

Family: MORACEAE (angiosperm)  
 Scientific name(s): *Milicia excelsa*  
*Milicia regia*  
 Commercial restriction: no commercial restriction

## WOOD DESCRIPTION

## LOG DESCRIPTION

Color: yellow brown	Diameter: from 80 to 100 cm
Sapwood: clearly demarcated	Thickness of sapwood: from 5 to 10 cm
Texture: coarse	Floats: no
Grain: interlocked	Log durability: moderate (treatment recommended)
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.	

## PHYSICAL PROPERTIES

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

## MECHANICAL AND ACOUSTIC PROPERTIES

	Mean	Std dev.		Mean	Std dev.
Specific gravity *:	0,64	0,06	Crushing strength *:	54 MPa	6 MPa
Monnin hardness *:	4,1	0,9	Static bending strength *:	87 MPa	15 MPa
Coeff. of volumetric shrinkage:	0,44 %	0,07 %	Modulus of elasticity *:	12840 MPa	2496 MPa
Total tangential shrinkage (TS):	5,4 %	0,7 %	(*: at 12% moisture content, with 1 MPa = 1 N/mm <sup>2</sup> )		
Total radial shrinkage (RS):	3,5 %	0,4 %	Musical quality factor: 126,8 measured at 2527 Hz		
TS/RS ratio:	1,5				
Fiber saturation point:	23 %				
Stability: moderately stable					

## 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)	
	Green	dry-bulb	wet-bulb
	40	50	47
	30	55	47
	20	70	55
	15	75	58
			Air humidity (%)
			84
			75
			67
			47
			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-USAGES

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

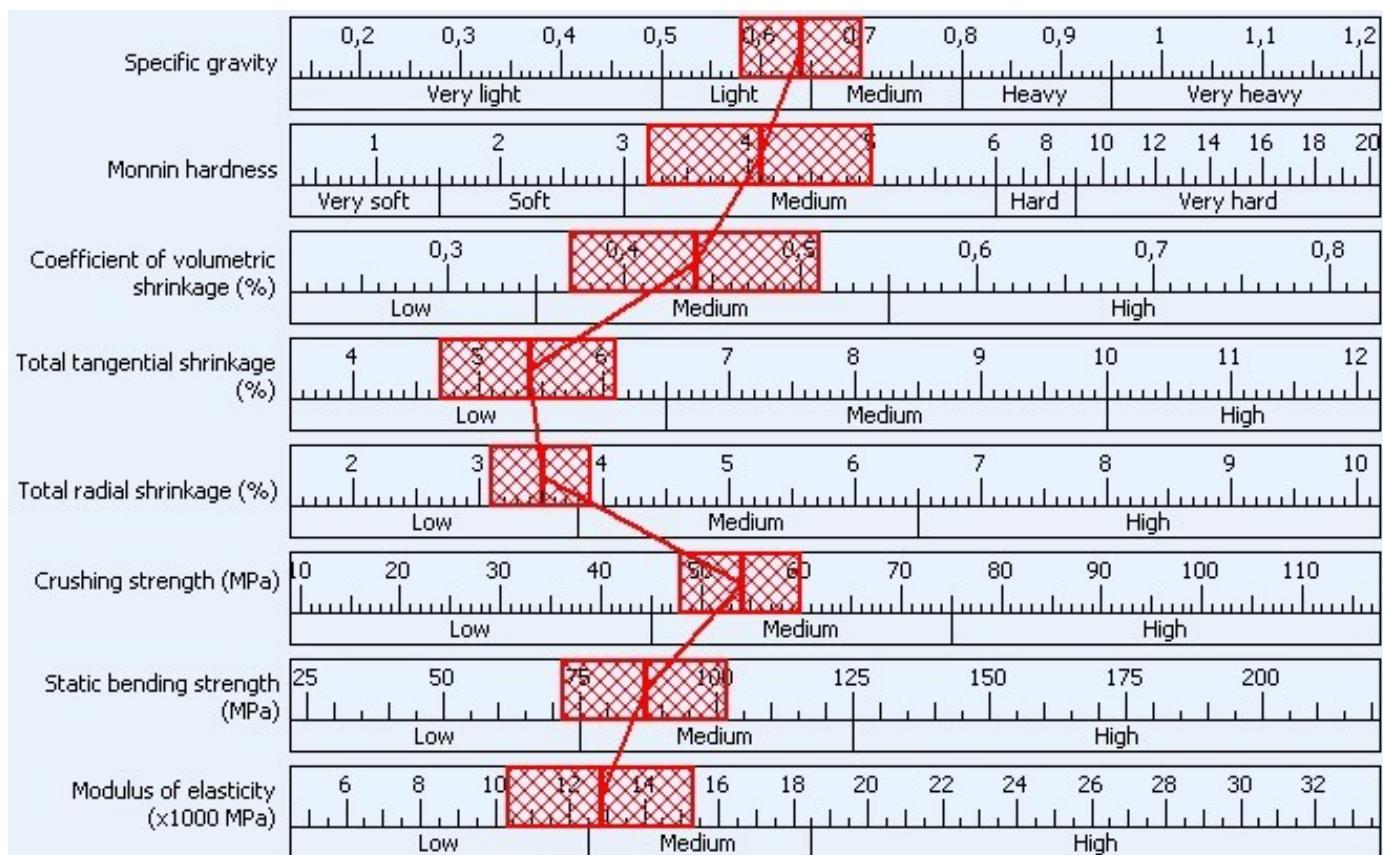
Vehicle or container flooring

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		



Resistance to fungi	Not durable	Poorly durable	Moderately durable	Durable	Very durable
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Resistance to dry wood insects borers	Susceptible	Durable
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Resistance to termites	Susceptible	Moderately durable	Durable
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Treatability	Not permeable	Poorly permeable	Moderately permeable	Easily permeable
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Stability	Poorly stable	Moderately stable	Stable
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