

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 color.

LOG DESCRIPTION

Diameter: 31 – 40 inches
Thickness of Sapwood: 1.9 – 3.9 inches
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
Janka Hardness (lbs):	1,260	
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/ACOUSTIC

	<u>Mean</u>
Crushing Strength*:	7,832 lbf
Static Bending Strength*:	12,618 lbf
Modulus of Elasticity*:	1,862,284 lbf

Musical Quality Factor: 127.8 measured at 259 Hz

**At 12% moisture content.*

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:	class D - 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
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 (°F)		Air Humidity (%)
	Dry-Bulb	Wet-Bulb	
Green	122	116.6	84
40	122	113	75
30	131	116.6	67
20	158	131	47
15	167	136.4	44

This schedule is given for information only and is applicable to thickness lower or equal to 1.5 in. It must be used in compliance with the code of practice. For thickness from 1.5 to 3 in, the air relative humidity should be increased by 5% at each step. For thickness over 3 in, 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

END-USES

Furniture or Furniture Components
Interior paneling
Flooring
Turned goods
Interior & Exterior Paneling
Cabinetwork (High Class Furniture)
Interior & Exterior Joinery
Stairs (Interior)
Ship building (Planking and Deck)
Sliced veneer
Light carpentry
Bridges (parts not in contact with water or ground)

MAIN LOCAL NAMES

Country	Local Name
Angola	Moreira
Cameroon	Abang
Ivory Coast	Iroko
Ghana	Odoum
Dem. Rep. of the Congo	Kambala, Mokongo, Lusanga
Angola	Moreira
Gabon	Mandji
Mozambique	Tule
Belgium	Kambala
Nigeria	Rokko

Note: Filling recommended. Wood sometimes resistant to wood finish product: IROKO contains a non-saturated phenolic compound, the chlorophorin, which is a powerful antioxidant. It is necessary to use paints or varnishes without free siccativ oil. Synthetic resin-based paints or varnishes such as vinyl paints or polyurethane varnishes that can also be used as an undercoat.

Works Cited:

CIRAD'S *Biomass, Wood, Energy, Bioproducts Research Unit (BioWooEB)*
 Meier, E. (2015), Wood, United States of America