

## European Redwood Details



<b>Common Name(s):</b>	European Redwood, Scots Pine,
<b>Scientific Name:</b>	<i>Pinus sylvestris</i>
<b>Distribution:</b>	Europe
<b>Tree Size:</b>	100-115 ft (30-35 m) tall, 2-4 ft (0.6-1.2 m) trunk diameter
<b>Average Dried Weight:</b>	32 lbs/ft <sup>3</sup> (510 kg/m <sup>3</sup> )
<b>Specific Gravity:</b> (Basic, 12% MC)	0.42, 0.51
<b>Janka Hardness:</b>	5,40 lb <sub>f</sub> (2,400 N)
<b>Modulus of Rupture:</b>	10,300 lb <sub>f</sub> /in <sup>2</sup> (71 MPa)
<b>Elastic Modulus:</b>	1,600,000 lb <sub>f</sub> /in <sup>2</sup> (11.0 GPa)
<b>Crushing Strength:</b>	7,400 lb <sub>f</sub> /in <sup>2</sup> (51 MPa)
<b>Shrinkage:</b>	Radial: 3.7%, Tangential: 7.8%, Volumetric: 11.5%, T/R Ratio: 2.1

**Colour/Appearance:** Heartwood is a light yellow to reddish-brown, often with a distinct contrast between pale sapwood and darker heartwood. Tends to darken slightly with age.

**Grain/Texture:** Grain is generally straight with a medium texture and moderate natural luster. Growth rings are usually clearly visible.

**Rot Resistance:** Heartwood is rated as moderately durable to non-durable, with poor resistance to insects. Sapwood is perishable and susceptible to decay.

**Workability:** Easy to work with both hand and machine tools. Glues, stains, and finishes well. Resin can sometimes clog tools or interfere with finishing.

**Pricing/Availability:** Widely available across Europe and the UK. Generally inexpensive and commonly used in construction, joinery, and furniture.

**Sustainability:** Not listed in CITES Appendices. Listed as Least Concern on the IUCN Red List due to its wide distribution and extensive plantation growth.

**Comments:** Often marketed as “redwood” in the UK timber trade (though unrelated to true redwoods). Commonly pressure-treated for outdoor use due to its limited natural durability.

## Timber Quality Advice – Redwood

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Redwood is a popular choice for construction and external furnishings, but it is important to reiterate that **all solid timbers are organic materials** and therefore constantly change relative to their environment.

### Surface Features

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When specifying Red Wood timber for your project you should expect the following natural features in the face and end grain of the pieces.

**These features should not be considered defects** and the extent of many surface features in the timber will change seasonally, sometimes closing up entirely due to natural expansion or shrinkage:

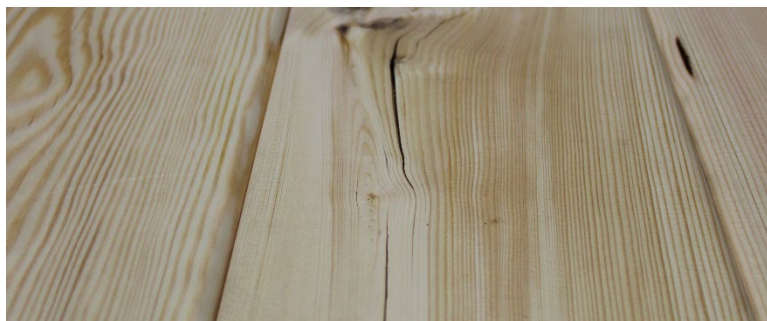
#### **Knots**

Knots appear as dark and often gnarled blemishes on the surface of the timber. They generally occur where branches leave the trunk of the tree, or where a tree had become damaged throughout its life.



#### **Splits**

Splits are a separation of the wood from one face to the opposite. They can occur as a result of mechanical damage while processing but most commonly occur during the drying process. Red Wood beams will have small or partial splits visible on the surface and end grain but unless they run the entire length of the piece, pose minimal structural concerns for application in non-load bearing exterior furnishings.



## Shake

Shakes are lengthwise separations of wood along the grain usually occurring between or through the rings of annual growth. Shakes are commonly most noticeable on the end grain of a piece.



## Sapping

Sap is a **natural exudate from all trees**. Under hot temperature conditions, the sap can ooze out of the wood surface. To stop this, you need to seal the wood surface. This is done by cleaning the wood of sap, sanding it, and then applying the sealer.



## Colour

Subtle variations in colour are to be expected give the nature of the species. Storage and treatment also play a large role in the colour of red wood. See **Delivery & Storage** for more information.



## Dimensional Tolerance & Movement

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The sawmills and suppliers of our timber products will generally work to a rough-sawn dimensional tolerance of  $\pm 6/0$ mm. They will then ensure pieces are planed flat and to final size with all faces and ends square, with tolerances as close as  $\pm 0.4/0.4$ mm.

Red Wood will also be subject to seasonal movement and other environmental factors, and dimensions are likely to change slightly from sawmill to our assembly plant to delivery on site.

As a general rule, a board/beam of 300mm can shrink/expand across its width as much as 6mm. This will dictate minimum distance adjacent timbers are spaced on a product as any contact between expanding pieces could have a severe effect on the integrity of the support or fixings. Longer Red Wood pieces will also expand and contract at different rates along their length resulting in lines originally cut perfectly straight becoming wavy over time. It is important to allow the timber to move without restriction to avoid failure.

We can advise on any design changes/limitations to be set to minimise these issues.



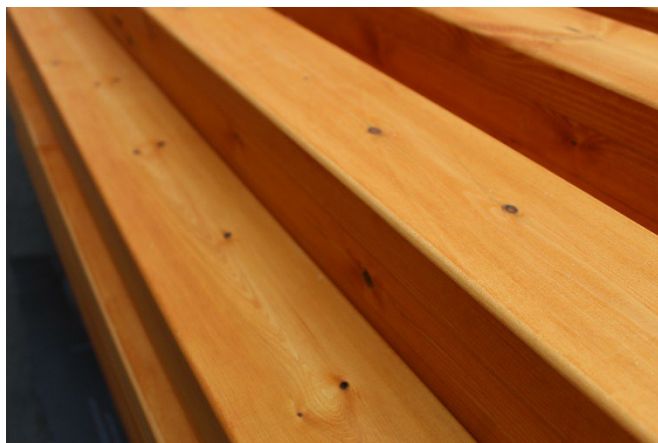
## Surface Treatments and Protection

As standard we treat our soft wood timber with a Teak Wood Stain. This waterproof coating is long lasting and protected by film protection that will resist algal and fungal growth.

Please note that the Teak Wood Stain coating will wear off over time – so reapplication will be required.



Untreated



Teak Wood Stain

Alternative wood stains are available in a range of colours \*at additional cost

Black	Super White	Walnut	Amazonian	Antler Brown	Asteroid	Bleached Oak	Blueberry
Brandy Alexander	Brickwork	Bright Blue	Burlesque	Burnt Plum	Buttercotch	California Gold	Cappuchino
Caramel Crisp	Carolina Stone	Cherrywood	Clover Leaf	Coffee Bean	Concord Grape	Dill Pickle	Eminence
Fali Straw	Gingerbread	Hemlock	Hudson Bay	Jungle Green	Lapis Lazuli	Lignite	Limestone
Marina	Monaco	Obsidian	Pea Green	Ponderosa Pine	Rain Forest	Red Pepper	Ripple Grey
Rose Smoke	Sargasso Sea	Shaman	Speculum	Toasted Almond	Volcanic Ash	Whisper Grey	Wild Grape

## Delivery & Storage

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We often deliver timber products to site strapped and wrapped for secure shipping and we are aware that products are commonly stored on site for weeks or months before installation:

**If products are left tightly bound/strapped** any natural movement may be restricted, leading to severe, uneven dimensional changes and even failure of the timber or fixings. **All strapping must be removed or loosened immediately following delivery to site.**

**If products are left wrapped in shipping materials** they may be subject to much higher temperature and humidity than the surrounding environment, which will lead to moisture being drawn out from the wood at a high rate, potentially causing severe dimensional changes. As this moisture will have nowhere to go the products will accumulate a large amount of condensate, which can stain the timber and even damage steelwork; the timber may also begin to rot if left in this state for too long. **All wrapping must be removed immediately following delivery to site.**

Consider assigning an outdoor, but covered area to store furniture products before final installation.



The workshop team at Bailey Street Furniture Group will assess every piece of timber to be used in your furniture product and will reject those that have excessive splitting, warping or potentially dangerous surface features.

Faces will be sanded to minimum 80 grit and all sharp corners softened unless instructed otherwise.