

WESTERN LARCH

Botanical Name: *Larix occidentalis* Nutt.

Western larch grows in valleys and on the lower slopes of mountains in the southern Interior of British Columbia. As it is intolerant to shade it does well in open stands. This large tree can grow to 80 metres tall and 1.5 metres in diameter. Western larch usually grows in mixed stands with Douglas-fir, western hemlock and lodgepole pine. Larch makes up only 0.7% of British Columbia's total growing stock, yet it is a very important species for producing heavy timber.

Common Uses

Western larch produces heavy, hard and strong wood. It is used mainly in building construction for rough dimension, small timbers, planks and boards, and for railroad cross-ties and mine timbers. It is used also for pilings, poles and posts. As it is a visually appealing species, some high-grade material is manufactured into interior finish, flooring, sashes and doors.

The properties of western larch are similar (and sometimes superior) to those of Douglas-fir and these species are sometimes sold mixed.



WESTERN LARCH

Western larch lumber is dried according to end-use and customer specifications. Kiln drying inhibits natural staining of the wood, improves its strength and stiffness, enhances its appearance, and increases its resistance to decay and attack by insects.

PHYSICAL PROPERTIES		
DENSITY (kg/m ³)	Green	549
	Air Dry	600
SPECIFIC GRAVITY (12% M.C.)	Standard	0.55
HARDNESS (N)	Side	4210
	End	5670
MOE (Mpa)	Green	11400
	Air Dry	14300
MOR (Mpa)	Green	59.8
	Air Dry	107.0
COMPRESSION PARALLEL (Mpa)	Air Dry	60.9
COMPRESSION PERPENDICULAR (Mpa)	Air Dry	7.31
SHEAR (Mpa)	Air Dry	9.25
CLEAVAGE (N/mm Width)	Air Dry	48.0
SHRINKAGE OD = oven dry air = air dry 12%	Radial (OD)	5.1%
	Tangential (OD)	8.9%
	Volumetric (OD)	14.0%
	Volumetric (air)	8.0%
	Tang / Rad ratio	1.8

VISUAL PROPERTIES	
COLOUR	
Heartwood	Deep reddish-brown.
Sapwood	Yellowish-white to yellowish-brown, narrow.
Heartwood / Sapwood Contrast	Sharply defined.
Latewood / Earlywood Contrast	There is considerable contrast in colour between the earlywood and latewood.
GRAIN	
The wood is generally straight-grained.	
FIGURE	
Plainsawn lumber or rotary-cut veneer: Conspicuous growth ring. Quartersawn lumber or quarter-sliced veneer: Distinct growth ring stripe. Other: Closely resembles Douglas-fir.	
KNOTS	
Knots are common but generally small and tight.	
OTHER	
Wood of western larch is stiff, moderately strong and hard. It splits easily and is subject to ring shake.	



WORKING PROPERTIES

Western larch wood is stiff, moderately strong and hard, as well as moderately heavy. The wood dries well, but with some tendency to warp and surface check. Works fairly readily with only a small blunting effect on cutting edges. It turns, planes and shapes well and can be sanded to a smooth finish. The wood glues well, has moderate nail and high screw holding ability, and takes a good finish.

PROCESS	PERFORMANCE	COMMENTS
MACHINING		
Planing	Moderate	Recommended planer settings: 20° hook angle and 16 or 20 kmpi (knife marks per inch).
Turning	High to medium surface quality	Turns exceptionally well on a rotary-knife lathe.
Sawing	Easy to work with tools	Resin exudation can sometimes negatively affect blunting effect.
Boring	Good to moderate	Good boring quality with both brad point bits and moderate boring quality with single twist bits.
Mortising	Moderate	Good mortising quality when using a hollow chisel mortise. Common mortising defects: Splintering on the out-going side of the mortise and crushed grain inside the mortise.
Shaping	Good shaping quality	
Veneering	N/A	
Sanding	Good	Excellent sanding properties.
FASTENING		
Screwing	Good	Average screw retention: 547 lb.
Lateral Nail Holding	Good	Comparable to Douglas-fir.
Nail Retention	Excellent	Tends to split in nailing. Excellent holding once nailed. Surpasses Douglas-fir.
Gluing	Glues satisfactorily	Bonds well with a fairly wide range of adhesives under a moderately wide range of bonding conditions.
FINISHING		
Staining	Moderate	Wild grain is very visible when a dark stain is used. Resin content can make staining more difficult.
Painting	Average to good paint holding ability	Resin content can make painting more difficult if the resin is not set during drying.
Lacquering	Good	Recommend multiple clear coats or a high build clear finish to achieve smooth texture. Performed well in the tape test (i.e. edges of the cuts were completely smooth; none of the squares of the lattice was detached) and in the pull-off test (i.e. average strength of 29 kg/cm ²).
Waxing	Good	Best results are obtained when using light- to medium-coloured waxes (e.g. Mellow Pine or Chestnut).
DRYING		
Ease of Drying	Moderately easy	Dries fairly well, but with some tendency to warp and surface check.
HEARTWOOD DURABILITY		
Natural Decay Resistance	Moderately durable	Should not be used in applications with prolonged ground contact.
Treatability	Impermeable to extremely impermeable	Can be improved by incising.



Commercial Availability

Western larch is produced predominantly as Douglas-fir – Larch species mix in structural grades according to National Lumber Grades Authority (NLGA) rules for dimension lumber. Select Structural, #2 and better, and stud grades are the most common grades produced. Specialty in-house grades and export grades are also available. Lamstock is a common product for larch because of its high strength properties.

Appearance grades are also produced according to NLGA rules. Clears, shop lumber and moulding stock are most common, though there are many potential appearance grades that can be produced.

** Marketed as structural lumber in the D Fir-L (N) (Douglas-fir – Larch) species mix.*