SERAYA WHITE

Family: DIPTEROCARPACEAE (angiosperm)

Scientific name(s): Parashorea malaanonan
Parashorea tomentella

Commercial restriction: no commercial restriction

Note: WHITE SERAYA is usually used for Malaysian species, BAGTIKAN for species from the Philippines.

WOOD DESCRIPTION

Color: pinkish white

Sapwood: not clearly demarcated

Texture: coarse

Grain: interlocked

Interlocked grain: marked

Note: Some logs are not floatable. Frequent ring shakes and brittleheart (large trees).
Wood pinkish white to light yellow or light brown, with pink shades. More or less frequent white lines (resin canals). Numerous medium size regular rays.

LOG DESCRIPTION

Diameter: from 80 to 130 cm

Thickness of sapwood: from 2 to 7 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 *:	0,62	0,10
Monnin hardness *:	2,8	0,9
Coeff. of volumetric shrinkage:	0,54 %	0,06 %
Total tangential shrinkage (TS):	8,5 %	0,9 %
Total radial shrinkage (RS):	4,3 %	0,9 %
TS/RS ratio:	2,0	
Fiber saturation point:	28 %	

Stability: poorly stable

MECHANICAL AND ACOUSTIC PROPERTIES

	Mean	Std dev.
Crushing strength *:	50 MPa	7 MPa
Static bending strength *:	84 MPa	16 MPa
Modulus of elasticity *:	12370 MPa	2199 MPa

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

Musical quality factor: 114,3 measured at 2880 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 S - susceptible

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: Durability low to moderate. Presence of black holes.

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: no

Risk of checking: slight risk

Risk of collapse: no

Note: Some risks of distortion. Must be properly stacked to avoid these defects.

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: normal

Sawteeth recommended: ordinary or alloy steel

Cutting tools: ordinary

Peeling: good

Slicing: nood

Note: Risks of tearing. Tendency to woolliness in edging. Keep sharp tools. Interlocked grain produces a broad stripe figure 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.

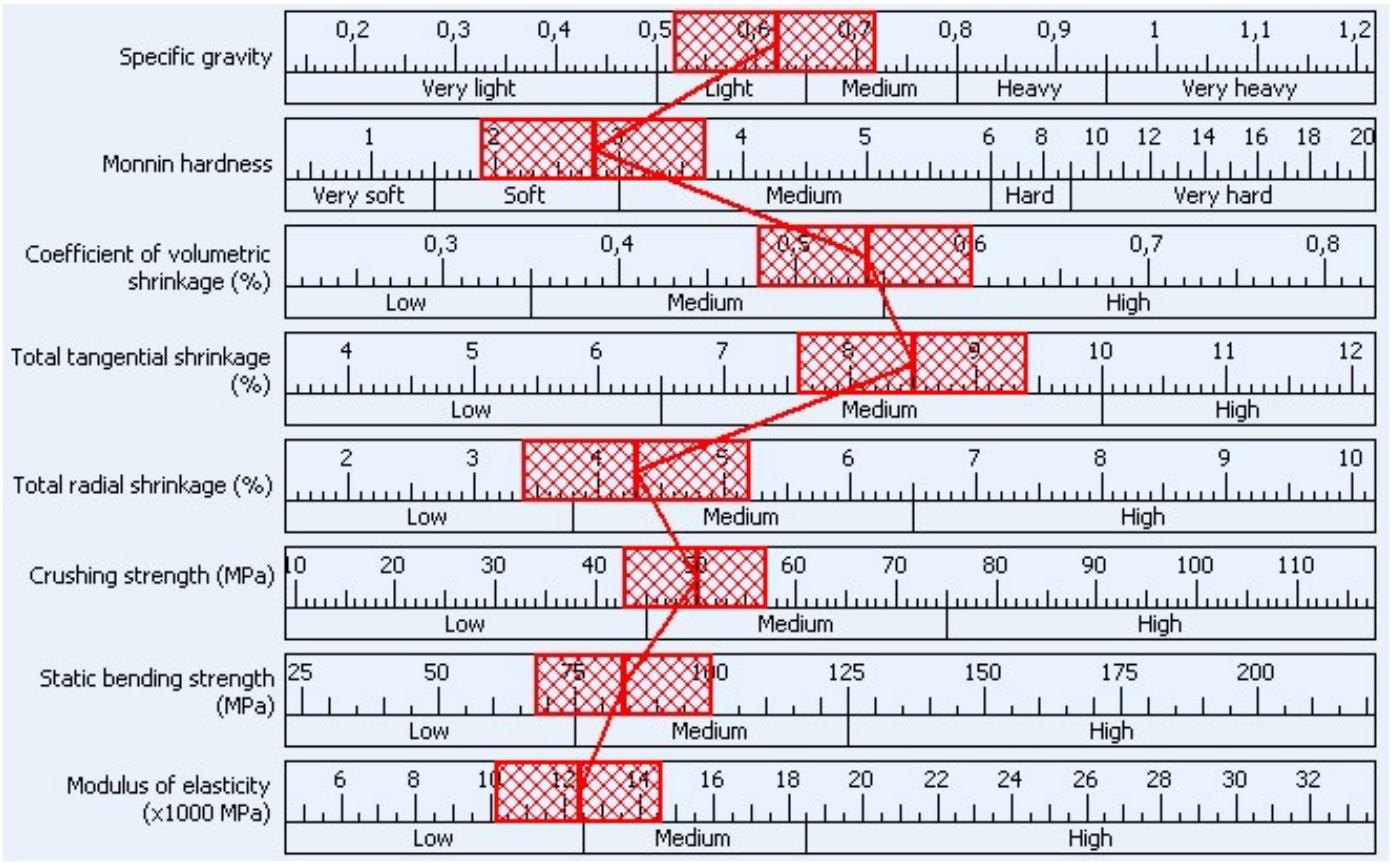
END-USES

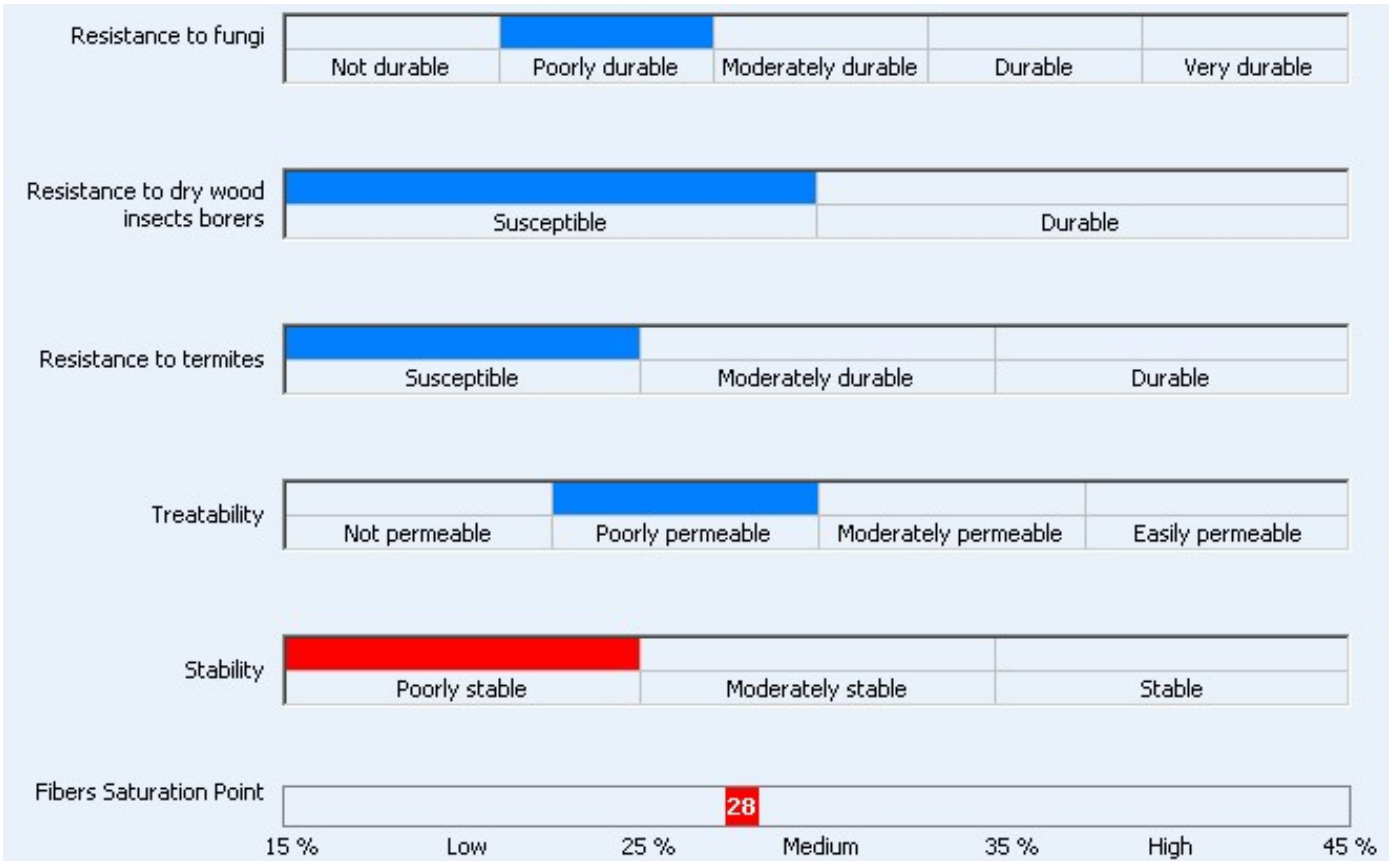
Veneer for interior of plywood
Interior joinery
Current furniture or furniture components
Fiber or particle boards
Boxes and crates
Light carpentry
Veneer for back or face of plywood
Interior panelling
Sliced veneer
Formwork
Moulding

Note: Filling is recommended in order to obtain a good finish.

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Indonesia	PENDAN	Indonesia	URAT MATA
Peninsular Malaysia	BELUTU	Peninsular Malaysia	URAT MATA
Peninsular Malaysia	WHITE SERAYA	Malaysia (islands)	URAT MATA
Malaysia (islands)	WHITE SERAYA	Philippines	BAGTIKAN


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
28
15 %
Low
25 %
Medium
35 %
High
45 %