MACUCU DE PACA

Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)
Scientific name(s): Aldina heterophylla
Commercial restriction: no commercial restriction

Note: MACUCU DE PACA is commercialized blended with ANGELIM (Hymenolobium spp.).

WOOD DESCRIPTION

| Color:             | yellow brown |
| Sapwood:           | not clearly demarcated |
| Texture:           | coarse |
| Grain:             | interlocked |
| Interlocked grain: | marked but not frequent |

Log description

- Diameter: from 60 to 100 cm
- Thickness of sapwood: from 5 to 8 cm
- Floats: no
- Log durability: good

LOG DESCRIPTION

- Sapwood: not clearly demarcated
- Texture: coarse
- Grain: interlocked
- Interlocked grain: marked but not frequent
- Note: Risk of shakes on logs. Grain sometimes wavy.

PHYSICAL PROPERTIES

- Color: yellow brown
- Sapwood: not clearly demarcated
- Texture: coarse
- Grain: interlocked
- Interlocked grain: marked but not frequent
- Note: Risk of shakes on logs. Grain sometimes wavy.

MECHANICAL AND ACOUSTIC PROPERTIES

- Specific gravity *: 0.88 ± 0.06
- Monnin hardness *: 7.6 ± 1.5
- Coeff. of volumetric shrinkage: 0.61 % ± 0.05 %
- Total tangential shrinkage (TS): 7.6 % ± 1.2 %
- Total radial shrinkage (RS): 4.9 % ± 0.8 %
- TS/RS ratio: 1.6
- Fiber saturation point: 24 %
- Crushing strength *: 64 MPa ± 6 MPa
- Static bending strength *: 109 MPa ± 28 MPa
- Modulus of elasticity *: 18170 MPa ± 1463 MPa
- TS/RS ratio: 1.6
- Musical quality factor: 135.5 measured at 2537 Hz

Stability: moderately stable

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: heartwood durable but sapwood not clearly demarcated
- Termites (according to E.N. standards): class D - durable
- Treatability (according to E.N. standards): class 3 - poorly permeable
- Use class ensured by natural durability: class 4 - in ground or fresh water contact
- Species covering the use class 5: No

Note: The possible presence of few demarcated sapwood in sawnwoods may have an influence on the expected durability. 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: requires appropriate 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: normal
Risk of distortion: high risk
Risk of casehardening: no
Risk of checking: slight risk
Risk of collapse: no

Note: Drying must be handled with care in order to reduce the risks of distortion.

SAWING AND MACHINING

Blunting effect: normal
Sawteeth recommended: ordinary or alloy steel
Cutting tools: ordinary
Peeling: not recommended or without interest
Slicing: nod

Note: Filling is recommended in order to obtain a good finish.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: no information available

Note: Pre-boring necessary in presence of highly interlocked grain. Tendency to end-splitting.

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to NHLA grading rules (January 2007)
Possible grading: FAS, Select, Common 1, Common 2, Common 3

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

Hydraulic works (fresh water) Bridges (parts in contact with water or ground)
Sleepers Industrial or heavy flooring
Vehicle or container flooring Exterior joinery
Sliced veneer Heavy carpentry
Exterior panelling Poles
Stakes Bridges (parts not in contact with water or ground)
## MAIN LOCAL NAMES

<table>
<thead>
<tr>
<th>Country</th>
<th>Local name</th>
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</thead>
<tbody>
<tr>
<td>Brazil (Amazon)</td>
<td>MACUCU DA CATINGA</td>
<td>Brazil (Amazon)</td>
<td>MACUCU DE PACA</td>
</tr>
<tr>
<td>Brazil (Amazon)</td>
<td>MACUCU DO BAIXO</td>
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</tbody>
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### Specific Gravity
- 0.2: Very light
- 0.3: Light
- 0.4: Medium
- 0.5: Heavy
- 0.6: Very heavy

### Monnin Hardness
- 1: Very soft
- 2: Soft
- 3: Medium
- 4: Hard
- 5: Very hard

### Coefficient of Volumetric Shrinkage (%)
- 0.3: Low
- 0.4: Medium
- 0.5: High

### Total Tangential Shrinkage (%)
- 4: Low
- 5: Medium
- 6: High

### Total Radial Shrinkage (%)
- 2: Low
- 3: Medium
- 4: High

### Crushing Strength (MPa)
- 0: Low
- 20: Medium
- 40: High

### Static Bending Strength (MPa)
- 25: Low
- 100: Medium
- 175: High

### Modulus of Elasticity (≤1000 MPa)
- 6: Low
- 8: Medium
- 10: High

### Resistance to Fungi
- Not durable
- Poorly durable
- Moderately durable
- Durable
- Very durable

### Resistance to Dry Wood Insects Borer
- Susceptible
- Durable

### Resistance to Termites
- Susceptible
- Moderately durable
- Durable

### Treatability
- Not permeable
- Poorly permeable
- Moderately permeable
- Easily permeable

### Stability
- Poorly stable
- Moderately stable
- Stable

### Fibers Saturation Point
- 15%: Low
- 25%: Medium
- 35%: High
- 45%: Very high

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