

Family: MORACEAE (angiosperm)

Scientific name(s): *Milicia excelsa*

Milicia regia

Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: yellow brown
Sapwood: clearly demarcated
Texture: coarse
Grain: interlocked
Interlocked grain: slight

Note: Yellow brown to more or less brown with golden glints. Ribbon like aspect on quartersawn, darker veins on slab. Possible presence of very hard white calcium carbonate deposits, sometimes surrounded by a darker colour.

LOG DESCRIPTION

Diameter: from 80 to 100 cm
Thickness of sapwood: from 5 to 10 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 *:	0,64	0,06
Monnin hardness *:	4,1	0,9
Coeff. of volumetric shrinkage:	0,44 %	0,07 %
Total tangential shrinkage (TS):	5,4 %	0,7 %
Total radial shrinkage (RS):	3,5 %	0,4 %
TS/RS ratio:	1,5	
Fiber saturation point:	23 %	
Stability: moderately stable		

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	54 MPa	6 MPa
Static bending strength *:	87 MPa	15 MPa
Modulus of elasticity *:	12840 MPa	2496 MPa

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

Musical quality factor: 126,8 measured at 2527 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 1-2 - very durable to durable

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

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

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

Use class ensured by natural durability: class 3 - not in ground contact, outside

Species covering the use class 5: No

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

The heartwood does not cover the use class 4 required for end-uses in contact with permanent humidity (example: contact with ground). On the other hand, if the constructive system is well-drained, without water trap, this species can be used outside without any treatment. Heartwood is hardly permeable to preservative products. This species naturally covers the use class 5 (end-uses in marine environment or in brackish water) due to its high specific gravity and hardness.

According to the European standard NF EN 335, performance length might be modified by the intensity of end-use exposition.

REQUIREMENT OF A PRESERVATIVE TREATMENT

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

In case of risk of temporary humidification: does not require any preservative treatment

In case of risk of permanent humidification: does not require any preservative treatment

DRYING

Drying rate: normal	Possible drying schedule: 2			
Risk of distortion: slight risk				
Risk of casehardening: no				
Risk of checking: no risk or very slight risk				
Risk of collapse: no				
Note: Spacer sticks often leave marks. A vertical surface drying is recommended before stacking.	M.C. (%)	Temperature (°C)		Air humidity (%)
		dry-bulb	wet-bulb	
	Green	50	47	84
	40	50	45	75
	30	55	47	67
	20	70	55	47
	15	75	58	44

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: good
Slicing: good
Note: The calcium carbonate deposits in some logs severely damage tools. Very irritant sawdust. Risks of tearing (irregular grain).

ASSEMBLING

Nailing / screwing: good
Gluing: correct

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

Exterior joinery	Interior joinery
Flooring	Sliced veneer
Ship building (planking and deck)	Interior panelling
Cabinetwork (high class furniture)	Turned goods
Current furniture or furniture components	Light carpentry
Cooperage	Glued laminated
Stairs (inside)	Veneer for interior of plywood
Veneer for back or face of plywood	Vehicle or container flooring
Bridges (parts not in contact with water or ground)	

Note: Filling recommended. Wood sometimes resistant to wood finish product: IROKO contains a non-saturated phenolic compound, the chlorophorin, which is a powerful anti-oxidant. It is then necessary to use paints or varnishes without free siccative oil, it is to say, synthetic resin based paints or varnishes such as vinylic paints or polyurethane varnishes that can also be used as undercoat.

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Angola	MOREIRA	Benin	LOKOTIN
Cameroon	ABANG	Congo	KAMBALA
Ivory Coast	IROKO	Gabon	ABANG
Gabon	MANDJI	Ghana	ODOUM
Guinea	SIMME	Equatorial Guinea	ABANG
Liberia	SEMLI	Mozambique	MUFULA
Mozambique	TULE	Nigeria	ROKKO
Central African Republic	BANGUI	Democratic Republic of the Congo	KAMBALA
Democratic Republic of the Congo	LUSANGA	Democratic Republic of the Congo	MOKONGO
Democratic Republic of the Congo	MOLOUNDOU	Sierra Leone	SEMLI
Belgium	KAMBALA		

