Family: SAPOTACEAE (angiosperm)
Scientific name(s): Tieghemella heckelii
Tieghemella africana
Dumoria spp. (synonymous)
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: red brown
Sapwood: clearly demarcated
Texture: medium
Grain: straight or interlocked
Interlocked grain: marked but not frequent

Note: Some logs are not floatable.
Wood dark pink brown to dark red brown with sometimes purplish glints and/or pale veins slightly distinct. Often moiré.

LOG DESCRIPTION

Diameter: from 90 to 130 cm
Thickness of sapwood: from 4 to 8 cm
Floats: yes
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></th>
<th>Mean</th>
<th>Std dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity *:</td>
<td>0,69</td>
<td>0,05</td>
</tr>
<tr>
<td>Monnin hardness *:</td>
<td>4,0</td>
<td>1,5</td>
</tr>
<tr>
<td>Coeff. of volumetric shrinkage:</td>
<td>0,48 %</td>
<td>0,05 %</td>
</tr>
<tr>
<td>Total tangential shrinkage (TS):</td>
<td>7,3 %</td>
<td>0,5 %</td>
</tr>
<tr>
<td>Total radial shrinkage (RS):</td>
<td>5,6 %</td>
<td>0,6 %</td>
</tr>
<tr>
<td>TS/RS ratio:</td>
<td>1,3</td>
<td></td>
</tr>
<tr>
<td>Fiber saturation point:</td>
<td>28 %</td>
<td></td>
</tr>
</tbody>
</table>

Stability: moderately stable to stable

MECHANICAL AND ACOUSTIC PROPERTIES

Crushing strength *: 59 MPa
Static bending strength *: 98 MPa
Modulus of elasticity *: 13850 MPa

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

Musical quality factor: 92,5 measured at 2213 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 1 - very 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 4 - not permeable
Use class ensured by natural durability: class 4 - in ground or fresh water contact

Species covering the use class 5: Yes

Note: This species is listed in the European standard NF EN 350-2.
   It naturally covers the use class 5 (end-uses in marine environment or in brackish water) due to its high silica content.
   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: does not require any preservative treatment
DRYING

Drying rate: normal
Risk of distortion: slight risk
Risk of casehardening: no
Risk of checking: slight risk
Risk of collapse: no
Note: Initial surface drying prior to kiln drying is recommended in order to reduce defects.

Possible drying schedule: 2

<table>
<thead>
<tr>
<th>M.C. (%)</th>
<th>Temperature (°C) dry-bulb</th>
<th>Temperature (°C) wet-bulb</th>
<th>Air humidity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>50</td>
<td>47</td>
<td>84</td>
</tr>
<tr>
<td>40</td>
<td>50</td>
<td>45</td>
<td>75</td>
</tr>
<tr>
<td>30</td>
<td>55</td>
<td>47</td>
<td>67</td>
</tr>
<tr>
<td>20</td>
<td>70</td>
<td>55</td>
<td>47</td>
</tr>
<tr>
<td>15</td>
<td>75</td>
<td>58</td>
<td>44</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: Very irritant sawdust. Sometimes clogging of sawblades.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: correct
Note: Tends to split when nailing. Gluing requires care (dense wood).

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

Exterior joinery
Flooring
Bridges (parts not in contact with water or ground)
Exterior panelling
Sliced veneer
Light carpentry
Ship building (planking and deck)
Veneer for back or face of plywood
Sculpture
Interior joinery
Stairs (inside)
Interior panelling
Current furniture or furniture components
Cabinetwork (high class furniture)
Ship building (ribs)
Veneer for interior of plywood
Vehicle or container flooring
Turned goods
## 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>NOM ADJAP ELANG</td>
<td>Congo</td>
<td>N'DUKA</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>MAKORE</td>
<td>Gabon</td>
<td>DOUKA</td>
</tr>
<tr>
<td>Ghana</td>
<td>ABACU</td>
<td>Ghana</td>
<td>BAKU</td>
</tr>
<tr>
<td>Ghana</td>
<td>MAKORE</td>
<td>Equatorial Guinea</td>
<td>OKOLA</td>
</tr>
<tr>
<td>Germany</td>
<td>DOUKA</td>
<td>France</td>
<td>DOUKA</td>
</tr>
<tr>
<td>Property</td>
<td>Scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.1, 1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monnin hardness</td>
<td>1, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coefficient of volumetric shrinkage (%)</td>
<td>0.3, 0.4, 0.5, 0.6, 0.7, 0.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total tangential shrinkage (%)</td>
<td>4, 5, 6, 8, 9, 10, 11, 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total radial shrinkage (%)</td>
<td>2, 3, 4, 5, 6, 7, 8, 9, 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crushing strength (MPa)</td>
<td>0, 20, 40, 60, 80, 100, 110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static bending strength (MPa)</td>
<td>25, 50, 75, 100, 125, 150, 175, 200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modulus of elasticity (&lt;1000 MPa)</td>
<td>6, 8, 10, 12, 15, 18, 20, 22, 24, 26, 28, 30, 32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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 %