

COMMON TIMBER TYPES EXTERIOR JOINERY

STANDARD SPECIES

SOFTWOODS

European Redwood



European Redwood is the most common timber used in window and door production, but due to its durability class, it must be preservative treated to hazard class 3, BS EN 335-1. Preservative treatment can be by double vacuum impregnation or superficial treatment.

The use of surface applied preservative systems such as TEKNOL AQUA 1410 or AQUAPRIMER 2907 combi primer, in conjunction with factory applied coatings, reduces these problems and is becoming increasingly common.

European Redwood is suitable for both translucent and opaque coating systems, our preferred method for opaque systems involves combining our knot inhibiting primer ANTISTAIN AQUA 5200 with filling and sealing the knots with TEKNOFILL 5001 fine surface filler and a suitable knotting solution.

Many manufacturers use engineered or laminated timber sections to minimise defects within the substrate. Finger jointed timber is common and clear face laminates are also available. Low moisture content can be a problem with engineered timber and must be taken into consideration during manufacture and when joinery is installed in areas of high moisture.

Low moisture content in the factory can lead to excessive grain raising and to snagging problems on site when the timber expands as it recovers to its natural moisture level.

Western Red Cedar



Western Red Cedar is a durable softwood from North America with excellent natural weathering properties. Left untreated the surface will go to a silvery grey colour. The natural extractives in Western Red Cedar can reduce adhesion, so it must be degreased prior to coating with a sharp solvent such as TEKNOSOLV 7012. Any cloths used to apply TEKNOSOLV 7012 must be changed regularly to ensure all extractives are removed rather than dispersed across the surface. Particular attention should be given to the moisture content of this timber, to ensure it is within the recommended range of 12% - 16%

STANDARD SPECIES

HARDWOODS

Sapele and Utile



Sapele and Utile are the most common hardwoods used in external joinery. With good strength characteristics and moderate durability, these species are used for doors, windows and conservatories.

Sapele has a tendency to 'reverse' grain which can cause problems with warping when used in door manufacturing.

Both Sapele and Utile can be coated with a translucent finish without problems, although a base coat stain such as AQUAPRIMER 2900 must be used to protect against surface discoloration due to UV exposure.

Tannin staining has become increasingly common on these species and if the staining is excessive we recommend two coats of ANTISTAIN AQUA 2901 are used to help prevent tannin staining through an opaque topcoat.

Grandis



Grandis has good strength characteristics and moderate durability, this species is used for doors, windows and conservatories. Grandis can be coated with a translucent finish without problems, although a base coat stain such as AQUAPRIMER 2900 must be used to protect against surface discoloration due to UV exposure.

Where tannin bleed is excessive we recommend two coats of ANTISTAIN AQUA 2901 are used to help prevent staining through an opaque topcoat.

Iroko



Iroko is a durable African hardwood with excellent weathering properties. Untreated, the surface turns a silvery grey colour.

Due to its durability, Iroko is typically used for cill components in door and window frames.

Iroko contains extractives, which can prevent good adhesion of surface coatings, and surfaces should be degreased with a sharp solvent such as TEKNOSOLV 7012 prior to coating. We recommend coating within 2 hours of degreasing. Cloths used to apply solvent should be replaced regularly to avoid spreading the natural extractives across the surface.

Oak



Oak is a durable Northern Hemisphere timber widely used for timber frames, garden furniture and, less commonly, windows, doors, and conservatories. The species typically used are European Oak and American White Oak.

Oak contains extractives that inhibit coating adhesion and should be degreased with a sharp solvent such as TEKNOSOLV 7012 prior to coating. Although naturally durable, oak is sensitive to moisture and UV discolouration and the surface tends to split on exterior exposure. Uncoated, it will blacken and eventually turn to a dark grey colour.

We do not recommend colourless systems on exterior oak joinery and all translucent shades generally require more frequent maintenance to keep their decorative appearance.

MODIFIED WOOD

CHEMICALLY MODIFIED

Accoya®



Accoya Wood - is a chemically modified wood (acetylation) with excellent stability in damp climates. Its performance characteristics being well suited for exterior joinery (windows, doors & conservatories), cladding, decking & garden structures / buildings)

The proprietary acetylation process enhances fast-growing, renewal and sustainably sourced softwood into a material with qualities to compete and outperform standard species hardwoods.

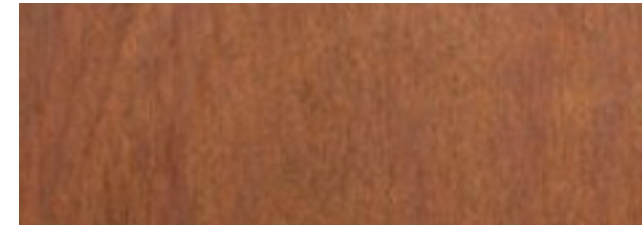
Accoya readily accepts both translucent and opaque coating systems (high build, medium build & low build non-film forming systems), where its inherent stability can typically extend the high build coating systems life by 3 times longer, than the typical standard species & other heat treated woods. Natural Accoya undergoes a slight change of colour when exposed to UV bombardment. This effect will still occur with light shaded translucent systems.

Density – 515 +/- 80 kg/m³

Accoya Warranty – 50 years above ground and 25 years in ground or fresh water.

CHEMICALLY & THERMALLY TREATED

Kebony



Kebony:- is considered a dually-modified wood, which means it's both chemically and thermally modified. That happens through their proprietary process called furfurylation. The Kebony technology modifies wood by forming stable, locked-in furan polymers in the wood cell walls. These increase the dimensional stability, as well as durability and hardness, of the wood. This process is based on impregnation with furfuryl alcohol produced from agricultural crop waste. Kebony thus uses a plant-derived waste product to give enhanced strength and durability to another plant product – namely wood.

Kebony wood is resistant to rot and fungi, and other wood-destroying microorganisms in an above-ground context. Kebony is a low-maintenance material that does not require additional treatment, but readily accepts both translucent and opaque coating systems (high build, medium build & low build non-film forming systems).

Kebony Clear
Density – 670 kg/m³

THERMALLY MODIFIED RADIATA PINE (NZ)

Abodo



Abodo wood is a great option for thermally modified wood that is durable and rapidly renewable. The timber has exceptional weatherability and maintains its durability and beauty for a lifetime.

Based in New Zealand, Abodo prides itself on producing a range of durable thermally modified timber solutions that are safe, sustainable, and renewable. The company has a strong ethos around ensuring its timber is ethically sourced and harvested from New Zealand's FSC® certified rapid renewable plantation forests. Using an ephemeral modification kiln, the New Zealand Radiata pine is processed up to 230°C at which point the thermal modification takes place. Abodo ensures it provides more than 30 years of service, which is as long as it takes to grow a replacement tree.

Density 420 kg/m³

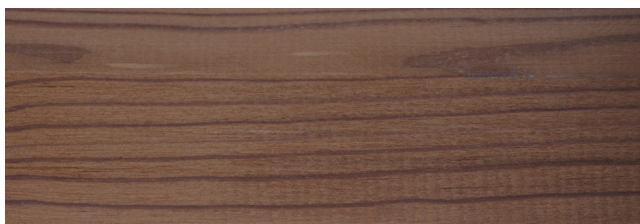
Background

One of trailblazing types of thermally modified timber is ThermoWood® from Finland, which starts life as Scandinavian Pine before undergoing a three-stage treatment involving high-temperature drying, heating and then cooling, which restores the moisture content.

ThermoWood® is a registered trademark owned by the International ThermoWood Association. This trademark signifies wood products made via a patented process developed in Finland in the 1990s.

The quality control of ThermoWood® was developed during the 90's collaboratively with Technical Research Center of Finland (VTT), member companies, and Finotrol Oy.

"Thermowood" Pine



Thermowood is a timber that has been thermally modified in order to enhance its durability and stability.

Thermowood Pine uses Scandinavian Redwood and is baked to temperatures in excess of 215°C and uses steam and pressure. This process changes the cellular structure of the timber and results in a stable timber.

When used as timber cladding, a key advantage of Thermowood is its stability. The treatment process makes the timber significantly more resistant to moisture than unmodified timber, which reduces the shrinkage and swelling of the timber significantly, making it ideal for coating with medium to low build systems.

Radiata Pine Thermowood can be coated with a range of surface finishes such as; planed, sawn and structured depending on the coating system chosen.

Radiata Pine Thermowood



Radiata Pine Thermowood is another modified timber that uses Radiata Pine sourced from Chile. It is a very clear timber that is almost free of knots and is an alternative to Western Red Cedar.

The Radiata Pine is thermally modified using heat and steam, it is baked to temperatures in excess of 215°C. This process changes the cellular structure of the timber and results in a stable timber that is ideal for a range of coatings.

Radiata Pine Thermowood is a light brown shade, with the grain being a chocolate brown.

Currently commercial influences and demands all suggest wood modification will continue to expand and develop as a market sector within the timber trade industry. This being the case we will see new brands and modification process methods being created and the subsequent products come to market.

General

Testing has shown modification processes alone will not improve the timber's resistance to surface mould growth. Proven performance confirms that: To attain optimum joinery / coating performance when using modified wood, a surface applied preservative is recommended.

Always refer to the Technical Datasheet for full instructions on how to use Teknos products.

For further support, contact your local Teknos coating expert or visit **teknos.com**