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.

#### **PHYSICAL PROPERTIES**

#### MECHANICAL AND ACOUSTIC PROPERTIES

Diameter: from 70 to 150 cm

2 to

5 cm

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

LOG DESCRIPTION

Thickness of sapwood: from

Floats: no

Log durability: good

|                                  | Mean       | Std dev. |   | Mean      | Std dev. |  |
|----------------------------------|------------|----------|---|-----------|----------|--|
| Specific gravity *:              | 0,91       |          | Crushing strength *:  | 75 MPa    |          |  |
| Monnin hardness *:               |            |          | Static bending strength *:                                      | 134 MPa   |          |  |
| Coeff. of volumetric shrinkage:  | %          |          | Modulus of elasticity *:  | 24300 MPa |          |  |
| Total tangential shrinkage (TS): | 7,4 %      |          |   |           |          |  |
| Total radial shrinkage (RS):     | 3,0 %      |          | (*: at 12% moisture content, with 1 MPa = 1 N/mm <sup>2</sup> ) |           |          |  |
| TS/RS ratio:                     | 2,5        |          |   |           |          |  |
| Fiber saturation point:          |            |          |   |           |          |  |
| Stability:                       | stable     |          |   |           |          |  |
| Note:                            | Hard wood. |          |   |           |          |  |

## 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: I         | No  |
|   | According to the European standard NF EN 335, performance length might be modified by the ntensity 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

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#### DRYING

| Drying rate: slow             | Possible drying | Possible drying schedule: 6 |          |                  |  |  |
|-------------------------------|-----------------|-----------------------------|----------|------------------|--|--|
| Risk of distortion: high risk |                 | Temperature (°C)            |          |                  |  |  |
| Risk of casehardening: no     | M.C. (%)        | dry-bulb                    | wet-bulb | Air humidity (%) |  |  |
| Risk of checking: slight risk | Green           | 42                          | 41       | 94               |  |  |
| Risk of collapse: no          | 50              | 48                          | 43       | 74               |  |  |
|                               | 30              | 54                          | 46       | 63               |  |  |
|                               | 20              | 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

Gluing: 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.

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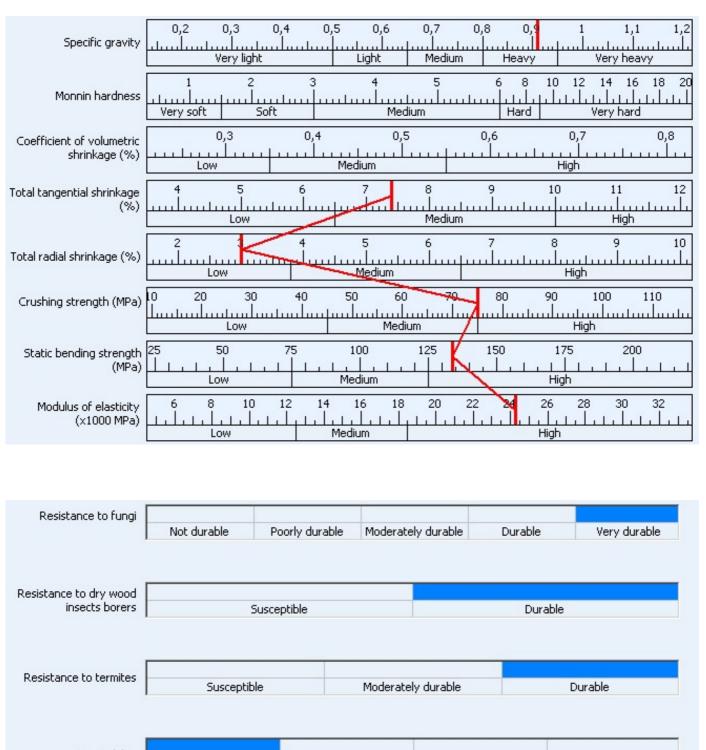
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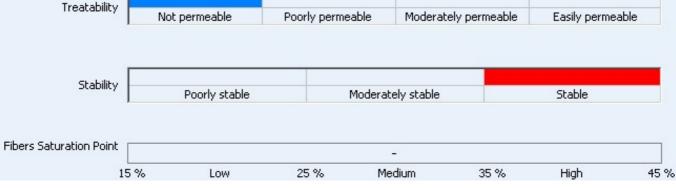
### **END-USES**

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> Indonesia Indonesia Thailand Local name PENAK-BUNGA PENAK-TEMBAGA TAKIAN CHAN <u>Country</u> Indonesia Malaysia (islands) Local name PENAK-SABUT CHENGAL





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