AFRICAN WALNUT | DIBETOU | BIBOLO

Family: MELIACEAE (angiosperm)
Scientific name(s): Lovoa trichilioides
Lovoa klaineana (synonymous)
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

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

Diameter: from 60 to 120 cm
Thickness of sapwood: from 3 to 7 cm
Floats: yes
Log durability: moderate (treatment recommended)

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 3-4 - moderately to poorly durable
Dry wood borers: durable - sapwood demarcated (risk limited to sapwood)

Termites (according to E.N. standards): class 5 - susceptible
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

PHYSICAL PROPERTIES

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

Mean Std dev. Mean Std dev.
Specific gravity *: 0,53 0,06 Crushing strength *: 47 MPa 8 MPa
Monnin hardness *: 2,3 0,7 Static bending strength *: 72 MPa 13 MPa
Coeff. of volumetric shrinkage: 0,43 % 0,11 %
Total tangential shrinkage (TS): 5,8 % 0,5 %
Total radial shrinkage (RS): 3,7 % 0,9 %
TS/RS ratio: 1,6
Fiber saturation point: 27 %
Musical quality factor: 109,5 measured at 2693 Hz

Coefficient of volumetric shrinkage: 0,43 %

Modulus of elasticity *: 10460 MPa 946 MPa

Total tangential shrinkage (TS): 5,8 %

Total radial shrinkage (RS): 3,7 %

TS/RS ratio: 1,6

Fiber saturation point: 27 %

Musical quality factor: 109,5 measured at 2693 Hz

MECHANICAL AND ACOUSTIC PROPERTIES

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DRYING

Drying rate: rapid to normal
Risk of distortion: slight risk
Risk of casehardening: no
Risk of checking: slight risk
Risk of collapse: no
Note: Existing shakes tend to slightly extend.

Possible drying schedule: 2

<table>
<thead>
<tr>
<th>M.C. (%)</th>
<th>Temperature (°C)</th>
<th>Air humidity (%)</th>
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</thead>
<tbody>
<tr>
<td>Green</td>
<td>dry-bulb</td>
<td>wet-bulb</td>
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<tr>
<td>40</td>
<td>50</td>
<td>47</td>
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<tr>
<td>30</td>
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<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: normal
Sawteeth recommended: ordinary or alloy steel
Cutting tools: ordinary
Peeling: good
Slicing: nood
Note: Difficulties due to interlocked grain in planing (tearing). Keep sharp tools. Ribbon like aspect on quartersawn. Sawdust may be irritant.

ASSEMBLING

Nailing / screwing: good
Gluing: correct
Note: Risks of end checks.

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 lumber: 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
Sliced veneer  Interior panelling
Veneer for back or face of plywood  Interior joinery
Turned goods  Seats
Light carpentry

Note: Should not be confused with WALNUT (Juglans spp.), only colours are similar.
## MAIN LOCAL NAMES

<table>
<thead>
<tr>
<th>Country</th>
<th>Local name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Cameroon</td>
<td>BIBOLO</td>
<td>Congo</td>
<td>BOSSO</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>DIBETOU</td>
<td>Gabon</td>
<td>EYAN</td>
</tr>
<tr>
<td>Ghana</td>
<td>AFRICAN WALNUT</td>
<td>Ghana</td>
<td>DUBINI-BIRI</td>
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<tr>
<td>Ghana</td>
<td>MPENGWA</td>
<td>Equatorial Guinea</td>
<td>MBERO</td>
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<tr>
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<td>N'VERO</td>
<td>Nigeria</td>
<td>ANAMENILA</td>
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<tr>
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<td>APOPO</td>
<td>Nigeria</td>
<td>SIDA</td>
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<td>BOYO KONDI</td>
<td>Democratic Republic of the Congo</td>
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<td>LIFAKI MUINDU</td>
<td>Sierra Leone</td>
<td>WNAIMEI</td>
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<tr>
<td>France</td>
<td>NOYER D'AFRIQUE</td>
<td>France</td>
<td>NOYER DU GABON</td>
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<td>United Kingdom</td>
<td>AFRICAN WALNUT</td>
<td>United Kingdom</td>
<td>TIGERWOOD</td>
</tr>
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<td>United States of America</td>
<td>CONGOWOOD</td>
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### African Walnut - Dibetou | Biboło

<table>
<thead>
<tr>
<th>Property</th>
<th>Not durable</th>
<th>Poorly durable</th>
<th>Moderately durable</th>
<th>Durable</th>
<th>Very durable</th>
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</thead>
<tbody>
<tr>
<td>Resistance to fungi</td>
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<tr>
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<tr>
<td>Treatability</td>
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<tr>
<td>Stability</td>
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<tr>
<td>Fibers Saturation Point</td>
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</tr>
</tbody>
</table>

- **Specific gravity**
  - 0.2: Very light
  - 0.3: Light
  - 0.4: Medium
  - 0.5: Heavy
  - 0.6: Very heavy

- **Monnin hardness**
  - Very soft
  - Soft
  - Medium
  - Hard
  - Very hard

- **Coefficient of volumetric shrinkage (%)**
  - Low
  - Medium
  - High

- **Total tangential shrinkage (%)**
  - Low
  - Medium
  - High

- **Total radial shrinkage (%)**
  - Low
  - Medium
  - High

- **Crushing strength (MPa)**
  - Low
  - Medium
  - High

- **Static bending strength (MPa)**
  - Low
  - Medium
  - High

- **Modulus of elasticity (<1000 MPa)**
  - Low
  - Medium
  - 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**
  - 15 %: Low
  - 25 %: Medium
  - 35 %: High
  - 45 %: Medium