

bendable. It is not resistant to pests, so protection is necessary when used outdoors. It must be built in and protected properly. In places with variable humidity, silver fir wood works better than spruce wood.

Silver fir wood dries well and quickly and is not susceptible to bending and cracking. It can be worked very well both by hand and machine although not quite as well as spruce wood. The wood is easy to cleave, it can be glued without problems and holds screws and nails very well. It is extremely resistant to acids and bases.

Woodenware use

Silver fir wood is used to make identical and similar products as spruce wood.

Listavci

Broad-Leaved Trees

Bukev – *Fagus silvatica*

Lastnosti bukovine so povzete po (Čufar, 2006, Wagenführ, 2007). Les bukve je rdečkasto bel, normalno brez obarvane jedrovine (beljava in jedrovina se barvo ne ločita). Pri starejših drevesih se na prečnem prerezu navadno pojavlja nepravilno oblikovan diskoloriran les, imenovan rdeče srce. Branike so različne. Kasni les z manj trahejami je nekoliko temnejši od ranega. Bukovina ima majhne difuzno razporejene traheje.

Bukovina ima visoko gostoto, je trda in se zelo krči in nabreka. Les je zelo žilav, malo elastičen in zelo trden. Dobro se cepi, predvsem po parjenju se dobro upogiba. Bukovina je zelo neodporna na glivni razkroj in napade insektov.

Ročno in strojno je bukovino mogoče lepo obdelovati, vendar sta krhanje orodij in poraba energije zaradi visoke gostote nekoliko večji. Dobro se struži in polira. Brez težav se žeblija, vijači in lepi.

Bukovino je mogoče izjemno dobro kriviti.

Bukev je naš najbolj razširjen listavec, ki pa se je vse do sredine 19. stoletja skoraj izključno uporabljal za kurjavo. Na trgu se prodajata neparjena in parjena bukovina. Danes je široko uporabna za proizvodnjo luščenega furnirja, krivljenega lesa (Thonetov stol) in številnih mizarskih izdelkov. Poleg omenjenega je zelo pomembna uporaba za proizvodnjo pragov ter LVL lepljenih nosilcev, ki jih proizvajajo iz luščenega furnirja.

Uporaba na področju suhe robe

Pri izdelavi suhe robe je bukovina uporabna za stružene izdelke. Prav tako je uporabna za izdelavo bukovih obodov, vendar mora biti parjena. Kljub nekoliko temnejši barvi se uporablja tudi za izdelavo žlic in kuhalnic. Prav tako je bukovina nepogrešljiva pri ročnem mizarstvu in orodjarstvu, za ročaje za sekire, krampe, cepine ... (Šinkovec, 1999).

Common beech – *Fagus silvatica*

The properties of beech wood have been summarised from the used references (Čufar, 2006; Wagenführ, 2007). Beech wood is reddish-white in colour and is usually without coloured heartwood (sapwood and heartwood do not differ in colour). In older trees, irregularly shaped discoloured wood called the red heart usually appears in the cross section. Its growth rings are clearly visible. Latewood with fewer vessels is slightly darker than earlywood. Beech wood has small vessels with a diffuse arrangement.

Beech wood has high density, is hard and subject to a large amount of shrinkage and swelling. It is very strong, slightly elastic and very solid. It is easy to cleave and has good bending characteristics, especially when steam bent. It is very resistant to fungal decay and insect attacks.

Beech wood can be worked easily both by hand and machine, however, tool blunting and energy consumption are slightly higher due to its high density. It is easy to turn and polish. It has good nailing, screwing and gluing properties, as well as excellent bending characteristics.

Beeches are Slovenia's most widespread broad-leaved trees, however, up until the mid-19th century beech wood was used almost exclusively as firewood. Unsteamed and steamed beech

timber is available for sale. Today, beech wood is widely used for the production of rotary cut veneer, bentwood (Thonet chair) and many cabinetry products. In addition to all this, it is also widely used for the production of thresholds and LVL beams, which are made from rotary cut veneer.

Woodenware use

In the field of woodenware making, beech wood is useful for turned products. It can also be used to make sieve rims, it must, however, be steam bent. Despite its slightly darker colour, it is also used to make soup spoons and cooking spoons. It is also indispensable for woodworking and tool making, i.e. to make handles for axes, pickaxes, ice axes etc. (Šinkovec, 1999).

Hrast – *Quercus petraea* – graden, *Quercus robur* – dob

Lastnosti hrastovine so povzete po (Čufar, 2006, Wagenführ, 2007). Lesova doba in gradna sta si zelo podobna in ju je zelo težko zanesljivo ločiti. Hrast je venčasto porozna drevesna vrsta z obarvano jedrovino, ki se ostro loči od beljave. Beljava je navadno ozka (2–5 cm) in je rumenkasto bele barve. Jedrovina je svetlorjava in na svetlobi potemni. Letnice so izrazite. Kot pri vseh venčasto poroznih listavcih se traheje na prečnem prerezu pojavljajo kot grobe, s prostim očesom dobro vidne pore, na vzdolžnih prerezih pa kot žlebiči. Zaradi venčaste porazdelitve trahej tangencialna površina izkazuje karakterističen plamenast videz, radialna pa progastega.

Les hrasta je gost in trd. Gostota zelo niha v odvisnosti od rastišča, rastnih posebnosti in starosti. V širokih branikah naraste delež kasnega lesa, kar se odraža v višji gostoti in trdnosti ter tudi večji naravni odpornosti, medtem ko je hrastovina z nizko gostoto lahko le zmerno odporna in podobna odpornosti smrekovine. Les hrasta je elastičen (Čufar, 2006, Wagenführ, 2007). Hrastovina se tradicionalno uporablja za gradben les za razne konstrukcije (npr. mostovi, izpostavljeni deli stavbnih konstrukcij, stebri pri kozolcih ...), kjer je potrebna velika nosilnost in dolga življenjska doba. Poleg tega je zelo uporabna v stavbnem in klasičnem mizarstvu.

Uporaba na področju suhe robe

Suhorobarji uporabljajo hrastovino v posodarstvu (kadi, čebri, škafi ...) in strugarstvu (Šinkovec, 1999).

Oak – *Quercus petraea* – Sessile oak, *Quercus robur* – common oak

The properties of oak wood have been summarised from the used references. Common oak wood and sessile oak wood are very similar and are thus very difficult to tell apart. Oak is a ring-porous wood species with coloured heartwood that contrasts sharply with the sapwood. The sapwood is usually narrow (2–5 cm) and yellowish-white in colour. The heartwood is light brown in colour and turns darker when exposed to light. Annual rings are clearly visible. As is the case in all ring-porous broad-leaved trees, in the cross-section vessels can appear as rough pores that are visible to the naked eye, and in longitudinal sections as grooves. Due to the ring-porous vessel arrangement, the tangential surface shows a characteristic fiery, flame-shaped grain, whereas the radial surface shows a wavy grain.

Oak wood is dense and hard. Its density varies greatly depending on the growing site, special growth characteristics and age. The share of latewood in wide growth rings increases, which is reflected in higher density and hardness, as well as greater natural durability. Low-density oak, however, is only moderately resistant and has a similar resistance as spruce wood. Oak wood is elastic. Traditionally, oak is used as timber for various structures (e.g. bridges, exposed parts of building structures (hayrack pillars), where high load-bearing capacity and a long lifespan are required. In addition, it is very useful in carpentry and cabinetry.

Woodenware use

It is used by woodenware makers for various vessels (tubs, buckets, pails etc.) and for woodturning (Šinkovec, 1999).



3

4