

# LARCH

<b>Botanical name:</b>	<i>Larix decidua</i> , Family PINACEAE
<b>Other important species:</b>	<i>L. gmelinii</i> , <i>L. sibirica</i> (East Asia); <i>L. laricina</i> , <i>L. occidentalis</i> (North America)
<b>Distribution:</b>	Europe
<b>Other important trade names:</b>	<i>Larix decidua</i> : larch (GB); meleze (Fr); lariks <i>L. gmelinii</i> , <i>L. sibirica</i> : Sibirische Lärche (D), Siberian larch (GB, USA). <i>L. laricina</i> , <i>L. occidentalis</i> : Kanadische Lärche (D), western larch (USA, CAN)

**Abbreviation as per DIN EN 13556:** LACD: *Larix decidua*; LAGM: *L. gmelinii*; LAOC: *L. occidentalis*

## Colour and structure of the wood:

Heartwood brown to red to yellow. Clear colour contrast between sapwood and heartwood, narrow. The sap is pale reddish yellow, the heartwood is yellowish brown to reddish and darkens intensely on exposure to light. The attractive grain of the wood is defined by the different year ring widths and the strong contrast between lighter earlywood and darker latewood. On tangential surfaces clear raised “cathedral effect” formed by innermost growth rings develop; on radial surfaces, narrow stripes develop. The width of the growth zones essentially depends on the growth conditions and the age of the tree.

## Properties:

Weight fresh [kg/m <sup>3</sup> ]		750 – 900
Bulk density air-dry (12-15 % u) [g/cm <sup>3</sup> ]		0.54 – 0.60
Compression strength u <sub>12-15</sub> [N/mm <sup>2</sup> ]		45 – 62
Bending strength u <sub>12-15</sub> [N/mm <sup>2</sup> ]		88 – 100
Modulus of elasticity (bending) u <sub>12-15</sub> [N/mm <sup>2</sup> ]		10600 – 13800 – 14500
Toughness [kJ/m <sup>2</sup> ]		50 – 75
Hardness (BRINELL) ⊥ to the grain u <sub>12-15</sub> [N/mm <sup>2</sup> ]		19 – 25
Drying shrinkage (fresh up to u <sub>12-15</sub> )	radial [%]	3.0
	tangential [%]	4.5
Differential shrinkage [%/%]	radial	0.14 – 0.18
	tangential	0.28 – 0.36
pH value (suspension)		4.5
pH value (surface)		3.9
Natural durability (DIN-EN 350-2)		category 3 - 4

**Workability:**

Larchwood can be worked well manually and by machine. The resinous heartwood and qualities with irregular grain cause a greater risk of tearing fibres. The easily cleavable wood should be pre-drilled when nailing and screwing. Bonding good to medium.

**Drying:**

Drying is fast, however, there is a greater tendency for crack formation and deformation than with pinewood.

**Use:**

Outdoor or indoor use. Especially suitable for: Outdoor use with no ground contact, horticulture and landscaping, children's play area and equipment, exterior cladding (facades), decorative veneer, frame structure (windows, house doors, conservatories), floors (parquet, boards, etc.), stairs, wall and ceiling coverings (interior), furniture, liquid containers in the chemical industry.



Macroscopic cross-section of larch  
(10 times magnification lens)



Wood surface of larch (radial section)

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### Surface treatment:

Because of an abrupt switch from earlywood to latewood strong differences in density occur, which can lead to adhesion issues. This is shown as crack formation or "wrinkling" surface. By immersion in water (floating) a bacterial contamination can cause a local over acceptance. In this area, it can lead to "sagging" of surface film. Heartwood formation anomalies can bring out this reaction. Treatability very poor (sapwood moderate; EN 350–2, 1994). In contact with iron ions discolouring occurs (iron/tannin reaction).

### 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	ANTISTAIN AQUA 5300-02*
Topcoat	AQUATOP 2600-9X

\*Joint protection is required when intermediate coat is sprayed.

System coating	Opaque
Wood preservative	GORI 356 / TEKNOL AQUA 1410-01
Primer	ANTISTAIN AQUA 5200-01
Intermediate	ANTISTAIN AQUA 5300-10
Topcoat	AQUATOP 2600-2X

System coating	Colourless
Wood preservative	GORI 356 / TEKNOL AQUA 1410-01
Intermediate	ANTISTAIN AQUA 5300-02*
Topcoat	AQUATOP 2600-6X

\*Joint protection is required when intermediate coat is sprayed.

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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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