

Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)

Scientific name(s): Afzelia africana  
Afzelia bella  
Afzelia bipindensis  
Afzelia pachyloba

Commercial restriction: no commercial restriction

## WOOD DESCRIPTION

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

Note: Wood golden brown to light red brown, sometimes with darker veins. Afzelia bipindensis can often be identified by the presence of yellow powder at the heart.

## LOG DESCRIPTION

Diameter: from 60 to 90 cm  
Thickness of sapwood: from 2 to 5 cm  
Floats: no  
Log durability: good

## 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 *:	0,80	0,06
Monnin hardness *:	7,7	1,6
Coeff. of volumetric shrinkage:	0,44 %	0,10 %
Total tangential shrinkage (TS):	4,4 %	0,7 %
Total radial shrinkage (RS):	3,0 %	0,5 %
TS/RS ratio:	1,5	
Fiber saturation point:	19 %	
Stability:	stable	

## MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	74 MPa	10 MPa
Static bending strength *:	124 MPa	23 MPa
Modulus of elasticity *:	17020 MPa	2889 MPa

(\*: at 12% moisture content, with 1 MPa = 1 N/mm<sup>2</sup>)

Musical quality factor: 124,8 measured at 2708 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 - very 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 4 - in ground or fresh water contact

Species covering the use class 5: No

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

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: slow	Possible drying schedule: 5			
Risk of distortion: slight risk		Temperature (°C)		
Risk of casehardening: no	M.C. (%)	dry-bulb	wet-bulb	Air humidity (%)
Risk of checking: slight risk	30	42	41	94
Risk of collapse: no	25	42	39	82
Note: Difficulties in extracting moisture from the heart of pieces. Slow drying necessary (3 to 5 months).	20	48	43	74
	15	48	43	74

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: not recommended or without interest

Slicing: nood

Note: Peeling recommended only for decorative veneer. Sawdust may cause irritations. Some difficulties due to interlocked grain (tearing).

## ASSEMBLING

Nailing / screwing: good but pre-boring necessary

Gluing: correct (for interior only)

Note: Tends to split when nailing. Gluing may be difficult due to the presence of wood extractives.

## 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

Ship building (ribs)

Exterior joinery

Stairs (inside)

Bridges (parts not in contact with water or ground)

Exterior panelling

Current furniture or furniture components

Industrial or heavy flooring

Wood frame house

Resistant to one or several acids

Sliced veneer

Note: Yellow powder often visible in areas near the heart contain substances that might hinder varnish drying.

Ship building (planking and deck)

Interior joinery

Flooring

Interior panelling

Cabinetwork (high class furniture)

Cooperage

Heavy carpentry

Shingles

Bridges (parts in contact with water or ground)

Filling is recommended to obtain a good finish.

## MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Angola	N'KOKONGO	Angola	UVALA
Benin	KPAKPATIN	Benin	PAKPAJIDE
Cameroon	DOUSSIE	Cameroon	M'BANGA
Congo	N' KOKONGO	Ivory Coast	AZODAU
Ivory Coast	LINGUE	Gabon	EDOUMEULEU
Ghana	PAPAO	Guinea-Bissau	PAU CONTA
Mozambique	CHANFUTA	Mozambique	MUSSACOSSA
Nigeria	APA IGBO	Democratic Republic of the Congo	BOLENGU
Senegal	LINGUE	Sierra Leone	KPENDEI
Tanzania	MBEMBAKOFI	Tanzania	MKORA
Germany	AFZELIA	Portugal	CHANFUTA
United Kingdom	AFZELIA		

