



UK Product Guide

Vulcan Thermally Modified Timbers



Carefully Crafted Timber



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Our Vision and Mission

Vision

Our vision is for all timbers to be safe, sustainable and cared for, like the forests they grow in.

For too long, the timbers used in the places we live and work have been harvested unsustainably and chemically treated. Here at Abodo, we are leading the way for change.

At Abodo we craft timbers with lasting beauty that are safe for people and the environment.

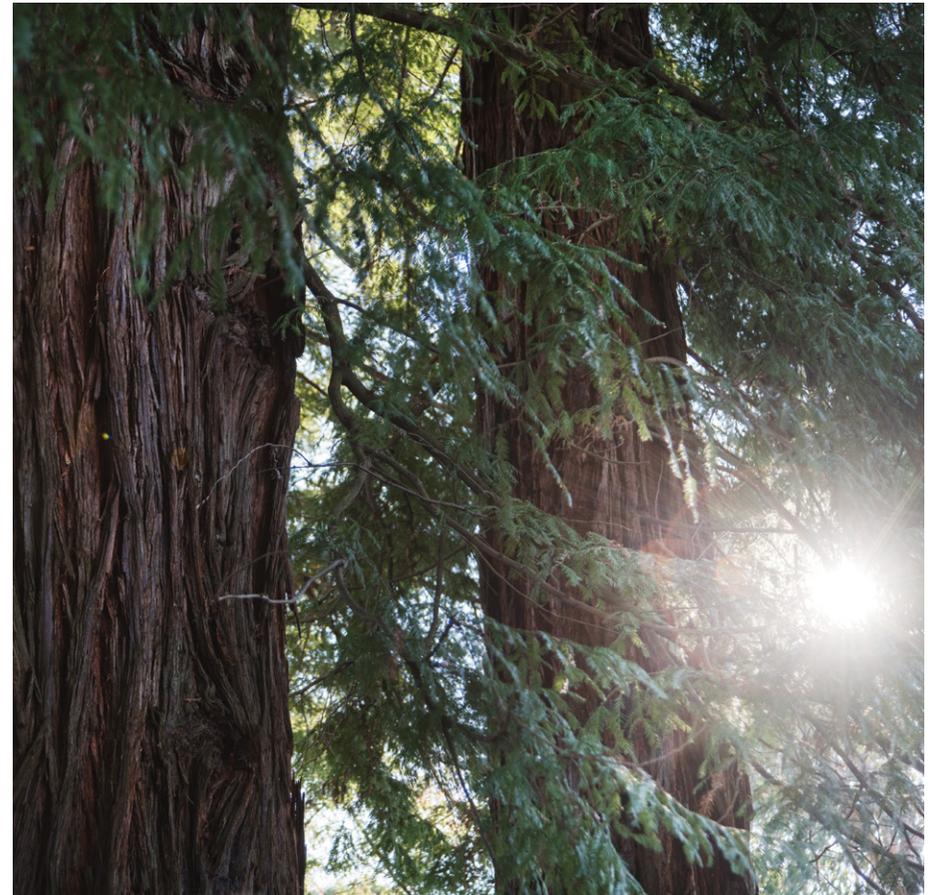
We are timber craftsmen. From milling to building, we respect our material, the people who use it and where it comes from.

“ ... we craft timbers with lasting beauty that are safe for people and the environment. ”

Mission

We are on a mission for alternatives to what has long been considered normal. We are always searching for better ways to stay true to our craft and nature's design. Old growth forests (such as Western Red Cedar) are a source of irreplaceable ecosystems and carbon.

Instead, we offer sustainable market-leading alternatives to old growth timbers, sourced from one of the highest rotation and carbon-beneficial forest estates in the world.



Our Craft

Abodo crafts timbers with lasting beauty that are safe for people and the environment. Many exterior timbers are harvested from unsustainable old growth forests or are treated with harmful chemicals. Our timbers stand the test of time, they are beautiful, durable and rapidly renewable.

Our Philosophy

Our design ethos has two core components:

Lifetime Beauty

Abodo timbers are crafted to be enjoyed for years to come. Designed to age with grace, our timbers have exceptional weatherability and maintain their durability and beauty for a lifetime.

With Tomorrow in Mind

Our timbers are harvested from New Zealand's FSC® certified rapidly renewable plantation forests. They are ethically crafted with respect from beginning to end – allowing us to meet today's increasing needs without disadvantaging future generations.

Our timber products are one of the only truly carbon negative building materials. Plantation forestry helps address climate change through absorption of carbon dioxide which is a green-house gas.

“ Our timbers stand the test of time, they are beautiful, durable and rapidly renewable. ”



Sources and Key Suppliers

Kaingarooa Region – New Zealand

Much of Abodo's Radiata Pine and Douglas fir is sourced from the Kaingarooa region, in New Zealand's central North Island.

The Kaingarooa Forest, is one of the largest man-made plantation forests in the southern hemisphere.

Today the Kaingarooa Forest is managed by Timberlands, a global forest manager, on behalf of investors. It is a world class forest, which is Forest Stewardship Council® (FSC®) certified.

Wood fibre from the Kaingarooa region is prized for its medium density, and high consistency.

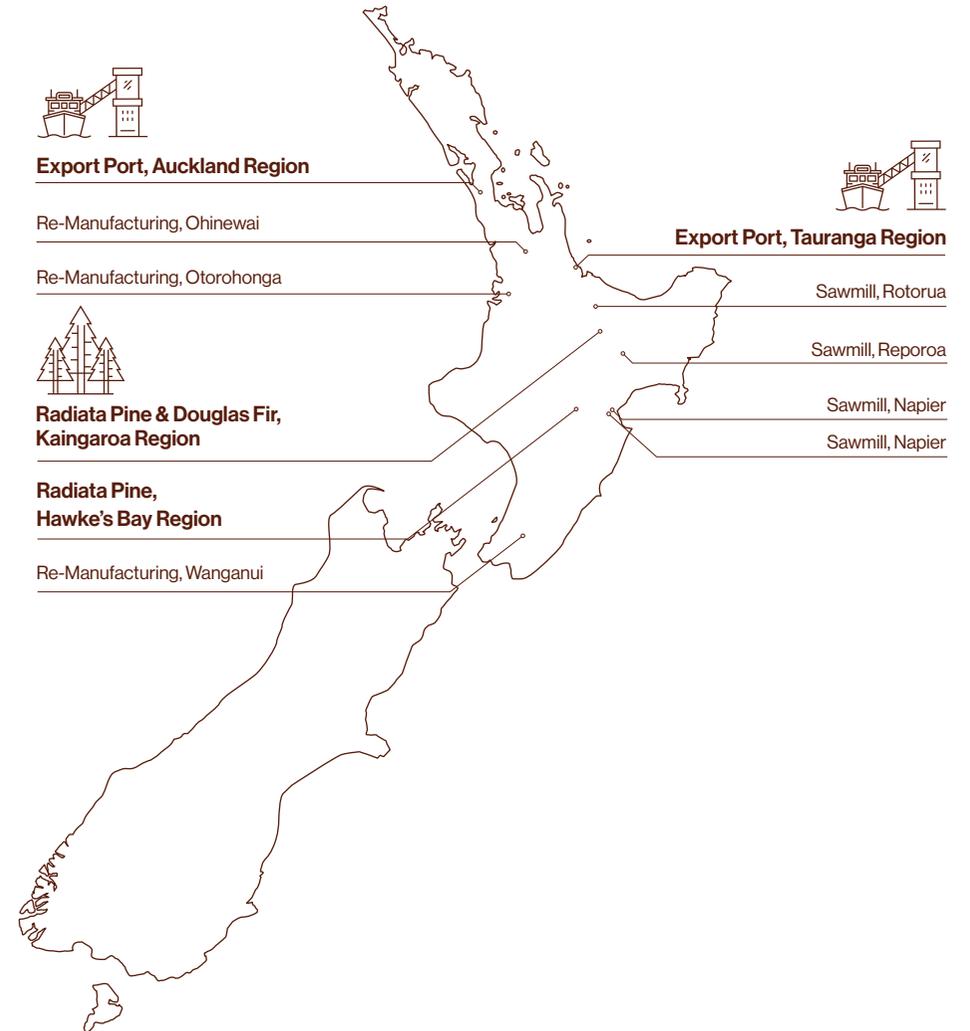
Hawke's Bay Region – New Zealand

In New Zealand's eastern North Island the Hawke's Bay region is home to a high quality pruned Radiata Pine resource.

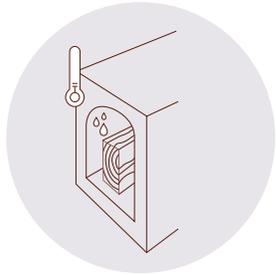
This forest region is Forest Stewardship Council® (FSC®) certified.

All Abodo timbers are Forest Stewardship Council® chain of custody under certificate number SGS-COC004944.

This label gives assurance that the timber comes from responsible sources so that we can continue to supply this product to future generations.



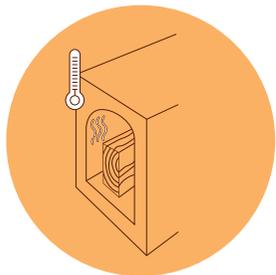
Thermal Modification Step by Step



1
PHASE

Initial heating process

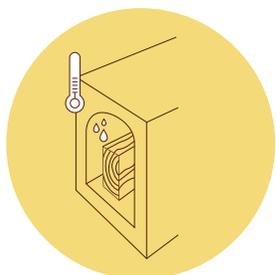
Kiln dried timber is placed in a thermal modification kiln and is gradually increased to a target temperature of 230 degrees. This process occurs over an extended period, with thicker boards requiring more time.



2
PHASE

Peak temperature

Once the timber has reached 230 degrees core temperature, it is held for a minimum of 2 hours. At this point the thermal modification is occurring and the temperature must be carefully controlled by probes. The moisture content of the wood at this stage is essentially zero.



3
PHASE

Reconditioning process

After the timber has reached its peak temperature, it is slowly cooled, and reconditioned with steam. This raises the moisture content to a target of 6-7% moisture content.

The Manufacturing Process

Thermal modification

Our flagship Vulcan architectural product utilises a process called thermal modification to permanently change the chemical and physical properties of timber.

The technology was invented in Europe and has been in commercial use there for over 30 years.

We use state of the art computer-controlled kilns located at the sawmill and less than 500m from the forest itself.

The thermal modification process uses heat and steam only, with no added chemicals. Abodo has developed a proprietary modification schedule that has been thoroughly tested for durability both in the lab to international standards and over 10 plus years field testing in New Zealand.

Not all thermally modified wood is created equal

We have discovered through this testing that 230 degrees Celsius is the critical temperature to achieve exterior durability.

The European Thermowood D schedule modifies softwoods at 212 degrees Celsius which our data shows is an unsuitable level to achieve durability for Radiata in exterior applications.

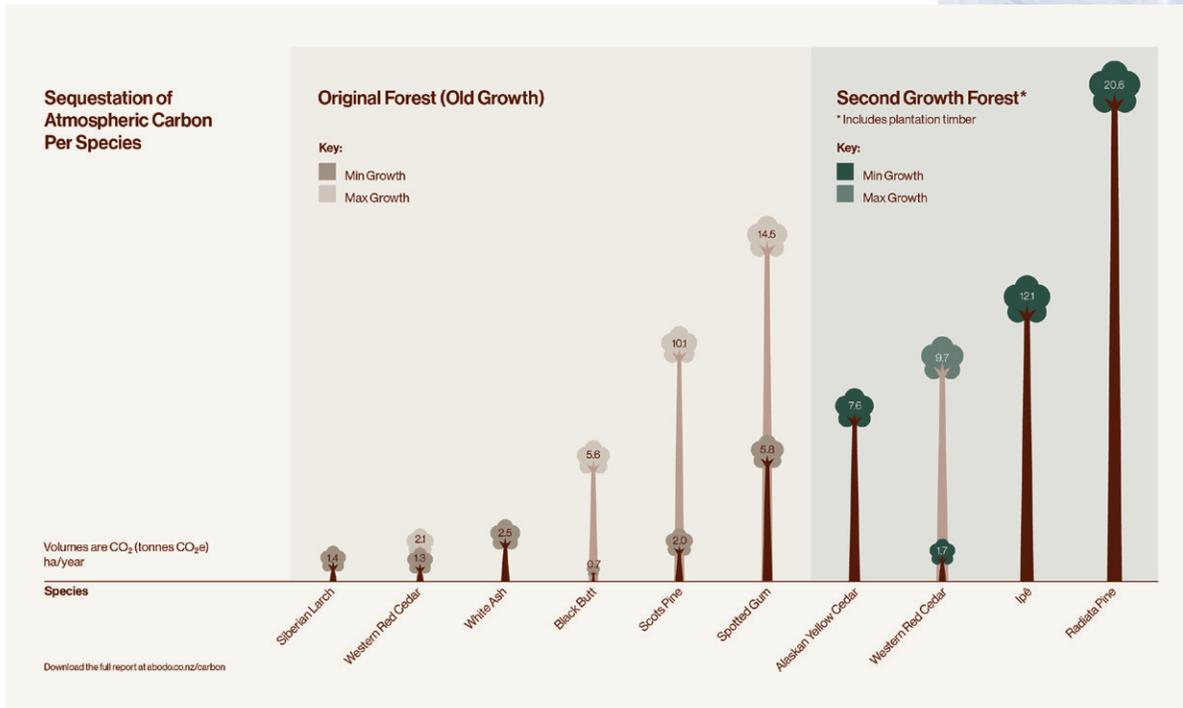
The modification process monitored remotely by our European kiln suppliers to ensure consistency of output across batches of product.

We have a world class multi point quality control system that ensures all timber is treated to the required durability standard every time.

We're Carbon Negative

Climate change is the pre-eminent challenge of the modern era. Carbon dioxide is a major contributor to global warming, therefore governments around the world are focusing on how we might reduce the carbon footprint of our built environment.

Radiata Pine is one of the most effective species at sequestering carbon dioxide because it is fast growing that allows high rotation harvesting, approximately every 27 years.



EACH SQUARE METRE STORES
9.74
 KG OF CARBON

Embodied Carbon

Modified woods from certified plantation sources are generally accepted to be superior in performance and sustainability when compared to tropical timber species used in window and door elements. They are also considered more durable with longer in service life than regionally sourced softwoods.

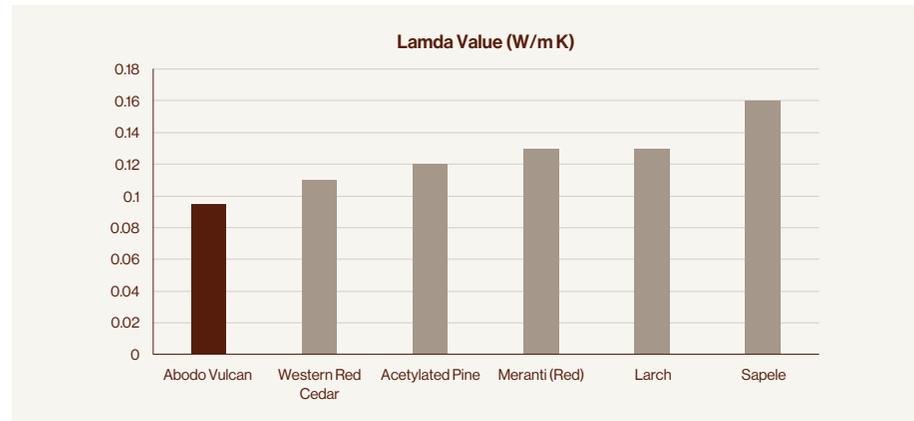
However, the embodied energy used to create modified products is higher than that of natural timbers. By combining New Zealand's renewable energy supply and centralised manufacturing, Abodo's Vulcan timber is one of the lowest embodied carbon modified woods available today.

A report commissioned by Abodo compares Environmental Product Declaration (EPD) and is publicly available¹.

Read the report here: www.abodowood.co.uk/resources

Our carbon impact was compared with many other wood products in a report by Dr Calum Hill and assessed as top of class.

Read the report here: www.abodowood.co.uk/news/comparing-the-carbon-footprint-of-different-timbers-a-study



Environmental impacts, 1m³ of sawn softwood

Environmental impact	Parameter	Unit	Production			Distribution			Demolition Transport to End of Life			Landfill (typical)			Energy recovery			Recycling			Reuse		
			A1-A3	A4	C1	C2	C4	C3	C3	C3	D	D	D	D	D	D	D	D	D	D	D		
Global warming potential (total)	GWPT	kg CO ₂ -eq.	-535	73.4	0.264	1.61	57.2	76.2	76.2	758	-0.0755	-493	-6.31	-224									

Comparison of carbon footprint for modified wood

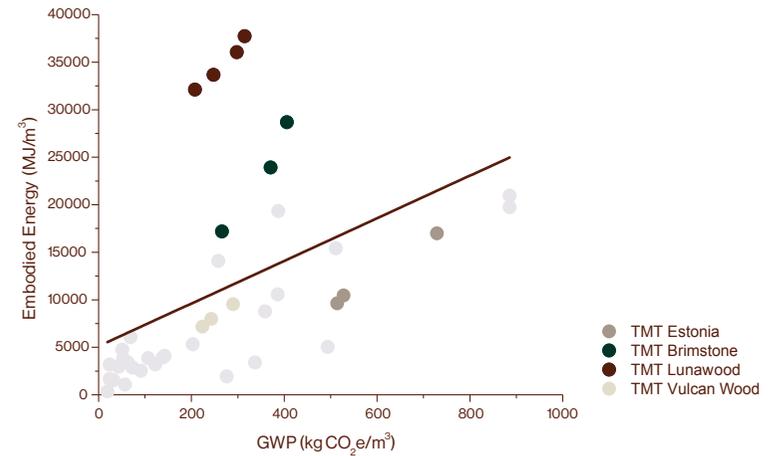


Figure 1: Relationship between embodied energy and GWP impact for thermally modified timber (TMT).

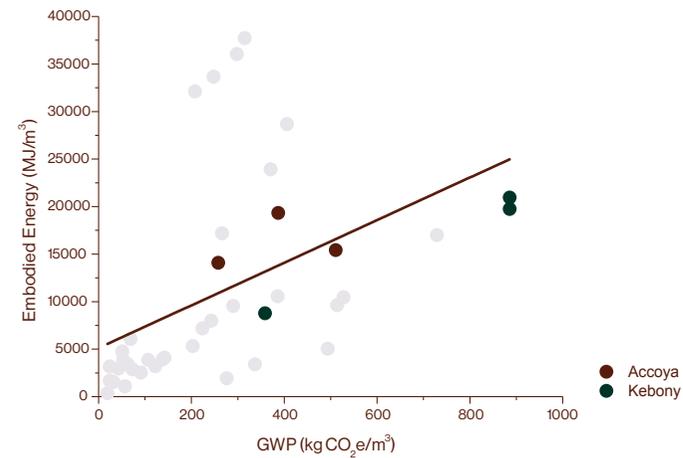


Figure 2: Relationship between embodied energy and GWP for Accoya and Kebony products.



Vulcan Timber USPs

- Harvested from a highly sustainable high rotation FSC® certified New Zealand grown source.
- Carbon negative building material (even after shipping to Europe).
- Aesthetically pleasing brown colour through full cross section.
- Naturally durable for above ground exterior applications (Class 1 EN350-1/ Class 2 AS5604).
- Non-corrosive (can use regular fixings, fittings).
- Takes coatings well, does not contain chemicals like acetic anhydride than can leach out under coatings and cause bubbling.
- Easy to machine, sand and prep for finishes = less work.
- Very low equilibrium moisture content ~7% = great for dry climates.
- Reduced resin content = no leaching of tannins.
- Long clear lengths without knots.
- Thermal properties improved 20% vs radiata pine.
- Improved stability, tangential movement from wet to dry:
 - Abodo Solid ~3%.
 - Abodo Laminated VG ~2%.
 - Accoya ~1.5%.
 - Sapelli ~7%.
 - Red Grandis 7%+Lamination.

Thermal conductivity performance

Vulcan Joinery has superior thermal conductivity performance compared to many other timbers.

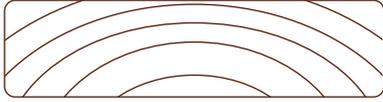
Species	W/m-K
Abodo Vulcan	0.095
Scots Pine	0.13
Larch	0.13
Sipo	0.16
Meranti	0.13
Sapele	0.16

Source: SKH-Publicate 99-05 + bijlage kwaliteitseisen 06.06.2023

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Sawn Timber and Engineered Timber

Vulcan – Flatsawn



Abodo offers a flatsawn solid thermally modified Radiata Pine, known as Vulcan flatsawn. This is typically used for the following applications:

- Interior or protected applications.
- Paint finish exterior.
- Specialty finishes, e.g. charred finish.

Grade rules

Vulcan flatsawn is typically supplied as a Clear 2 grade sawn timber. This grade allows defects on the back face. In finished product form it is sold as Select Grade – equivalent to CE EN14915 GRADE A for timber claddings and BS1186:3 1990 Grade CSH and BS EN942 Grade J5 for use in joinery.

Also available as finger jointed clears to specified lengths.



Grain orientation	Grade	Dimensions
Flatsawn	Select	25x100mm/150mm/200mm
Flatsawn	Select	32x100mm/125mm/150mm/200mm
Flatsawn	Select	38x150mm/200mm
Flatsawn	Select	50x100mm/125mm/150mm/200mm
Flatsawn	Select	63x100mm/125mm/150mm/200mm/225mm
Flatsawn	Select	75x100mm/125mm/150mm/200mm

Sizing tolerances: Thickness +/- 1mm Width +/- 3mm.



Vulcan – Laminated Vertical Grain Block

Abodo's flagship product is produced from thermally modified Radiata Pine that has been laminated and grain oriented into large blocks.

Laminated blocks are formed, which can then be converted into more manageable sizes – and can be cut down into boards for profiling (into a wide variety of finished items). It is critical that the bandsaw runs perpendicular to the glue lines. Some stepping and glue spill can occur on the edges of the block during the glue lamination process, with an acceptable variation of up to 4mm between laminae – a centre cut through the block allows a square edge to run against saw guides.

Edge stepping – acceptable variance

	Min. lamella width	Max. stepping*
146 wide block	140mm	4mm
192 wide block	190mm	4mm

*Stepping to one face only.
*Inner lamellas only.



Length specification

As standard, Vulcan laminated block is available in 3.6, 4.2 and 4.8m solid lengths. Finger jointing to exact length is optional, up to 7.2m.

Suggested bandsaw specification

Manufacturer	Product	More information
Lenox	Woodmaster B 2" x .050" x .090" x 1/1.3 VT	www.lenoxtools.com

Band sawn finish

Should be 'fine sawn'. Use sharp, thin kerf fine tooth saw ensuring consistent finish to faces. Visible saw skip or aggressive cut lines are not acceptable.



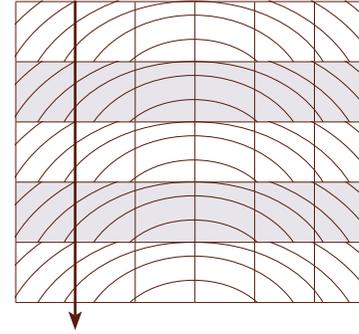
Standard laminated block dimensions

Vulcan laminated block	Grade	Dimension w x h
Laminated vertical grain	Select	146x143mm
Laminated vertical grain	Select	146x147mm*
Laminated vertical grain	Select	146x183mm*
Laminated vertical grain	Select	146x228mm
Laminated vertical grain	Select	146x295mm
Laminated vertical grain	Select	192x143mm
Laminated vertical grain	Select	192x183mm
Laminated vertical grain	Select	192x200mm*
Laminated vertical grain	Select	192x228mm
Laminated vertical grain	Select	192x295mm

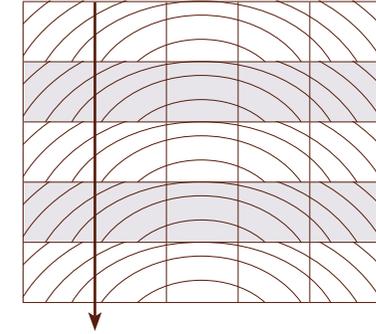
Other sizes can be made to order.
Dimensions and construction may vary.

Illustrated board conversion sizes – block size 146mm wide

6 out – 23mm blanks

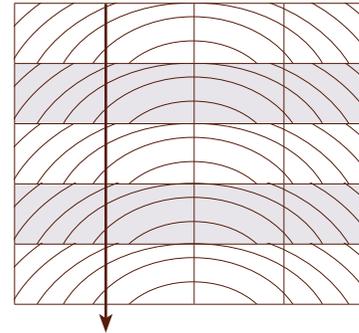


5 out – 28mm blanks

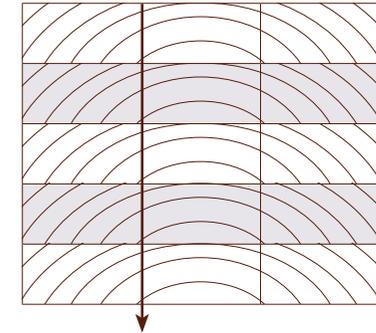


Boards are cut through in this direction

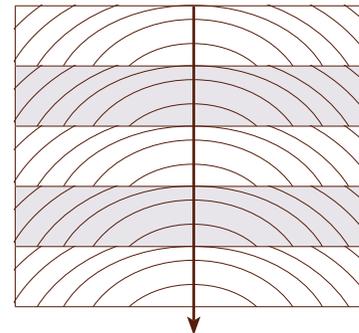
4 out – 35mm blanks



3 out – 47mm blanks



2 out – 72mm blanks



Finished Products

Interiors

Dunlop Hub – Queenstown, New Zealand

Forming the headquarters for Dunlop Builders, the building makes extensive use of Abodo timbers, from the cladding through to the interior shelving and, of course, the doors.

Dunlop's glazed entrance door, internal doors and windows feature thermally efficient ThermaDura joinery framed in Vulcan Joinery timber.



Photography credits: Dunlop Hub

Tuhoe Living Building – Lake Waikaremoana, New Zealand

Tuhoe Living Building in Lake Waikaremoana is a multi-award winning visitor's centre. For the door and window frames, the building features Vulcan Joinery timber finished in Protector, as a product that is FSC® certified and sustainably harvested, as well as being free of 'Red List' ingredients and preservatives.



Cardrona Cabin – Queenstown, New Zealand

Set in the heart of Cardrona Valley, in the South Island's harsh alpine climate, the cabin demonstrates the durability, along with the beauty of Abodo timber products and processes.

The interior reflects warmth, texture and heart with a crafted carpentry of exposed timber structure, and highly grained timber TG-9 panelling in a raw finish.

Externally, the slatted Vulcan Screening finished in silicate coating is designed to age and weather to the grey tones of its rocky environment.



Photography credits: Simon Devitt and Chris Lea

Exteriors

Historic Aitken House – West Linton, Scotland

An external material palette of stone and Abodo Vulcan timber weatherboards were carefully chosen to help this new building merge with its neighbours, with a lower level formed out of local stone and a darkly textured slate roof. Abodo Vulcan Cladding – Vertical Grain, laid both horizontally with WB10 180x20 weatherboards, and vertically with WB12 mixed profiles, breaks up the volume of the upper storey, while also softening the aesthetics of the building.

Finished in Protector – Ebony, Abodo Vulcan is also used for louvred shading on the upper storey, which hides the contemporary nature of the double height windows in the living area, and for the entry gate.



Linkwood Home – Scotland

A simple palette of external materials was proposed as a direct response to the local region including natural slate, light coloured render, timber cladding and drystone walling.

Abodo Vulcan Cladding – Flatsawn was specified for a number of reasons. Firstly, the client did not like the weathering process of local larch cladding and Abodo provided a more consistent appearance.



Waihi Beach House – New Zealand

The summer months are largely spent outdoors, so this deck is substantial with stadium-style stairs to the lawn and a covered barbecue area extending the entertaining space beyond the walls of the home.

Vulcan Decking finished in Protector – Clear was chosen for this exposed environment. This low-maintenance finish will silver off over time and also has the benefit of being made using a waterborne formulation, which means it is safe on bare feet and won't leach chemicals into the environment. Being created from FSC® certified pine plantations, these timber products are also sustainable choices.



Culbara – Sunshine Coast, Australia

A contemporary home that uses a bold combination of complementary materials including Abodo Vulcan battens and panelling, Culbara creates a statement in its riverside neighborhood.

With a base of breeze blocks in a charcoal grey and an upper level wrapped in concrete formwork and Abodo Vulcan bandsawn 4 face timber battens.

The tropical climate of the area, which can see storms rolling in from the coast as well as harsh sun beating down year-round, prompted the use of Abodo's silicate coating on the 42x42mm timber battens, a natural wood coating which allows the timber to gradually silver off over time and requires only minimal re-coating when compared to the annual maintenance required of cedar or other stained hardwoods.





Vulcan Cladding – Vertical Grain

A range of standard Abodo profiles are available in vertical grain. Other profiles are available on request.

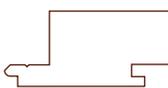
Standard profiles (mm)



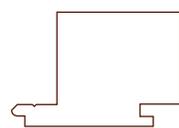
WB10 138x20
(118mm cover) vertical/horizontal



WB10 180x20
(160mm cover) vertical/horizontal



WB12 90x40
(70mm cover) vertical



WB12 90x60
(70mm cover) vertical



WB12 138x20
(118mm cover) vertical



WB12 180x20
(160mm cover) vertical



Finition WB12F 180x20
(160mm cover) vertical



Bevelback AW62 180x20
(148mm cover) horizontal

- Above profiles generally to be machined with band sawn faces.
- Other profiles available on request.
- All cladding profiles are manufactured in accordance with BS8605-1:2014 External Timber Cladding. Timber used equivalent to CE EN14915 Grade A.

Finish:



Fine band sawn



Brushed



Sanded smooth



Vulcan Cladding – Flatsawn

Standard profiles (mm)



WB10 138x20
(118mm cover) vertical/horizontal



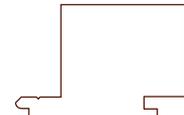
WB10 180x20
(160mm cover) vertical/horizontal



WB12 90x20
(70mm cover) vertical



WB12 90x40
(70mm cover) vertical



WB12 90x60
(70mm cover) vertical



WB12 138x20
(118mm cover) vertical



WB12 180x20
(160mm cover) vertical



RHB 68x26



FINELINE WB12F 180x20
(160mm cover) vertical



Bevelback AW62 180x20
(148mm cover) horizontal

- Above profiles generally recommended to be machined with band sawn faces.
- Other profiles available on request.
- All cladding profiles are manufactured in accordance with BS8605-1:2014 External Timber Cladding.
Timber used equivalent to BS EN942 Grade J5/CE EN14915 Grade A.

Finishes:



Fine band sawn



Brushed



Sanded smooth

Coatings – Cladding

Factory application of Abodo's coating systems are ideally applied prior to delivery to site.

In all cases timber must be thoroughly sanded and be clean and free of dust prior to application of coating. Note: Band sawn or textured timber does not need sanding.

Exterior claddings – Protector

Abodo recommends the use of Protector. Protector is a two coat, water borne penetrating oil. Protector is best applied in a flood/brush type coating line, or alternatively a spray type coating line. Caution should be applied to vacuum or roller coating.

Things to watch:

- When applying Protector in a flood system ensure it is not over applied, excess oil can pool on the surface, causing over-pigmentation or patchiness.
- Ensure that coating sits into the wood surface not on top. Use brush and/or air knife on out-feed to remove excess oil and relieve surface tension.
- Lighter colours like Straw and Patina can appear washed out on Vulcan timber. The dark substrate of Vulcan does not initially blend well with lighter pigments. This will quickly change on exposure to UV, when the substrate begins to lighten. End users should be made aware of this in advance.
- Follow the technical datasheet for application instructions.
- At minimum Abodo recommends coating boards with one coat, four sides prior to site delivery.
- Second and final coat can be applied on site, if required.

Colours:



Some colours may not be stocked in the UK, please enquire for availability and lead time prior to specification. Refer to the Technical Data Sheet - Protector for more information.

End sealing

Vulcan is a dry absorbent timber, and it is critical to thoroughly seal any exposed end grain. In cladding applications, Protector End Seal or similar wax based end seal should be applied to exposed ends.

Primer

- Oil borne alkyd primers are generally recommended for optimal performance (please consult with Abodo if unsure).
- Apply 2 coats all sides and ends via machine spray, vacuum or flood coat method.
- Spot fill, sand, prime prior to/between coats as appropriate to eliminate defects such as cracks or pinhole.
- Rack dry between coats as appropriate to atmospheric conditions and manufacturers recommendations.



Vulcan Decking

With timber sourced from rapidly renewable New Zealand plantation forests, Abodo Vulcan Decking is a sustainable and natural choice.

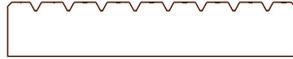
The thermal modification process means Abodo Vulcan Decking has reduced resin content, resulting in enhanced stability through all weathers. The natural timber provides a beautiful, homogeneous brown tone that silvers off, suits a wide range of architectural styles.

Unlike most hardwoods, Vulcan Decking does not require pre-drilling. It's easy to work with, cut and fix, making it a favoured material among professional and DIY builders alike.

Standard profiles (mm)



DK16V 142x27



GT16 142x27



Coatings – Decking

For decking Abodo generally recommends clear non-pigmented penetrating coatings such as Abodo Protector, that allows the timber to silver off naturally. If colour is to be maintained then a pigmented penetrating deck stain can be used, however increased maintenance in the form of regular (annual or more) re-coating must be expected to maintain the colour and cover over track marks.

Finishes:



Clear

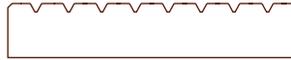


Vulcan Decking – OPX Treated

Standard profiles (mm)



DK16V 142x27



GT16 142x27

OPX is a colourless water-based timber preservative treatment containing the well-proven combination of azoles plus termiticide combined with mouldicides and water repellent for enhanced weathering characteristics in above ground exterior applications.

OPX treatment is applied to dry timber using a low uptake vacuum-pressure treatment process in a commercial timber treatment plant that results in full sapwood penetration. The low uptake process means that the wood has minimal increase in final moisture content (approximately 4-5%) and low dimensional change after treatment.

Wood treated with OPX will resist insect attack and decay in situations where the wood is above ground but exposed to moisture (subject to warranty conditions). To meet the requirements of AS1604.1 up to Hazard Class H3 and equivalent to AWPAC UC3B.

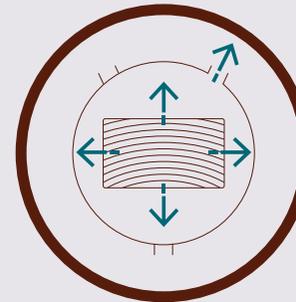
Abodo timbers available with OPX:

- Radiata pine.
- Vulcan thermally modified radiata pine.
- Solid sapwood timber up to 28mm thickness only.

Features and benefits:

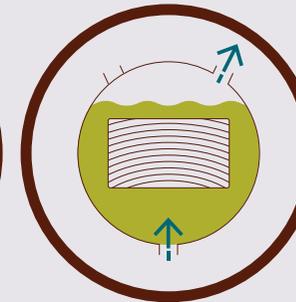
- Low increase in moisture content and minimal dimensional change after treatment.
- Unique patented formulation with water repellent for enhanced dimensional stability.
- Increased resistance to mould and algae growth- helps keep the timber a bright tone as it weathers off.
- Resistance against attack by termites and wood destroying insects (subject to warranty conditions).
- Enhanced resistance to fungal decay (subject to warranty conditions).
- Low VOC water-based treatment- no nasty solvents.
- 25 Year Built to Last limited warranty subject to conditions (select countries only).

The treatment process:



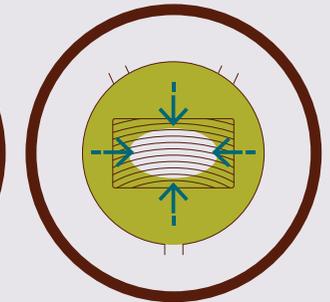
①

Timber loaded into treatment vessel. Initial vacuum applied and the timber cells are evacuated of air. Vacuum held.



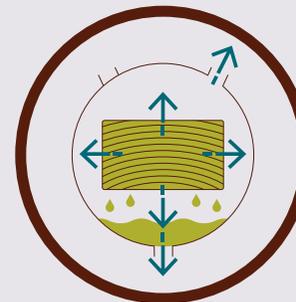
②

Hydraulic pressure applied, forcing the preservative deep into the structure of the timber.



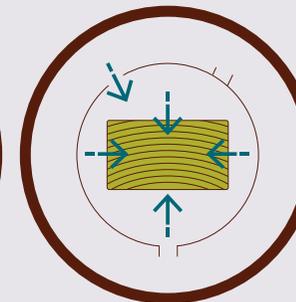
③

Cylinder flooded under vacuum with wood preservative.



④

Final vacuum extracts excess preservative solution, which is pumped back to storage.



⑤

Low pressure inside timber draws in surface solution when vented to atmosphere. Treated timber is left to dry.



Vulcan Screening

Abodo Vulcan Screening is a high performance product designed to weather gracefully in harsh environments.

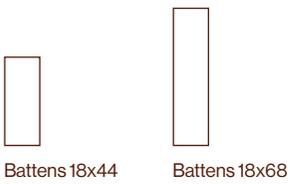
Derived from FSC® certified plantation forests, this is an excellent renewable alternative to cedar for use in rainscreen, batten, louvre and beam applications.

Available in a number of profiles and sizes, Vulcan Screening can be used to add a stylish timber element to any project, from a more traditional extension or renovation to a contemporary design.

With Abodo's patented vertical grain orientation paired with the rigours of the thermal modification process, Vulcan Screening is a robust material that won't warp or cup in extreme temperatures.

Customisable in a range of bandsawn finishes for a unique look and feel, Vulcan Screening results in clean, modern lines and a finish that will turn heads.

Standard profiles (mm)



Vulcan Panelling – Vertical Grain

Standard profiles (mm)



TG9 – 135x10 Smooth face up



TG9 – 135x10 V-Groove face up



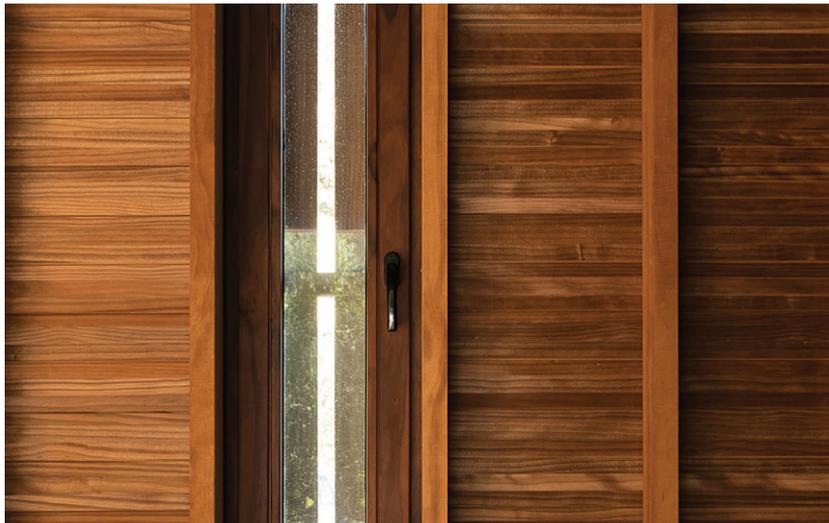
TG9 – 175x10 Smooth face up



TG9 – 175x10 V-Groove face up



TG17 – 84x17





Joinery

Vulcan is an excellent choice for windows, doors and interior joinery in both paint and stain finish.

The thermal modification process combined with optional lamination means Vulcan Joinery has enhanced stability, reduced resin content, is a beautiful homogenous brown colour, and is naturally durable so does not require any chemical preservatives.

The long term service life of window and door joinery is highly dependent on how it has been designed, detailed, installed and maintained

Prediction of service life is not precise and is based on the assumption of good design and a regular maintenance regime.

Abodo recommends industry best practice in joinery design including:

- Profiles designed to shed water away from the building by use of a slope on horizontal members with a pitch of not less than 1:8.
- Windows/doors designed to allow free draining of water, and to prevent pooling or entrapment of water on or around timber members and other adjacent materials.
- Rounding arises at edges to 3mm radius to increase performance of paint/film forming coatings.
- Sealing of end grains thoroughly with an appropriate exterior sealant to prevent water ingress at the ends of timber.
- Coating with an appropriate wood coating that is maintained during the lifetime of the joinery.

Exterior

For weather-exposed applications such as window and door joinery, approved exterior grade semi-transparent coating or paint finish must be applied to all sides and end grains sealed thoroughly.

In fully exposed exterior applications e.g. no eaves, paint finish is recommended.

If semi-transparent finished is desired Vulcan – Vertical Grain is recommended.

Coatings – Joinery

Paint finish

Factory Prefinished Exterior Vulcan TMT Joinery.

The performance of paint systems on exterior doors and windows is dependent on careful surface preparation and painting. Top and bottom surfaces must have the full coating system applied to them. This is best undertaken before they are hung or fitted.

Particular attention is needed to ensure that there are proper flashings above doors and windows and that the sides of joinery are properly weatherproofed by use of adequate scribes and/or sealants.

All edges of the joinery and future hidden surfaces must be primed before assembly with particular attention to priming the seal end grains.

Attention is needed to ensure all sharp edges on joinery are sanded to a rounded profile before painting.

- Step 1: Ensure any sharp edges are arrissed to a rounded profile.
- Step 2: Ensure all surfaces are clean and free from contamination before painting. All timber faces are to be lightly sanded and the dust removed.
- Step 3: Apply Wood Primer to achieve 12 square metres per litre as per manufacturers instructions. (Note: the application rate may vary with timber porosity and application method).
- Step 4: Any nail holes or areas of damaged timber should first be primed with the specified timber primer before filling with a wood filler in accordance with manufacturer's instructions. Sand smooth and spot prime the filled areas, with specified timber primer.
- Step 5: Apply Acrylic Primer Undercoat to achieve 12 square metres per litre as per manufacturers instructions.
- Step 6: Apply semigloss or gloss waterborne enamel to achieve 12 square metres per litre as per manufacturers instructions.
- Step 7: Apply a second coat to achieve 12 square metres per litre as above.

Sikkens, Remmers and Teknos Paint systems have been tested.

Visit the link: www.abodowood.co.uk/resources

Colour note: Dark colours may be used, however increased maintenance can be expected due to increased heat.

Semi-transparent finish

If semi-transparent finished is desired Vulcan – Vertical Grain is recommended.

Semi-transparent finishes are recommended only in protected or semi-protected applications e.g. under eaves >400mm depth. Semi-transparent finishes will require more regular re-coating throughout the life of the joinery compared to paint. This maintenance regime must be agreed and signed off by the end user prior to supply to ensure.

Care must be taken to ensure that timber profiles are oriented with vertical grain exposed to the weather only.

Specialist exterior joinery finishes must be used. Pigmented, UV stable, film forming or high solids coatings are recommended for UV protection and to maintain colour.

Interior

For interior applications coating is optional, though sealing is recommended to allow for easy cleaning and to maintain colour.

Specialist interior finishes should be used only. Options include high solids hard wax oils for a more natural appearance, or film forming polyurethane or acrylic systems that tend to be harder wearing but less natural in appearance.

General Manufacturing Guidelines

Standard profiles

Moulding

Vulcan timber machines and moulds very well.

A band sawn face finished product can be created by moulding the back face and edges and leaving the clean sawn face without further finishing.

Lower roller pressures should be used as the thermal modification process does increase the brittleness of the timber.

Sawdust can be fine, good strong dust extraction required in all cases.

Agitation of piping system may be required to prevent settling of dust at junctions.

Operators and others should wear face masks if exposed to dust.

Glue specification

New generation polyurethane adhesive – VOC, solvent and formaldehyde free are used.

- Exterior polyurethane adhesive – VOC, solvent and formaldehyde free.
- Complies with EN 15425.

Brands suitable:

Manufacturer	Product	More information
Henkel	Purbond HBS	www.henkel.com
Jowat	Jowapur 681	www.jowat.com

In general these glues have low abrasiveness against tooling, and are easily worked. We suggest contacting the adhesive manufacturer to confirm your use application.

General processing notes

- Due to the increased stability from thermal modification and lamination significant movement is reduced when resawing.
- Material can contain some resin pockets that will be uncovered after resawing.
- Some glue spill may be evident on the edges of block, this is easily cut.
- Sawdust can be fine, dust extraction required on bandsaw.
- Dust masks should be worn, along with other PPE.



Basic Specifications and Grading Summary

Grade	Select
Species	Radiata Pine.
Treatment	Thermally Modified TMT230.
Origin	North Island, New Zealand.
Sustainability	Forest Stewardship Council® (FSC®) Certified FSC MIX, FSC-C010962, SGS-COC-004944.
Average density	~420 kg/m ³ .
Moisture content at mill	~7% (+/-2%).
Durability	Durability Class 1 (EN350-1). Suitable for exterior above ground vertical applications.
Expected exterior above ground service life	30 years or more when properly installed and maintained.
Warranty	15 years against fungal attack (subject to terms and conditions).
Approx expansion when wet (from 7% MC to fibre saturation point)	Flatsawn: Tangential 3-4%, Radial 1.5-2.0%, Longitudinal 0.25%.
Compatibility	Non-corrosive to most metals including aluminium. Use hot dip galvanised or stainless steel fixings for exterior applications.
Fixings	Nail hold strength same as for Radiata Pine (JD4). Screw hold strength reduced by around 20% (JD4-JD5).
Gluing	Normal PVA, PU, MUF glues and RF resins can generally be used. Always check specific requirements with the adhesive manufacturer (e.g. required moisture content) and test for compatibility prior to commencement of production.
pH (indicative)	3.9.
Hardness	Medium-Low (3.5kN Janka).
Thermal properties	~0.095 W/mK (EN 12667).
Characteristic structural properties (clear sap wood)	Stiffness (MoE) 8GPa, Bending strength (MoR) 50MPa.
Workability	Excellent machinability. Timber exhibits reduced splitting strength, therefore care should be taken to use sharp tools and pre-drill fixings. Fine dust is created from machining so good extraction is required.
Coating	Takes most oil and water borne coatings well, absorption rates tend to be higher.
Fire	Euroclass D-s1-d0. Can be fire treated to Euroclass B-s2-d0 (s2 Smoke Production – d0 Flaming Droplets). BS EN 13823 & BS EN 11925-2 Single Burning Item Equivalent to UK “Class O” BS 476: Part 6 & BS 476: Part 7.

15 Year Built to Last Warranty

Abodo Vulcan timber is covered by a 15 year Built to Last Warranty.

Read the full warranty information at: www.abodowood.co.uk/resources

Vulcan Sawn Timber – Grade Rules

Clear two grade or better (C2)

High appearance grade.

Front face and edges primarily clear with some small defects allowed.

Permitted best face defects:

- Birds eye fleck, kiln check (1mm wide by 250mm long, three per board), sap stain (insufficient to obscure grain), and bow, crook, cup, and twist as given in tables 1, 2, 3, 4 of appendix.
- Tight knot (intergrown, partially intergrown and tight encased): 15mm or equivalent smaller.
- Short split, up to the width of board and no more than 200mm.
- Wane up to 8mm in depth, ¼ length of board of equivalent, slightly more for short distance. Transport damage is permitted within the same wane limits.

Permitted reverse/back face defect may contain knots and defects as described below:

- Sound knots and pruned scars singly and in combination up to one third of the board width only.
- Resin pockets 10mm wide x 100mm long, three per board. Max depth on RS board 10mm.
- Machine Damage 50mm wide x 150mm long, two per board. Max depth on RS board 5mm.
- Surface checks less than 1mm wide x 250mm long.
- Short end split, up to the 50% width of board and no more than 200mm.
- Edge defects in bottom two thirds of edge only.
- Spike knots inter grown up to 20mm wide.
- Product may be up to 3% undersize from nominal size.
- Tight encased knots maximum 10mm wide, three per board.
- Wane up to 8mm in depth, ¼ length of board of equivalent, slightly more for short distance. Transport damage is permitted within the same wane limits.



Best Face



Reverse

Refer to the full Vulcan Sawn Timber Grade Rules document for full grade description.

Vulcan Vertical Grain – Grade Rules

Select grade

A high appearance grade with front face and edges primarily clear but with some small defects allowed in some boards. Vulcan flatsawn is typically supplied as a Select Grade sawn timber. Grade equivalent to CE EN14915 Grade A for claddings/BS1186:3 1990 Grade CSH and BS EN942 Grade J5 for use in joinery.

Front face and edges allow isolated defects as follows:

- Birds eye fleck – medium.
- Sap stain – insufficient to obscure grain.
- Edge defect – one tight knot, resin or bark pocket in bottom two thirds of edge only.
- Bow, crook, cup, twist as given in tables 1, 2, 3, 4 of appendix.

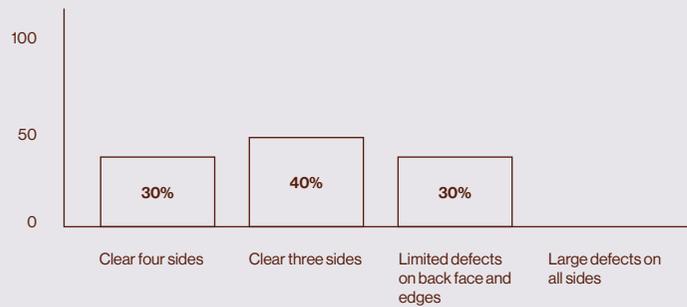
In **20% of boards** one defect is allowed on the best face as follows:

- Small tight knot (inter-grown or tight encased) <5mm diameter.
- Resin or bark pocket <30mm length x 3mm width.
- Kiln check less than 1mm wide x 50mm long.

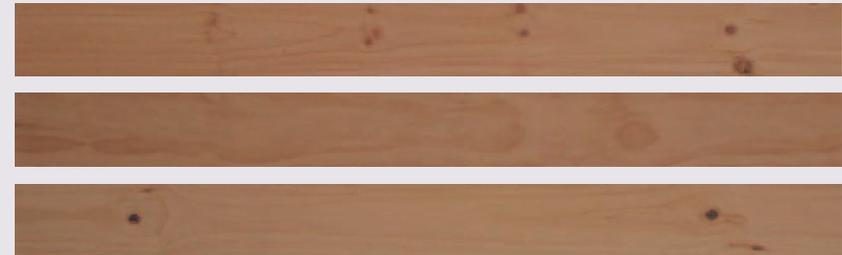
The reverse face of the board may contain knots and defects as described in Premium Grade.

Cladding profiles may have skip dress present on the back face.

Indicative percentage of lengths per grade



Best Face



Reverse



General enquiries

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