## EARTHEN PLUS :

Earthen Plus is made from thermally modified select grade FSC certified New Zealand radiata pine. Thermal modification 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.

Thermal modification is achieved simply by using steam and high temperatures above 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.

## THERMAL MODIFICATION PROCESS :

### Phase 1 :

The Kiln is slowly elevated in temperature until the moisture content of the wood is essentially zero %. The wood in the kiln is then heated further until it reaches a desired modification temperature of 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 to bring the moisture content back to around 7%. Once cool enough the wood can be extracted from the kiln.

### Features :

- Beautiful chocolate brown colour when uncoated.
- Naturally durable in above ground exterior applications, no chemical preservatives required.
- 50% less swelling and shrinkage than radiata pine.
- More stable and less movement in service.
- Extractives and resins driven out of the wood reduce resin bleed in service.
- 20-30% better thermal performance than radiata pine.
- Select grade timber in long lengths. Less wastage during installation.
- Made from New Zealand plantation timber a truly renewable, carbon negative building product.

## QUICK REFERENCE SPECIFICATIONS GUIDE :

- **Length:** Random length within packs 2.4m - 5.4m (subject to availability).
- **Select grade:** A high appearance grade with front face and edges primarily clear but with some small defects allowed in some boards. 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.
- 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.
- **Species:** Radiata Pine.
- **Treatment:** Thermally Modified TMT230.
- **Origin:** North Island, New Zealand.
- **Sustainability:** FSC® certified- mixed, CoC No.: SGS-COC-004944.
- **Dry density:** ~430 kg/m3.
- **Moisture content at mill:** ~7%.
- **Durability Class 1 (EN335):**
  - Field tested at SCION Rotorua.
  - More durable than Macrocarpa (Cupressus macrocarpa) heartwood.
  - Suitable for exterior above ground vertical applications requiring minimum 15-year service life in low-moderate decay situations eg: joinery, cladding, screening, fascia.
- **Expected exterior above ground service life:** Up to 30 years or more when properly installed and maintained.
- **Warranty:** 15 years against fungal attack.
- **Approx expansion when wet (from 7% MC to fibre saturation point):** Tangental 2.5-3.0%, Radial 1.5-2.0%, Longitudinal 0.25%.
- **Compatibility:** Non-corrosive to most metals including aluminium. Use C3 coated or stainless fixings for exterior applications.
- **Fixings:** Nail hold strength and screw same as for radiata pine.
- **Gluing:** Normal PVA, PU, MUF glues and RF resins can be used pH (indicative) 3.9.
- **Hardness:** Medium-Low (3.5kN Janka).
- **Thermal properties:** ~0.099 W/mK /~R1.35 per 25mm thickness.
- Characteristic structural properties (clear sap wood).
- **Stiffness:** (MoE) 8GPa, Bending strength (MoR) 50MP.

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OUR COMMON FUTURE

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