

## SILVER FIR

<b>Botanical name:</b>	<i>Abies alba</i> , family: PINACEAE
<b>Other important species:</b>	<i>A. nordmanniana</i> , <i>A. pectinata</i> , <i>A. amabilis</i> , <i>A. balsamea</i> , <i>A. grandis</i>
<b>Distribution:</b>	Europe, Mediterranean area including North Africa and Middle East
<b>Other important trade names:</b>	Edeltanne, Weißtanne (D); silver fir, European silver pine, whitewood (GB)
<b>Abbreviation as per DIN EN 13556:</b>	ABAL

### Colour and structure of the wood:

Heartwood yellow and light. Sapwood matches the colour of heartwood. The wood is yellowish white and darkens when exposed to light. Growth zone boundaries clearly marked by the colour contrast between darker latewood and lighter earlywood. The dark latewood zones produce a clear raised “cathedral effect” formed by innermost growth rings (tangential) on the longitudinal surfaces or striping (radial).

### Properties:

Weight fresh [kg/m <sup>3</sup> ]		800 – 950
Bulk density air-dry (12-15 % u) [g/cm <sup>3</sup> ]		0.43 – 0.48
Compression strength u <sub>12-15</sub> [N/mm <sup>2</sup> ]		40 – 52
Bending strength u <sub>12-15</sub> [N/mm <sup>2</sup> ]		62 – 80
Modulus of elasticity (bending) u <sub>12-15</sub> [N/mm <sup>2</sup> ]		10000 – 14500
Toughness [kJ/m <sup>2</sup> ]		35 – 42 – 65
Hardness (BRINELL) ⊥ to the grain u <sub>12-15</sub> [N/mm <sup>2</sup> ]		13 – 16
Drying shrinkage (fresh up to u <sub>12-15</sub> )	radial [%]	2.0
	tangential [%]	5.0
Differential shrinkage [%/%]	radial	0.12 – 0.16
	tangential	0.28 – 0.35
pH value (suspension)		5.8
pH value (surface)		4.3
Durability class (EN 350:2016)		DC 4

**Workability:**

The wood is easy to saw, plane, drill, and sand as well as easily sliced and cleaved. Easy nailing and screwing. Bonding good.

**Drying:**

Drying is quick and easy. The wood only has a low tendency to crack and warp.

**Use:**

Indoor and outdoor use with no ground contact. Especially suitable for: building supplies (scaffolding, formwork), exterior cladding (facades), frame structure (windows, house doors, conservatories), wall and ceiling coverings (internal), furniture, music instruments, packaging material.



Macroscopic cross-section of Silver Fir  
(10 times magnification lens)



Wood surface of Silver Fir (radial section)

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**Surface treatment:**

No known problems.

**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
Wood preservative*	TEKNOL AQUA 1412-01 / TEKNOL AQUA 1410-01 / TEKNOL AQUA 1415-01
Primer	AQUAPRIMER 2900-X2
Intermediate	AQUAFILLER 6500-01
Topcoat	AQUATOP 2600 translucent topcoat

System coating	Opaque
Wood preservative*	TEKNOL AQUA 1412-01 / TEKNOL AQUA 1410-01 / TEKNOL AQUA 1415-01
Primer	ANTISTAIN AQUA 5200-01
Intermediate	ANTISTAIN AQUA 5200-01
Topcoat	AQUATOP 2600-2X

System coating	Colourless
Wood preservative*	TEKNOL AQUA 1412-01 / TEKNOL AQUA 1410-01 / TEKNOL AQUA 1415-01
Intermediate	AQUAFILLER 6500-01
Topcoat	AQUATOP 2600-6X

\*The use of biocidal products within EU is only allowed if the product has been authorized according to BPR for the country in question. Use biocides safely. Always read the label and product information before use.

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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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