



Tasmanian Timber

Radiata Pine

Pinus radiata

Other common names: Monterey Pine

The Timber

Radiata Pine is a versatile timber; it is widely used for the full range of structural and decorative applications including framing, lining, glue laminated beams, veneer and plywood. When appropriately treated, it can be used for many exposed structural and non-structural applications.

The timber is low in density and fairly soft, often with very wide annual growth rings. The heartwood is light brown to yellow; the sapwood white to pale yellow, but often indistinct. The grain is usually straight, but knots are common.

Radiata Pine is very easy to work with standard tools, although its knotty character and resin canals can cause premature blunting of cutters. Its open grain structure readily accepts preservative treatment, which can provide protection to hazard level 6 (the highest level).

The Resource

Radiata Pine is a plantation softwood timber grown widely throughout Australia. In Tasmania, the first commercial Radiata Pine plantations were established in the 1930s. Since then the Tasmanian Radiata Pine estate has expanded to more than 55,000 ha, largely concentrated in the north-east of the State. The tree has also been widely planted in windbreaks and as stock shelter, particularly on slopes of otherwise poor productivity.

Radiata Pine plays a significant role in meeting the ever-increasing demand for sawn timber. As a well-managed plantation tree, it can provide a renewable resource providing dependable supply for generations to come.



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Radiata Pine

Tasmanian Radiata Pine properties:	
Colour	Cream to light straw.
Grain	Grain is usually straight. Knots are common and growth rings are prominent.
Texture	Fine but uneven.
Durability	In-ground contact: Class 4. Outside above ground: Class 4. Termite resistance of heartwood: Not resistant. Refer to AS 5604—2005 Timber—Natural durability ratings. In-ground performance of untreated Radiata Pine is poor. It can be preservative treated to any durability class.
Lyctid susceptibility	Not susceptible.
Sizes	Dressed seasoned timber 40 to 190 mm wide by 12 to 90 mm thick. Undressed seasoned timber 50 to 200 mm wide by 19 to 100 mm thick. Lengths up to 5400 mm long are available, with the bulk of production between 2400 and 4800 mm long.
Density	Approximately 550 kg/m ³ at 12% moisture content. Unseasoned density approximately 800 kg/m ³ .
Shrinkage (green to 12% MC)	Approximately 3% radial, 5% tangential.
Movement	Between 25% and 5% MC, radial movement is approximately 0.27% per 1% MC change; tangential movement about 0.20% per 1% MC change.
Strength groups	Seasoned SD6, unseasoned S6.
Joint group	Seasoned JD4, unseasoned J4.
Structural grades	Commonly structural #3 - F5 unseasoned and F8 seasoned
Toughness (Izod)	15-24 Nm unseasoned, up to 15 Nm seasoned.
Hardness (Janka)	2.1 kN unseasoned, 3.3 kN seasoned.

Fire hazard properties: wall and ceiling lining (AS/NZ 3837)	
Material group no.	3
Average extinction area	< 250 m ² /kg
Fire hazard properties: other (AS 1530.3)	
Spread of flame index	7
Smoke development index	3
Workability	
General	Usually easy to work away from knots.
Blunting	Moderate. Can be severe in knotty material.
Sawing	Easy, normally fairly clean.
Planing	Smooth surfaces easy to attain. Knots can be hard on cutters.
Moulding	Satisfactory.
Boring	Easy to drill. Holes tend to be oversize.
Rebating + mortising	Generally produces good results.
Turning	Satisfactory. Density variations across growth rings can cause problems.
Nailing	Very easy to nail. Twisted shank nails may be necessary to achieve satisfactory hold.
Gluing	Glues well with most common adhesives.
Bending	A good bending timber. 25 mm material bends well to a radius of 100 mm.
Finishing	Readily worked to a smooth, flat surface. Stains readily, and finishes adhere very well.

For further information contact:

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 Email: contact@tasmaniantimber.com.au

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Tasmanian timber is sustainably grown, harvested and processed to meet the highest standards in quality and environmental practice.



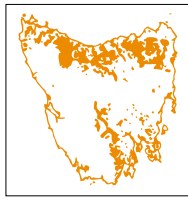
Tasmanian Timber

Radiata Pine

Pinus radiata

Forest Type

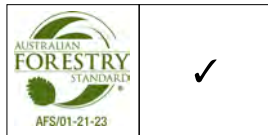
Distribution of forest type that contain these species:



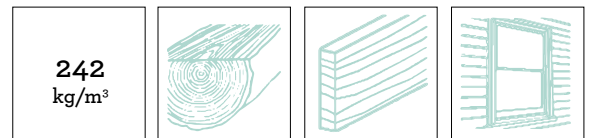
Forest Type Location



Certification



Carbon Storage²

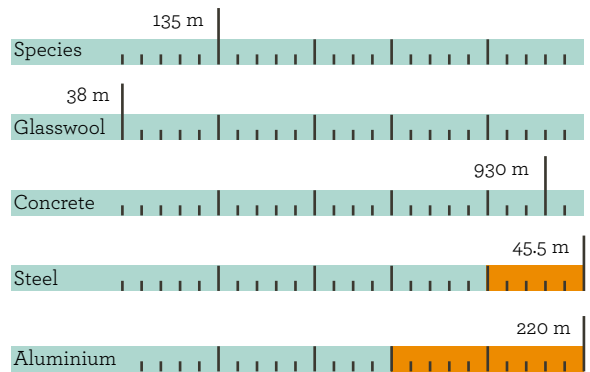


Availability



Thermal Resistance³

Thickness required to achieve a value of R1



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Appearance

Radiata Pine is a medium-sized tree that reaches heights of 40–50 m, with a diameter of about one metre. In plantations, trees have straight trunks with a shallow crown. Radiata Pine is a fast growing tree. The annual growth rate in plantations averages 18 m³ per hectare per year.

Flowers: female pine cones grow on very short stalks. They start out small and green but soon become quite large (8–14 cm) and brown. Male cones are fairly inconspicuous, remaining small and hidden among the pine needles.

Leaves: leaves are characteristically dark green pine needles, generally 5–13 cm long.

Bark: the bark of Radiata Pine is grey to red brown. Thick, rough and deeply fissured, the bark can be 6 cm deep by the time a tree is 40 years old. It only sheds in small flakes. Tannins from the bark can be used to make adhesives.

Forest

A native of North America, Radiata Pine is grown as a plantation timber in Tasmania. The species prefers cooler climates and is unsuitable for the subtropics and more humid coastal areas. It is frost and cold hardy, but can be damaged by snowfalls, and grows best between the coast and 1,000 m above sea level. Radiata Pine prefers sloping, well-drained sites and will not grow well in heavy clay soil.

Growing Constraints: Radiata Pine has been chosen as a plantation species because it is easily raised and planted. It provides larger yields of usable timber in a shorter time than many native species. It seeds readily and, in exposed sunny positions, a seed may still fall and sprout a year or two after ripening. It can be susceptible to Dothistroma needle blight. Radiata Pine is generally harvested at about 35 years.

Distribution: Radiata Pine plantations in Tasmania are largely concentrated in the north-west of the state. There is currently around 71,500 ha of pine plantations which equates to 28% of Tasmania's total plantations.

Environmental

The aim of environmentally sustainable and responsible building practice is to consume minimal resources during construction, operation and eventual demolition.

Sustainable Management¹: The National Forest Policy Statement identifies three principles for sustainable forest management: preserve biological diversity, maintain ecological processes within forests, and community benefit. Species sourced and processed in Tasmania from certified native forest and plantations are considered to be sustainably managed.

Certification: certified forests are managed in line with internationally recognised performance-based standards and are subject to third party audit. Most forests in Tasmania are certified to the Australian Forest Certification Scheme (AFCS). This requires compliance with AS 4708 (for forestry growers) and AS 4707 for Chain of Custody (forest to consumers). AFCS is Internationally recognised by the Program of the Endorsement of Forest Certification schemes (PEFC) and certifiers are independently accredited by JAS-ANZ.

Chain of Custody: ensures that timber supplied is from a certified forest source. It requires controlled labelling and an auditable trail from the forest along the supply chain involving forest managers, processors, manufacturers, and stockists.

Carbon Storage²: the growth of trees absorbs carbon, other emissions and particles from the atmosphere; converting them into wood and other biomass. Some carbon is released by harvest and processing, but the carbon stored within the recovered wood is contained for the life of the material.

R Values³: a material's resistance to the flow of heat is calculated as its R Value. The R Value of the building envelope is the sum of individual building components. The insulation (R Value) properties of building materials are important considerations in the design of energy efficient structures.

Availability: Radiata Pine is freely available and is continuously harvested.



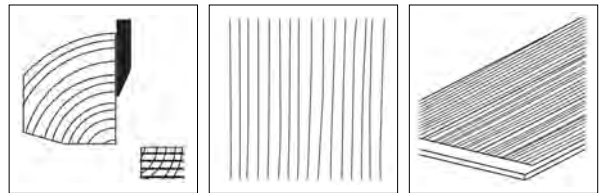
Tasmanian Timber

Radiata Pine

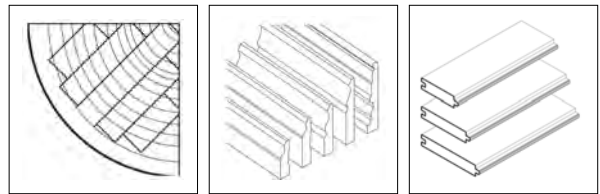
Environmental Summary	
Resource Available from sustainably managed sources ¹	✓
Reserves A percentage of this species is reserved	✓
Certification This species is available with forest certification	✓
Chain of Custody Product with Chain of Custody is available	✓
Appearance Product for appearance use is available	✓
Structural Product for structural use is available	✓

Products Appearance

Quarter Sawn Veneer

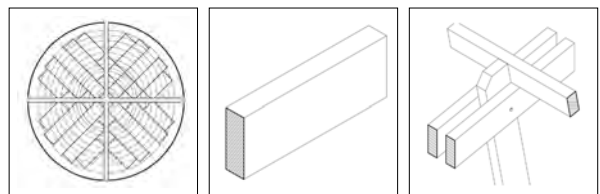


Sawn Solid

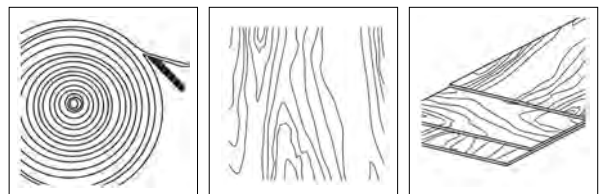


Products Structural

Sawn Solid



Peeled Veneer



Tasmanian Timber

Radiata Pine

Characteristics



Colour:

Heartwood is reddish-brown varying to shades of yellow. Sapwood is usually pale yellow to white.



Grain:

Generally straight with fine but uneven texture, where knots are common. An often pronounced difference in colour between earlywood and latewood results in a very distinctive figure when backsawn.



Features:

1 & 2 Knots: that portion of a branch or limb that has been surrounded by subsequent growth of the stem. The shape of the knot as it appears on a cut surface depends on the angle of the cut relative to the long axis of the knot.

Credits:

Maps: Tasmanian Government Department of Primary Industries and Water; **Tree Product Illustration:** Forestry Tasmania; **Forest Type Illustration:** Fred Duncan, Forestry Tasmania; **Forest Image:** Tasmanian Timber Promotion Board; **Species Illustration:** Vicky Dewsbury; **Species Application Image:** Auspine

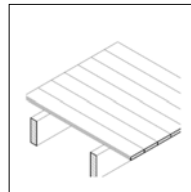
1. National Forest Policy Statement, daffa.gov.au

2. 2004: Ximenes, F.A. and Davies, I. "TimberCAM – A carbon accounting model for wood and wood products in Australia". dpi.nsw.gov.au/forests/info/timbercam

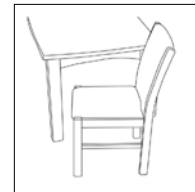
3. R Value Comparison Calculations - AS2878:2000, and ASHRAE, 2005 Physical Properties of Materials.

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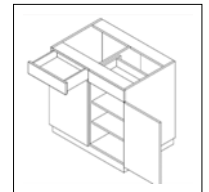
Applications



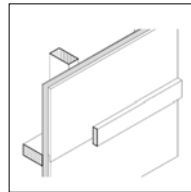
Flooring



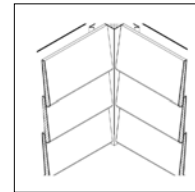
Furniture



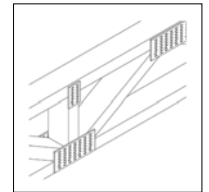
Joinery



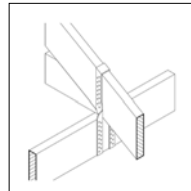
Fitting & Trims



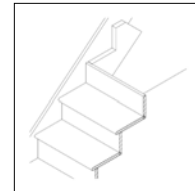
Lining & Cladding



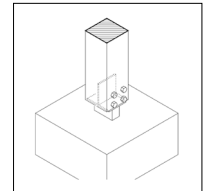
Truss & Nail Plated



Framing



Windows, Doors, Stairs



External Structures*

* when protected and not in ground contact



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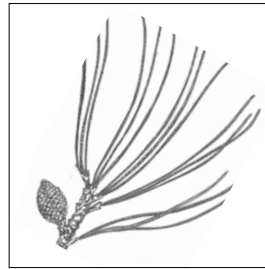
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Radiata Pine

Tree

Can grow to 40–50m
Has a straight trunk
Can grow to 1 m in diameter



Bark

Grey to red brown
Thick and rough
Deeply fissured



Leaves

Dark green needles



Flowers

Male cones remain small & green
Female cones grow large & brown



Funding assistance was provided through the Tasmanian Community Forest Agreement Industry Development Program, a joint initiative of the Australian and Tasmanian governments and administered by the Australian government Department of Agriculture, Fisheries and Forestry.

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