Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)
Scientific name(s): Guibourtia ehie
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: yellow brown
Sapwood: clearly demarcated
Texture: fine
Grain: interlocked
Interlocked grain: slight

Note: Wood yellow brown to dark brown, with grey to blackish veins and copper glints. Moiré aspect on quartersawn. White deposits.

LOG DESCRIPTION

Diameter: from 60 to 75 cm
Thickness of sapwood: from 4 to 7 cm
Floats: no
Log durability: good

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>
<th>Mean</th>
<th>Std dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity*:</td>
<td>0.82</td>
<td>0.05</td>
<td>Crushing strength*:</td>
<td>69 MPa</td>
</tr>
<tr>
<td>Monnin hardness*:</td>
<td>7.5</td>
<td>2.3</td>
<td>Static bending strength*:</td>
<td>127 MPa</td>
</tr>
<tr>
<td>Coeff. of volumetric shrinkage:</td>
<td>0.57%</td>
<td>0.12%</td>
<td>Modulus of elasticity*:</td>
<td>21470 MPa</td>
</tr>
<tr>
<td>Total tangential shrinkage (TS):</td>
<td>8.0%</td>
<td>1.2%</td>
<td>(*: at 12% moisture content, with 1 MPa = 1 N/mm²)</td>
<td></td>
</tr>
<tr>
<td>Total radial shrinkage (RS):</td>
<td>3.9%</td>
<td>0.7%</td>
<td>Fibre saturation point:</td>
<td>24 %</td>
</tr>
<tr>
<td>TS/RS ratio:</td>
<td>2.1</td>
<td></td>
<td>Stability:</td>
<td>moderately stable</td>
</tr>
</tbody>
</table>

MECHANICAL AND ACOUSTIC PROPERTIES

Musical quality factor: 109.8 measured at 2875 Hz

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 2 - 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 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: This species is listed in the European standard NF EN 350-2.
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: 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: use not recommended

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### DRYING

- **Drying rate:** normal to slow
- **Risk of distortion:** slight risk
- **Risk of casehardening:** no
- **Risk of checking:** slight risk
- **Risk of collapse:** no

<table>
<thead>
<tr>
<th>Possible drying schedule: 6</th>
<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>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>42</td>
<td>41</td>
<td>94</td>
</tr>
<tr>
<td>50</td>
<td>48</td>
<td>43</td>
<td>74</td>
</tr>
<tr>
<td>30</td>
<td>54</td>
<td>46</td>
<td>63</td>
</tr>
<tr>
<td>20</td>
<td>60</td>
<td>51</td>
<td>62</td>
</tr>
<tr>
<td>15</td>
<td>60</td>
<td>51</td>
<td>62</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:** fairly high
- **Sawteeth recommended:** stellite-tipped tungsten carbide
- **Cutting tools:** not recommended or without interest
- **Peeling:** no
- **Slicing:** need

**Note:** Requires power. Some difficulties due to interlocked grain. Sometimes white efflorescence on sawnwoods; a wash with warm water can remove it.

### ASSEMBLING

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

**Note:** Pre-boring recommended due to hardness.

### 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 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.

### FIRE SAFETY

Conventional French grading: Thickness > 14 mm : M.3 (moderately inflammable)

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

### END-USES

- **Cabinetwork (high class furniture)**: Current furniture or furniture components
- **Sliced veneer**
- **Interior panelling**
- **Musical instruments**
- **Exterior joinery**
- **Stairs (inside)**
- **Interior joinery**
- **Turned goods**
- **Flooring**
- **Exterior panelling**
- **Resistant to one or several acids**
## 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>Cameroon</td>
<td>MBAGNA</td>
<td>Ivory Coast</td>
<td>AMAZAKOUE</td>
</tr>
<tr>
<td>Ghana</td>
<td>ANOKYE</td>
<td>Ghana</td>
<td>HYEDUA</td>
</tr>
<tr>
<td>Ghana</td>
<td>HYEDUANI NI</td>
<td>Gabon</td>
<td>OVANGKOL</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>PALISSANDRO</td>
<td>Nigeria</td>
<td>GUIBOURTIA</td>
</tr>
<tr>
<td>Nigeria</td>
<td>KALUK AFUON</td>
<td>United States of America</td>
<td>MOZAMBIQUE</td>
</tr>
</tbody>
</table>
# Properties of a Material

<table>
<thead>
<tr>
<th>Property</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Monnin hardness</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Coefficient of volumetric shrinkage (%)</td>
<td>0.3</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Total tangential shrinkage (%)</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Total radial shrinkage (%)</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Crushing strength (MPa)</td>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Static bending strength (MPa)</td>
<td>25</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>Modulus of elasticity (≥1000 MPa)</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

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

**Resistance to Dry Wood Insects Boring**
- 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%
- 25%
- 35%
- 45%