KEKELE

Family: ULMACEAE (angiosperm)
Scientific name(s): Holoptelea grandis
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: light yellow
Sapwood: not demarcated
Texture: medium
Grain: straight or interlocked
Interlocked grain: slight
Note: Wood cream white to light yellow.

LOG DESCRIPTION

Diameter: from 80 to 110 cm
Thickness of sapwood:
Floats: no
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 *:	0,65	0,05
Monnin hardness *:	3,2	0,5
Coeff. of volumetric shrinkage:	0,54 %	0,07 %
Total tangential shrinkage (TS):	8,3 %	0,8 %
Total radial shrinkage (RS):	4,4 %	0,4 %
TS/RS ratio:	1,9	
Fiber saturation point:	26 %	
Stability:	moderately stable	

	Mean	Std dev.
Crushing strength *:	60 MPa	3 MPa
Static bending strength *:	105 MPa	11 MPa
Modulus of elasticity *:	14960 MPa	1920 MPa

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

Musical quality factor: 114,2 measured at 2651 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 5 - not durable
Dry wood borers: susceptible - sapwood not or slightly demarcated (risk in all the wood)
Termites (according to E.N. standards): class M - moderately durable
Treatability (according to E.N. standards): class 2 - moderately permeable
Use class ensured by natural durability: class 1 - inside (no dampness)
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

Risk of distortion: slight risk

Risk of casehardening: yes

Risk of checking: high risk

Risk of collapse: no

Note: Kiln drying must be handled with care in order to avoid risks of casehardening (low speed and high humidity).

Possible drying schedule: 3

M.C. (%)	Temperature (°C) dry-bulb	wet-bulb	Air humidity (%)
Green	60	56	81
30	68	58	61
20	74	60	51
15	80	61	41

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: nood

Note: Sometimes difficulties due to interlocked 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)

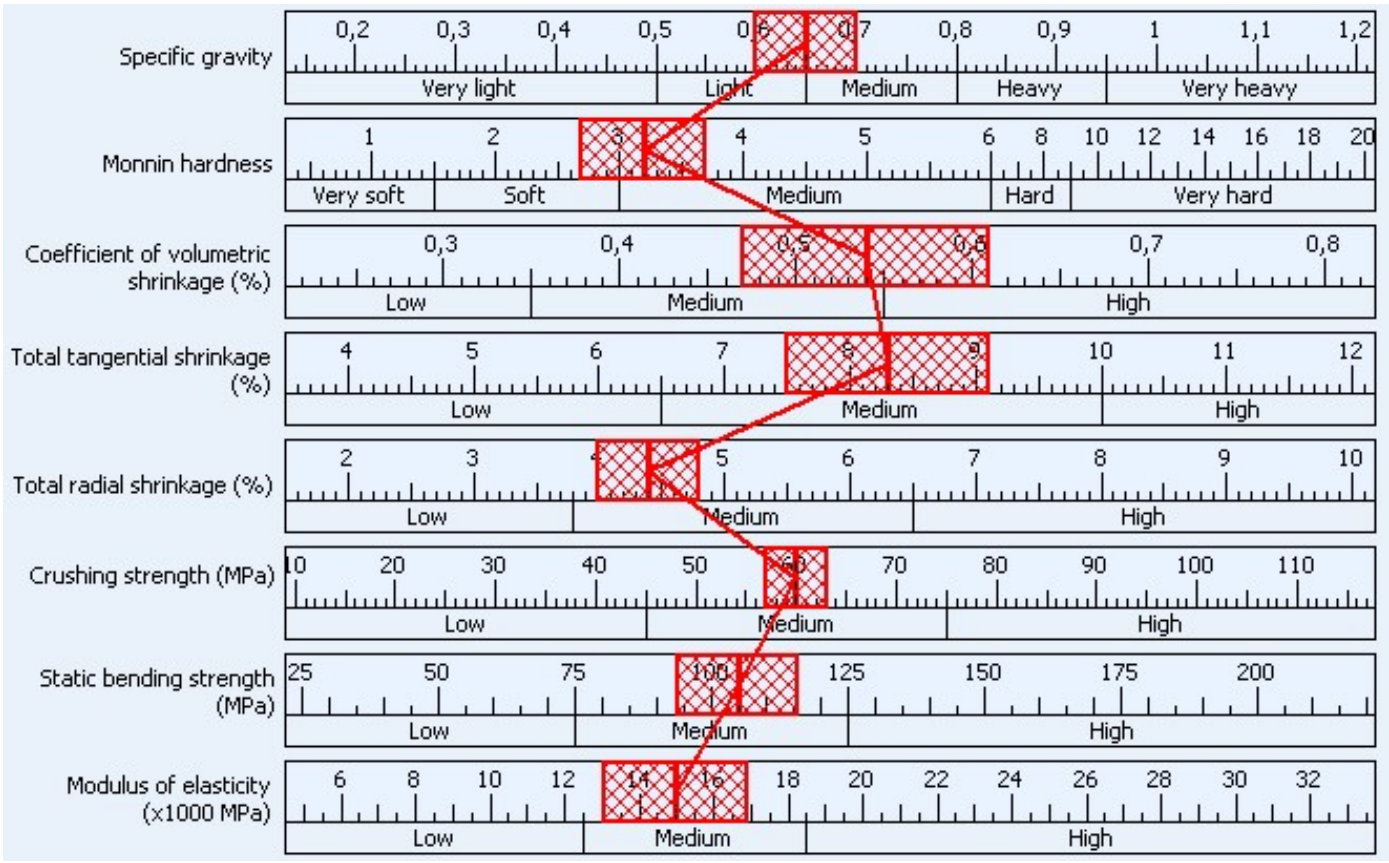
Euroclasses grading: D s2 d0
Default grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2009). It concerns structural graded timber in vertical uses with mean density upper 0.35 and thickness upper 22 mm.

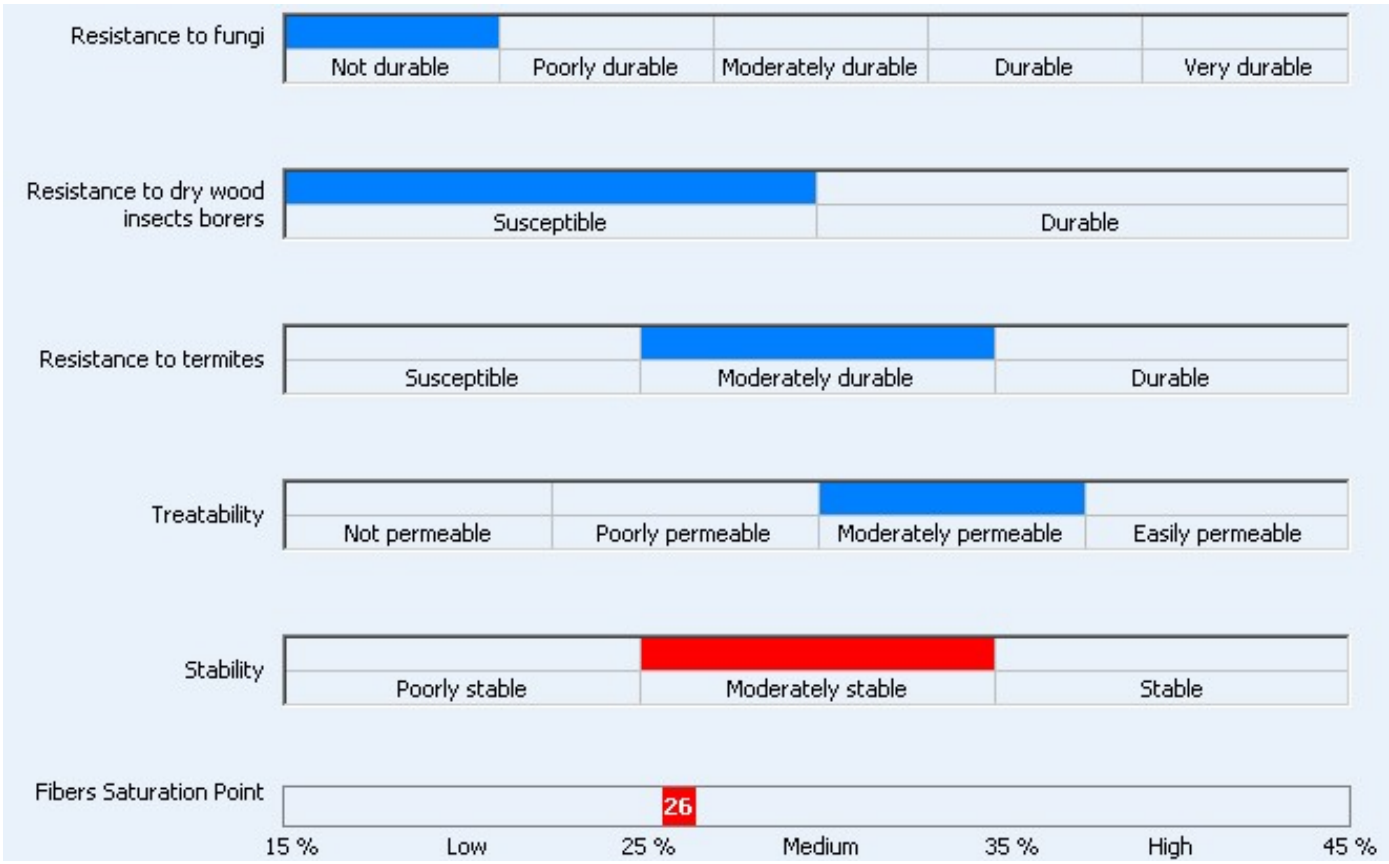
END-USES

Matches
Current furniture or furniture components
Cabinetwork (high class furniture)
Veneer for interior of plywood
Boxes and crates
Wood frame house
Interior joinery
Sliced veneer
Veneer for back or face of plywood
Turned goods
Light carpentry
Flooring

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Benin	SAYO	Cameroon	AVEP-ELE
Congo	MBOSSO	Ivory Coast	KEKELE
Ghana	ONAKWA	Nigeria	OLAZO
Uganda	MUMULI	Central African Republic	GOMBOUL
Democratic Republic of the Congo	NEMBA-MBOBOLO		


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
26
15 %
Low
25 %
Medium
35 %
High
45 %