# ESSIA

Family: LECYTHIDACEAE (angiosperm)

Scientific name(s): Petersianthus macrocarpus
Combretodendron macrocarpum (synonymous)

Commercial restriction: no commercial restriction

## WOOD DESCRIPTION

Color: red brown
Sapwood: clearly demarcated
Texture: medium
Grain: interlocked
Interlocked grain: marked

## LOG DESCRIPTION

Diameter: from 60 to 100 cm
Thickness of sapwood: from 8 to 10 cm
Floats: no
Log durability: low (must be treated)

Note: Unpleasant odour when green. Wood yellowish pink to red brown with variable aspect. Grain straight or wavy.

## PHYSICAL 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 *: | 0,80 | 0,06 |
| Monnin hardness *: | 4,0 | 1,0 |
| Coeff. of volumetric shrinkage: | 0,53 % | 0,17 % |
| Total tangential shrinkage (TS): | 9,2 % | 1,2 % |
| Total radial shrinkage (RS): | 4,7 % | 0,7 % |
| TS/RS ratio: | 2,0 | |
| Fiber saturation point: | 36 % | |

Stability: moderately stable to poorly stable

## MECHANICAL AND ACOUSTIC PROPERTIES

| | Mean | Std dev. |
|---|---|---|
| Crushing strength *: | 57 MPa | 11 MPa |
| Static bending strength *: | 103 MPa | 19 MPa |
| Modulus of elasticity *: | 12870 MPa | 2398 MPa |

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

## 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: durable - sapwood demarcated (risk limited to sapwood)
Termites (according to E.N. standards): class M - moderately durable
Treatability (according to E.N. standards): class 3 - poorly permeable
Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)
Species covering the use class 5: No
Note: Wide sapwood sensible to insect attacks.

## REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: does not require any 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: slow
Risk of distortion: high risk
Risk of casehardening: no
Risk of checking: high risk
Risk of collapse: yes
Note: Quartersawn recommended especially for thick dimensions. Kiln drying very difficult. It is recommended to dry thin dimensions.

## SAWING AND MACHINING

Blunting effect: normal
Sawteeth recommended: stellite-tipped
Cutting tools: tungsten carbide
Peeling: bad
Slicing: nood
Note: Machining more or less easy according to interlocked grain, especially in planing (tearing).

## ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: poor
Note: Risks of splits with thin dimensions.

## 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.

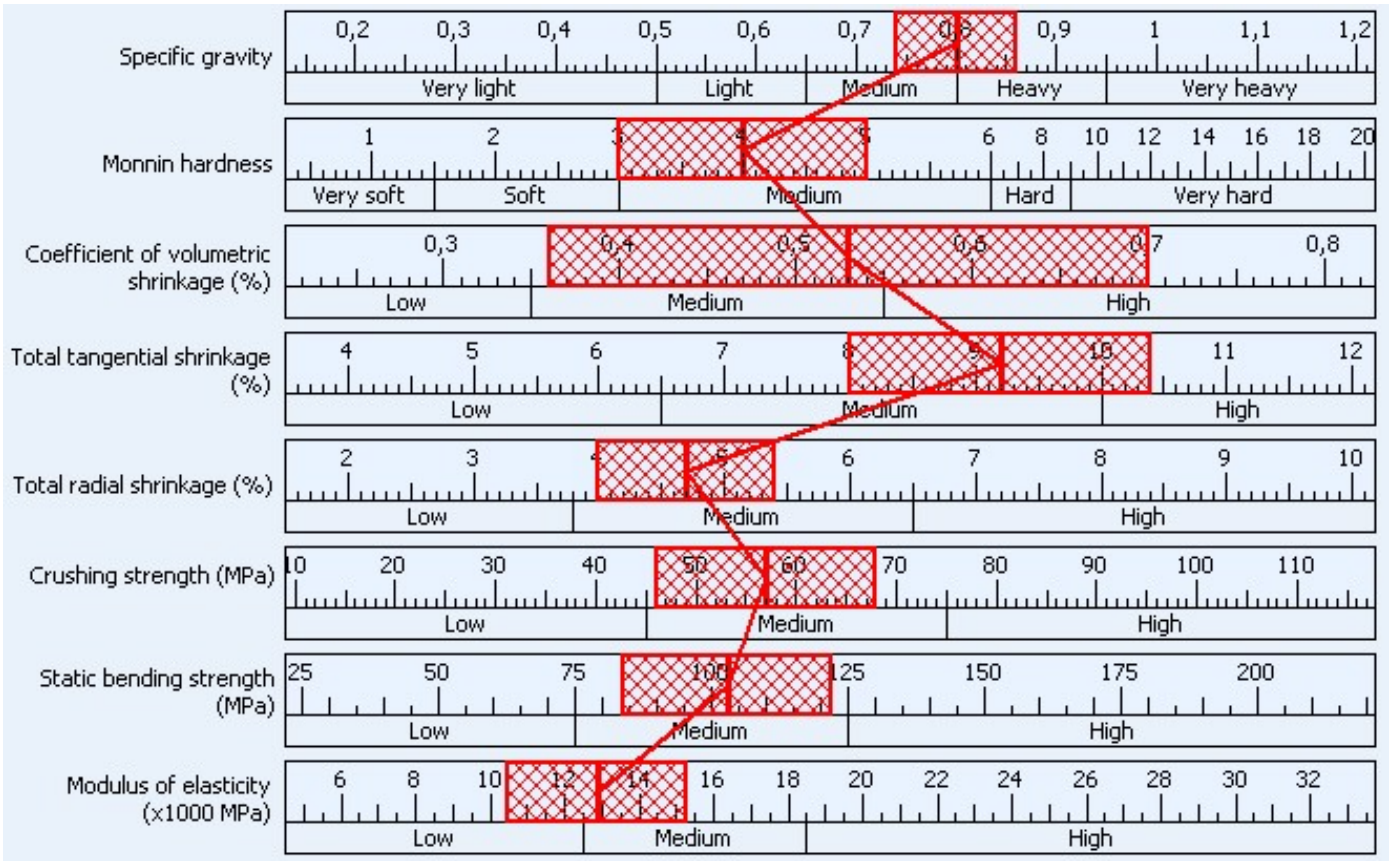
## END-USES

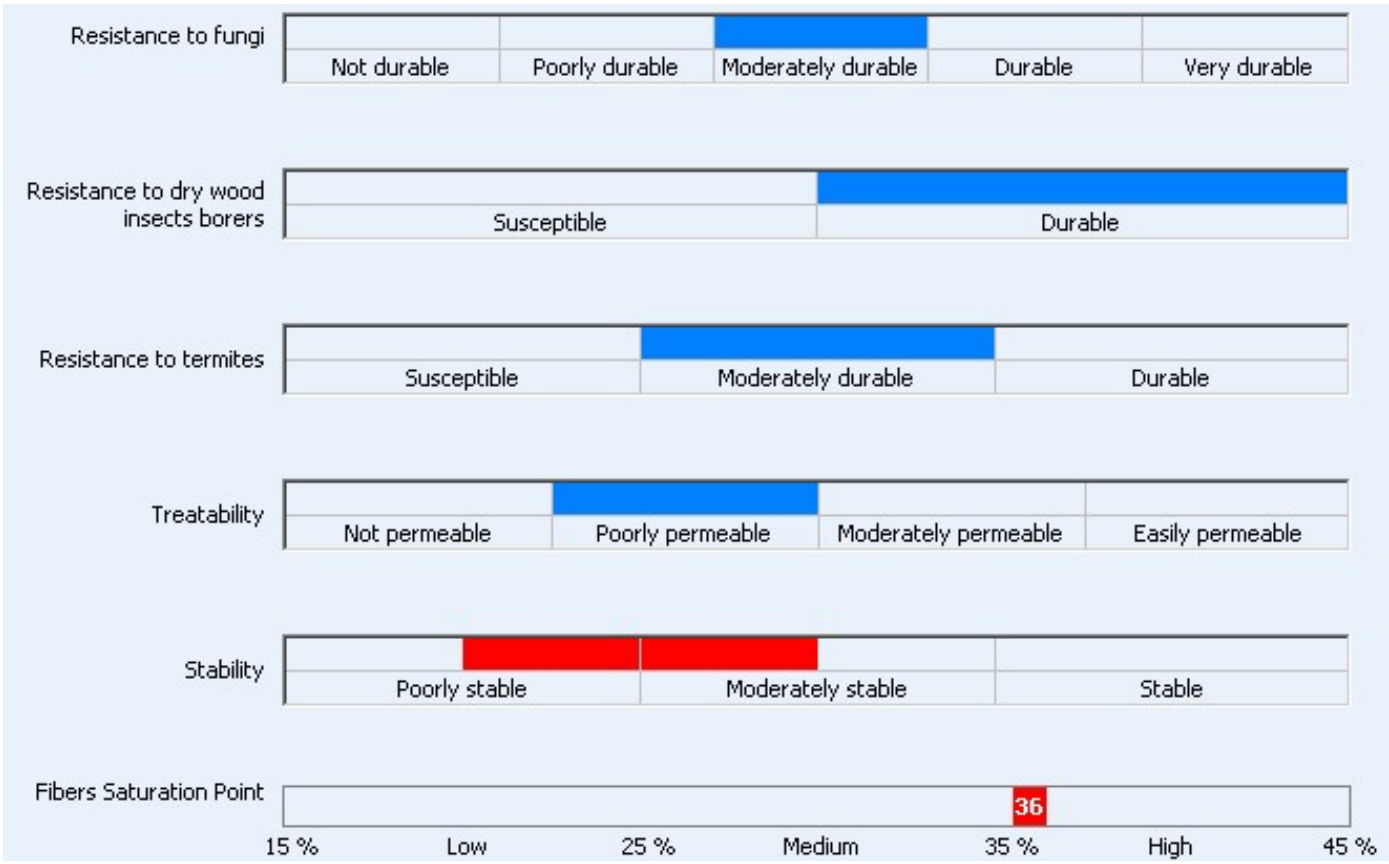
Heavy carpentry
Vehicle or container flooring
Sliced veneer

Note: Mottled, striated, veined or moiré wood are in great demand for decorative sliced veneer.

## MAIN LOCAL NAMES

| Country | Local name | Country | Local name |
|---|---|---|---|
| Cameroon | ABING | Congo | MINZU |
| Gabon | ABIN | Gabon | ABING |
| Ghana | ESIA | Ghana | ESSIA |
| Nigeria | OWEWE | Central African Republic | NOSSOBA |
| Democratic Republic of the Congo | BOSSOHO | Democratic Republic of the Congo | WULO |
| France | ABALE | | |


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
36
15 %
Low
25 %
Medium
35 %
High
45 %