



MODIFIED WOOD
BY BÄCKEGÅRDS



ThermoWood®

Reduced swelling and shrinking
due to moisture

Enhanced dimensional stability

Better biological durability

Darker colour

No Resin

Lower thermal conductivity

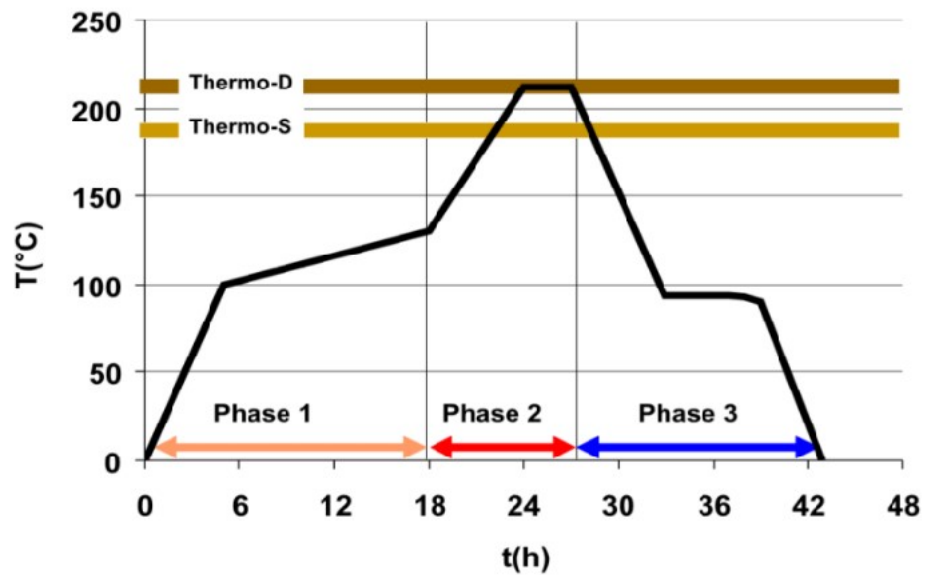


ThermoWood®

No chemicals are used in the production of ThermoWood® products. All raw materials are procured from certified sources. The production method is a result of extensive development work and it is based on the controlled modification of timber with heat, steam and water. The modification phases are high-temperature drying, thermal modification and cooling, and moisture conditioning. The process results in permanent physical and chemical changes in the wood. The new properties remain unchanged, even when the timber is processed with methods such as sawing or planing. This also applies to the colour of the product (through-stained). There are two classes of ThermoWood®: Thermo-S and Thermo-D.

The process

Thermal modification of timber takes place in industrial-scale facilities. The ThermoWood® process is suitable for both hardwoods and softwoods and it is always optimised for the wood species used as the raw material. At the start of the process,



timber is turned into batten bundles, which are transferred to the kiln. During thermal modification, the timber is protected by means of steam, which also influences the permanent changes that take place in the timber. The ThermoWood® process can be divided into three main phases. Phase 1: High-temperature drying The kiln is heated rapidly to 100°C. After this, the temperature is gradually increased to the desired level. During this process, the timber dries and its moisture content decreases to zero. Phase 2: Thermal modification After high-temperature drying, the kiln is maintained at a steady temperature and the actual modification takes place. Phase 3: Cooling/conditioning During the last phase, the temperature in the kiln is decreased with a water-spray system. When the temperature is sufficiently low, the timber's moisture content is increased using water and steam to improve its machinability and dimensional stability. After the cooling phase, the moisture content of ThermoWood® products is 4–7%. The duration of the ThermoWood® process depends on the product class (Thermo-S or Thermo-D), wood species and the raw material's moisture content and dimensions. The product gains its brown colour during the process when the heat changes its chemical properties. During thermal modification, softwoods secrete resin and other organic compounds. Extractives are also removed from hardwoods.