FRAMIRE

Family: COMBRETACEAE (angiosperm)
Scientific name(s): Terminalia ivorensis
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: yellow
Sapwood: not clearly demarcated
Texture: medium
Grain: straight or interlocked
Interlocked grain: slight
Note: Brittleheart and possible wind shakes.
Wood yellow more or less light, sometimes with greenish shades. Ribbon like aspect due to interlocked grain.

LOG DESCRIPTION

Diameter: from 65 to 85 cm
Thickness of sapwood: from 2 to 5 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 *:	0,50	0,07
Monnin hardness *:	1,9	0,7
Coeff. of volumetric shrinkage:	0,37 %	0,06 %
Total tangential shrinkage (TS):	5,2 %	0,9 %
Total radial shrinkage (RS):	3,6 %	0,7 %
TS/RS ratio:	1,4	
Fiber saturation point:	27 %	

Stability: stable

	Mean	Std dev.
Crushing strength *:	44 MPa	6 MPa
Static bending strength *:	71 MPa	12 MPa
Modulus of elasticity *:	11350 MPa	2185 MPa

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

Musical quality factor: 125,4 measured at 2492 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 2-3 - durable to 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 4 - not permeable
Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)
Species covering the use class 5: No
Note: This species is listed in the European standard NF EN 350-2.

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: rapid
Risk of distortion: no risk or very slight risk
Risk of casehardening: no
Risk of checking: no risk or very slight risk
Risk of collapse: no

Possible drying schedule: 2

	Temperature (°C)		
M.C. (%)	dry-bulb	wet-bulb	Air humidity (%)
Green	50	47	84
40	50	45	75
30	55	47	67
20	70	55	47
15	75	58	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: normal
Sawteeth recommended: ordinary or alloy steel
Cutting tools: ordinary
Peeling: good
Slicing: nood
Note: In machining, risk of tearing due to interlocked grain. Sawdust may cause irritations. Filling is necessary to obtain a good finish.

ASSEMBLING

Nailing / screwing: good
Gluing: correct
Note: Gluing must be done with care: wood is acid.

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.

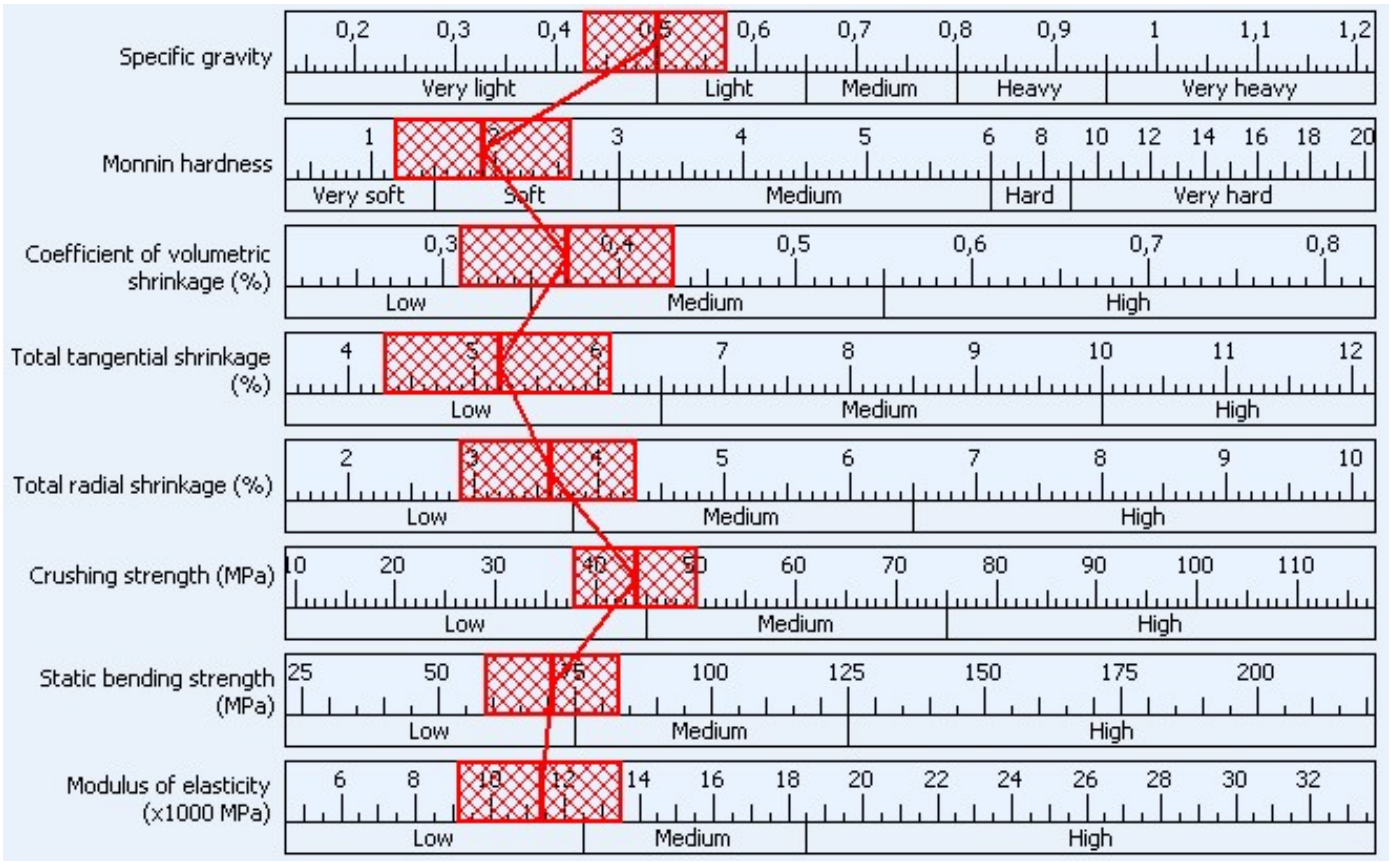
END-USES

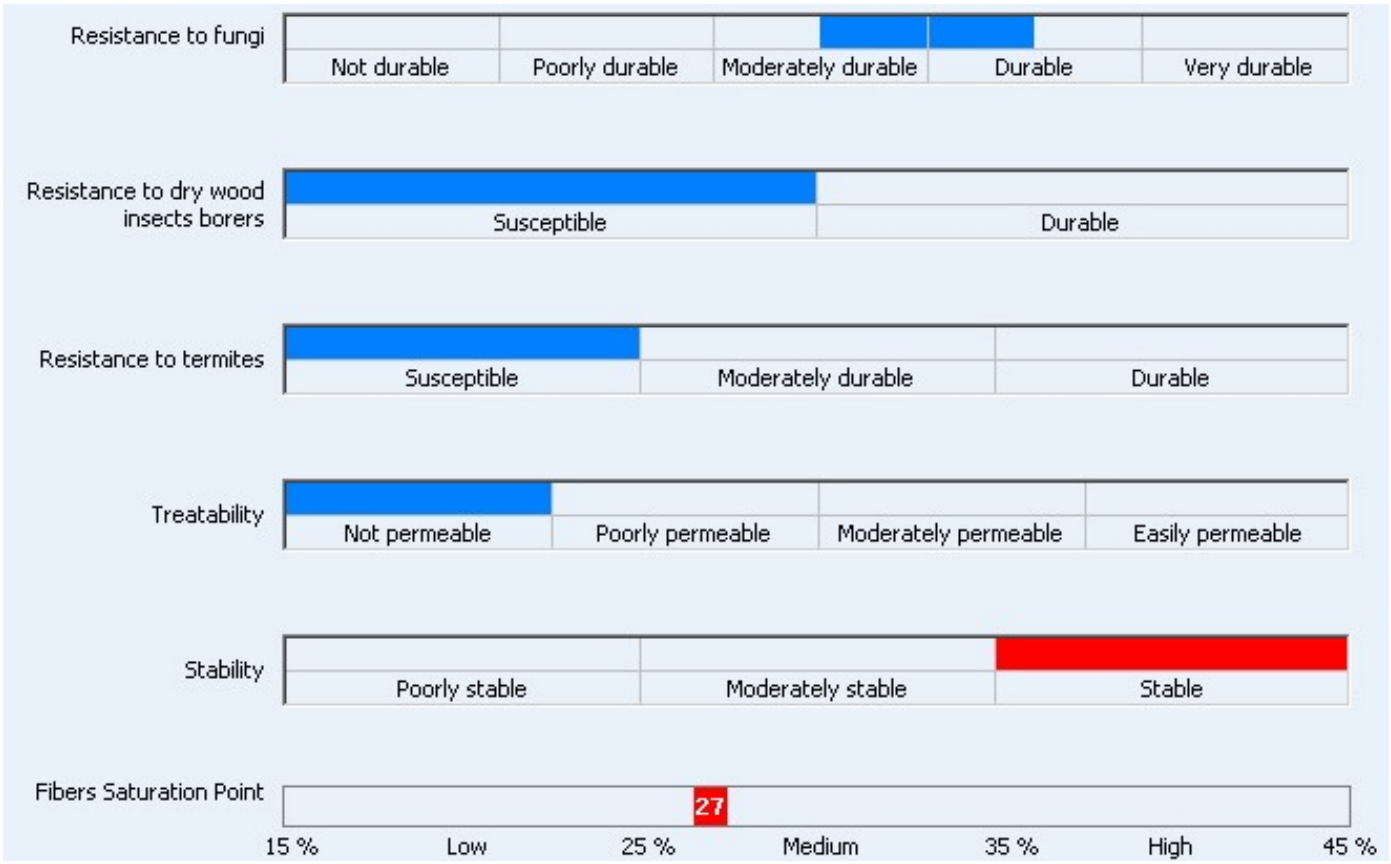
Exterior joinery
Interior panelling
Moulding
Veneer for interior of plywood
Sliced veneer
Stairs (inside)
Rolling shutters
Light carpentry
Interior joinery
Exterior panelling
Current furniture or furniture components
Veneer for back or face of plywood
Flooring
Turned goods
Seats
Glued laminated

Note: FRAMIRE contains yellow tannins that may stain with humidity. For external end-uses, paint is preferable to varnish.

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Benin	IDIGBO	Cameroon	LIDIA
Ivory Coast	FRAMIRE	Ghana	EMERI
Liberia	BAJII	Nigeria	BLACK AFARA
Nigeria	IDIGBO	Sierra Leone	BAJII
United Kingdom	IDIGBO		


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 %