

ROBINIA

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| Botanical name: | <i>Robinia pseudoacacia</i> , family: FABACEAE-FABOIDEAE |
| Distribution: | Europe, North America (naturally in Southeastern USA; Cultivated worldwide, primarily in Southeast Europe, Korea and China) |
| Other important trade names: | Robinie, Falsche Akazie, Akazie, Gemeiner Schotendorn (D), robinier (F), false acacia (GB), black locust, yellow locust (USA) |

Abbreviation as per DIN EN 13556: ROPS

Colour and structure of the wood:

Heartwood brown to yellow to green. Clear colour contrast between sapwood and heartwood, very narrow. Sap is white to light yellow, heartwood in fresh condition yellowish olive to light brown, when exposed to light darkens to golden brown or light leather brown. The large ring-shaped earlywood pores, embedded in light parenchyma, create distinctive raised “cathedral effect” formed by innermost growth rings on tangential surfaces and fine stripes on radial surfaces. The grain is due to curvature of the stem and often irregular eccentric growth.

Properties:

| | | |
|--|-----------------------|-------------|
| Weight fresh [kg/m ³] | 800 – 900 – 950 | |
| Bulk density air-dry (12-15 % u) [g/cm ³] | 0.74 – 0.80 | |
| Compression strength u_{12-15} [N/mm ²] | 58 – 72 – 86 | |
| Bending strength u_{12-15} [N/mm ²] | 118 – 150 | |
| Modulus of elasticity (bending) u_{12-15} [N/mm ²] | 11000 – 15700 – 16200 | |
| Toughness [kJ/m ²] | 110 – 170 | |
| Hardness (BRINELL) \perp to the grain u_{12-15} [N/mm ²] | 40 – 57 | |
| Drying shrinkage (fresh up to u_{12-15}) | radial [%] | 4.0 |
| | tangential [%] | 7.7 |
| Differential shrinkage [%/%] | radial | 0.20 – 0.26 |
| | tangential | 0.32 – 0.38 |
| pH value (suspension) | 4.2 | |
| pH value (surface) | 5.2 | |
| Natural durability (DIN-EN 350-2) | category 1 – 2 | |

Additional information:

Specific wood substances (flavonoids) can trigger allergic reactions with hypersensitive persons.

Workability:

Straight-grained and tension-free wood can be worked easily manually and by machine tools despite the hardness. Pre-drilling is essential for nailing and screwing. Robinia is easily pliable and not easily cleavable. Bonding medium.

Drying:

Due to the poor permeability for liquids and gases Robinia only dries slowly and is heavily prone to lagging, often also to warping and cracking. Good results can be achieved however with open air drying preceding kiln drying, as well as adequately long conditioning after drying.

Use:

Outdoor or indoor use. Especially suitable for: Outdoor use with ground contact, outdoor use with no ground contact, horticulture and landscaping, children's play areas and equipment, frame structure (windows, house doors, conservatories) (only laminated profiles), floors (parquet, boards, etc.), stairs (solid and pre-finished parquet), furniture, turnery, liquid containers in the chemical industry.



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



Wood surface of Robinia (radial section)

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Surface treatment:

In outdoor application, satisfactory results are only achieved with heavily pigmented, UV absorbent coats. Due to the reactions of condensing content, quick processing must take place after planing or milling. As a result of strong tylose formation, treatability is very poor. Discolouring possible in contact with iron ions (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 |
|----------------|------------------------|
| Primer | AQUAPRIMER 2900-42 |
| Intermediate | ANTISTAIN AQUA 2901-62 |
| Intermediate | ANTISTAIN AQUA 2901-62 |
| Topcoat | AQUATOP 2600-9X |

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

| System coating | Colourless |
|----------------|------------------------|
| Primer | ANTISTAIN AQUA 2901-62 |
| Intermediate | ANTISTAIN AQUA 2901-62 |
| 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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