MOVINGUI

Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)
Scientific name(s): Distemonanthus benthamianus
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>yellow</td>
</tr>
<tr>
<td>Sapwood</td>
<td>clearly demarcated</td>
</tr>
<tr>
<td>Texture</td>
<td>medium</td>
</tr>
<tr>
<td>Grain</td>
<td>interlocked</td>
</tr>
<tr>
<td>Interlocked grain</td>
<td>slight</td>
</tr>
</tbody>
</table>

Diameter: from 60 to 90 cm
Thickness of sapwood: from 2 to 4 cm
Floats: no
Log durability: moderate (treatment recommended)

PHYSICAL PROPERTIES

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Mean</th>
<th>Std dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity *</td>
<td>0.73</td>
<td>0.06</td>
</tr>
<tr>
<td>Monnin hardness *</td>
<td>5.6</td>
<td>1.7</td>
</tr>
<tr>
<td>Coeff. of volumetric shrinkage</td>
<td>0.54 %</td>
<td>0.10 %</td>
</tr>
<tr>
<td>Total tangential shrinkage (TS)</td>
<td>5.8 %</td>
<td>1.0 %</td>
</tr>
<tr>
<td>Total radial shrinkage (RS)</td>
<td>3.6 %</td>
<td>0.6 %</td>
</tr>
<tr>
<td>TS/RS ratio</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Fiber saturation point</td>
<td>23 %</td>
<td></td>
</tr>
</tbody>
</table>

Stability: moderately stable to stable

MECHANICAL AND ACOUSTIC PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Mean</th>
<th>Std dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crushing strength *</td>
<td>64 MPa</td>
<td>11 MPa</td>
</tr>
<tr>
<td>Static bending strength *</td>
<td>116 MPa</td>
<td>13 MPa</td>
</tr>
<tr>
<td>Modulus of elasticity *</td>
<td>14740 MPa</td>
<td>3053 MPa</td>
</tr>
<tr>
<td>(*: at 12% moisture content, with 1 MPa = 1 N/mm²)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Musical quality factor</td>
<td>144.2 measured at 2704 Hz</td>
<td></td>
</tr>
</tbody>
</table>

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 - moderately durable
  Dry wood borers: durable - sapwood demarcated (risk limited to sapwood)
- Termites (according to E.N. standards): class M - moderately durable
- Treatability (according to E.N. standards): class 4 - not permeable
- Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)
  Species covering the use class S: No

Note: This species is listed in the European standard NF EN 350-2. The MOVINGUI cannot be used without appropriate preservative treatment for end-uses under use class 3, except for some parts of a work such as windows, less exposed than others (entrance doors, shutters ...). This species is used for exterior joinery in tropical area but its use in temperate area is limited as it is prone to Coriolus versicolor fungi attacks.

REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: does not require any 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: normal
Risk of distortion: slight risk
Risk of casehardening: no
Risk of checking: slight risk
Risk of collapse: no

Possible drying schedule: 2

<table>
<thead>
<tr>
<th>M.C. (%)</th>
<th>Temperature (°C)</th>
<th>Air humidity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>dry-bulb</td>
<td>wet-bulb</td>
</tr>
<tr>
<td>Green</td>
<td>50</td>
<td>47</td>
</tr>
<tr>
<td>40</td>
<td>50</td>
<td>45</td>
</tr>
<tr>
<td>30</td>
<td>55</td>
<td>47</td>
</tr>
<tr>
<td>20</td>
<td>70</td>
<td>55</td>
</tr>
<tr>
<td>15</td>
<td>75</td>
<td>58</td>
</tr>
</tbody>
</table>

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: high
Sawteeth recommended: stellite-tipped
Cutting tools: tungsten carbide
Peeling: good
Slicing: nood

Note: Some difficulties due to irregular grain. Filling is recommended in order to obtain a better finish.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: correct

Note: Pre-boring recommended, especially for large nails (risks of splits).

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to SATA grading rules (1996)
For the "General Purpose Market":
Possible grading for square edged timbers: choix I, choix II, choix III, choix IV
Possible grading for short length lumbers: choix I, choix II
Possible grading for short length rafters: choix I, choix II, choix III

For the "Special Market":
Possible grading for strips and small boards (ou battens): choix I, choix II, choix III
Possible grading for rafters: choix I, choix II, choix III

Thickness > 14 mm : M.3 (moderately inflammable)
Thickness < 14 mm : M.4 (easily inflammable)

Euroclasses grading: D ≤ 2 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.

FIRE SAFETY

Conventional French grading:

- Thickness > 14 mm : M.3 (moderately inflammable)
- Thickness < 14 mm : M.4 (easily inflammable)

Euroclasses grading:

- D ≤ 2 d0

DEFINES

Veneer for back or face of plywood
Exterior joinery
Interior panelling
Flooring
Cooperage
Cabinetwork (high class furniture)
Glued laminated
Turned goods
Resistant to one or several acids

END-USES

Sliced veneer
Wood frame house
Interior joinery
Exterior panelling
Stairs (inside)
Arched goods
Current furniture or furniture components
Vehicle or container flooring
Shingles
Light carpentry

Note: MOVINGUI contains water-soluble yellow extracts that can stain the elements in contact with wood under moisture conditions.
## MAIN LOCAL NAMES

<table>
<thead>
<tr>
<th>Country</th>
<th>Local name</th>
<th>Country</th>
<th>Local name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benin</td>
<td>AYAN</td>
<td>Cameroon</td>
<td>EYEN</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>BARRE</td>
<td>Gabon</td>
<td>EYEN</td>
</tr>
<tr>
<td>Gabon</td>
<td>MOVINGUI</td>
<td>Ghana</td>
<td>AYAN</td>
</tr>
<tr>
<td>Ghana</td>
<td>BONSAMDU</td>
<td>Equatorial Guinea</td>
<td>EYEN</td>
</tr>
<tr>
<td>Nigeria</td>
<td>AYAN</td>
<td>Nigeria</td>
<td>AYANRAN</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>AYAN</td>
<td>United Kingdom</td>
<td>DISTEMONANTHUS</td>
</tr>
</tbody>
</table>
### Wood Properties

#### 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)
- **10** (Low)
- **20** (Medium)
- **30** (High)

#### Static Bending Strength (MPa)
- **25** (Low)
- **50** (Medium)
- **75** (High)

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

### Resistance

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

#### Resistance to Dry Wood Insects and Borers
- 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 %** (High)