

## Brazil nut

Family. Lecythidaceae

Botanical Name(s).

*Bertholletia excelsa*

Continent. Latin America

CITES. This species is not listed in the CITES Appendices (Washington Convention 2023).

### Description of logs

Diameter. From 60 to 120 cm

Thickness of sapwood. From 3 to 5 cm

Floats. No

Log durability. Moderate (treatment recommended)

### Description of wood

Colour reference. Light brown

Sapwood. Not clearly demarcated

Texture. Medium

Grain. Straight or interlocked

Interlocked grain. Slight

Notes. Presence of traumatic canals.

### Physics and mechanics

*The properties indicated are for mature wood. These properties may vary significantly depending on the origin and growing conditions of the wood.*

| Property                             | Average value |
|--------------------------------------|---------------|
| Specific gravity <sup>1</sup>        | 0.77          |
| Monnin hardness <sup>1</sup>         | 4.4           |
| Coefficient of volumetric shrinkage  | 0.56 % per %  |
| Total tangential shrinkage (St)      | 10.0 %        |
| Total radial shrinkage (Sr)          | 4.9 %         |
| Ratio St/Sr                          | 2.0           |
| Fibre saturation point               | 26 %          |
| Thermal conductivity (λ)             | 0.25 W/(m.K)  |
| Lower heating value                  |               |
| Crushing strength <sup>1</sup>       | 56 MPa        |
| Static bending strength <sup>1</sup> | 89 MPa        |
| Modulus of elasticity <sup>1</sup>   | 13,950 MPa    |

<sup>1</sup> At 12 % moisture content, with 1 MPa = 1 N/mm

### Natural durability and preservation

Resistance to fungi. Class 3 - moderately durable



Quarter sawn



Half-quarter sawn

Resistance to dry wood borers. Class S - susceptible (risk in all the wood)

Resistance to termites. Class M - moderately durable

Treatability. Class 3 - poorly permeable

Use class ensured by natural durability.

Class 2 - inside or under cover (dampness possible)

## Requirement of a preservative treatment

Against dry wood borer. Requires appropriate preservative treatment

In case of temporary humidification. Requires appropriate preservative treatment

In case of permanent humidification. Use not recommended

## Drying

Drying rate. Rapid to normal

Risk of distorsion. Slight risk

Risk of casehardening. No known specific risk

Risk of checking. Slight risk

Risk of collapse. No known specific risk

Suggested drying program.

| Phases              | Duration (H) | MC (%) probes | T (°C) | Rh (%) | UGL (%) |
|---------------------|--------------|---------------|--------|--------|---------|
| <b>Prewarm 1</b>    |              | > 50          | 50     | 87     | 17.0    |
| <b>Prewarm 2</b>    | 4            | > 50          | 50     | 86     | 16.5    |
| <b>Drying</b>       |              | > 50          | 53     | 85     | 15.7    |
|                     |              | 50 - 40       | 53     | 82.0   | 14.6    |
|                     |              | 40 - 35       | 54     | 78.0   | 13.4    |
|                     |              | 35 - 30       | 55     | 77.0   | 12.9    |
|                     |              | 30 - 27       | 57     | 73.0   | 11.9    |
|                     |              | 27 - 24       | 58     | 68.0   | 10.7    |
|                     |              | 24 - 21       | 60     | 61.0   | 9.3     |
|                     |              | 21 - 18       | 62     | 52.0   | 7.9     |
|                     |              | 18 - 15       | 64     | 43.0   | 6.6     |
|                     |              | 15 - 12       | 65     | 39.0   | 6.0     |
|                     |              | 12 - 9        | 65     | 31.0   | 5.0     |
|                     |              | 9 - 6         | 65     | 28.0   | 4.5     |
| <b>Conditioning</b> | 8            |               | 58     | (3)    | (2)     |
| <b>Cooling</b>      | (1)          |               | Stop   | (3)    | (2)     |

(1) ) Cooling: until the temperature inside the kiln no longer exceeds external temperature by more than 30 °C.

(2) UGL = final H% x 0,8 to 0,9.

(3) Subtract RH from the UGL determined in (2) and temperature, using the Hailwood-Horrobin equation.

## Sawing and machining

Blunting effect. Normal

Sawteeth recommended. Ordinary or alloy steel

Cutting tools. Ordinary

Peeling. Good

Slicing. Good

## Assembling

Nailing and screwing. Good

## Commercial grading

Appearance grading for sawn timbers.

According to ATIBT grading rules, possible grade: FAS (First And Second), n°1 Common and select, n°2 Common

Visual grading for structural applications

No visual grading for structural applications

## Fire safety

Conventional French grading.

Thickness > 14 mm: M3 (moderately inflammable)

Thickness < 14 mm: M4 (easily inflammable)

Euroclasses grading. D-s2, d0

Default grading for solid wood, according to requirements of European standard EN 14081-1+A1 (August 2019).

It concerns structural graded timber in vertical uses and ceiling with mean density upper 0.35 and thickness upper 22 mm.

## End-uses

- Cabinetwork (high class furniture)
- Current furniture or furniture components
- Flooring
- Heavy carpentry
- Indoor staircases
- Interior joinery
- Sliced veneer
- Vehicle or container flooring
- Veneer for back or face of plywood
- Wood frame house

## Main local names

| Country   | Local name          |
|-----------|---------------------|
| Brazil    | Castanha do brasil  |
| Brazil    | Castanha do para    |
| Brazil    | Castanheiro         |
| Colombia  | Castana del maranon |
| Venezuela | Brazil nut          |
| Venezuela | Jubia               |