

DOUGLAS FIR

{*Pseudotsuga menziesii*}

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 metres in the Interior.

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, 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.

Douglas fir is commonly used for building and construction purposes due to its extraordinary strength to weight ratio and availability in large dimensions. In India, it has been used in post and beam construction and is highly recommended for solid doors and door frames.

PHYSICAL PROPERTIES

STIFFNESS / MOE (MPa)	Air Dry	13600
STRENGTH / MOR (MPa)	Air Dry	88
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



WHAT IS THE 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.

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.

	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.



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