

## Iglavci

### Conifers

#### Smreka – Picea abies

Smreka je iglavec brez obarvane jedrovine, kar pomeni, da beljave in jedrovine barvno ne moremo ločiti. V mladosti je les rumenobel, v starosti lahko tudi rumenkasto rjav. Odvisno od rastišča ima lahko ozke ali široke branike, ki so različne. Kvalitetnejši je les z ožjimi branikami. Prehod iz svetlega, belkastega ranega lesa do rdečkasto rumenega kasnega lesa je večinoma postopen. Poskobljane površine imajo svilnat lesk. Svež les diši po smoli. Pogost je pojav smolnih žepkov. Gostota smrekovega lesa je nizka do srednja, krčenje je zmerno. Smrekovina je elastična in trdna, suši se brez težav, lahko se cepi in lepo se lušči. Les je le malo nagnjen k zvijanju in pokanju in se z lahkoto obdeluje z ročnimi orodji ali strojno. Zaradi nizke vsebnosti ekstraktivov je les kemično komajda aktiven. Železo ob stiku s smrekovino ne korodira, vendar se les sivkasto obarva (Čufar, 2006, Wagenführ, 2007).

Smrekov les je le zmerno odporen proti atmosferilijam in dovzeten za napade insektov in glivni razkroj. Pri uporabi na prostem mora biti zato smrekovina pravilno vgrajena in zaščitena oz. površinsko obdelana.

Les smreke se večinoma uporablja kot gradbeni in konstrukcijski les, ker ima dobro razmerje med težo in trdnostjo. Če je rast počasna in enakomerna, nastane resonančen les, ki se uporablja za glasbila. Uporaben je tudi za notranje in zunanje pohištvo oz. opremo (Čufar, 2006).

##### Uporaba na področju suhe robe

Ker se smrekovina dobro krivi in cepi, se uporablja za izdelovanje obodov. Zelo je razširjena uporaba na področju posodarstva za najrazličnejše vrste posod (škafi, vedra, okrasni škafci ...). Les za takšne izdelke mora biti brez grč, raven in gladek (Šinkovec, 1999).

#### European spruce – Picea abies

Spruce is a coniferous tree without coloured heartwood, which means that it is not possible to tell sapwood and heartwood apart in terms of colour. When young, the wood is yellowish-white and when spruce trees are old, it can also be yellowish-brown. Depending on the trees' habitat, wood can have narrow or wide growth rings. Wood that has narrower growth rings is of better quality. The transition from light, whitish earlywood to reddish-yellow latewood is mostly gradual. Planed surfaces have a silky sheen. Fresh wood has a resinous smell. Resin pockets are common.

Spruce wood density is low to medium, the shrinkage is moderate. Spruce wood is elastic and solid, dries easily, and is easy to cleave and peel. The wood is only slightly susceptible to twisting and cracking and is easy to work with either hand tools or machine tools. Due to the low extractive content, spruce wood is barely chemically active. In direct contact with spruce wood, iron does not corrode, the wood, however, turns greyish (Čufar, 2006, Wagenführ, 2007).

Spruce wood is only moderately resistant to weathering and is susceptible to insect attacks and fungal decay. When used outdoors, spruce wood must be properly installed and protected, as well as surface treated.

Spruce wood is mostly used as a construction and structural core material because it has a good weight-to-strength ratio. If the growth is slow and steady, this results in resonance wood, which is used for musical instruments. It is also useful for indoor and outdoor furniture and furnishings (Čufar, 2006).

##### Woodenware use

Since spruce wood is easy to bend and cleave, it is used to make sieve rims. It is also widely used in the field of vessel making for various types of vessels (pails, buckets, decorative pails etc.). The wood for such products must be free of knots, straight and smooth (Šinkovec, 1999).

#### Jelka – Abies alba

Lastnosti jelovine so povzete po literaturnih podatkih (Čufar, 2006, Wagenführ, 2007). Jelka ima neobarvano jedrovino, zato se beljava in jedrovina barvno ne ločita. Les jelke je mehek in srednje gost, podobno kot smrekovina. Les je rdečkasto bele preko rumenkasto bele do skoraj bele barve, pogosto s sivkasto vijoličnim nadihom. Na lokaciji mokrega srca se les rahlo obarva. Branike so različne. Rani les je svetel ter belkast in postopoma prehaja v rdečkasto rumen kasni les. Normalnih smolnih kanalov ni, zato jelovina nima značilnega vonja po smoli. Sveže mokro srce ima neprijeten kiselkast vonj.

Jelovina je zelo podobna smrekovini. Najpomembnejši znak za njuno makroskopsko razločevanje so normalni smolni kanali, ki se pojavljajo samo pri smreki. Aksialne smolne kanale na zglajenem prečnem prerezu vidimo kot svetle pike. Barva smrekovine je bolj rumenkasta, les ima bolj svilnat lesk. Jelovina je za razliko od smrekovine brez leska. Pri jelki potekajo veje skoraj pravokotno na os drevesa, pri smreki pa bolj poševno, zato ima žagana jelovina bolj okrogle, smrekovina pa bolj ovalne grče.

Tako kot po videzu se tudi po obdelovalnih in predelovalnih lastnostih jelovina le malo loči od smrekovine, vsaka pa ima nekaj posebnosti, pomembnih predvsem za specialno uporabo. Smrekovina je zaradi v splošnem boljše obdelovalnosti bolj priljubljena za stavbno in pohištveno mizarstvo. Jelovina je nekoliko krhkejša in vlaknata, ima obilnejše, močnejše in trše grče kot smrekovina. Jelovini dajejo prednost tam, kjer smola ni zaželen in kjer je potrebna velika odpornost lesa proti kislinam in bazam.

Trdnost jelovine se ne razlikuje bistveno od trdnosti smrekovine, tako da sta enakovredni pri uporabi za nosilne elemente. Jelovina se zmerno krči in ima po sušenju dobro stabilnost (deluje manj kot smreka). Poleg tega je jelovina elastična in upogljiva. Je neodporna proti škodljivcem, zato nezaščitena ni primerna za uporabo na prostem. Treba jo je pravilno vgraditi in zaščititi.

Jelovina se na mestih s spremenljivo vlažnostjo obnese bolje kot smrekovina.

Jelovina se suši dobro in hitro ter ni nagnjena k zvijanju in pokanju. Čeprav nekoliko slabše kot smrekovina, se dobro obdeluje z vsemi orodji in stroji. Les se lepo cepi, dobro žeblja in vijači ter brez težav lepi. Jelovina je izredno odporna proti kislinam in bazam.

##### Uporaba na področju suhe robe

Les jelke se uporablja pri izdelavi enakih in podobnih izdelkov kot iz smrekovine.

#### Silver fir – Abies alba

The properties of silver fir wood have been summarised from the used references (Čufar, 2006, Wagenführ, 2007). Silver fir has uncoloured heartwood, and thus its sapwood and heartwood do not differ in colour. Silver fir wood is soft and of medium density, similar to spruce wood. The wood colour ranges from reddish-white, yellowish-white to almost white, and often has a greyish-purple tinge. At the wet heartwood location, the wood gets slightly coloured. Growth rings are clearly visible. Earlywood is light and whitish in colour, gradually turning into reddish-yellow latewood. There are no normal resin canals, so fir wood does not have the characteristic resinous smell. Fresh wet heartwood has an unpleasant sour smell.

Silver fir wood is very similar to spruce wood. The most important sign to distinguish them at a macroscopic level are normal resin canals, which are found only in spruce wood. Axial resin canals in a smoothed cross section are visible as light dots. Spruce wood is more yellowish in colour and has a more silky sheen. Unlike spruce wood, silver fir wood, has no sheen. Fir branches are almost perpendicular to the tree axis, whereas spruce branches grow at a more oblique angle, so sawn silver fir wood has rounder knots and spruce wood more oval knots.

Neither in appearance, nor in its workability and processing properties, spruce wood differs much from spruce wood; both woods, however, have some special features that are particularly important in terms of special use. Spruce wood is more popular for joinery and cabinetry due to its better general workability. Silver fir wood is slightly more fragile and fibrous, and has larger, stronger and harder knots than spruce wood. Silver fir wood is preferred where resin is to be avoided and where high resistance to acids and bases is required.

The hardness of silver fir wood does not differ significantly from the hardness of spruce wood, so they are equal when it comes to their use as load-bearing elements. Silver fir wood shrinks moderately and has good strength after drying (it works less than spruce wood). In addition, it is elastic and



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