

Family: DIPTEROCARPACEAE (angiosperm)

Scientific name(s): Neobalanocarpus heimii

Balanocarpus heimii (synonymous)

Commercial restriction: no commercial restriction

WOOD DESCRIPTION

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

Note: Heartwood varies from brown olive to red brown. Presence of slight resinous area.

LOG DESCRIPTION

Diameter: from 70 to 150 cm
Thickness of sapwood: from 2 to 5 cm
Floats: no
Log durability: good

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 *:	0,91	
Monnin hardness *:		
Coeff. of volumetric shrinkage:	%	
Total tangential shrinkage (TS):	7,4 %	
Total radial shrinkage (RS):	3,0 %	
TS/RS ratio:	2,5	
Fiber saturation point:		
Stability: stable		

Note: Hard wood.

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	75 MPa	
Static bending strength *:	134 MPa	
Modulus of elasticity *:	24300 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 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 4 - not permeable

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

Species covering the use class 5: No

Note: 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

Risk of checking: slight risk

Risk of collapse: no

Possible drying schedule: 6

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
Green	42	41	94
50	48	43	74
30	54	46	63
20	60	51	62
15	60	51	62

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: Presence of resin is troublesome in machining.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary

Gluings: correct

Note: Gluing needs caution due to resin.

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

Sleepers

Bridges (parts not in contact with water or ground)

Industrial or heavy flooring

Interior joinery

Bridges (parts in contact with water or ground)

Heavy carpentry

Exterior joinery

Flooring

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>
Indonesia	PENAK-BUNGA
Indonesia	PENAK-TEMBAGA
Thailand	TAKIAN CHAN

<u>Country</u>	<u>Local name</u>
Indonesia	PENAK-SABUT
Malaysia (islands)	CHENGAL

