Family: Fabaceae-Caesalpinioideae (angiosperm)
Scientific name(s): Guibourtia arnoldiana
Commercial restriction: no commercial restriction

### WOOD DESCRIPTION

- **Color:** brown
- **Sapwood:** clearly demarcated
- **Texture:** fine
- **Grain:** straight or interlocked
- **Interlocked grain:** slight

**Note:** Heartwood yellowish brown to brown presenting a dark striping or reddish glints.

### LOG DESCRIPTION

- **Diameter:** from 40 to 80 cm
- **Thickness of sapwood:** from 5 to 8 cm
- **Floats:** no
- **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>0,79</td>
<td>0,05</td>
</tr>
<tr>
<td>Monnin hardness *</td>
<td>5,9</td>
<td>2,1</td>
</tr>
<tr>
<td>Coeff. of volumetric shrinkage</td>
<td>0,56 %</td>
<td>0,06 %</td>
</tr>
<tr>
<td>Total tangential shrinkage (TS)</td>
<td>8,8 %</td>
<td>0,7 %</td>
</tr>
<tr>
<td>Total radial shrinkage (RS)</td>
<td>5,0 %</td>
<td>0,6 %</td>
</tr>
<tr>
<td>TS/RS ratio</td>
<td>1,8</td>
<td></td>
</tr>
<tr>
<td>Fiber saturation point</td>
<td>27 %</td>
<td></td>
</tr>
</tbody>
</table>

**Stability:** moderately 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>79 MPa</td>
<td>10 MPa</td>
</tr>
<tr>
<td>Static bending strength *</td>
<td>138 MPa</td>
<td>14 MPa</td>
</tr>
<tr>
<td>Modulus of elasticity *</td>
<td>21250 MPa</td>
<td>4700 MPa</td>
</tr>
</tbody>
</table>

( *: at 12% moisture content, with 1 MPa = 1 N/mm²)

**Musical quality factor:** 123,4 measured at 2734 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

- **Fungi (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

Drying rate: slow
Risk of distortion: slight risk
Risk of casehardening: no
Risk of checking: slight risk
Risk of collapse: no
Note: Must be dried carefully.

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
Cutting tools: tungsten carbide
Peeling: no information available
Slicing: nood
Note: Requires power. Some difficulties in planing due to interlocked grain.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: correct (for interior only)

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

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

- Cabinetwork (high class furniture)
- Current furniture or furniture components
- Turned goods
- Interior joinery
- Wood frame house
- Seats
- Sliced veneer
- Interior panelling
- Flooring
- Stairs (inside)
- Heavy carpentry
- Wood-ware

Note: Substitute for WALNUT (Juglans regia) for sliced veneers.
<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>M’PENZE</td>
<td>Congo</td>
<td>BENZI</td>
</tr>
<tr>
<td>Democratic Republic of the Congo</td>
<td>MBENGE</td>
<td>Democratic Republic of the Congo</td>
<td>MUTENYE</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>OLIVE WALNUT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Specific gravity

| Value | Description  
|-------|-------------|
| 0.2   | Very light  
| 0.3   | Light       
| 0.4   | Medium      
| 0.5   | Heavy       
| 0.6   | Very heavy  

### Monnin hardness

| Value | Description  
|-------|-------------|
| 1     | Very soft   
| 2     | Soft        
| 3     | Medium      
| 4     | Hard        
| 5     | Very hard   

### Coefficient of volumetric shrinkage (%)

| Value | Description  
|-------|-------------|
| 0.3   | Low         
| 0.4   | Medium      
| 0.5   | High        

### Total tangential shrinkage (%)

| Value | Description  
|-------|-------------|
| 4     | Low         
| 5     | Medium      
| 6     | High        

### Total radial shrinkage (%)

| Value | Description  
|-------|-------------|
| 2     | Low         
| 3     | Medium      
| 4     | High        

### Crushing strength (MPa)

| Value | Description  
|-------|-------------|
| 10    | Low         
| 20    | Medium      
| 30    | High        

### Static bending strength (MPa)

| Value | Description  
|-------|-------------|
| 25    | Low         
| 50    | Medium      
| 75    | High        

### Modulus of elasticity (≤1000 MPa)

| Value | Description  
|-------|-------------|
| 6     | Low         
| 8     | Medium      
| 10    | High        

### Resistance to fungi

- Not durable
- Poorly durable
- Moderately durable
- Durable
- Very durable

### Resistance to dry wood insects 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

| Value | Description  
|-------|-------------|
| 15%   | Low         
| 25%   | Medium      
| 35%   | High        
| 45%   | Very high   |