Fritz Kollitz
Fine Tonewood since 1890

Fritz Kollitz · D-91085 Weisendorf

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Thermally modified wood

During thermal modification, wood is heated to well over 150°C for several hours (typically one to two days) with oxygen being removed. Depending on the process, the oxygen is removed. The use of a steam atmosphere is widespread. However, vacuum or inert gas is also used. The heating is not uniform, but certain temperature-time regimes are used. The treatment causes certain chemical reactions to take place in the wood without oxidation by the oxygen of the environment due to the heat supplied.

The main treatment process is the degradation of hemicellulose. Volatile substances such as resins and decomposition products of hemicellulose are at least partially expelled. Depending on the process and treatment regime, the wood darkens to a greater or lesser extent. These are the same processes that have been demonstrated during the aging of wood, albeit at a much slower rate. Thermowood therefore has similar properties to wood that has been stored for many years.

The most important change in properties due to the treatment is the significant reduction of the sorption behaviour and the associated increase in dimensional stability. Other proven changes are:

- Reduction of density between 4% and 20%, depending on the type of wood and process.
- Increase of the speed of sound in the direction of the fibres by 3% to 5
- Reduction of damping (but not for all woods)

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