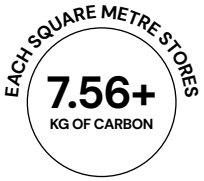
Imbue Radiata Timber

A Trusted Choice in High Performing Heat Tempered Timber



Imbue Radiata heat tempered timber is a new generation of wood product that presents a renewable and high performing alternative to old growth timbers that are often from unsustainable sources.

Imbue Radiata products are made from heat tempering clear grade FSC® certified New Zealand Radiata Pine. World class proprietary heat tempering is achieved by using steam and high temperatures on or above 230°C. The unique modification process is made in purpose-built computer-controlled kilns. A quality control process is in place that measures selected parameters to ensure every piece of timber is modified to the core with the correct specification and quality.

Imbue Radiata has been tested extensively for over 15 years, both in lab and long-term accelerated field trials. This is combined with over a decade of real-world in-service history, so you can be confident of performance and durability for a lifetime.

Imbue Radiata Cladding

-7.56kg/m2

Not all heat tempered wood performs equally!

- Heat tempering is more than making wood brown and not all heat tempered wood performs equally.
- Careful work is required to create a heat tempering schedule that is dedicated to a specific species.
- Lower durability timbers may not be adequately durable when generic thermal modification schedules are followed.
- Any heat tempered timber should be modified to a specific schedule and field tested in decay tests to establish actual durability class.
- Imbue Radiata is single species focused and has a modification schedule that has been perfected over 20 years, this reinforces the performance attributes of Imbue Radiata.

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Fact Sheet Summary

What is it?

Imbue Radiata products are made from heat tempered clear grade FSC® certified New Zealand Radiata Pine. Heat tempering dramatically increases the durability and stability of wood and results in an aesthetically pleasing brown colouration – effectively creating a new sustainable, environmentally friendly timber species.

Heat tempering is achieved simply by using steam and high temperatures in excess of 200 degrees Celsius. The real trick to the process is in the cooling and reconditioning phase. This is achieved by using purpose-built computer-controlled kilns that ensure every stick of timber is modified to the correct specification and quality. At the end of the process the chemical and physical properties have been permanently changed.

Heat tempering process

Phase 1 The kiln is slowly elevated in temperature until the moisture content of the wood is essentially 0%. The wood in the kiln is then heated further until it reaches the desired modification temperature – in most cases 230 degrees Celsius for outdoor end use applications.

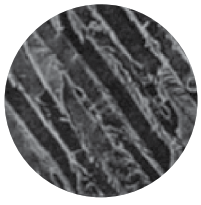
Phase 2 The kiln is held at the modification temperature for a prescribed time to achieve full modification. This time is the critical point in the process.

Phase 3 The kiln is allowed to cool, and the wood is reconditioned with steam (we bring the moisture content back to around 7%). Once cool enough the wood can be extracted from the kiln.

Imbue Radiata

Timber going into the kiln

Cell structure – normal kiln dried timber



Cell structure – heat tempered timber

Features

- Beautiful chocolate brown colour (will weather to grey if left uncoated).
- Naturally durable in above ground exterior applications = no chemical preservatives required = friendly to people and the planet.
- 50% less swelling and shrinkage than radiata pine = more stable and less movement in service.
- Extractives and resins driven out of the wood = reduced resin bleed in service.
- Improved thermal properties = 20-30% better thermal performance than radiata pine.
- Clears grade timber in long lengths = less wastage during installation.
- Made from New Zealand plantation timber = a truly renewable, carbon storing building product.

Quick reference specifications guide

Product options	Imbue Radiata – Flatsawn
Typical nominal sawn sizes (mm)	100x25, 125x25, 150x25, 200x25, 100x32, 150x32, 200x32, 100x50, 150x50, 200x50mm
Lengths	2.4m, 2.7m, 3.0m, 3.6m, 4.2m, 4.8m (subject to availability). US Imperial lengths available
Grade	Clear 2 or Better
Species	Radiata Pine
Treatment	Heat tempered TMT230
Origin	North Island, New Zealand
Sustainability	FSC® certified- mixed, CoC No.: SGS-COC-004944
Average dry density	~420 kg/m3
Equilibrium Moisture Content % (EMC)	~7%
Durability	Class 1 (EN350-1). Class 2 above ground (AS5604)
Warranty	15 years against fungal attack (subject to terms and conditions)
Indicative expansion when wet (from 7% MC to fibre saturation point)	Tangential 3%, Radial 2%, Longitudinal 0.25%. May vary due to natural variation in the timber
Compatibility	Can be placed in contact with most materials including aluminium, galvanised and stainless steel however increased acidity of the timber may require separation from zinc. Use 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	Cross linking PVA, PU, MUF glues and RF resins can be used. Unique properties of the timber including dryness may affect glue bond performance, always check with adhesive manufacturer and conduct testing prior to use
pH (indicative)	3.9
Hardness	Medium-Low (2.5kN Janka)
Thermal properties	~0.095 W/mK /~R1.35 per 25mm thickness (EN12667, ASTM C518, ISO 8301)
Characteristic structural properties (clear sap wood)	Stiffness (MoE) 8GPa, Bending strength (MoR) 50MPa
Weathering	Flatsawn boards will exhibit some surface cracking and will lighten in colour (eventually to silver-grey) with exposure to weather
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. Increased brittleness so careful handling and robust protective packaging of profiled product required
Coating	Takes most oil and water borne coatings well, absorption rates tend to be higher. Smooth dressed timber must be sanded prior to coating. Always test coatings prior to use and follow coating manufacturer's instructions for application
Fire	D-s1-d0 (EN13501-1), Class C (ASTM E84), Group 3 (AS/NZS3837) (Fire classifications may be subject to specific installation requirements in accordance with test reports and local building regulations)