

# WESTERN RED CEDAR

<b>Botanical name:</b>	<i>Thuja plicata</i> , family: CUPRESSACEAE
<b>Distribution:</b>	North America (Western North America from Alaska to California and eastwards to Montana)
<b>Other important trade names:</b>	Riesenlebensbaum, Rotzeder (D); Western red cedar, giant cedar, canoe cedar, red cedar, shinglewood, abor vitae (US)
<b>Abbreviation as per DIN EN 13556:</b>	THPL

## Colour and structure of the wood:

Heartwood brown to red to yellow. Clear colour contrast between sapwood and heartwood, narrow. Sap light; heartwood usually yellowish brown to dark reddish brown, sometimes striped locally, darkens with long exposure to light. By regularly switching between early and latewood, clear raised “cathedral effect” formed by innermost growth rings develop on tangential surfaces and stripes corresponding to the year ring widths develop on radial surfaces. Smell of the wood is distinctive (aromatic, spicy (like cedar oil)).

## Properties:

Weight fresh [kg/m <sup>3</sup> ]		550
Bulk density air-dry (12-15 % u) [g/cm <sup>3</sup> ]		0.36 – 0.39
Compression strength u <sub>12-15</sub> [N/mm <sup>2</sup> ]		29 – 35
Bending strength u <sub>12-15</sub> [N/mm <sup>2</sup> ]		48 – 55
Modulus of elasticity (bending) u <sub>12-15</sub> [N/mm <sup>2</sup> ]		7400 – 8400
Toughness [kJ/m <sup>2</sup> ]		24 – 34
Hardness (BRINELL) ⊥ to the grain u <sub>12-15</sub> [N/mm <sup>2</sup> ]		9
Drying shrinkage (fresh up to u <sub>12-15</sub> )	radial [%]	1.4
	tangential [%]	3.2
Differential shrinkage [%/%]	radial	0.07 – 0.10
	tangential	0.20 – 0.24
pH value (suspension)		3.4
pH value (surface)		3.6
Durability class (EN 350:2016)	from natural forests	DC 2

**Workability:**

The light and straight-grain wood can be worked neatly in any form and is extremely cleavable. Bonding good.

**Drying:**

Drying at lower strengths (up to approx. 3.5 cm) is quick and easy, when preceded by open air drying for two or three months. With larger densities, there is a risk of internal cracking.

**Use:**

Outdoor or indoor use; non-supporting. Especially suitable for: Outdoor construction with no ground contact (pergolas, conservatories), exterior cladding (facades) (wall covering, ceiling suspensions; weatherboards), frame structure (windows, house doors, conservatories), wall and ceiling coverings (internal) (especially in damp rooms).



Macroscopic cross-section of Western Red Cedar  
(10 times magnification lens)



Wood surface of Western Red Cedar  
(radial section)

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**Surface treatment:**

Western Red Cedar is regarded as a very good coating substrate for indoor and outdoor use. In contact with iron ions discolouring occurs (iron/tannin reaction).

**Coating systems:**

The coating systems illustrated here are examples developed to ensure utmost durability and lasting quality.

Alternative systems are also available; however, these must be confirmed by Teknos. Please contact your local Teknos representative for further details.

Details on application can be found in the technical data sheets for each product.

**Windows, doors, conservatories, and folding shutters:**

System coating	Translucent
Primer	AQUAPRIMER 2900-43
Intermediate	ANTISTAIN AQUA 2901-63
Intermediate	ANTISTAIN AQUA 2901-63
Topcoat	AQUATOP 2600 translucent topcoat

System coating	Opaque
Primer	ANTISTAIN AQUA 2901-52
Intermediate	ANTISTAIN AQUA 2901-52
Topcoat	AQUATOP 2600-2X

System coating	Colourless
Primer	ANTISTAIN AQUA 2901-63
Intermediate	ANTISTAIN AQUA 2901-63
Topcoat	AQUATOP 2600-6X

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**Wood is a unique, beautiful, and very versatile material**

The features and properties of wood vary greatly and therefore individual attention is required in processing and surface finishing.

With this Teknos wood data sheet we would like to go into detail on the features and range of applications in the coating of important wood species.

The data sheet originated from a collaboration with the Johann Heinrich von Thünen-Institute in Hamburg.

The pH values of wood have been determined as important chemical variables for the first time.

The concentration dependence of extracts such as tannic acids or tannins to the pH value is important.

A good surface coating and targeted selection of system structures shall be safer based on these variables determined by Thünen-Institute and demonstrate wood-related problem solving.

All system structures named in the data sheet are selected according to utmost durability and quality and are considered to be relevant systems. However, a practical test is always necessary.

Due to different application possibilities and stresses of parts to be coated, variations are required.

To select individual systems easily, the Teknos technical department will be happy to assist you.

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