

Douglas-Fir

Douglas-Fir is one of the best known timber producing species in the world. In British Columbia (B.C.) there are two varieties of Douglas-Fir, coastal and interior. The coastal variety occurs along the Southern mainland coast and across Vancouver Island. The interior variety is found throughout Southern and Central B.C. Douglas-Fir is a large tree reaching heights of 85 metres on the coast, and 42 meters in the interior.

Douglas-Fir is commonly used for building and construction purposes due to its extraordinary strength to weight ratio and availability in large dimensions.

COMMON USES

Douglas-Fir is seen as a first class wood for the manufacturing of sash, doors and windows. The wood is also used for a wide variety of products including general millwork, flooring, furniture, cabinets, veneer, vats, ship and boat construction, transmission poles, and marine pilings.

Douglas-Fir is one of the finest timbers for heavy structural purposes, including laminated arches and roof trusses. Structurally it is used in the form of lumber, timbers, piles, and plywood.

DIFFERENCE BETWEEN COASTAL AND INTERIOR DOUGLAS-FIR

Coastal Douglas-Fir is a much bigger tree than interior Douglas-Fir. The timber from the coastal region is generally lighter in colour, and more uniform in texture than that grown in the interior. One of the main differences is that interior Douglas-Fir is less permeable to preservative treatments. Besides the mentioned properties the two varieties have the same wood properties.

PHYSICAL PROPERTIES

STIFFNESS/ MOE (MPa)	Air Dry	13600
STRENGTH/MOR (MPa)	Air Dry	88.6
DENSITY (kg/m ³)	Air Dry	487
COMPRESSION PARALLEL (MPa)	Air Dry	50.1
SHEAR (MPa)	Air Dry	9.53
SHRINKAGE (air dried - 12%)	Tangential / Radial ratio	1.5



WORKING PROPERTIES

Douglas-Fir has excellent strength properties and is well known for its workability. The wood dries rapidly

with small dimensional movement and little tendency to check. It is relatively easy to work, with good machining qualities. It turns, planes and shapes

well and can be sanded to a smooth finish. The wood glues easily, has good nail and screw holding ability and takes a good finish.

WORKING PROPERTIES			
	PROCESS	PERFORMANCE	COMMENTS
MACHINING	Planing	Good	Good surface quality.
	Shaping	Excellent	
	Sanding	Good	Very good sanding properties.
FASTENING	Screwing	Excellent	Very good holding. Excellent resistance to splitting.
	Nail Retention	Good	
	Gluing	Good	Bonds well with a fairly wide range of adhesives under a moderately wide range of bonding conditions.
FINISHING	Staining	Excellent	Good results with light stain or clear finish followed by nitrocellulose alkyd clear sealer and finish.
	Painting	Good	
DRYING	Ease of Drying	Good	A relatively easy wood to dry with little trouble occurring from checking, warping, and splitting. Lower grades require more care.
DURABILITY	Natural Decay Resistance	Fair	Should not be used in applications with prolonged ground contact without treatment.
	Treatability	Fair	Can be improved by incising.



For more information on the availability of Douglas-Fir, please contact info@canadianwoodbc.com



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Data for this factsheet has been compiled by FPInnovations from internal and external scientific sources. FPInnovations is a not-for-profit technical research institute serving the Canadian forest sector.