

Family: FABACEAE-MIMOSOIDEAE (angiosperm)

Scientific name(s): Acacia mangium

Racosperma mangium (synonymous)

Commercial restriction: no commercial restriction

Note: Fast-growing species; woods presently commercialized come from plantations.

WOOD DESCRIPTION

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

Note: Heart rot is common for some origins. Heartwood light brown, sometimes with olive brown shades.

LOG DESCRIPTION

Diameter: from 30 to 60 cm
Thickness of sapwood:
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 *: | 0,52 | 0,05 |
| Monnin hardness *: | 3,1 | |
| Coeff. of volumetric shrinkage: | 0,37 % | |
| Total tangential shrinkage (TS): | 7,0 % | |
| Total radial shrinkage (RS): | 3,1 % | |
| TS/RS ratio: | 2,3 | |
| Fiber saturation point: | 25 % | |
| Stability: | stable | |

Note: As it is frequently observed for many plantation species, physical and mechanical properties of this wood hardly vary and depend on origin and trees age.

MECHANICAL AND ACOUSTIC PROPERTIES

| | <u>Mean</u> | <u>Std dev.</u> |
|----------------------------|-------------|-----------------|
| Crushing strength *: | 46 MPa | 3 MPa |
| Static bending strength *: | 105 MPa | 6 MPa |
| Modulus of elasticity *: | 10800 MPa | 900 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 3-4 - moderately to poorly durable

Dry wood borers: susceptible

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

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: rapid

Risk of distortion: high risk

Risk of casehardening: no

Risk of checking: high risk

Risk of collapse: no

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: no information available

Slicing: no information available

Note: Planned surfaces are glossy.

ASSEMBLING

Nailing / screwing: poor

Gluing: correct

Note: Good gluing with phenol resins, difficult with urea-formol resins.

COMMERCIAL GRADING

Appearance grading for sawn timbers: Grading depending on the source

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

Pulp
Current furniture or furniture components
Interior panelling
Formwork

Fiber or particle boards
Interior joinery
Blockboard
Boxes and crates

MAIN LOCAL NAMES

| <u>Country</u> | <u>Local name</u> | <u>Country</u> | <u>Local name</u> |
|--------------------------|-------------------|--------------------------|-------------------|
| Australia | BLACK WATTLE | Australia | BROWN SALWOOD |
| Indonesia | MANGGE HUTAN | Indonesia | TONGKE HUTAN |
| Malaysia (islands) | KAYU SAFODA | Papua New Guinea | ARR |
| Thailand | KRA THIN TEPA | United Kingdom | BLACK WATTLE |
| United Kingdom | BROWN SALWOOD | United States of America | BLACK WATTLE |
| United States of America | BROWN SALWOOD | | |

