

Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)

Scientific name(s): *Guibourtia arnoldiana*

Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: brown
Sapwood: clearly demarcated
Texture: fine
Grain: straight or interlocked
Interlocked grain: slight

Note: Heartwood yellowish brown to brown presenting a dark striping or reddish glints.

LOG DESCRIPTION

Diameter: from 40 to 80 cm
Thickness of sapwood: from 5 to 8 cm
Floats: no
Log durability: moderate (treatment recommended)

PHYSICAL PROPERTIES

Physical and mechanical properties are based on mature heartwood specimens. These properties can vary greatly depending on origin and growth conditions.

	<u>Mean</u>	<u>Std dev.</u>
Specific gravity *:	0,79	0,05
Monnin hardness *:	5,9	2,1
Coeff. of volumetric shrinkage:	0,56 %	0,06 %
Total tangential shrinkage (TS):	8,8 %	0,7 %
Total radial shrinkage (RS):	5,0 %	0,6 %
TS/RS ratio:	1,8	
Fiber saturation point:	27 %	
Stability: moderately stable		

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	79 MPa	10 MPa
Static bending strength *:	138 MPa	14 MPa
Modulus of elasticity *:	21250 MPa	4700 MPa

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

Musical quality factor: 123,4 measured at 2734 Hz

NATURAL DURABILITY AND TREATABILITY

Fungi and termite resistance refers to end-uses under temperate climate. Except for special comments on sapwood, natural durability is based on mature heartwood. Sapwood must always be considered as non-durable against wood degrading agents.

E.N. = Euro Norm

Funghi (according to E.N. standards): class 3 - moderately durable

Dry wood borers: durable - sapwood demarcated (risk limited to sapwood)

Termites (according to E.N. standards): class M - moderately durable

Treatability (according to E.N. standards): class 3-4 - poorly or not permeable

Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)

Species covering the use class 5: No

Note: This species is listed in the European standard NF EN 350-2.

REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: does not require any preservative treatment

In case of risk of temporary humidification: requires appropriate preservative treatment

In case of risk of permanent humidification: use not recommended

DRYING

Drying rate: slow

Risk of distortion: slight risk

Risk of casehardening: no

Risk of checking: slight risk

Risk of collapse: no

Note: Must be dried carefully.

Possible drying schedule: 6

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
Green	42	41	94
50	48	43	74
30	54	46	63
20	60	51	62
15	60	51	62

This schedule is given for information only and is applicable to thickness lower or equal to 38 mm.

It must be used in compliance with the code of practice.

For thickness from 38 to 75 mm, the air relative humidity should be increased by 5 % at each step.

For thickness over 75 mm, a 10 % increase should be considered.

SAWING AND MACHINING

Blunting effect: fairly high

Sawteeth recommended: stellite-tipped

Cutting tools: tungsten carbide

Peeling: no information available

Slicing: nood

Note: Requires power. Some difficulties in planing due to interlocked grain.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary

Gluing: correct (for interior only)

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to SATA grading rules (1996)

For the "General Purpose Market":

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

Possible grading for short length lumbers: choix I, choix II

Possible grading for short length rafters: choix I, choix II, choix III

For the "Special Market":

Possible grading for strips and small boards (ou battens): choix I, choix II, choix III

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

FIRE SAFETY

Conventional French grading: Thickness > 14 mm : M.3 (moderately inflammable)

Thickness < 14 mm : M.4 (easily inflammable)

Euroclasses grading: D s2 d0

Default grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2009). It concerns structural graded timber in vertical uses with mean density upper 0.35 and thickness upper 22 mm.

END-USES

Cabinetwork (high class furniture)

Current furniture or furniture components

Turned goods

Interior joinery

Wood frame house

Seats

Note: Substitute for WALNUT (*Juglans regia*) for sliced veneers.

Sliced veneer

Interior panelling

Flooring

Stairs (inside)

Heavy carpentry

Wood-ware

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Angola	M'PENZE	Congo	BENZI
Democratic Republic of the Congo	MBENGE	Democratic Republic of the Congo	MUTENYE
United Kingdom	OLIVE WALNUT		

