THERMOWOOD

BY WHOOD

TECHNICAL SPECIFICATIONS & PROFILES 2020

ThermoWood is a product manufactured using a special high temperature kilning. ThermoWood not only protects the timber with a high heat and steam process but also brings up some chemical changes as well. With the ThermoWood Process the sugar inside the timber gets caramelized and that causes the color change, making the timber more stable and durable compared to regular Kiln Dried timber. Thanks to the thermal modification, the swelling and bending range of the timber has been minimized.

Basic Specifications

Stability

As a result of the ThermoWood process the stability is increased compared to regular wood. Due to structural changes of the wood with high heat treatment the internal stress has been reduced. After the process the equilibrium moisture content and permeability of the wood has been reduced, as well as, the working and twisting tendency compared to regular wood has been minimized

Durability

During the ThermoWood Process the biological durability of ThermoWood products are being increased due to the hemicellulose breakdown. As these are the nutrients of the bacteria causing decay and fungus which are pulled out during the ThermoWood process. ThermoWood products have a durability against various types of fungus as well as being durable against wood destroying basidiomycetes. The ThermoWood process does not protect the materials from algae and fungus on the surface. These organisms feed from the environment and does not cause and structural changes on ThermoWood products. The algae on the surface which can be seen as an aesthetic clause and can be easily prevented with the surface treatment (Such as wood preservative oil, water-based varnish).

Service Life

Compared to regular wood, ThermoWoods are 80% more efficient for outdoor usage. The swelling and shrinkage behaviour of the wood has been minimized and rotting has been prevented by natural transactions. ThermoWood products are nature and human friendly.

The durability of ThermoWood Ash products are as per European norms EN 350 ve EN 335-1.

TMT has certified that ThermoWood Ash products have a biological durability of minimum 25 years as per CEN/TS 15083-1:2005 technical norms in case of a direct touch to the ground and continuously wet conditions.

According to EN 113 norms tested by VTT, it has been proved that the minimum durability of ThermoWood Pine cladding products are 30 years in the terms of British standards.

According to EN 335-1 ve EN 350-2 the durability class of ThermoWood iroko decking products have a minimum durability of 25 years.

The effect of weather on cladding products are 6 times less as compared to ThermoWood decking products. According to EN 335-1 ve EN 350-2 the durability class of ThermoWood Tulipwood cladding products have a minimum durability of 25 years.

Density

The density of ThermoWood Ash products are 595 – 620 kg/m3 with a humidity content of 4, 3 – 6% in 20 deg environmental degree with 65% relative humidity.

The weight density of ThermoWood Pine products are between 350 – 480 kg/m3. This is valid with a humidity content of 4-7% in 20 deg environmental degree with 65% relative humidity.

It has been examined that with a humidity content of 4-6% in 20 deg environmental degree with 65% relative humidity, the weight density of ThermoWood Iroko products are between 650-675 kg/m3.

The weight density of ThermoWood Tulipwood products are between 420-450 kg/m3. Note: As ThermoWood products are 100% natural, a weight density difference of 10% is possible among the pieces.

Modulus of Elasticity and Strength

Due to lack of humidity in Thermally modified ThermoWood products and structural changes happening during the process, the impact bending strength values are lower as compare to regular wood. Big differences are observed whilst relating to regular wood.

Nail and Screw Holding Strength

Compared to regular wood, the nail and screw retention of ThermoWood products do not display a great difference. Due to the cell wall changes during the ThermoWood process, nail and screw holding strength becomes lower of about 20%. By using accuracy when installing and stainless-steel screws this can be easily avoided. (A2 Stainless Steel screws are recommended)

Gluing

It has been examined that the gluing of ThermoWood products are on the same level as regular wood products. Proposed glues are MUF, Polyurethane, PVA and Epoxy.

Brinell Hardness

After the ThermoWood process the Brinell strength is higher compared to non-heat-treated products.

The Brinell hardness of ThermoWood Ash products are 30, 5 N/mm2.
Brinell hardness of ThermoWood Pine products are 15 N/mm2.
Brinell hardness of ThermoWood Iroko products are measured a 40 N/mm2.

Emission

The ThermoWood process has its own characteristic smell. This smell might not be liked by everyone but the test results of VTT (KET 3300495) has shown that the emissions are not harmful in fresh airs.

The test results of TVOC – Total Volatile Organic Compounds has shown that the rates are much lower compared to regular wood.

The smell of ThermoWood products may disappear within a few days but with the surface treatment or rain it may arise again for a short time.

Fire Resistance

According to the Europeans Norms EN 13501 (SBI0-Test) the reaction class towards the fire is rated as 'Class B'.

ThermoWood Charred and Non-Charred cladding products can achieve BS476 Class O and 1 Euroclass B BS EN 13823 with special techniques and fire-retardant liquids.

Insulation

Insulation properties of ThermoWood products have been increased by 20%. ThermoWood products are ideal for use externally for cladding, saunas, windows, doors and decking.

Colour

As ThermoWood products are totally natural it is well known that the change in color is subject to the glucose amount inside of the timber itself, due to the high heat treatment the sugars inside the wood gets caramelized and the color of the wood changes.

ThermoWood Ash gains a dark brown color
ThermoWood Pine gains a light brown color

Moisture

Content During the packing of ThermoWood products in our factory the humidity content is between 4 – 6%, this percentage may change due to the atmospheric environment. In dry climates with 95% of relative humidity the maximum balance humidity rate is about 11.9%.

Prior to installation all external timber cladding and decking needs to be unwrapped from its packaging and allowed to acclimatize to the high UK moisture levels that we experience over any 12 month period.

Maintenance

Maintenance is recommended for ThermoWood. For decking products, the advice is every 12-18 months and for cladding products the suggested period is between 5 & 8 years. When laying ThermoWood decking it is recommended that a minimum of 50mm gap is left between the ground and the decking. This is to make sure there is enough space left for air circulation – it is also suggested that significant ventilation is left if closing the surround of the decked area. When installing ThermoWood products, excluding profiled cladding, a 5mm gap between each board (cladding or decking) should be left to allow for any slight movement and for ventilation purposes.

Maintenance periods may vary depending on the oil/stain used, for additional information please see Maintenance Guide.

Environment

Our ThermoWood has FSC Certification and comes from sustainable forests. During production of ThermoWood no water is wasted this is due to controlled water consumption, the natural resources are protected and no harm is given to the environment.

Working with the product

Like regular woods ThermoWood products can be cut to size with no problem. It is recommended that eye protection is worn during the cutting process due to dust particles being smaller in size as the ThermoWood is at a drier state to regular woods.

Health and Safety

ThermoWood products are 100% natural, there are no chemicals used during the ThermoWood process meaning that there is nothing to cause harm to nature or to human beings. However, if wood splinters penetrate the skin it is highly recommended to remove it as soon as possible.

Storage

As ThermoWood's dust particles are smaller than regular woods wearing eye protection and mask is recommended when cutting ThermoWood products.

Storage

The packages of timber should be stored on a flat ideally unheated surface with wooden battens at a recommended distance of 600mm between the packs this is to avoid any distortion and to prevent it from touching the ground.

On arrival, all external cladding and decking should be unwrapped and allowed to acclimatize to the the local moisture levels.

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NOTE

WHOOD floors are manufactured only from natural wood, with the natural implication of producing shades, occurrence of knots, and the ring patterns and grain structures of particular elements – boards, slats etc. – can differ from one another as well as in relation to the photos included in all WHOOD marketing materials. This natural variation can be noticed when comparing the final product with the samples presented at the exposition. The wood variety is a natural feature of this noble raw material, determining its beauty and uniqueness.

D4

PROFILES	
▸ 20 x 95mm	▸ 20 x 150mm
▸ 20 x 112mm	▸ 26 x 90mm
▸ 20 x 132mm	▸ 26 x 160mm
INSTALLATION	▸ Screws

D4 sg2

PROFILES	
▸ 20 x 95mm	▸ 20 x 150mm
▸ 20 x 112mm	▸ 26 x 130mm
▸ 20 x 132mm	
INSTALLATION	▸ T-4, T-6

D32

PROFILES	
▸ 20 x 132mm	
INSTALLATION	▸ TENI© Clip

D31

PROFILES	
▸ 20 x 112mm	▸ 20 x 132mm
INSTALLATION	▸ TENI©Clip

D34

PROFILES	
▸ 26 x 115mm	▸ 26 x 160mm
▸ 26 x 130mm	
INSTALLATION	▸ TENI©Clip

D38

PROFILES	
▸ 20 x 150mm	
INSTALLATION	▸ TENI©Clip

D45J

PROFILES	
▸ 21 x 118mm	
INSTALLATION	▸ PaCS© Strip118

D41

PROFILES	
▸ 20 x 112mm	
INSTALLATION	▸ TENI©Clip

PROFILES
- 20 x 132mm
- 20 x 155mm

INSTALLATION
- B1-1

NEW!

PROFILES
- 20 x 155mm

INSTALLATION
- Screws or nails

NEW!

PROFILES
- 20 x 150mm

INSTALLATION

PaCS ©
- CLAD150

NEW!

PROFILES
- 26 x 130mm

INSTALLATION
- Screws or nails

PROFILES
- 20 x 72mm
- 26 x 65mm

INSTALLATION
- Screws or nails

PROFILES
- 20 x 52mm

INSTALLATION

PaCS©
- CLAD52

PROFILES
- 20 x 52mm
- 20 x 72mm

INSTALLATION

PaCS©
- CLAD52
- CLAD72

PROFILES
- 20 x 95mm
- 20 x 112mm

INSTALLATION
- B1-1

D4

PROFILES	
▸ 26 x 115mm	▸ 42 x 42mm
▸ 26 x 140mm	▸ 42 x 140mm
INSTALLATION	▸ Screws

D4 sg

PROFILES	
▸ 26 x 115mm	▸ 26 x 140mm
INSTALLATION	▸ PCClip

D45J

PROFILES	
▸ 26 x 118mm	
INSTALLATION	▸ PaCS© trip118

D30

PROFILES	
▸ 26 x 115mm	
INSTALLATION	▸ Screws

D34

PROFILES	
▸ 26 x 115mm	▸ 26 x 140mm
INSTALLATION	▸ TENI© Clip

D30 sg

PROFILES	
▸ 26 x 115mm	▸ 26 x 140mm
INSTALLATION	▸ PC Clip

GLB (glue laminated board)

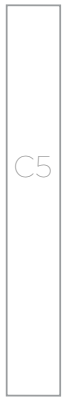
PROFILES	▸ 95 x 95mm

PROFILES
- 20 x 115mm
- 20 x 140mm

INSTALLATION
- Screws or nails

PROFILES
- 20 x 115mm
- 20 x 140mm

INSTALLATION
- Screws or nails



PROFILES
- 20 x 140mm

INSTALLATION
- Screws or nails

PROFILES
- 20 x 140mm

INSTALLATION
- B1-1

PROFILES
- 26 x 140mm

INSTALLATION
- Screws or nails

NEW!

PROFILES
- 26 x 130mm

INSTALLATION
- Screws or nails

PROFILES
- 20 x 67mm
- 26 x 68mm

INSTALLATION
- Screws or nails

PROFILES
- 20 x 65mm

INSTALLATION

PaCS©
- CLAD65
- CLAD65-0

PROFILES
- 20 x 115mm
- 20 x 140mm
- 42 x 42mm

INSTALLATION
- Screws or nails

PROFILES
- 20 x 115mm
- 20 x 138mm

INSTALLATION
- Screws or nails

PROFILES
- 20 x 115mm
- 20 x 138mm

INSTALLATION
- Screws or nails

PROFILES
- 20 x 138mm

INSTALLATION
- B1-1

PROFILES
- 20 x 65mm

INSTALLATION

PaCS©
- CLAD65
- CLAD65-0

D4

PROFILES	
▸ 26 x 160mm	▸ 42 x 68mm
INSTALLATION	Screws

D34

PROFILES	
▸ 26 x 160mm	
INSTALLATION	TENI© Clip

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