Botanical Name(s).

Distemonanthus benthamianus

Continent. Africa

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

Description of logs

Diameter. From 60 to 90 cm

Thickness of sapwood. From 2 to 4 cm

Floats. No

Log durability. Moderate (treatment recommended)

Description of wood

Colour reference. Yellow

Sapwood. Clearly demarcated

Texture. Medium

Grain. Interlocked

Interlocked grain. Slight

Notes. Lemon-yellow to yellow brown. Some logs present a highly figured wood. Possible presence of internal stresses and 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	0.73
Monnin hardness ¹	5.6
Coefficient of volumetric shrinkage	0.54 % per %
Total tangential shrinkage (St)	5.8 %
Total radial shrinkage (Sr)	3.6 %
Ratio St/Sr	1.6
Fibre saturation point	23 %
Thermal conductivity (λ)	0.24 W/(m.K)
Lower heating value	19,940 kJ/kg
Crushing strength ¹	64 MPa
Static bending strength ¹	116 MPa
Modulus of elasticity ¹	14,740 MPa

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

Natural durability and preservation

Resistance to fungi. Class 3 - moderately durable



Half-quarter sawn



Flat sawn

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

Resistance to termites. Class M - moderately durable

Treatability. Class 4 - not permeable

Use class ensured by natural durability.

Class 2 - inside or under cover (dampness possible)

Notes. This species is listed in the European standard NF EN 350 (2016). The MOVINGUI cannot be used without appropriate preservative treatment for end-uses under use class 3, except for some parts of a work such as windows, less exposed than others (entrance doors, shutters ...). This species is used for exterior joinery in tropical area but its use in temperate area is limited as it is prone to *Coriolus versicolor* fungi attacks.

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. Normal

Risk of distorsion. Slight risk

Risk of casehardening. No known specific risk

Risk of checking. Slight risk

Risk of collapse. No known specific risk

Notes.

Suggested drying program.

Phases	Duration (H)	MC (%) probes	T (°C)	Rh (%)	UGL (%)
Prewarm 1		> 50	45	86	17.0
Prewarm 2	4	> 50	45	86	16.5
Drying		> 50	48	84	15.7
		50 - 40	48	80.5	14.6
		40 - 35	49	77.0	13.4
		35 - 30	50	75.0	12.9
		30 - 27	51	70.0	11.5
		27 - 24	53	62.0	9.9
		24 - 21	54	53.0	8.4
		21 - 18	55	48.5	7.7
		18 - 15	55	40.0	6.6
		15 - 12	55	35.0	5.9
		12 - 9	60	30.0	5.0
		9 - 6	60	28.0	4.7
Conditioning	8		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. High

Sawteeth recommended. Stellite-tipped

Cutting tools. Tungsten carbide

Peeling. Good

Slicing. Good

Notes. Some difficulties due to irregular grain. Filling is recommended in order to obtain a better finish.

Assembling

Nailing and screwing. Good but pre-boring necessary

Notes. Pre-boring recommended, especially for large nails (risks of splits).

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

No visual grading for structural applications

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

- Arched goods
- Cabinetwork (high class furniture)
- Cooperage
- Current furniture or furniture components
- Exterior joinery
- Exterior panelling
- Flooring
- Glued laminated
- Indoor staircases
- Interior joinery
- Interior panelling
- Light carpentry
- Resistant to one or several acids
- Shingles
- Sliced veneer
- Turned goods
- Vehicle or container flooring
- Veneer for back or face of plywood
- Wood frame house

Notes. MOVINGUI contains water-soluble yellow extracts that can stain the elements in contact with wood under moisture conditions.



Folding shutters in sheltered outdoor environment (wood supply: Fibres Industries Bois)

Island of Réunion (France)

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Main local names

Country	Local name
Benin	Ayan
Cameroon	Éyen
Côte d'Ivoire	Barré
Equatorial Guinea	Éyen
Gabon	Éyen
Gabon	Movingui
Ghana	Ayan
Ghana	Bonsamdua
Nigeria	Ayan
Nigeria	Ayanran
United Kingdom (importated tropical timber)	Ayan
United Kingdom (importated tropical timber)	Distemonanthus