Family: DIPTEROCARPACEAE (angiosperm)
Scientific name(s): Shorea contorta
Commercial restriction: no commercial restriction

Note: WHITE LAUAN species come from the Philippines. The name "White Lauan" is sometimes given to the species Parashorea malaanonan, Shorea almon, Shorea palosapis.

WOOD DESCRIPTION

Color: pinkish white
Sapwood: not clearly demarcated
Texture: coarse
Grain: straight or interlocked
Interlocked grain: slight

Note: Brittleheart. Wood cream white to pinkish white, becoming light brown with age. Sometimes, presence of white lines (resin canals). Visible darker silver figure on quartersawn. Frequent black holes.

LOG DESCRIPTION

Diameter: from 60 to 150 cm
Thickness of sapwood: from 5 to 9 cm
Floats: yes
Log durability: moderate (treatment recommended)

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>0,55</td>
<td>0,06</td>
</tr>
<tr>
<td>Monnin hardness *</td>
<td>2,2</td>
<td>0,4</td>
</tr>
<tr>
<td>Coeff. of volumetric shrinkage</td>
<td>0,49 %</td>
<td>0,04 %</td>
</tr>
<tr>
<td>Total tangential shrinkage (TS):</td>
<td>8,1 %</td>
<td>0,7 %</td>
</tr>
<tr>
<td>Total radial shrinkage (RS):</td>
<td>4,3 %</td>
<td>0,8 %</td>
</tr>
<tr>
<td>TS/RS ratio</td>
<td>1,9</td>
<td></td>
</tr>
<tr>
<td>Fiber saturation point</td>
<td>30 %</td>
<td></td>
</tr>
<tr>
<td>Stability</td>
<td></td>
<td>moderately stable</td>
</tr>
</tbody>
</table>

MECHANICAL AND ACOUSTIC PROPERTIES

Crushing strength *: 46 MPa 5 MPa
Static bending strength *: 80 MPa 7 MPa
Modulus of elasticity *: 12330 MPa 1488 MPa
Musical quality factor: 109,6 measured at 2735 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 5 - not 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: Prone to blue stain.

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: normal
Risk of distortion: slight risk
Risk of casehardening: no
Risk of checking: no risk or very slight risk
Risk of collapse: no

Note: Risks of blue stain.

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 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: Risks of tearing in edging. Tendency to woolliness - keep sharp tools. Large stripes on quartersawn (interlocked grain).

ASSEMBLING

Nailing / screwing: poor
Gluing: correct

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to MGR grading rules (2009)
Possible grading: Prime, Select, Standard, Serviceable, Utility

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

Veneer for interior of plywood
Fiber or particle boards
Interior joinery
Current furniture or furniture components
Glued laminated
Sliced veneer
Note: Filling is recommended

Veneer for back or face of plywood
Formwork
Interior panelling
Moulding
Boxes and crates
## 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>Philippines</td>
<td>BAGTIKAN</td>
<td>Philippines</td>
<td>LAUAN MALAANONAN</td>
</tr>
<tr>
<td>Philippines</td>
<td>URAT MATA</td>
<td>Philippines</td>
<td>WHITE LAUAN</td>
</tr>
</tbody>
</table>
### Physical Properties

#### Specific Gravity

- **Very light**: 0.2 to 0.3
- **Light**: 0.3 to 0.4
- **Medium**: 0.4 to 0.5
- **Heavy**: 0.5 to 0.7
- **Very heavy**: 0.7 to 1.2

#### Monnin Hardness

- **Very soft**: 1
- **Soft**: 2 to 3
- **Medium**: 4 to 5
- **Hard**: 6 to 8
- **Very hard**: 9 to 20

#### Coefficient of Volumetric Shrinkage (%)

- **Low**: 0.3
- **Medium**: 0.4 to 0.5
- **High**: 0.6 to 0.8

#### Total Tangential Shrinkage (%)

- **Low**: 4
- **Medium**: 5 to 6
- **High**: 7 to 9

#### Total Radial Shrinkage (%)

- **Low**: 2
- **Medium**: 3 to 4
- **High**: 5 to 6

#### Crushing Strength (MPa)

- **Low**: 0 to 20
- **Medium**: 20 to 40
- **High**: 40 to 60

#### Static Bending Strength (MPa)

- **Low**: 25
- **Medium**: 50 to 100
- **High**: 100 to 200

#### Modulus of Elasticity (% 1000 MPa)

- **Low**: 6
- **Medium**: 8 to 10
- **High**: 12 to 16

### Resistance Properties

#### Resistance to Fungi

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

#### Resistance to Dry Wood Insects 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

- **15%**
- **20%**
- **25%**
- **30%**
- **35%**
- **40%**
- **45%**