ÉBÈNE

Diospyros crassiflora Hiern, D. mespiliformis, D. viridicans

Family: Ebenaceae · Continent: Africa



IDENTIFICATION

Family: Ebenaceae · Continent: Africa
Botanical names: Diospyros crassiflora Hiern, Diospyros mespiliformis Hochst., Diospyros viridicans Hiern, Diospyros p.p.
CITES (2016): only Diospyros species from Madagascar are listed in Appendix II (logs, sawn wood, veneers).
Notes: often sold as short billets (1 to 1.5 m).

LOG DESCRIPTION

Diameter: 30 to 60 cm
Sapwood thickness: 5 to 12 cm
Buoyancy: does not float
Durability in forest: good

WOOD DESCRIPTION

Reference colour: black
Sapwood: clearly demarcated
Texture: fine
Grain: straight or interlocked
Interlocked grain: slight
Notes: logs may show various defects, including pin holes and heart rot. The wood is uniformly black to blackish brown (Diospyros mespiliformis).



PHYSICAL & MECHANICAL PROPERTIES

Property	Mean value
Density (1)	**0.90**
Monnin hardness (1)	**7.0**
Volumetric shrinkage coefficient	**0.51% per %**
Total tangential shrinkage (T)	**11.0%**
Total radial shrinkage (R)	**7.0%**
T/R ratio	**1.6**
Fibre saturation point	**29%**
Thermal conductivity (λ)	**0.29 W/(m.K)**
Lower heating value	**–**
Crushing strength (1)	**58 MPa**
Static bending strength (1)	**130 MPa**
Longitudinal modulus of elasticity (1)	**15,500 MPa**

(1) At 12% moisture content, with 1 MPa = 1 N/mm²
Properties vary widely with species and origin: density can range from 0.75 to 1.1.

NATURAL DURABILITY AND TREATABILITY

Fungi resistance: class 1, very durable
Dry wood borer resistance: class D, durable (sapwood distinct, risk limited to sapwood)
Termite resistance: class D, durable · Treatability: class 4, not permeable
Use class covered by natural durability: class 4, in contact with the ground or fresh water

PRESERVATIVE TREATMENT

Against dry wood borer attacks: this wood does not require preservative treatment.
Temporary humidification: no preservative treatment required.
Permanent humidification: no preservative treatment required.

DRYING

Drying rate: slow
Risk of distortion: high
Risk of case hardening: no known risk
Risk of checking: high
Risk of collapse: no known risk
Suggested kiln schedule: no. 7

ASSEMBLING

Nailing and screwing: good holding, pre-drilling required.
Notes: dense wood; gluing must strictly follow good practice and the glue manufacturer's recommendations.

COMMERCIAL GRADING

Appearance grading of sawn timber: this cabinetmaking species is not covered by conventional grading rules. Grading is based on the intended end use of the products.

SAWING AND MACHINING

Blunting effect: high
Sawteeth recommended: stellite-tipped
Cutting tools: tungsten carbide
Peeling: not recommended or of no interest
Slicing: good
Notes: powerful machines are needed for machining and slicing because of the very high hardness. Dust may cause dermatitis. Sawn veneers are widely used in cabinetwork.

FIRE SAFETY

French conventional classification: thickness > 14 mm: M3 (moderately flammable); thickness < 14 mm: M4 (easily flammable).
Euroclass: D-s2, d0.
Default classification for solid timber meeting NF EN 14081-1 (April 2016): structural timber used for walls and ceilings, graded, with minimum mean density 0.35 and minimum thickness 22 mm.

MAIN END USES

- Turned articles
- Cabinetwork (luxury furniture)
- Musical instruments
- Wind instruments
- Tool handles (resilient wood)
- Sculpture
- Small fancy articles
- Sawn veneer

Prior surface treatment with alcohol is recommended before applying polyester coatings and primers.



MAIN LOCAL NAMES

Country — Local name	Country — Local name
Germany — Afrikanisches Ebenholz	Gabon — Évila
Benin — Cubaga, Ébène	Equatorial Guinea — Ebano
Cameroon — Épindé-pindé, Mavini, Mévini, Ndou	Nigeria — Abokpo, Kanran, Nyareti, Osibin
Congo — Mopini	Central African Republic — Bingo, Ngoubou
France — Ébène d'Afrique	United Kingdom — African ebony

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