Family: FABACEAE-CAESALPINIOIDEAE (angiosperm)
Scientific name(s): Oxystigma oxyphyllum
Pterygopodium oxyphyllum (synonymous)
Oxystigma manni
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: red brown
Sapwood: clearly demarcated
Texture: coarse
Grain: straight or interlocked
Interlocked grain: slight
Note: Some logs are not floatable.
Heartwood copper red brown with blackish veins. Blackish resin exudation.

LOG DESCRIPTION

Diameter: from 70 to 120 cm
Thickness of sapwood: from 6 to 10 cm
Floats: yes
Log durability: moderate (treatment recommended)

PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Mean</th>
<th>Std dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity *:</td>
<td>0.64</td>
<td>0.03</td>
</tr>
<tr>
<td>Monnin hardness *:</td>
<td>2.9</td>
<td>0.4</td>
</tr>
<tr>
<td>Coeff. of volumetric shrinkage:</td>
<td>0.45 %</td>
<td>0.04 %</td>
</tr>
<tr>
<td>Total tangential shrinkage (TS):</td>
<td>7.5 %</td>
<td>0.6 %</td>
</tr>
<tr>
<td>Total radial shrinkage (RS):</td>
<td>3.9 %</td>
<td>0.5 %</td>
</tr>
<tr>
<td>TS/RS ratio:</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Fiber saturation point:</td>
<td>28 %</td>
<td></td>
</tr>
<tr>
<td>Stability:</td>
<td>stable</td>
<td></td>
</tr>
</tbody>
</table>

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>58 MPa</td>
<td>6 MPa</td>
</tr>
<tr>
<td>Static bending strength *:</td>
<td>88 MPa</td>
<td>13 MPa</td>
</tr>
<tr>
<td>Modulus of elasticity *:</td>
<td>14960 MPa</td>
<td>950 MPa</td>
</tr>
<tr>
<td>Musical quality factor:</td>
<td>122.6 measured at 2613 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 3-4 - poorly or not permeable
- Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)
- Species covering the use class 5: No

Note: This species is listed in the European standard NF EN 350-2.

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

<table>
<thead>
<tr>
<th>Drying rate:</th>
<th>normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of distortion:</td>
<td>slight risk</td>
</tr>
<tr>
<td>Risk of casehardening:</td>
<td>no</td>
</tr>
<tr>
<td>Risk of checking:</td>
<td>slight risk</td>
</tr>
<tr>
<td>Risk of collapse:</td>
<td>no</td>
</tr>
</tbody>
</table>

Possible drying schedule: 2

<table>
<thead>
<tr>
<th>M.C. (%)</th>
<th>Temperature (°C)</th>
<th>Air humidity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>dry-bulb</td>
<td>wet-bulb</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 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: | good |
| Slicing: | nod |

Note: Resin tends to clog tools. Irritant sawdust.

ASSEMBLING

Nailing / screwing: good
Gluing: correct

Note: Gluing requires care due to resin exudation.

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)

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:
- Euroclasses grading: D ≤ 2 D0

Note: Due to the presence of resin, it is often used painted. Wood from less resinous logs can be used as a substitute for WALNUT (Juglans spp.).
### 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>Angola</td>
<td>TOLA CHINFUTA</td>
<td>Cameroon</td>
<td>NOM SINEDON</td>
</tr>
<tr>
<td>Congo</td>
<td>KITOLA</td>
<td>Congo</td>
<td>TCHITOLA</td>
</tr>
<tr>
<td>Gabon</td>
<td>EMOLA</td>
<td>Gabon</td>
<td>M' BABOU</td>
</tr>
<tr>
<td>Nigeria</td>
<td>LOLAGBOLA</td>
<td>Democratic Republic of the Congo</td>
<td>AKWAKWA</td>
</tr>
<tr>
<td>Democratic Republic of the Congo</td>
<td>TSHIBUDIMBU</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Properties

#### Specific Gravity
- Very light: 0.2
- Light: 0.3
- Medium: 0.4
- Heavy: 0.7
- Very heavy: 0.8

#### Monnin Hardness
- Very soft: 1
- Soft: 2
- Medium: 4
- Hard: 8
- Very hard: 12

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

#### Total Tangential Shrinkage (%)
- Low: 4
- Medium: 6
- High: 9

#### Total Radial Shrinkage (%)
- Low: 2
- Medium: 5
- High: 6

#### Crushing Strength (MPa)
- Low: 10
- Medium: 50
- High: 100

#### Static Bending Strength (MPa)
- Low: 25
- Medium: 75
- High: 150

#### Modulus of Elasticity (≤1000 MPa)
- Low: 6
- Medium: 11
- High: 16

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

#### Resistance to Dry Wood Insects and 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
- Low: 15%
- Medium: 25%
- High: 45%