

Wood and its derivatives.

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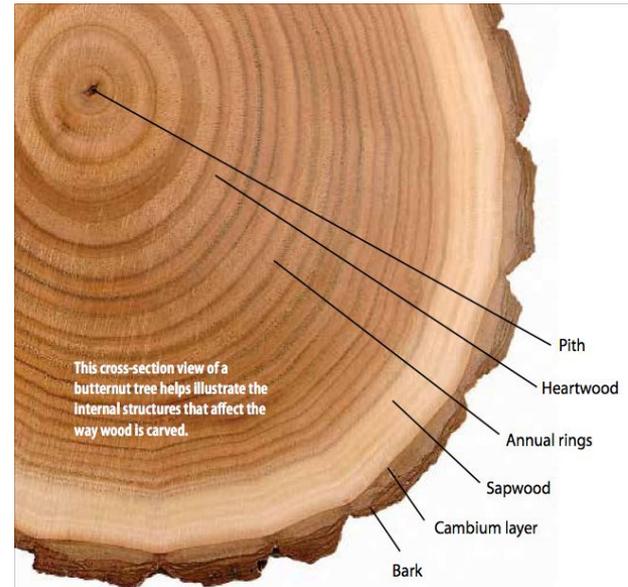
Wood and its parts.

Wood is a raw material with natural origin. It's composed of cellulose and lignin.

The parts of the trunk are:

- **Bark:** exterior layer which protects the plant.
- **Cambium:** Thin transparent layer where growth happens.
- **Sapwood:** Used for artistic woodwork.
- **Heartwood:** Hardest, darkest and driest part, the best one for woodwork.
- **Pith:** Middle and unuseful part.

You can know how old a trunk is by the number of rings it has.



How to get wood.

- **Logging and pruning:** People cut the base of the trunk, then cut the branches.
- **Transport:** Then, huge machines lift the logs on trucks and move them away to a sawmill.
- **Stripping the bark:** Rollers with teeth remove the bark from the logs.
- **Cutting:** The trunks are cutted on the needed length.
- **Drying:** Before working with wood it must be dried, so it's lighter and lasts longer.
- **Planing:** planer machines eliminate rough surfaces and make exact sizes sheets of wood.



Types of wood.

There are two types of wood: **Hardwoods** and **softwoods**.

Hardwoods: Are usually from deciduous trees, grow slowly and have thick, compact trunks. They can have different colours and types of trees.

Beech:	Used in furniture and floors. Also used for toys, tools, kitchen utensils.
Oak:	Used in furniture, doors, windows, parquet, boats...
Mahogany:	Used in joinery, luxury furniture, instruments...

Softwoods: Are usually from conifer trees, they grow quickly and don't have many colours, they're light and easy to work with. There are different types of trees.

Pine:	Used in furniture, electrical posts, boats, floors...
Silver fir:	used in building, boats, simple furniture, carpentry, boxes, paper...
White poplar:	Used in furniture frames, plywood, paper...

Derivatives of wood.

Derivatives of wood include engineered wood and cellulose materials.

Engineered wood.

Type of wood.	Source.	Characteristics.
Plywood	Formed by gluing thin sheets with synthetic resins, it is very resistant.	It can deform due to humidity changes.
Chipboard	Made with wood shavings and sheeps compressed together.	Fragile, rough surface and really affected to humidity.
Fibreboard	Tiny wood threads are glued with synthetic resins.	Polished, fine texture. Very resistant to humidity.

Cellulose materials.

These are made from wood's cellulose, includes paper, cardboard, silk, paper and card. Wood is pulped and mixed with water and chemicals to form a paste, this is compressed into layers and turns into sheets.

Properties of wood.

Properties	Soft	Hard	Engineered
Density	Average	Average	Average
Resistance and toughness	Needs protection	Very resistant and needs protection	Needs protection
Waterproof	No	No	No
Colours	not variety	variety	variety
Electrical conductivity	Insulator	Insulator	Insulator
Thermal conductivity	Insulator	Insulator	Insulator
Acoustic conductivity	Conductor	Conductor	Conductor
Easy to work with	Yes, but be careful	No, be careful	Yes, but be careful.
Recyclable	Yes	Yes	Yes
Biodegradable	Yes	Yes	Yes
Reusable	Yes	Yes	Yes