EKABA

Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)

Scientific name(s): Tetraberlinia bifoliolata
Berlinia bifoliolata (synonymous)
Tetraberlinia tubmaniana

Commercial restriction: no commercial restriction

Note: EKABA is often confused with ANDOUNG (Monopetalanthus spp.).

WOOD DESCRIPTION

Color: pinkish brown
Sapwood: not clearly demarcated
Texture: medium
Grain: straight or interlocked
Interlocked grain: slight
Note: Possible presence of wind shakes.

LOG DESCRIPTION

Diameter: from 70 to 100 cm
Thickness of sapwood: from 2 to 12 cm
Floats: yes
Log durability: moderate (treatment recommended)

PHYSICAL PROPERTIES

MECHANICAL AND ACOUSTIC PROPERTIES

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

	Mean	Std dev.
Specific gravity *:	0,62	0,07
Monnin hardness *:	3,0	0,6
Coeff. of volumetric shrinkage:	0,50 %	0,07 %
Total tangential shrinkage (TS):	7,8 %	1,2 %
Total radial shrinkage (RS):	4,1 %	0,7 %
TS/RS ratio:	1,9	
Fiber saturation point:	27 %	

	Mean	Std dev.
Crushing strength *:	56 MPa	8 MPa
Static bending strength *:	90 MPa	15 MPa
Modulus of elasticity *:	13760 MPa	2030 MPa

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

Musical quality factor: 94,8 measured at 2842 Hz

Stability: moderately stable

Note: T. bifoliolata has lower physical and mechanical properties than T. tubmaniana.

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: susceptible - sapwood not or slightly demarcated (risk in all the wood)
Termites (according to E.N. standards): class S - susceptible
Treatability (according to E.N. standards): class 2 - moderately permeable
Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)
Species covering the use class 5: No

REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: requires appropriate 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: normal to slow

Risk of distortion: high risk

Risk of casehardening: no

Risk of checking: high risk

Risk of collapse: no

Note: Risks of discoloration during drying.

Possible drying schedule: 6

M.C. (%)	Temperature (°C) dry-bulb	wet-bulb	Air humidity (%)
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: normal

Sawteeth recommended: ordinary or alloy steel

Cutting tools: ordinary

Peeling: good

Slicing: not recommended or without interest

Note: Risks of grain tearing in presence of interlocked grain; a reduced cutting angle is then recommended.

ASSEMBLING

Nailing / screwing: poor

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)

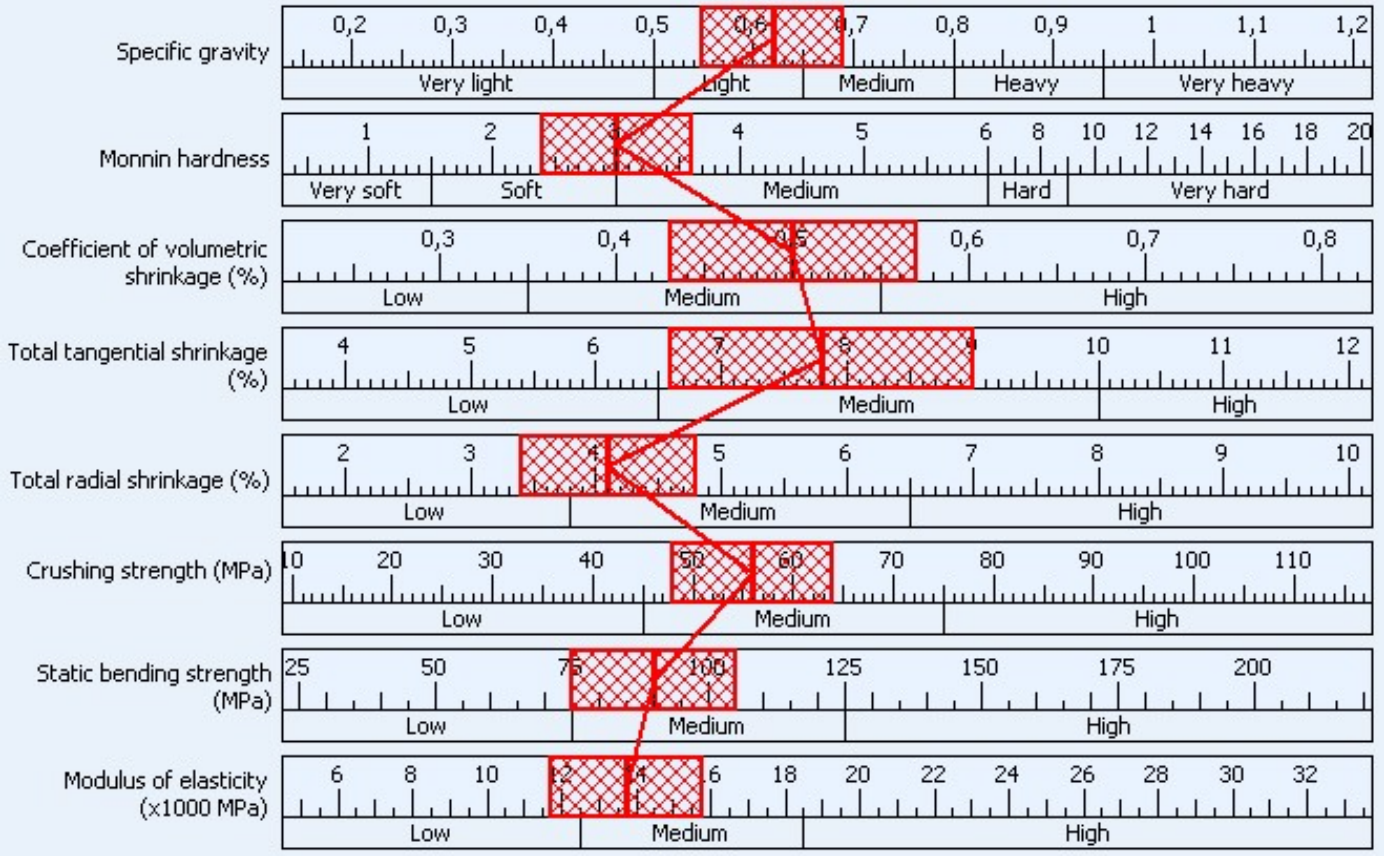
Euroclasses grading: D s2 d0
Default grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2009). It concerns structural graded timber in vertical uses with mean density upper 0.35 and thickness upper 22 mm.

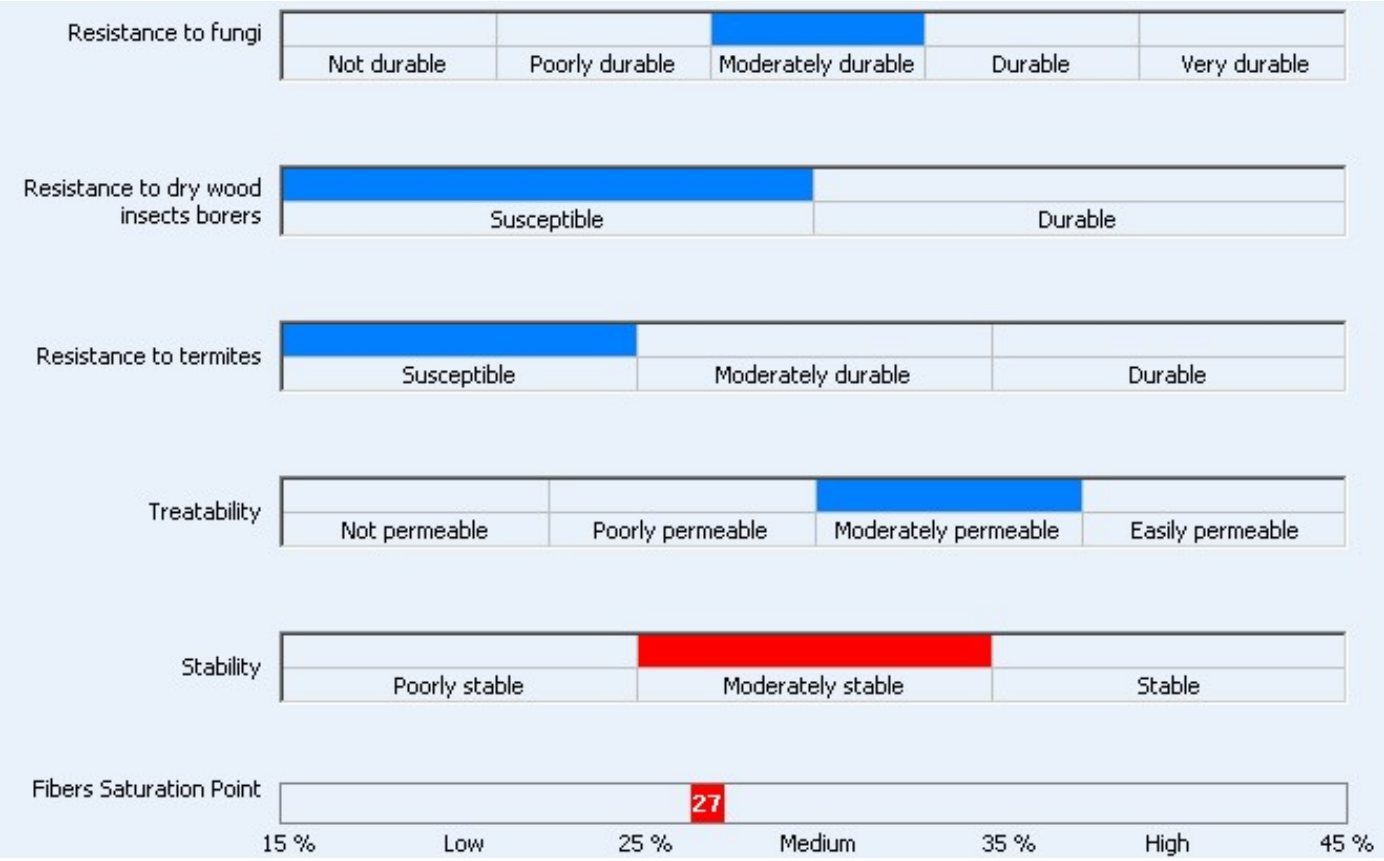
END-USES

Veneer for interior of plywood
Blockboard
Glued laminated
Moulding
Formwork
Turned goods
Exterior panelling
Interior panelling
Veneer for back or face of plywood
Light carpentry
Wood frame house
Boxes and crates
Current furniture or furniture components
Exterior joinery
Interior joinery

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Cameroon	EKOP-RIBI	Congo	EKO-ANDOUNG
Gabon	EKO-ANDOUNG	Equatorial Guinea	EKOP
Liberia	HOH	Liberia	SIKON
Germany	EKOP	Spain	EKABAN
Netherlands	EKOP	United Kingdom	TETRABERLINIA


Specific gravity
0,2 0,3 0,4 0,5 0,6 0,7 0,8 0,9 1 1,1 1,2
Very light
Light
Medium
Heavy
Very heavy
Monnin hardness
1 2 3 4 5 6 8 10 12 14 16 18 20
Very soft
Soft
Medium
Hard
Very hard
Coefficient of volumetric shrinkage (%)
0,3 0,4 0,5 0,6 0,7 0,8
Low
Medium
High
Total tangential shrinkage (%)
4 5 6 7 8 9 10 11 12
Low
Medium
High
Total radial shrinkage (%)
2 3 4 5 6 7 8 9 10
Low
Medium
High
Crushing strength (MPa)
10 20 30 40 50 60 70 80 90 100 110
Low
Medium
High
Static bending strength (MPa)
25 50 75 100 125 150 175 200
Low
Medium
High
Modulus of elasticity (x1000 MPa)
6 8 10 12 14 16 18 20 22 24 26 28 30 32
Low
Medium
High


Resistance to fungi
Not durable
Poorly durable
Moderately durable
Durable
Very durable
Resistance to dry wood insects borers
Susceptible
Durable
Resistance to termites
Susceptible
Moderately durable
Durable
Treatability
Not permeable
Poorly permeable
Moderately permeable
Easily permeable
Stability
Poorly stable
Moderately stable
Stable
Fibers Saturation Point
27
15 %
Low
25 %
Medium
35 %
High
45 %