

## WOOD OXIDATION

WOOD is a living, highly photosensitive material that is distinguished by its colour as one of its essential characteristics.

Since it is alive, colour variation over time is an inevitable and totally natural process.

Wood breathes, expands and shrinks, and is sensitive to moisture, air and light.

Why does parquet change colour?

The colour change is called **oxidation** and occurs when **UV rays** hit the cells of the surface layers of the floor, causing the degradation of lignins, i.e. the organic chemical compounds that, together with cellulose, are the elements part of wood. This degradation requires the intervention of tannins, which have the ability to improve the **preservation** of the wood itself. Tannins have a **pharmacological application**: they are known for their antibacterial and antifungal action.

Oxidation is an **irreversible** process: once the colour has changed, there is no return to the original one.

Parquet usually tends to darken or homogenise the wood grains and shades present, but this is not always true. Not all wood species behave in the same way; in some types of wood oxidation is more pronounced, while in others it is less so.

- **European woods** (beech, fir, larch, ash, etc.): have a moderate oxidation that will tend to turn the wood towards warmer tones, without darkening it much.
- **African woods** (doussié, iroko, afrormosia, cabreuva incense or dorada) and **American walnut**: they have a more intense and stronger oxidation. They tend to darken noticeably.
- **Oak** is a low-oxidation wood type that is well suited for use in rooms with a good level of brightness.
- **European walnut** is a wood that starts from a very cold tone and when it oxidises it tends to a warm brown with a hint of red.
- **Teak**, like heat-treated woods (including steamed woods), has a reverse oxidation and therefore tends to lighten and tone rather than darken/warmen.

The first, most important and most evident oxidation phenomenon occurs in the period immediately following installation. The adaptation of the floor to the conditions of the new installation site in fact also relates to the amount of direct and indirect light that will hit the parquet and which will allow more or less marked oxidation to begin.

Example of oxidation on 175° brushed Thermo Treated Ash varnished with water-based coating:



**The colour will tend to become stable after 3-6 months.** Nevertheless, intensity and speed depend, as already seen, on the wood species, but also on other factors, such as **exposure to the sun**, the **finishing** of the parquet and the **products** used for maintenance and cleaning.

Even coloured parquet floors (oiled or varnished) undergo a colour change due to oxidation of the substrate wood. The only ones that do not change are RAL lacquered floors where the colour layer is so thick that it hides the wood from the light.

**There are no screens that can block this natural phenomenon**, but filtering windows and curtains help to maintain the condition of parquet better.

Large openings, with neutral glass panes that produce a lens effect and allow light and ultraviolet rays to pass through, accelerate the oxidative process, intensifying the results where the sun hits directly.