Family: COMBRETACEAE (angiosperm)
Scientific name(s): Terminalia superba
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: light yellow
Sapwood: not demarcated
Texture: medium
Grain: straight or interlocked
Interlocked grain: slight

Note: Sometimes brittle heart. Some logs have a black greyish heartwood, more or less veined.

LOG DESCRIPTION

Diameter: from 60 to 100 cm
Thickness of sapwood:
Floats: yes
Log durability: low (must be treated)

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>
</tr>
</thead>
<tbody>
<tr>
<td>Specific gravity *</td>
<td>0.54</td>
<td>0.07</td>
</tr>
<tr>
<td>Monnin hardness *</td>
<td>2.4</td>
<td>0.9</td>
</tr>
<tr>
<td>Coeff. of volumetric shrinkage</td>
<td>0.42 %</td>
<td>0.07 %</td>
</tr>
<tr>
<td>Total tangential shrinkage (TS)</td>
<td>6.1 %</td>
<td>0.9 %</td>
</tr>
<tr>
<td>Total radial shrinkage (RS)</td>
<td>4.3 %</td>
<td>1.1 %</td>
</tr>
<tr>
<td>TS/RS ratio</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>Fiber saturation point</td>
<td>28 %</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>47 MPa</td>
<td>8 MPa</td>
</tr>
<tr>
<td>Static bending strength *</td>
<td>80 MPa</td>
<td>16 MPa</td>
</tr>
<tr>
<td>Modulus of elasticity *</td>
<td>11750 MPa</td>
<td>2480 MPa</td>
</tr>
</tbody>
</table>

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

Musical quality factor: 115.6 measured at 2740 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 4 - poorly durable
Dry wood borers: susceptible - sapwood not or slightly demarcated (risk in all the wood)

Termites (according to E.N. standards): class 5 - susceptible
Treatability (according to E.N. standards): class 2 - moderately permeable
Use class ensured by natural durability: class 1 - inside (no dampness)
Species covering the use class 5: No

Note: This species is listed in the European standard NF EN 350-2.
Preservative treatment is sometimes difficult due to a variable permeability (low to good).

REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: requires appropriate 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: rapid to normal
Risk of distorsion: no risk or very slight risk
Risk of casehardening: no
Risk of checking: no risk or very slight risk
Risk of collapse: no

Possible drying schedule: 3

<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>30</td>
<td>68</td>
<td>58</td>
</tr>
<tr>
<td>20</td>
<td>74</td>
<td>60</td>
</tr>
<tr>
<td>15</td>
<td>80</td>
<td>61</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: Internal stresses in some logs (usually timbers from plantation). Sometimes, blunting effect quite high.

ASSEMBLING

Nailing / screwing: good
Gluing: correct

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 ≤2 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

Veneer for interior of plywood
Blockboard
Seats
Interior panelling
Light carpentry
Wood frame house
Fiber or particle boards
Sliced veneer

Veneer for back or face of plywood
Current furniture or furniture components
Interior joinery
Moulding
Glued laminated
Boxes and crates
Wood-ware

Note: Sawdust may cause allergic reactions during machining.
## 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>Benin</td>
<td>AZINII</td>
<td>Cameroon</td>
<td>AKOM</td>
</tr>
<tr>
<td>Congo</td>
<td>LIMBA</td>
<td>Ivory Coast</td>
<td>FRAKE</td>
</tr>
<tr>
<td>Gabon</td>
<td>AKOM</td>
<td>Ghana</td>
<td>OFRAM</td>
</tr>
<tr>
<td>Equatorial Guinea</td>
<td>AKOM</td>
<td>Nigeria</td>
<td>AFARA</td>
</tr>
<tr>
<td>Nigeria</td>
<td>WHITE AFARA</td>
<td>Central African Republic</td>
<td>NGANGA</td>
</tr>
<tr>
<td>Democratic Republic of the Congo</td>
<td>LIMBA</td>
<td>Sierra Leone</td>
<td>KOJAGEI</td>
</tr>
<tr>
<td>France</td>
<td>FRAKE</td>
<td>France</td>
<td>LIMBO</td>
</tr>
<tr>
<td>France</td>
<td>NOYER DU MAYOMBE</td>
<td>United States of America</td>
<td>KORINA</td>
</tr>
</tbody>
</table>