

## Robinia Wood (Robinia pseudoacacia)

**Botanical description:** Robinia pseudoacacia, Fabaceae family

**Other trade names:** (Falsche) Akazie (D); Robinier, faux acacia (F); Robinia, false acacia (GB); Fehér akác (H); Robinia, agagia (I); Locust, black locust (USA).

**Abbreviation according to DIN 4076/1:** ROB

### Description

Form of the trunk: Mid-size tree of 12 to 25 m, maximum 30 m height and 30 to 60 cm diameter, knotless lengths mostly relatively small, from 2 to 6 m, in a closed population up to 10 m; often crooked, partly non-circular and buttressed. Planned selection and silvicultural tending strategies in plantations can positively influence the form and dimensions.

Colour and structure of the wood: The sapwood is white or light yellowish and in case of older trees very narrow; the heartwood is yellowish-olive or light brown in a fresh condition, it darkens to golden brown or light leather-brown under the effect of light. Pores in the early wood are rough and arranged circularly (ring-pored) and embedded in a pale soft tissue, tangentially as prominent light curled spots and radially as light, fine stripes defining the picture of the wood; with strong tylosis. Pores of the late wood are considerably smaller, partly individually, partly arranged in small clusters and connected through pale soft tissue partly to short, wavy tangential or diagonal groups.



### Origin

The Robinia originally comes from the north-eastern part of America. In the middle of the 18th century, Carl von Linne named Robinia after the French court gardener Jean Robin, who helped bringing the Robinia across the Atlantic.

Jean Robin discovered Robinia as an ornamental tree and brought it from America to France in the beginning of the 17th century for his royal gardens and parks. In Germany, the first references to Robinia date from the year 1670 concerning Robinias in the Berlin pleasure garden. Today Robinias can be found almost everywhere in Central and Eastern Europe.

### Occurrence

After the eucalyptus and cottonwood species, Robinia is today the most frequently cultivated broadleaf worldwide – predominantly with the objective to improve the quality of soil (nitrogen input) and to assure heaps. Forestations for wood production exist primarily in South-eastern Europe, with the largest areas in Hungary and Romania.



## Characteristics

The wood of Robinia has outstanding technical characteristics, high natural durability and often a decorative appearance. It is heavy and hard, accordingly it has good strength values that clearly exceed those of the oak. It is difficult to split, tough, elastic and easy to bend. As the ash and the hickory, the Robinia stands out due to its above-average load capacity in case of a dynamic load.

The degrees of shrinkage – as measured by the high density – are low. Once dried, the wood has a good stability. The drying takes place very slowly. Due to deviation of fibers and growth tensions Robinia wood tends to warp and crack. However, a sufficient predrying in open air and the sealing of ends allow very good results in technical drying. The wood having straight grains can be easily processed, carved and shaped with all hand and machine tools.



Robinia wood has high edge strength. Planed surfaces are tight and flat, and can be processed further without problems. All connections with nails, screws or adhesives are very durable. However, pre-drilling is required.

The original colour of Robinia disappears in case of thermal treatment, e.g. steaming for veneer production, and changes to chestnut brown. The wood is highly acidic and gets discoloured by metals in connection with humidity, additionally the metals corrode. Timber joints or stainless steel need to be used for mounting. The dry wood is odourless. Specific ingredients (flavonoids) may possibly evoke allergic skin reactions (dermatitis, eczema) in case of sensitive persons. The heartwood has high natural resistance against wood destructive fungi and insects. Robinia is the only kind of wood growing in Europe having resistance class 1-2 according to DIN EN 350-2.

Characteristic numbers (for European origins):

Weight (fresh): - 930 kg/m<sup>3</sup>

Weight (kiln dried): 0,66 - 0,79 g/cm<sup>3</sup>

Compression strength\*: 55 - 75 N/mm<sup>2</sup>

Bending strength\* : 120 - 160 N/mm<sup>2</sup>

Impact resistance\*: 110 - 210 kJ/m<sup>2</sup>

\*air dried (12-15% wood moisture)



## Application

As long as shape and available dimensions allow, black locust is a versatile applicable wood species due to its properties (strength, workability, stability, natural resistance).

For outdoor application black locust is qualified for general construction wood (in case of larger dimensions it is glued), for ground care and landscaping, for playground equipment as well as for vehicle construction, doors and windows, gates and fences and terraces.

Due to its high dynamic strength it is qualified especially for high quality tool shafts as well as for gymnastic and sports equipment. Similar to ash and beech, Robinia is notably suitable for bending wood.

Moreover, Robinia is used for fences and poles in farming, wine-growing and orchards. Still today it can sometimes be found in traditional industries like wheelwright's workshops (production of wheels, wagons and farming equipment) and as mine timber in mining.

