

ThermoWood®

Cladding & Trim



SILVA 
TIMBER PRODUCTS

Offering enhanced physical properties and an attractive rich brown colour, ThermoWood® is an exceptional natural cladding material.

ThermoWood (Thermo-D) is produced using a chemical-free, natural process. By heat treating carefully selected Scandinavian Redwood to enhance its chemical and physical properties, ThermoWood transforms into a natural cladding material with outstanding durability, stability and insulation attributes.

Why choose ThermoWood cladding?

- Natural thermal modification process for enhanced durability and decay resistance
- Readily accepts finish due to absence of resin and low moisture content
- Consistent dark brown colour throughout the wood
- Thermo-D corresponds to class 2 in resistance against decay (EN113, EN350-1, EN350-2)
- 30 year expected service life endorsed by the Building Research Establishment
- Improved dimensional stability



Silva Timber and Metsä Wood

Silva Timber has partnered with Metsä Wood, one of the world's leading producers of ThermoWood.



Environment

The timber used to produce Silva Timber's ThermoWood is grown in Metsä Wood's own Finnish forests, fully certified under the Finnish Forestry Certification System.

Certification

PEFC Certified - ensuring the raw material is sourced from sustainably managed forests.

Material

Metsä Wood ThermoWood (Thermo-D) is produced from European Redwood (*Pinus Sylvestris*). The specially selected raw material is sawn from live knotted logs.



How is ThermoWood created?

Thermal modification of timber is a clean, ecological process which enhances the physical properties of the wood. The process is completely natural and chemical free, using only high temperatures and steam to transform and control the timber's characteristics.

Thermal modification can be divided into three phases:

- 1:** Temperature of the wood is raised using heat and steam to prevent cracking. The wood is then dried.
- 2:** Thermal modification takes place - moisture content of wood is dropped to close to zero, then heated to 212°C. Steam is used to prevent cracking and burning, as well as to influence the chemical changes in the wood.
- 3:** The treated wood is cooled down and re-moisturised to around 5-6%.

By heating the wood to 212°C, resistance to decay and dimensional stability are greatly enhanced, creating the Thermo-D properties suitable for exterior and interior cladding applications.

Products



21 x 118mm
Tongue & Groove



21 x 118mm
Shiplap



21 x 118mm
Channel



21 x 92mm
Trim



42 x 42mm
Trim



42 x 42mm
Corner Trim

Alternatively, take advantage of Silva Timber's in-house machining service to create a bespoke profile to your specification.



ThermoWood Characteristics

Stability

ThermoWood is more stable than most softwoods due to the fact that the heat treatment process makes the timber less able to absorb or lose moisture. The equilibrium moisture content is reduced by 50%, minimising the potential to warp, twist or cup. Tests have shown the potential for cupping to be reduced by up to 90%.

Durability

ThermoWood has a high resistance to most decay fungi. This improved durability is enabled by the heat treatment process.

Thermo-D corresponds to class 2 in resistance against decay (EN113, EN350-1, EN350-2). ThermoWood is recommended to be used in use class 1-3 (EN335-2:2006).

While ThermoWood is not resistant to algae growth on its surface, it does not cause any structural damage as these organisms obtain their nourishment from the surrounding air. Algae growth can be prevented by using a protective finish such as Sansin SDF.

Moisture Content

ThermoWood has a moisture content of 6-8% when packed at the manufacturing unit. This level will change according to onsite atmospheric conditions. The moisture content found in ThermoWood is only half of the value found in untreated pine.

Density

The material density of ThermoWood is approximately 10% lower than Nordic pine.

Thermal Properties and pH Level

The thermal conductivity of ThermoWood is reduced by 20-25% compared with normal softwoods. The pH level is also slightly decreased when compared to untreated wood.

Emissions

ThermoWood has a characteristic odour caused by the changes during heat treatment, however no harmful compounds are released into the air. The evaporation of the majority of terpenes during the heat treatment process means ThermoWood contains significantly lower Volatile Organic Compound (VOC) values than untreated softwoods.

Colour

ThermoWood's dark colour is similar to some tropical hardwood species, which is created and closely monitored during the heat treatment process. When ThermoWood is exposed to UV light it will lose its colour and turn silver grey unless protected by a pigmented finish. See the section 'Protecting ThermoWood' for more information.

Resin-free

The heat treatment process removes resin from timber, resulting in no resin leakage/bleed through surface coatings, helping improve stability and reducing maintenance cycles.

Strength

Strength properties are decreased during the heat treatment process. ThermoWood is not recommended to be used in load-bearing structures.



Protecting ThermoWood

As with all timber, it is recommended to protect ThermoWood with a finish to defend against UV damage and maintain a consistent moisture content.

What is weathering?

There is a risk involved when leaving wood exposed to the elements. During the weathering process wood can appear unsightly as the material can blacken due to moisture getting into the fibres.

This can lead to patchy, inconsistent areas of discolouration which are unsightly. While this can naturally weather to the silver-grey look over time, the process can take years until you're left with a consistent finish.

ThermoWood is renowned for high durability and physical stability. However as with all wood, it is susceptible to weathering once exposed to UV rays or moisture.

How can it be avoided?

Protecting your timber from the outset is the best way to keep it looking its best for years to come. Silva Timber have a wide range of options available for protecting timber cladding.

Sansin Enviro-Stains

Environmentally friendly wood protection

For over 25 years Sansin have pioneered the use of environmentally friendly water-borne wood protection technologies that deliver outstanding performance. Rather than forming a film, Sansin bonds directly with wood to become an integral part of the wood's cell structure. With over 80 colour tones available, Sansin is ideal for customers looking to enhance the natural appearance of wood.

www.silvatimber.co.uk/sansin



Sioo Wood Protection

A breakthrough in wood protection technology



Sioo's active natural ingredients combine to quickly protect all wood species, enhancing both appearance and performance. Sioo works to double the hardness of wood and provide a clean, bright surface with a natural silver-grey finish. Sioo's simple application method provides up to 15 years virtually maintenance free use on cladding.

By applying Sioo Wood Protection to new timber, algae formation and rot is resisted. The application results in a light, lustrous surface finish, protecting the wood against any deterioration and discolouration.

www.silvatimber.co.uk/sioo

Pre-finishing

Protect timber from the outset with Silva's pre-finishing service

Under the direction of Dr. Nenad Vidovic, the Sansin Research & Development team conducted extensive testing of Sansin's core line up of products in a variety of heat-treated wood applications.

Sansin's test results confirmed that without suitable coating, heat treated wood is not weather resistant and particularly susceptible to UV degradation.

For optimal performance Silva Timber recommend pre-finishing ThermoWood with Sansin SDF HT, a specially formulated penetrating stain for thermally modified exterior wood.



Technical information

Installation

Tongue & Groove or Trim Boards should be face nailed in the lower part of the board. Shiplap and Channel cladding profiles can be secret nailed. Ventilation should be provided behind the boards (22-25mm). There should be at least 200mm between the ground and lower edge of the cladding.

Fasteners

For best results use stainless steel annular ring shank nails. These have thin shanks and blunt points to reduce splitting. Nails should be driven with care into the framing members. Hand nailing is recommended as pneumatic nail guns can cause wood distortion and splitting. Nails should not be closer than 30mm from the end and edges of the board or use pre-drilled nail holes. When using a conventional hammer, it is advisable to use a nail punch for the last 2-3mm.

Fire Treatment

ThermoWood can be treated for enhanced fire retardation. Specify either DRICON for interior/weather protected situations, or NON-COM EXTERIOR for exterior or severe damp situations.

Please note that this information is intended as a basic guide only. A detailed 'Installation Manual' can be downloaded in PDF format from the technical area on our website. Visit www.silvatimber.co.uk for online ordering, case studies, technical library and much more.



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