



DOUGLAS-FIR



Douglas-Fir (*Pseudotsuga menziesii*)



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Common Name(s): Douglas-Fir

Scientific Name: *Pseudotsuga menziesii*

Distribution: Western North America

Tree Size: 200-250 ft (60-75 m) tall, 5-6 ft (1.5-2 m) trunk diameter

Average Dried Weight: 32 lbs/ft³ (510 kg/m³)

Specific Gravity (Basic, 12% MC): .45, .51

Janka Hardness: 620 lb_f (2,760 N)

Modulus of Rupture: 12,500 lb_f/in² (86.2 MPa)

Elastic Modulus: 1,765,000 lb_f/in² (12.17 GPa)

Crushing Strength: 6,950 lb_f/in² (47.9 MPa)

Shrinkage: Radial: 4.5%, Tangential: 7.3%, Volumetric: 11.6%, T/R Ratio: 1.6

Color/Appearance: Can vary in color based upon age and location of tree. Usually a light brown color with a hint of red and/or yellow, with darker growth rings. In quartersawn pieces, the grain is typically straight and plain. In flatsawn pieces, (typically seen in rotary-sliced veneers), the wood can exhibit wild grain patterns.

Grain/Texture: Grain is generally straight, or slightly wavy. Medium to coarse texture, with moderate natural luster.

Endgrain: Small to medium sized resin canals, infrequent and variable in distribution; solitary or in tangential groups of several; earlywood to latewood transition abrupt, color contrast high; tracheid diameter medium-large.

Rot Resistance: Douglas-Fir heartwood is rated to be moderately durable in regard to decay, but is susceptible to insect attack.

Workability: Typically machines well, but has a moderate blunting effect on cutters. Accepts stains, glues, and finishes well.

Odor: Has a distinct, resinous odor when being worked.

Allergies/Toxicity: Although severe reactions are quite uncommon, Douglas-Fir has been reported to cause skin irritation, nausea, giddiness, runny nose, along with an increased likelihood of splinters getting infected. See the articles [Wood Allergies and Toxicity](#) and [Wood Dust Safety](#) for more information.

Pricing/Availability: Should be widely available as construction lumber for a modest price. Old growth or reclaimed boards can be much more expensive.

Sustainability: This wood species is not listed in the CITES Appendices, and is reported by the IUCN as being a species of least concern.

Common Uses: Veneer, plywood, and structural/construction lumber.

Comments: Named after Scottish botanist David Douglas, (though the scientific name is in honor of Archibald Menzies, who first described the tree in the 1790s). Douglas-Fir is technically not a true Fir (*Abies* genus), but is in its own genus: *Pseudotsuga*.

The tree itself grows to be very large, and yields a large amount of usable lumber and veneer for plywood. It is an incredibly valuable commercial timber, widely used in construction and building purposes. The wood is very stiff and strong for its weight, and is also among the hardest and heaviest softwoods commercially available in North America.

The mechanical properties listed represent the average values from four regions: coastal, interior west, interior north, and interior south.

Related Species:

None available.

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Scans/Pictures:



Douglas-Fir (sanded)



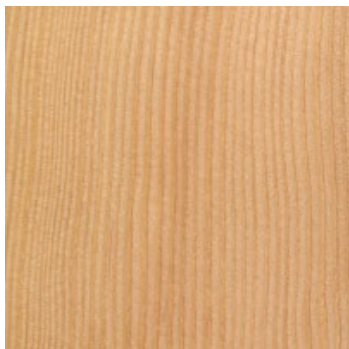
Douglas-Fir (sealed)



Douglas-Fir (endgrain)



Douglas-Fir (endgrain 10x)



Douglas-fir (quartersawn)

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