Family: LECYTHIDACEAE (angiosperm)

Scientific name(s): Bertholletia excelsa

Commercial restriction: no commercial restriction

WOOD DESCRIPTION

- Color: light brown
- Sapwood: not clearly demarcated
- Texture: medium
- Grain: straight or interlocked
- Interlocked grain: slight
- Note: Presence of traumatic canals.

LOG DESCRIPTION

- Diameter: from 60 to 120 cm
- Thickness of sapwood: from 3 to 5 cm
- Floats: no
- Log durability: moderate (treatment recommended)

PHYSICAL PROPERTIES

- Specific gravity *: Mean 0.77, Std dev. 0.05
- Monnin hardness *: Mean 4.4, Std dev. 0.5
- Coeff. of volumetric shrinkage: 0.56 %, 0.02 %
- Total tangential shrinkage (TS): 10.0 %, 2.0 %
- Total radial shrinkage (RS): 4.9 %, 1.0 %
- TS/RS ratio: 2.0
- Fiber saturation point: 26 %
- Stability: moderately stable

MECHANICAL AND ACOUSTIC PROPERTIES

- Crushing strength *: Mean 56 MPa, Std dev. 4 MPa
- Static bending strength *: Mean 89 MPa, Std dev. 10 MPa
- Modulus of elasticity *: Mean 13950 MPa, Std dev. 370 MPa

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 - moderately durable
- Dry wood borers: susceptible - sapwood not or slightly demarcated (risk in all the wood)
- Termites (according to E.N. standards): class M - moderately durable
- Treatability (according to E.N. standards): class 3 - poorly permeable
- Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)
- Species covering the use class 5: No

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 distortion: slight risk
Risk of casehardening: no
Risk of checking: slight risk
Risk of collapse: no

Note: A period of surface drying prior to kiln drying is recommended in order to reduce the risks of casehardening for thick material.

SAWING AND MACHINING

Blunting effect: normal
Sawteeth recommended: ordinary or alloy steel
Cutting tools: ordinary
Peeling: good
Slicing: nod

ASSEMBLING

Nailing / screwing: good
Gluing: correct (for interior only)

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to NHLA grading rules (January 2007)
Possible grading: FAS, Select, Common 1, Common 2, Common 3

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

Interior joinery
Cabinetwork (high class furniture)
Veneer for back or face of plywood
Wood frame house
Vehicle or container flooring

Current furniture or furniture components
Sliced veneer
Heavy carpentry
Flooring
Stairs (inside)
### 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>Brazil (Amazon)</td>
<td>CASTANHA DO BRASIL</td>
<td>Brazil (Amazon)</td>
<td>CASTANHA DO PARA</td>
</tr>
<tr>
<td>Brazil (Amazon)</td>
<td>CASTANHEIRO</td>
<td>Colombia</td>
<td>CASTANA DEL MARANON</td>
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<td>Venezuela</td>
<td>BRAZIL NUT</td>
<td>Venezuela</td>
<td>JUBIA</td>
</tr>
<tr>
<td>Property</td>
<td>Range</td>
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<tr>
<td>--------------------------------</td>
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</tr>
<tr>
<td>Specific gravity</td>
<td>0.2 - 1.2</td>
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<tr>
<td>Monnin hardness</td>
<td>1 - 20</td>
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<tr>
<td>Coefficient of volumetric shrinkage (%)</td>
<td>0.3 - 0.8</td>
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<tr>
<td>Total tangential shrinkage (%)</td>
<td>4 - 12</td>
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</tr>
<tr>
<td>Total radial shrinkage (%)</td>
<td>2 - 10</td>
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<tr>
<td>Crushing strength (MPa)</td>
<td>0 - 110</td>
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</tr>
<tr>
<td>Static bending strength (MPa)</td>
<td>25 - 200</td>
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<tr>
<td>Modulus of elasticity (MPa)</td>
<td>6 - 32</td>
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<table>
<thead>
<tr>
<th>Resistance to fungi</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 dry wood insects borers</td>
<td>Susceptible</td>
<td>Durable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance to termites</td>
<td>Susceptible</td>
<td>Moderately durable</td>
<td>Durable</td>
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</tr>
<tr>
<td>Treatability</td>
<td>Not permeable</td>
<td>Poorly permeable</td>
<td>Moderately permeable</td>
<td>Easily permeable</td>
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<tr>
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<td>Stable</td>
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<tr>
<td>Fibers Saturation Point</td>
<td>15% Low</td>
<td>25% Medium</td>
<td>35% High</td>
<td>45%</td>
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**CASTANHEIRO**