MERSAWA

Family: DIPTEROCARPACEAE (angiosperm)
Scientific name(s): Anisoptera spp.
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: orange - yellow
Sapwood: not clearly demarcated
Texture: coarse
Grain: straight or interlocked
Interlocked grain: slight
Note: Heartwood orangey yellow darkening to golden brown. Presence of whitish resin veins.

LOG DESCRIPTION

Diameter: from 60 to 150 cm
Thickness of sapwood: from 5 to 8 cm
Floats: yes
Log durability: moderate (treatment recommended)

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 *:	0,63	0,06
Monnin hardness *:	2,6	0,7
Coeff. of volumetric shrinkage:	0,52 %	0,10 %
Total tangential shrinkage (TS):	8,8 %	1,2 %
Total radial shrinkage (RS):	3,7 %	0,8 %
TS/RS ratio:	2,4	
Fiber saturation point:	32 %	

Stability: moderately stable to stable
Note: Hardness varies from soft to fairly hard.

MECHANICAL AND ACOUSTIC PROPERTIES

	Mean	Std dev.
Crushing strength *:	46 MPa	8 MPa
Static bending strength *:	83 MPa	16 MPa
Modulus of elasticity *:	12930 MPa	1507 MPa

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

Musical quality factor: 113,4 measured at 2665 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 4 - poorly 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 3-4 - poorly or not permeable
Use class ensured by natural durability: class 1 - inside (no dampness)
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: use not recommended
In case of risk of permanent humidification: use not recommended

DRYING

Drying rate: slow
Risk of distortion: slight risk
Risk of casehardening: no
Risk of checking: slight risk
Risk of collapse: no
Note: Drying requires care in order to avoid pocket moisture.

Possible drying schedule: 2

M.C. (%)	Temperature (°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: high
Sawteeth recommended: stellite-tipped
Cutting tools: tungsten carbide
Peeling: good
Slicing: nood
Note: Resin exudation in steaming. Tendency to tearing on quartersawn.

ASSEMBLING

Nailing / screwing: good
Gluing: correct

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to MGR grading rules (2009)
Possible grading: Prime, Select, Standard, Serviceable, Utility

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.

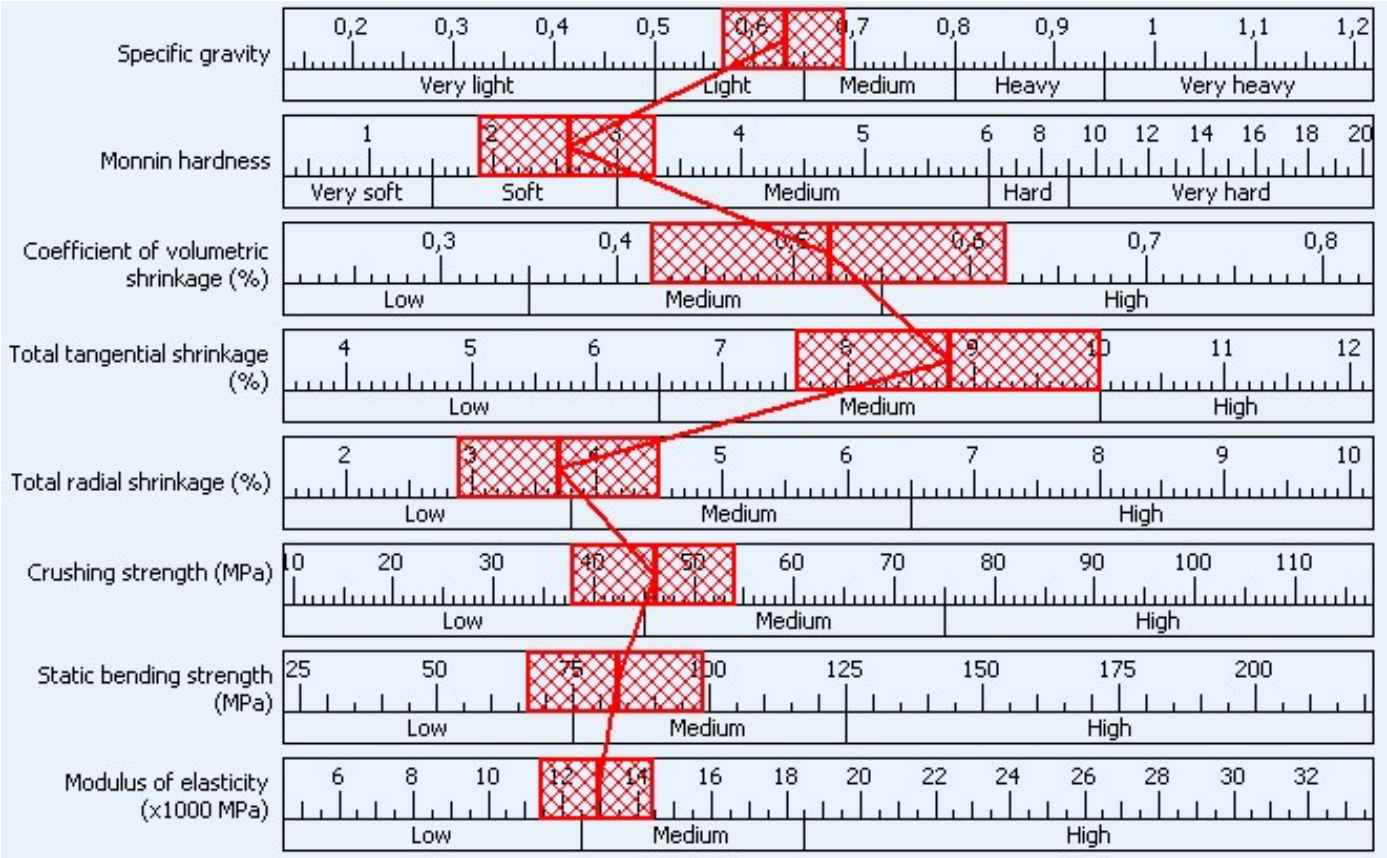
END-USES

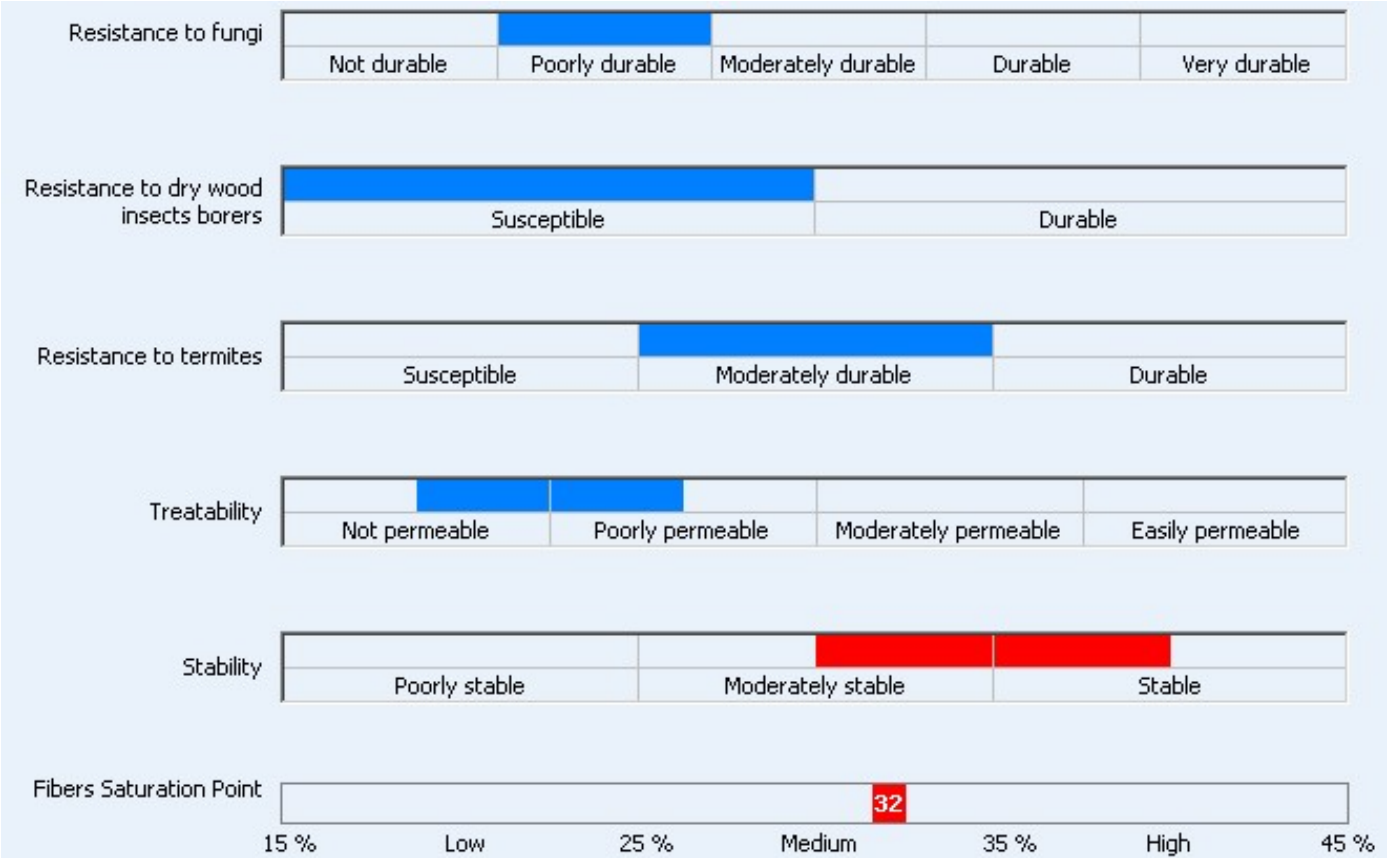
Glued laminated
Veneer for interior of plywood
Boxes and crates
Interior joinery
Moulding
Turned goods
Flooring
Veneer for back or face of plywood
Formwork
Current furniture or furniture components
Interior panelling
Sliced veneer

Note: Filling is recommended to obtain a good finish.

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Cambodia	PHDIEK	Indonesia	MERSAWA
Laos	MAI BAK	Peninsular Malaysia	PENGIRAN
Malaysia (islands)	MERSAWA	Myanmar	KAUNGHMU
Papua New Guinea	MERSAWA	Philippines	PALOSAPIS
Thailand	KRABAK	Thailand	PIK
Vietnam	VEN-VEN	France	VEN-VEN
United Kingdom	KRABAK	United States of America	BELLA ROSA


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
32
15 %
Low
25 %
Medium
35 %
High
45 %