

SILVER FIR

Botanical name:	<i>Abies alba</i> , family: PINACEAE
Other important species:	<i>A. nordmanniana</i> , <i>A. pectinata</i> , <i>A. amabilis</i> , <i>A. balsamea</i> , <i>A. grandis</i>
Distribution:	Europe, Mediterranean area including North Africa and Middle East
Other important trade names:	Edeltanne, Weißtanne (D); silver fir, European silver pine, whitewood (GB)
Abbreviation as per DIN EN 13556:	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 ³]		800 – 950
Bulk density air-dry (12-15 % u) [g/cm ³]		0.43 – 0.48
Compression strength u ₁₂₋₁₅ [N/mm ²]		40 – 52
Bending strength u ₁₂₋₁₅ [N/mm ²]		62 – 80
Modulus of elasticity (bending) u ₁₂₋₁₅ [N/mm ²]		10000 – 14500
Toughness [kJ/m ²]		35 – 42 – 65
Hardness (BRINELL) ⊥ to the grain u ₁₂₋₁₅ [N/mm ²]		13 – 16
Drying shrinkage (fresh up to u ₁₂₋₁₅)	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
Natural durability (DIN-EN 350-2)		category 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. Treatability moderate to poor (EN 350–2, 1994).

Coating systems:

The coating systems selected here are variants which ensure utmost durability and lasting quality.

Other coating systems are basically possible; however, they must be coordinated with Teknos.

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

Windows, doors, conservatories and folding shutters:

System coating	Translucent
Wood preservative	GORI 356 / TEKNOL AQUA 1410-01
Primer	AQUAPRIMER 2900-22
Intermediate	AQUAFILLER 6500-01
Topcoat	AQUATOP 2600-9X

System coating	Opaque
Wood preservative	GORI 356 / TEKNOL AQUA 1410-01
Primer	ANTISTAIN AQUA 5200-01
Intermediate	ANTISTAIN AQUA 5200-01
Topcoat	AQUATOP 2600-2X

System coating	Colourless
Wood preservative	GORI 356 / TEKNOL AQUA 1410-01
Intermediate	AQUAFILLER 6500-01
Topcoat	AQUATOP 2600-6X

Further information:

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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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