

Secret clip system

A guide to cladding, decking
and our timber profiles



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Rain-screen cladding attached to Grad® secret clip system

Grad® x Millworks

Grad® is a precision-engineered solution for secret-fix timber cladding and decking installations. Comprised of coated aluminium rails, pre-spaced clips and a wide range of accessories, the system is designed to be as durable as your timber, offering easy installation and long-lasting performance.

It is the ideal base for horizontal, vertical or diagonal cladding, where it can be attached directly to external and interior walls. It also provides a versatile decking system that can be installed in any setting, from hard or uneven ground to balconies, rooftops and self-supporting structures.

Millworks boards are securely fastened to the Grad® clip using a precision-shaped groove, creating a secure connection between the structure and the timber. Fixing from the reverse reduces moisture ingress, keeping the board face intact and fixing free.

Millworks profiles are specifically designed to accommodate the natural movement of timber while the clip allows the boards to expand and contract with seasonal changes, keeping the expansion gap intact at all times.

Benefits of the system

- Hidden fixings – Clean, screw-free board faces with a concealed clip system that protects coatings and enhances longevity.
- Perfect alignment – Pre-spaced clips on rails ensure precise board placement for a seamless finish.
- Rapid installation – Clip-in design reduces installation time by up to 50%.
- Flexible design – Customisable system suits various board orientations, timber types, and architectural styles.
- Sustainable materials – Features 100% recyclable clips and rails made from 80%+ recycled aluminium; timber boards are FSC® or PEFC™ certified.
- Circular construction – Easily replace individual boards without dismantling the system; reducing waste and extending life cycle.

About Grad®

Nearly 20 years of research, development and innovation have gone into perfecting the Grad® secret clip fastening system. It's versatility and ease-of-use have helped it become a product of choice for architects, landscapers and self-builders across Europe.

Rails

Engineered for longevity, the 6060 aluminium alloy used for Grad rails has excellent properties for structural use and provides exceptional resistance to corrosion, allowing the system to be installed in exposed environments, including coastal areas.

Clips

The factory installed clips are made from POM, a high-performance recyclable plastic known for its strength and durability. They can be removed or replaced easily, using a special dismantling key – ideal for replacing boards or for situations where access is required for maintenance or wiring.

About Millworks Ltd

Millworks is a specialist manufacturer of contemporary timber cladding, decking and fencing. All of our timber processing is done in-house in the UK, using state-of-the-art machinery that allows us to transform raw material into beautifully finished, ready-to-install products.

This gives us great flexibility, enabling us to meet a wide range of project requirements while maintaining high quality standards. Our dedicated production lines cover every step of the process, from profiling and grooving to high-performing finishes and factory coatings.

Our commitment to sustainable manufacturing is at the heart of everything we do. We are proud members of Timber Development UK (TDUK), and adhere to their Responsible Purchasing Policy.

Our timber is carefully selected from trusted partners and is FSC® and PEFC™ certified, ensuring sustainable forest management and a traceable supply chain from forest to final product.

A dedicated team is on hand to help with any digital modelling, design, specification or product queries, giving you peace of mind throughout your project.



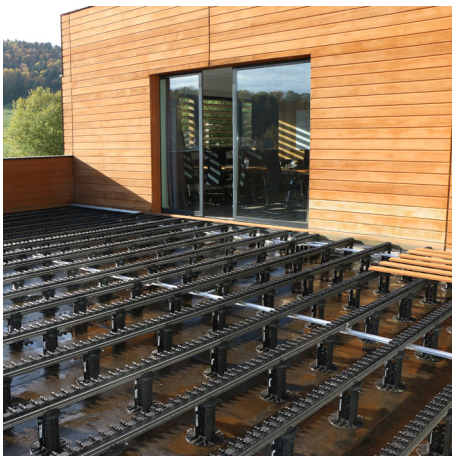
Flat rail with pre-spaced clips



Applications



External cladding



Rooftop deck installation

Grad x Millworks is a versatile system that can be used in many applications.

For external and interior cladding, the rails can be attached directly onto walls, ceilings and other flat surfaces. The rail incorporates built-in ventilation, which removes the need for counter battens and provides a fast, accurate installation with lasting durability.

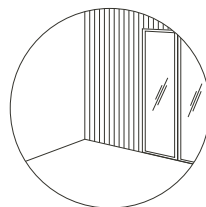
For decking, the system comes with a range of height-adjustable and load bearing options, offering quick and stable installations across a variety of situations, including hard or uneven ground, and self-supported structures. Unlike traditional timber subframes, it is made from rot-proof, high-quality materials, making it perfect for exposed environments.

The lightweight nature of the system makes it particularly suitable for balconies and rooftops where weight distribution is a key factor. Accessories are available to support furniture and planters without risk of puncturing any membranes or linings.

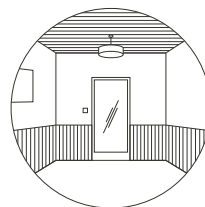
For open rainscreen profiles and decking, the timber boards are fully removable; perfect for situations where access is required for maintenance, concealed wiring or suspended ceilings.

The flexibility of the system means it can be fully customised to suit your project requirements. For bespoke designs and applications, please contact our team at Millworks.

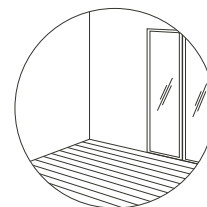
Key to application icons



External cladding



Interior cladding



Decking

Timber species



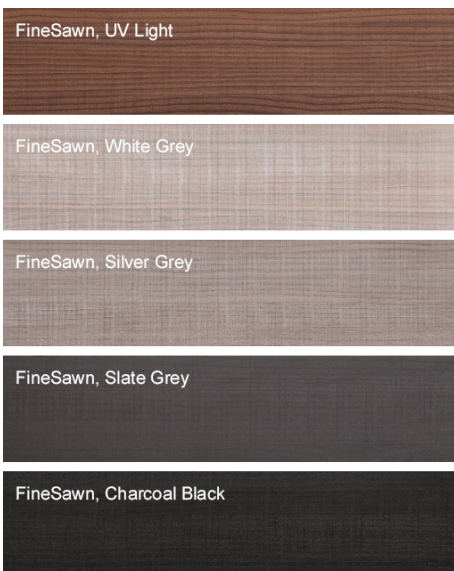
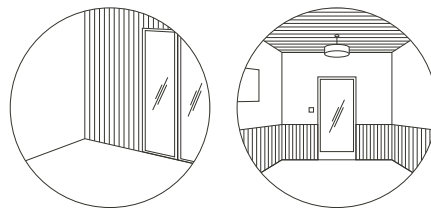
Abodo Vulcan®

Abodo Vulcan® is a premium, thermally-modified timber that offers exceptional performance, durability and sustainability. Responsibly sourced from new-growth Radiata pine, and enhanced through a heat-tempering process, it delivers the performance of slow-grown timbers without the environmental cost.

Attributes

- Certification: FSC®
- Durability Class: BS EN 350-1 Class 1
- Desired service life (BS8417): Naturally durable, 30 years

Applications



Finishes



Double and single grooved profiles

Appearance

The striking vertical-grain and clear-grade nature of Vulcan combined with its beautiful rich brown colouring, produces timber boards that are both refined and elegant. Its enhanced stability and reduced resin content make it ideal for a variety of finishes, including protective factory coatings and surface textures, offering great flexibility in design

Available profiles



MW6 Grad® – 20mm x 55mm, 20mm x 118mm or 20mm x 180mm



MW6 Mix Grad® – 20mm x 43mm, 62mm and 117mm (pattern spans 984mm)



MW7 Grad® – 20mm x 68mm or 20mm x 130mm



MW8 Grad® – 20mm x 138mm



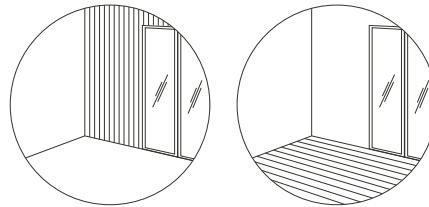
Accoya® Color Grey

Accoya® Color Grey is a high-performance, pre-coloured timber that offers an immediate, low-maintenance solution for weathered timber. Resistant to rot and insect attack, Accoya Color Grey has a lifespan of 60 years and is warranted for up to 50 years dependant on application.

Attributes

- Certification: FSC®
- Durability Class: BS EN 350-2 Class 1
- Desired service life (BS8417): Naturally durable. 60 years
- Warranty: 50 years above ground

Applications



Appearance

Accoya Color Grey retains the natural beauty and character of real wood featuring a subtle, flat-sawn grain pattern. The grain is typically fine and even creating a smooth surface with a muted, silver-grey tone that runs through the entire cross-section of the wood. With its pre-coloured, matte finish, Accoya Color Grey delivers the look of aged timber from day one.



Finishes



Double and single grooved profiles

Available profiles



MW6 Grad® – 20mm x 55mm, 20mm x 118mm or 20mm x 180mm



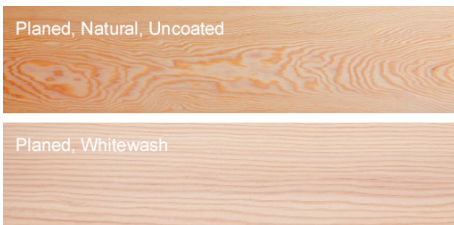
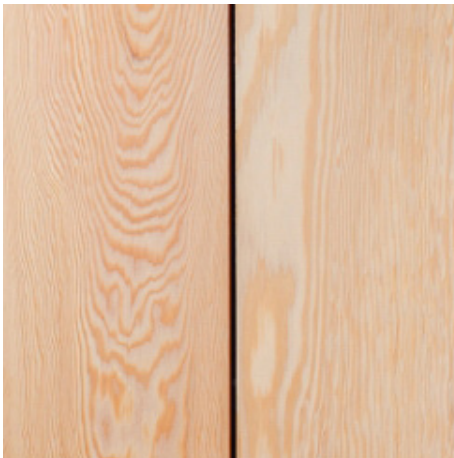
MW6 Mix Grad® – 20mm x 43mm, 62mm and 117mm (pattern spans 984mm)



MW7 Grad® – 20mm x 68mm or 20mm x 130mm



Decking Grad® – 20mm x 118mm



Finishes



Double and single grooved profiles

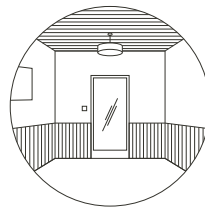
Douglas Fir

Douglas Fir is an attractive and sustainable timber suitable for interior applications. Slow grown in The Pacific North West of Canada, Douglas Fir boasts the highest strength-to-weight ratio among softwoods, making it a stable internal timber with reliable results.

Attributes

- Certification: PEFC™
- Durability Class: BS EN 350-2 Class 3
- Desired service life (BS8417): Naturally durable. 30 years

Applications



Appearance

Douglas Fir has a distinctive, tight grain pattern and warm tones ranging from pale cream to pinkish-brown. Its neutral tones complement a wide range of building materials and its light tones help reflect both natural and artificial light, making spaces feel brighter and more open.

Available profiles



MW6 Grad® - 20mm x 55mm



MW6 Grad® - 20mm x 118mm



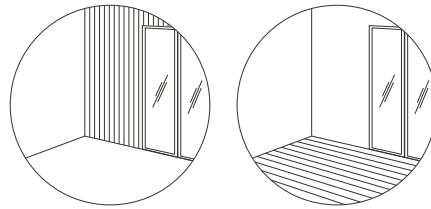
Imbue™

Imbue™ is a sustainable, thermally modified timber that delivers a clear-grade appearance with a striking natural grain pattern. Sourced from FSC®-certified Radiata Pine plantations in New Zealand, this rapidly renewable timber provides an environmentally responsible alternative to clear-grade softwoods such as unsorted Larch.

Attributes

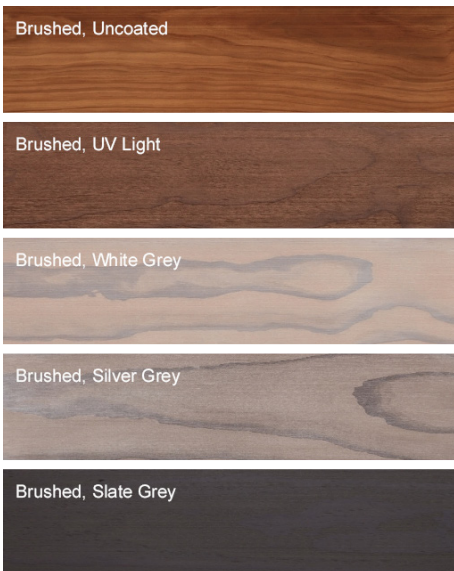
- Certification: FSC®
- Durability Class: BS EN 350-2 Class 1
- Desired service life (BS8417): Naturally durable. 30 years

Applications



Appearance

Following modification, Imbue develops a rich brown colour that emphasises the natural grain pattern of the timber. Clear grade and consistent in colour, it is ideal for modern and traditional cladding. Left untreated, it will weather to a natural silver grey patina.



Finishes



Double and single grooved profiles

Available profiles



MW6 Grad® – 20mm x 55mm or 20mm x 118mm



MW6 Mix Grad® – 20mm x 43mm, 62mm and 117mm (pattern spans 984mm)



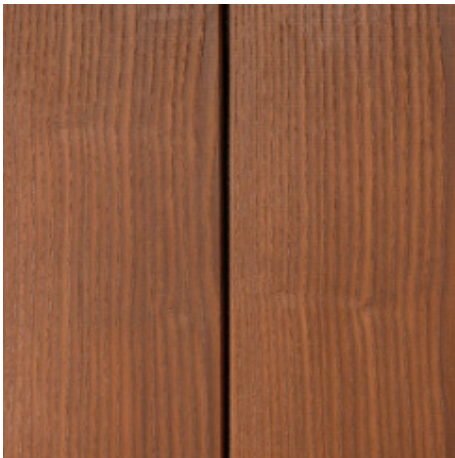
MW7 Grad® – 20mm x 68mm or 20mm x 130mm



MW8 Grad® – 20mm x 138mm



Decking Grad® – 20mm x 118mm



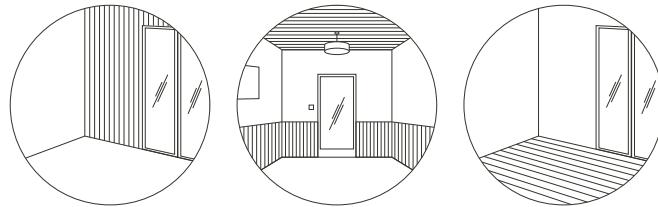
ThermoWood® Ash

We source all modified Ash from carefully selected International ThermoWood® Association members. ThermoWood® Ash achieves a high durability classification after thermal treatment offering a long service life. The heat process improves resistance to rot, fungi, and decay ensuring long-lasting performance.

Attributes

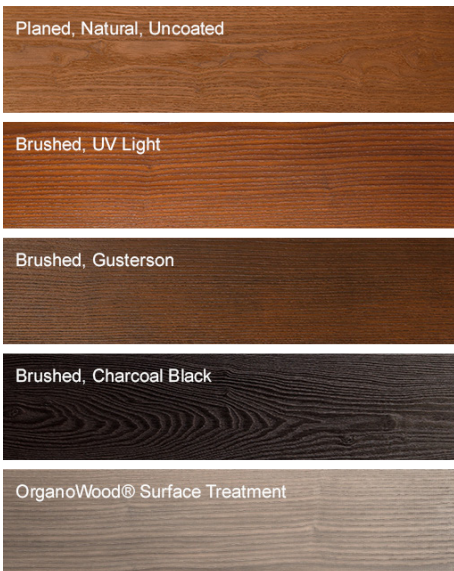
- Certification: FSC®
- Durability Class: BS EN 350-2 Class 1
- Desired service life (BS8417): Naturally durable. 30-60 years

Applications



Appearance

After treatment, ThermoWood® Ash takes on a consistent rich dark brown colour with unique hardwood grain. The thermal modification reduces the woods' ability to absorb moisture, resulting in a board that is less prone to warping, twisting, or cupping.



Finishes



Double and single grooved profiles

Available profiles



MW6 Grad® – 20mm x 55mm or 20mm x 118mm



MW6 Mix Grad® – 20mm x 43mm, 62mm and 117mm (pattern spans 984mm)



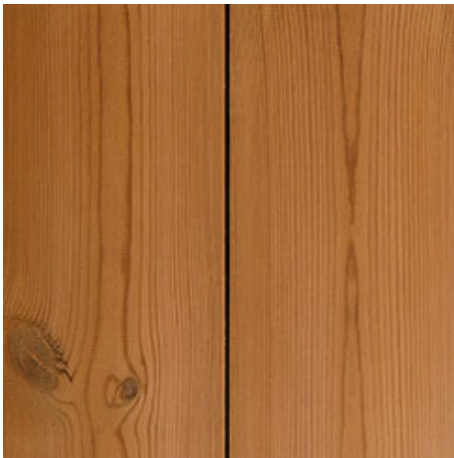
MW7 Grad® – 20mm x 68mm or 20mm x 130mm



MW8 Grad® – 20mm x 138mm



Decking Grad® – 20mm x 118mm



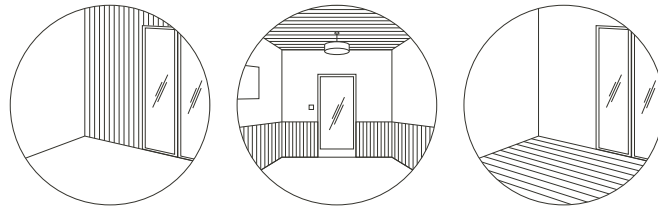
ThermoWood® Pine

A modified Redwood, sourced from carefully selected International ThermoWood® Association members. Thermal modification enhances the wood's natural attributes resulting in a timber that boasts impressive stability and improved durability suitable for a wide range applications, profiles and finishes.

Attributes

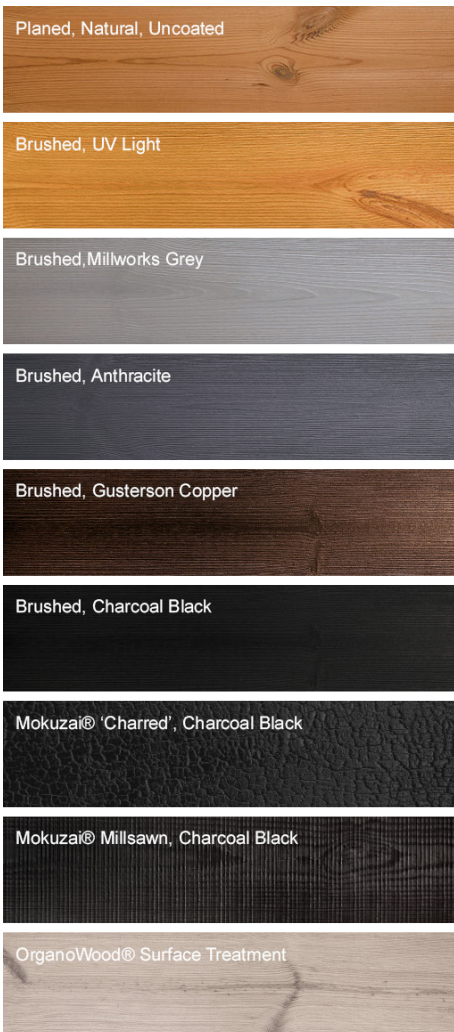
- Certification: PEFC™
- Durability Class: BS EN 350-2 Class 2
- Desired service life (BS8417): Naturally durable. 30-60 years

Applications



Appearance

ThermoWood® Pine is dark brown in colour throughout, with recognisable round and butterfly-shaped knots. The thermal modification reduces the woods' ability to absorb moisture, resulting in a board that is less prone to warping, twisting, or cupping.



Finishes



Double and single grooved profiles

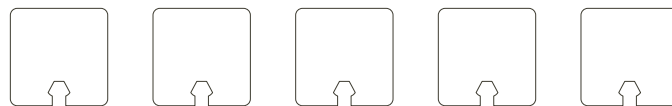
Available profiles



MW6 Grad® – 20mm x 55mm or 20mm x 118mm



MW6 Mix Grad® – 20mm x 43mm, 62mm and 117mm (pattern spans 984mm)



MW6D Grad® – 43mm x 43mm



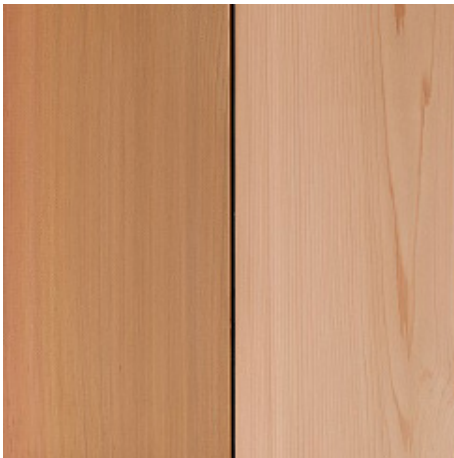
MW7 Grad® – 20mm x 68mm or 20mm x 130mm



MW8 Grad® – 20mm x 138mm



Decking Grad® – 20mm x 118mm



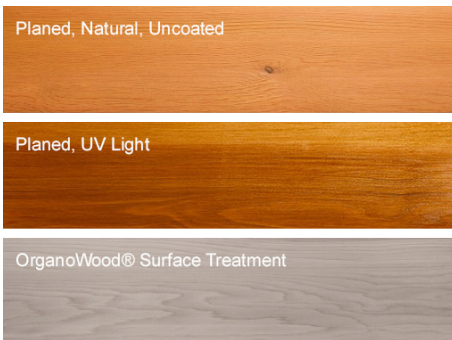
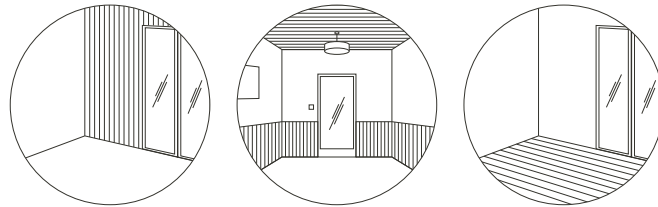
Western Red Cedar

Millworks Western Red Cedar is a sustainable timber solution with exceptional performance. Its low density makes it a fantastic thermal insulator and the lightweight nature of boards means it is easy to install. We custom cut Western Red Cedar to grade, providing high-end specifications.

Attributes

- Certification: PEFC™
- Durability Class: BS EN 350-2 Class 2
- Desired service life (BS8417): Naturally durable. 30-60 years (dependant on application)

Applications



Finishes



Double and single grooved profiles

Appearance

Highly sought after for its variation in warm, rich colouring, Western Red Cedar ranges from pale cream to deep reddish browns offering a dynamic finish for both traditional and contemporary architecture.

Available profiles



MW6 Grad® – 20mm x 55mm or 20mm x 118mm



MW6 Mix Grad® – 20mm x 43mm, 62mm and 117mm (pattern spans 984mm)



MW7 Grad® – 20mm x 68mm or 20mm x 130mm



MW8 Grad® – 20mm x 138mm

Finishes



Western Red Cedar uncoated
and left to weather



ThermoWood® Pine coated with
MillCoat® Charcoal Black

All Millworks timber species have a durability class suitable for their application without the need for further finishing. However, when left uncoated all timber will weather to a silver-grey patina – a normal part of its life cycle which does not compromise structural integrity providing the timber is correctly specified, installed and maintained.

Applying a finish to timber boards offers a number of advantages. Timber coatings serve both decorative and protective purposes, enhancing the appearance of timber and offering a layer of defence against adverse weathering and UV degradation.

In addition to a standard planed finish, Millworks offer a range of coatings, treatments and surface textures, that provide long-lasting colour, consistent weathering and enhanced grain patterns.

MillCoat®

Our in-house coating system, MillCoat®, offers a wide range of colour options, with custom colour coating available on request.

This low-build wood stain is applied under controlled factory conditions to ensure a consistent and durable finish.

Designed with a focus on sustainability, MillCoat is a water-based coating system that contains minimal volatile organic compounds (VOCs) to reduce environmental impact.

The pigments in MillCoat provide a shield which slows the fading process and helps reduce the impact of weathering. With regular maintenance, MillCoat wood stains retain their colour intensity providing a robust barrier against UV.

For ThermoWood® products a brushed surface texture is recommended when coatings are applied to improve adhesion, performance and coating longevity.



Western Red Cedar with OrganoWood® treatment

OrganoWood®

The OrganoWood® surface treatment system offers improved protection and long-lasting durability for timber with a beautifully weathered finish.

Using patented technology that modifies wood at a molecular level, OrganoWood coated timber acquires a natural and uniform silver-grey patina that mirrors the appearance of naturally aged wood.

The treatment penetrates into the timber, binding silicon compounds to wood fibres to create a physical surface barrier that provides enhanced protection against rot and fungal decay. This protective shield reduces splitting and discourages biological surface growth that can damage wood over time.

OrganoWood is a water-based treatment composed of organic silicon polymers and natural substances without toxic heavy metals or biocides. It contains no harmful chemicals, making it safe for the environment, humans and pets.

Note: This process is activated by direct UV exposure and as such the timber gradually transforms to a silver-grey colour over time.

Mokuzai®

Our award winning Mokuzai® finishes are inspired by 'Yakisugi', a traditional Japanese method of wood preservation by charring with fire, often referred to as Shou Sugi Ban.

Our method is completely flameless and creates a hard wearing, high-relief texture, which is then factory coated using MillCoat® to enhance the distinctive finish.

A firm favourite for external and internal projects alike, our Mokuzai products have been created to capture the beauty of this bespoke finish without compromising on longevity for modern living.

Mokuzai 'Charred' – provides a heavy burn pattern designed to resist chipping or flaking.

Mokuzai MillSawn – offers a twist on a traditional fine sawn finish with increased definition and texture.



ThermoWood® Pine finished in Mokuzai® Charred