

Tunncliffe's

Tunncliffe Timber Company Limited

ThermoWood® INTENZ™

The alternative for Western Red Cedar

Humans and their never ending hunger for improvement, in search of perfection in the world of wood have led to the next generation of timber products by means of Modification. An example of manipulating a natural product to serve our society, in an acceptable way, sustainable, environmental friendly yet nothing to do with genetics...

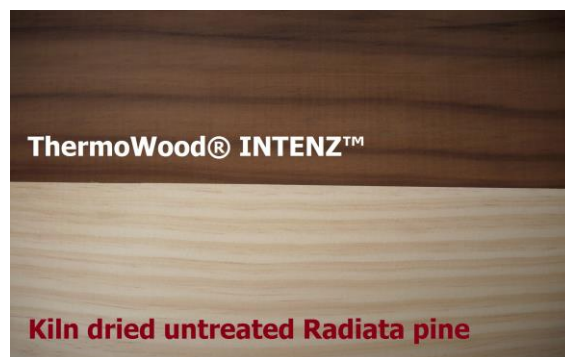


Timber Modification is bringing a new generation of timber products. It is technically incorrect to refer to a new "timber-treatment" mainly because the properties of the timber after the process are permanently changed, effectively resulting in a new timber species.

There are two main categories of timber modification processes, chemical and thermal. Chemical examples are Acetylation and Furfurylation, thermal modification is generally referred to as TMT (Thermally Modified Timber). Among those two categories there are several different technologies and brands on the market catering for a variety of applications.

Tunncliffe's introduced ThermoWood®230 to the New Zealand Joinery market in 2009. This new timber species is created from our traditional New Zealand grown Radiata pine with the help of a thermal modification process called ThermoWood® originating in Finland.

The timber is "cooked" at 230 degrees to achieve maximum increase in stability and durability. The new product has been maturing over the last 9 years and received a new name: **ThermoWood® INTENZ™**. The new brand name is referring to "intense" as it has been modified to the maximum temperature of 230 degrees, ensuring maximum stability and durability without the help of any chemicals.



What led us to get started with thermal modification? Our traditional Radiata pine is a great timber species, yet its biggest downfall is instability. We had the desire to find a solution for that instability effecting specific joinery applications such as larger solid doors warping, jamming doors and sashes during wet weather.

The first product was our finger-jointed and laminated ThermoWood® mullion that stayed straight. Next was a large section of clear to produce the big sill sections for double-hung windows. The increase in rebate sizes from 44 x 14 up to 65 x 18mm for exterior timber joinery is causing treated pine to cup or "curl". With ThermoWood® INTENZ™ you completely avoid that issue.

During the past 10 years since its introduction ThermoWood® INTENZ™ has found its niche and is gaining ground where preservative treated Radiata pine and Western Red Cedar used to be the norm. We learned a lot over the years and received plenty of valuable feedback from our customers. The main area of growth for ThermoWood® INTENZ™ is offering an alternative to Western Red Cedar.



Western Red Cedar (WRC), with its characteristic look and smell, is a fantastic timber and has been for a long time in the New Zealand joinery industry. However feedback from joiners is that WRC, in general, is not what it used to be. When you have a closer, critical look, you find a number of areas in which WRC is letting itself down. And when you think of it you would be keen to find an alternative for the future.

Quality and Sustainability

In the past we used a lot of Californian Redwood for cladding and joinery. This resource ran out and we made a switch to WRC. History repeating itself may apply; it seems that the harvest is moving away from old crop trees to plantation forests, sustainably managed but not producing the quality we were used to. Importers predict that we can expect to see more sappy and knotty timber to work with in the future. ThermoWood® INTENZ™ comes from a truly sustainable resource, here at home in good old New Zealand. There is plenty of it and the quality will be there for a long time to come.



Durability

Western Red Cedar is a well-established timber species in New Zealand. When we evaluated the ThermoWood® durability trials at Scion in Rotorua (former forest research) we were surprised to find that we could not compare our results with WRC. The timber was never trialed and tested in New Zealand, there is simply no data available. WRC is featuring in our building standard yet, according to feedback from joiners over the years we know that WRC has some serious limitations as to its durability at times.

ThermoWood® INTENZ™ is effectively a naturally durable timber like WRC. A naturally durable species we have data for in New Zealand is Cupresses macrocarpa. ThermoWood® INTENZ™ proofed to be more durable than Macrocarpa heartwood in accelerated (severe exposure) decking trials. One should not really compare with the Hazard Classification system as it applies to chemically treated timber, but if you do ThermoWood® INTENZ™ also out-performs H3.1 LOSP treated Radiata pine sapwood and comes very close to H3.2.

When compared with chemically treated timber, under pressure the chemicals are never going to disperse evenly throughout the timber due to the variation in the timber fibres. There is generally more of the preservatives on the outside of the timber than deeper within and heartwood is very difficult to treat full stop. An important feature is that heat goes everywhere consistently, evenly modifying all timber fibres. This means that no matter how much you cut and machine ThermoWood® INTENZ™, this will not compromise the durability of that piece of timber.

ThermoWood® INTENZ™ is used as an alternative solution and currently under CodeMark application.

Pricing

As an imported species WRC has shown significant price fluctuations over time due to exchange rate variations and overseas market conditions.

ThermoWood® INTENZ™ being a locally "grown" timber is not subject to these variables, offering price stability. It has no speculative components for importers covering risks. WRC is a relatively expensive timber. ThermoWood® INTENZ™ is now a quality Kiwi commodity, reasonably priced and keeping our Kiwi dollar within our own economy just got to be good for all of us.

Painting

WRC can be problematic to paint. The timber contains tannic acid and other extractives conflicting with paint systems.

ThermoWood® INTENZ™ paints extremely well due to the fact that all resin, which normally conflict with paint, has been taken out by burning off. The resin canals that travel tangentially through the wood are opened up, making the timber more permeable. You will find that the first coat of primer is more or less sucked in. The paint holds very well, making a significant contribution to the products durability.



Machining

A common annoyance when machining WRC is that it tends to chip. Less so with ThermoWood® INTENZ™.

Screw-holding

Screw holding can be a problem with WRC. During our in-house screw withholding tests we found ThermoWood® INTENZ™ to have 20% more holding power than WRC.



Stability and Strength

What WRC and ThermoWood® INTENZ™ have in common is stability and strength, both are very similar for both species.

So when you sum it all up WRC is proven, old school, well established, but arguably on the way out. ThermoWood® INTENZ™ is new, young and innovative with a growing reputation, making its mark now and even more so in the very near future.●