

Family: PINACEAE (gymnosperm)

Scientific name(s): Pinus merkusii

Commercial restriction: no commercial restriction

Note: This species can be found at altitudes between 150 m and 650 m.

WOOD DESCRIPTION

Color: light brown
Sapwood: clearly demarcated
Texture: medium
Grain: straight
Interlocked grain: absent

Note: Wood light brown with dark red veins. Numerous resin canals.

LOG DESCRIPTION

Diameter: from 60 to 80 cm
Thickness of sapwood: from 2 to 5 cm
Floats: yes
Log durability: low (must be treated)

PHYSICAL PROPERTIES

Physical and mechanical properties are based on mature heartwood specimens. These properties can vary greatly depending on origin and growth conditions.

	<u>Mean</u>	<u>Std dev.</u>
Specific gravity *:	0,73	
Monnin hardness *:	3,2	
Coeff. of volumetric shrinkage:	0,45 %	
Total tangential shrinkage (TS):	8,0 %	
Total radial shrinkage (RS):	5,0 %	
TS/RS ratio:	1,6	
Fiber saturation point:	32 %	
Stability:	moderately stable	

Note: Hardness varies from fairly hard to hard. Physical and mechanical properties vary according to age and origin.

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	51 MPa	
Static bending strength *:	90 MPa	
Modulus of elasticity *:	16370 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 4 - poorly durable
Dry wood borers: susceptible
Termites (according to E.N. standards): class S - susceptible
Treatability (according to E.N. standards): class 2 - moderately permeable
Use class ensured by natural durability: class 1 - inside (no dampness)
Species covering the use class 5: No

Note: Often very important sapwood; end-uses under use class 4 possible with an adequate preservative treatment.

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: requires appropriate preservative treatment

DRYING

Drying rate: rapid

Risk of distortion: no risk or very slight risk

Risk of casehardening: no

Risk of checking: slight risk

Risk of collapse: no

Note: Risks of blue stain and resin exudation. Wood must be sawn quickly. For air drying: storage under cover and piling in "V".

Possible drying schedule: 4

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
Green	42	39	82
50	48	43	74
40	48	43	74
30	48	43	74
15	54	46	63

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: not recommended or without interest

Note: Risks of clogging of tools due to resin.

ASSEMBLING

Nailing / screwing: good

Gluing: correct

COMMERCIAL GRADING

Appearance grading for sawn timbers: Grading depending on the source

FIRE SAFETY

Conventional French grading: Thickness > 18 mm : M.3 (moderately inflammable)

Thickness < 18 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

Light carpentry

Interior joinery

Flooring

Boxes and crates

Interior panelling

Veneer for interior of plywood

Pulp

Note: Can be used for wooden house construction.

Glued laminated

Poles

Matches

Current furniture or furniture components

Formwork

Veneer for back or face of plywood

Exterior joinery

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Cambodia	SRAL	Indonesia	TUSAM
Laos	MAY PEK	Myanmar	TENASSERIM-PINE
Myanmar	TINYU	Philippines	MINDORO-PINE
Philippines	TAPULAU	Vietnam	KIA
Vietnam	THONG	United Kingdom	MERKUS-PINE
United States of America	MERKUS-PINE		

