

Common name:	CHENGAL
Family:	DIPTEROCARPACEAE
Scientific name(s):	Néobalanocarpus heimii Balanocarpus heimii

#### LOG DESCRIPTION

Diameter:	from 70 to 150 cm
Thickness of sapwood:	from 2 to 5 cm
Floats:	no
Durability in forest :	Good

#### WOOD DESCRIPTION

Colour:	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.

#### PHYSICAL PROPERTIES

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

	mean	standard deviation
Density *:	0.91 g/cm <sup>3</sup>	
Monnin hardness*:		
Coef of volumetric shrinkage:	%	
Total tangential shrinkage:	7.4 %	
Total radial shrinkage:	3.0 %	
Fibre saturation point:	%	
Stability:	stable	
Note:	Hard wood.	

#### MECHANICAL PROPERTIES

	mean	standard deviation
Crushing strength *:	75 MPa	
Static bending strength *:	134 MPa	
Modulus of elasticity *:	24300 MPa	

(\* : at 12 % moisture content ; 1 MPa = 1 N/mm<sup>2</sup>)

#### 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.

Fungi:	Class 1 - very durable	* ensured by natural durability (according EN standards).
Dry wood borers:	Durable; sapwood demarcated (risk limited to sapwood)	
Termites:	Class D - Durable	
Treatability:	4 - not permeable	
Use class*:	4 - in ground or fresh water contact	
Note:	According to the European standard NF EN 335, performance length might be modified by the intensity of end-use exposition.	

#### MAIN LOCAL NAMES

Countries	Local names
Indonesia	PENAK-BUNGA
Indonesia	PENAK-SABUT
Indonesia	PENAK-TEMBAGA
Peninsular Malaysia	CHENGAL
Thailand	TAKIAN CHAN

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## CHENGAL

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### REQUIREMENT OF A PRESERVATIVE TREATMENT

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Against dry wood borer attacks:	Does not require any preservative treatment
In case of temporary humidification risk:	Does not require any preservative treatment
In case of permanent humidification risk:	Does not require any preservative treatment

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### DRYING

#### Possible drying schedule

Drying rate:	Slow	Temperature (°C)			Air humidity (%)
		M.C. (%)	dry-bulb	wet-bulb	
Risk of distortion:	High risk	Green	42	41	94
Risk of casehardening:	No	50	48	43	74
Risk of checking:	Slight risk	30	54	46	63
Risk of collapse:	No	20	60	51	62
		15	60	51	62

This schedule is given for information only and is applicable to thickness < 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.

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### SAWING AND MACHINING

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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.

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### ASSEMBLING

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Nailing / Screwing:	Good but pre-boring necessary
Gluing:	Correct
Note:	Gluing needs caution due to resin.

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### END-USES

Main known end-uses; they must to be implemented according to the code of practice.

Important remark: some end-uses are mentionned for information (traditional, regional or ancient end-uses).

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#### Sleepers

Bridges (parts in contact with water or ground)

Bridges (parts not in contact with water or ground)

Heavy carpentry

Industrial or heavy flooring

Exterior joinery

Interior joinery

Flooring

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