ALEP

Family: IRVINGIACEAE (angiosperm)

Scientific name(s): Desbordesia glaucescens (synonymous)
Desbordesia insignis

Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: yellow brown

Sapwood: clearly demarcated

Texture: fine

Grain: straight

Interlocked grain: absent

Note: Logs must be sawn quickly after felling (cracks during drying).
Wood turns to dark brown with air. Dark veins more or less numerous.

LOG DESCRIPTION

Diameter: from 90 to 100 cm

Thickness of sapwood: from 5 to 8 cm

Floats: no

Log durability: no information available

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 *:	1,05	0,05
Monnin hardness *:	10,9	0,8
Coeff. of volumetric shrinkage:	0,67 %	0,15 %
Total tangential shrinkage (TS):	10,9 %	0,6 %
Total radial shrinkage (RS):	6,8 %	0,4 %
TS/RS ratio:	1,6	
Fiber saturation point:	28 %	

Stability: poorly stable

	Mean	Std dev.
Crushing strength *:	80 MPa	15 MPa
Static bending strength *:	157 MPa	13 MPa
Modulus of elasticity *:	23390 MPa	3350 MPa

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

Musical quality factor: 109,3 measured at 2918 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 3 - poorly permeable

Use class ensured by natural durability: class 4 - in ground or fresh water contact

Species covering the use class 5: Yes

Note: This species naturally covers the use class 5 (end-uses in marine environment or in brackish water) due to its high specific gravity and its hardness.
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
Risk of distortion: high risk
Risk of casehardening: no information available
Risk of checking: high risk
Risk of collapse: no information available

Possible drying schedule: 1

M.C. (%)	Temperature (°C) dry-bulb	wet-bulb	Air humidity (%)
Green	40	37	82
40	44	38	68
30	44	36	59
20	46	36	52
15	49	37	46

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: not recommended or without interest
Note: Requires power.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: correct (for interior only)
Note: Gluing must be done with care (very dense wood).

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.

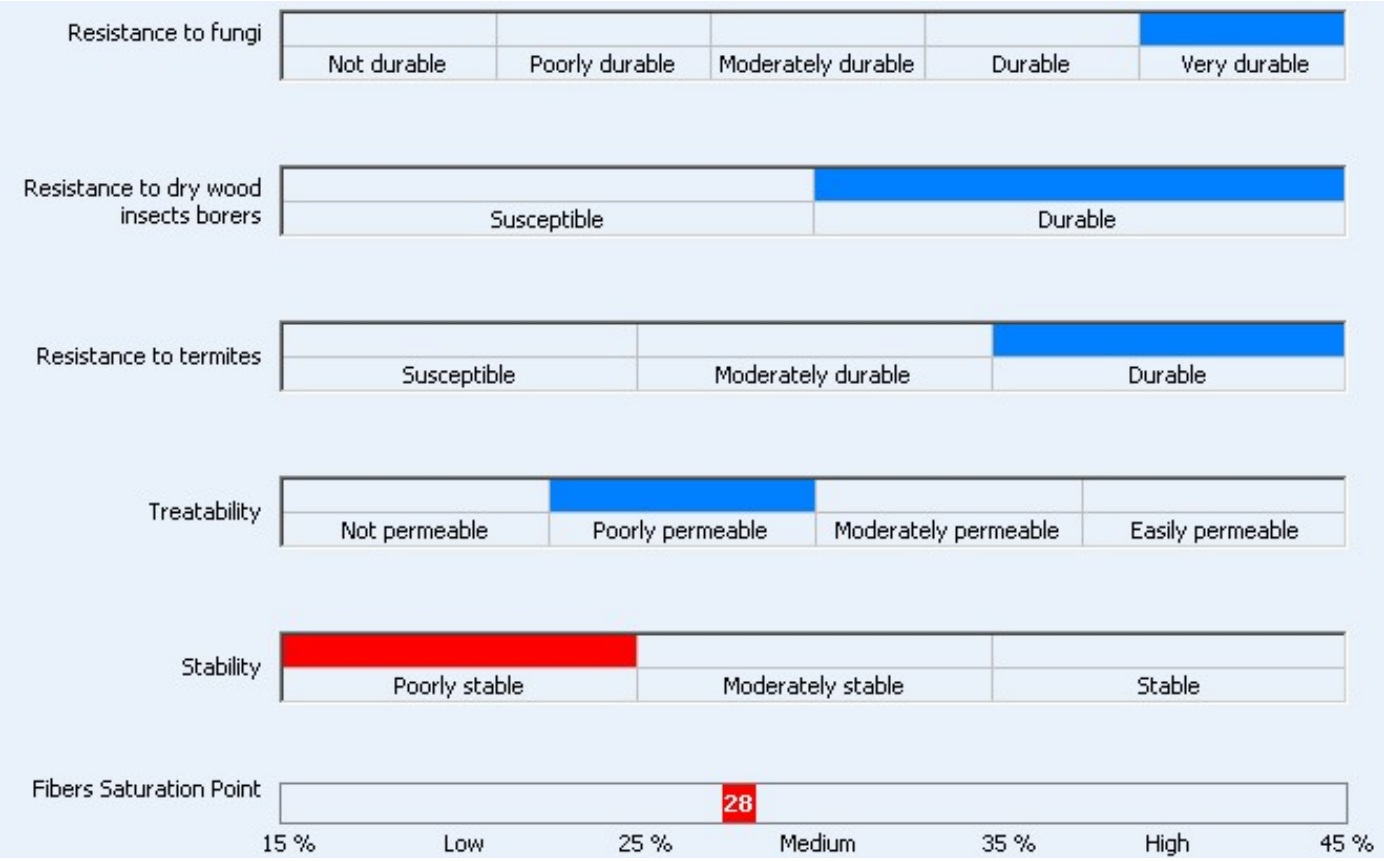
END-USES

Heavy carpentry
Poles
Vehicle or container flooring
Bridges (parts not in contact with water or ground)
Sleepers
Bridges (parts in contact with water or ground)
Hydraulic works (fresh water)

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Cameroon	OMANG	Congo	BENGA
Gabon	ALEP	Nigeria	KOWO
Democratic Republic of the Congo	BENGA		


Specific gravity
0,2 0,3 0,4 0,5 0,6 0,7 0,8 0,9 1,1 1,2
Very light Light Medium Heavy Very heavy
Monnin hardness
1 2 3 4 5 6 8 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 12
Low Medium High
Total radial shrinkage (%)
2 3 4 5 6 8 9 10
Low Medium High
Crushing strength (MPa)
10 20 30 40 50 60 70 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 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
28
15 % Low 25 % Medium 35 % High 45 %