Technological process

The Thermo wood process consists of preliminary drying, controlled heat treatment in wet steam and in lack of oxygen, and finally smooth cooling and conditioning of the timber. The whole process takes up to 7 days. The required time depends on wood species, width and initial moisture content.

Recommendations for the end use applications:
- building components,
- furnishing in dry conditions,
- fixtures in dry conditions,
- furniture,
- garden furniture,
- sauna benches,
- door and window components,
- cladding,
- outer doors,
- shutters,
- environmental constructions,
- sauna and bathroom furnishing,
- flooring,
- garden furniture.

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Products gallery:

Thermo Ash

Thermo Spruce

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TOUS LES ASPECTS DU BOIS

Thermo wood is thermally modified timber. This process has a permanent effect on the wood's properties providing excellent durability, dimension stability and insulating qualities. Thermo wood has improved protection against water and decay, reduced warp and twist caused by moisture, sun and time influence. Thermo wood products keep a new-like appearance for a long time.

As a principle the heat treatment process can be done on all wood species.

The biological resistance against some (not all) micro-organisms and insects (termites) is improved. Shrinking and swelling is reduced up to 50–90%.

Flexibility strength is slightly decreased as a result of the high temperatures, but it is not an issue in the real applications.

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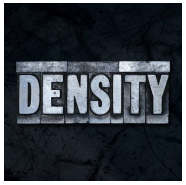
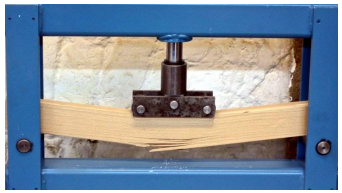
What is Thermo wood?

Thermo wood is thermally modified timber. Thermo wood Ash before treatment and after. The treated wood is darkened in color.



Density
Thermo wood has slightly lower density (10-15% less) than untreated wood. Lower density provides better insulating parameters and lighter weight of the structure.

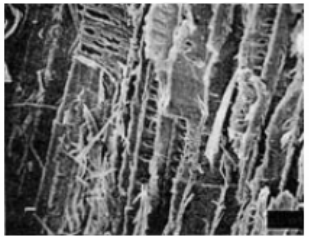


Strength
Thermo wood has lower moisture content, and therefore the strength is higher compared to normal wood. The bending strength is reduced by up to 40% compared with normal treated wood due to areas around the defects.

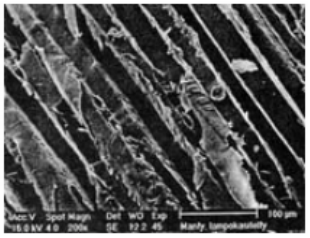
Emissions
Thermo wood has lower emission compared to untreated wood and provides healthy ambience for the human beings. Total amount of Volatile Organic Compounds was reduced up to 55-82 % by the heat treatment. Take care of yourself and grab healthy life!

Screw holding strength
The major impact on screw holding strength comes more from the general variance in wood density than heat treatment itself. In lower density material the results are better when pre-drill holes are used.

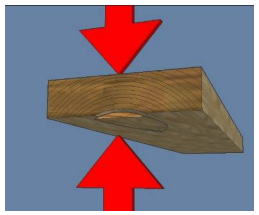
Wood structure



Untreated wood



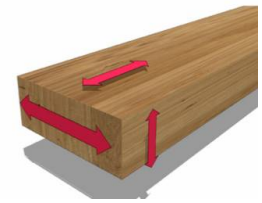
Thermo wood



Compression strength
The rail compression strength is improved about 30% gained over normal kiln dried timber. The test pieces in this study had been submerged in water before testing. Compression strength is mainly dependent on the actual density of the wood.

Hardness
The hardness value improves as the intensive heat treatment temperature level increases, however the change in relative terms is very small, therefore giving no effect in practice.

Moisture content
The heat treatment of wood reduces the equilibrium moisture content. When higher temperature treated goods are exposed to over 90% humidity the moisture content can be 40-50 % less than normal treated.



Stability
The overall stability of heat treated timber is viewed in many positive aspects. Generally moisture content is somewhat lower, the tangential and radial swelling decreases significantly.

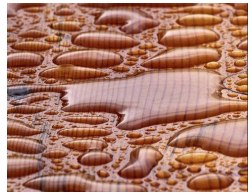
Permeability
Water uptake of heat treated timber is important in such products as window units. The water uptake in heat treated spruce was 20-30 percent less than normal treated wood.

Thermal properties
The tests have shown that the thermal conductivity of Thermo wood is reduced by 20-25% compared with normal treated softwoods. Therefore the material has good advantages when used in applications like external doors, cladding, windows, sauna materials.

Biological durability
The biological resistance shows very good durability depending on the treatment temperature and time: modified wood gains class one (very durable).

Resistance to insects
The results of the tests found that Thermo wood has better resistance to all types of insects, including termites etc.

Weather resistance without surface treatment



Rain & Sun: Against natural weathering Thermo wood has about half the moisture content compared to untreated wood, this difference remains after five years of exposure. Thermo wood shows better ultra violet resistance compared to untreated wood. However further surface treatment with oil or antiseptic is recommended to get even better result.