

BIGLEAF MAPLE

Botanical Name:
Acer macrophyllum Pursh



BIGLEAF MAPLE

Bigleaf maple is the largest maple in Canada, and it only grows in the southwest corner of British Columbia. On good sites it can reach 36 metres in height and 60 cm in diameter. Bigleaf maple commonly occurs in mixed groups of softwood and hardwood tree species such as red alder, black cottonwood, Douglas-fir, western red cedar, and western hemlock. In British Columbia, hardwoods make up only 5.4% of the province's total growing stock.

Common Uses

Bigleaf maple is an attractive wood generally used for higher value, appearance grade products. As the wood is hard and heavy it is used in flooring and furniture, as well as turnings, musical instruments and interior millwork. Maple is also used in products such as panelling veneer and even plywood. The sap of bigleaf maple is not suitable for maple syrup because of its relatively low sugar content.

Bigleaf maple 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	466
	Air Dry	507
SPECIFIC GRAVITY (12% M.C.)	Standard	0.47
HARDNESS (N)	Side	4110
	End	5780
MOE (Mpa)	Green	8960
	Air Dry	11400
MOR (Mpa)	Green	55.9
	Air Dry	91.0
COMPRESSION PARALLEL (Mpa)	Air Dry	42.2
COMPRESSION PERPENDICULAR (Mpa)	Air Dry	5.72
SHEAR (Mpa)	Air Dry	12.17
CLEAVAGE (N/mm Width)	Air Dry	86.7
SHRINKAGE OD = oven dry air = air dry 12%	Radial (OD)	4.1%
	Tangential (OD)	7.6%
	Volumetric (OD)	12.1%
	Volumetric (air)	8.2%
	Tang / Rad ratio	1.9

VISUAL PROPERTIES	
COLOUR	
Heartwood	Usually light reddish-brown, but sometimes darker.
Sapwood	White with a slight reddish-brown tinge. Wider than that of hard maples.
Heartwood / Sapwood Contrast	Light-coloured heartwood and little contrast between heartwood and sapwood.
Latewood / Earlywood Contrast	The annual growth rings are indistinct as it is a diffuse-porous wood.
GRAIN	
The wood has straight or sometimes curly or wavy grain, medium to occasionally coarse grain, and has an even texture.	
FIGURE	
Plainsawn lumber or rotary-cut veneer: Faint growth ring, occasionally Birdseye, curly, and wavy.	
Quartersawn lumber or quarter-sliced veneer: Occasionally curly and wavy.	
Other: Occasionally pieces have highly figured, wavy grain. Figured forms of maple include bird's eye, fiddle-back, blister and curly maple.	
KNOTS	
Wood often figured around knots.	



WORKING PROPERTIES

Bigleaf maple is moderately heavy, hard and of medium strength. It is well known for its working properties. The wood dries without difficulty, but rather slowly. 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 moderate nail and screw holding ability, and takes a good finish.

PROCESS	PERFORMANCE	COMMENTS
MACHINING		
Planing	Good planing quality	A cutting angle of 20° assists the finishing operation when curly grain or other irregular grain is present.
Turning	Good surface quality	One of the most desirable BC species for turning.
Sawing	Moderately easy to work with tools	Machines with less difficulty than hard maple in all operations.
Boring	Moderate	Medium boring quality with brad point bits and poor quality with single twist bits.
Mortising	Good	
Shaping	Good	
Veneering	N/A	
Sanding	Good	
FASTENING		
Screwing	Moderate	
Nail Retention	N/A	
Gluing	Good to moderate	Bonds well with a fairly wide range of adhesives under a moderately wide range of bonding conditions.
FINISHING		
Staining	Easy	Good to excellent stainability especially with light colours. Recommend light stain or clear finish followed by nitrocellulose/alkyd clear, sealer and finish.
Painting	Average to good paint holding ability	
Lacquering	Good	Multiple coats of clear or a clear coat with a high build is recommended.
Waxing	Good	Excellent results with clear finish. Performed well in the tape test (i.e. small flakes of the coating were detached at intersections of cuts) and in the pull-off test (i.e. average strength of 35 kg/cm ²).
DRYING		
Ease of Drying	Moderately easy	Dries without undue difficulty, but rather slowly.
DURABILITY		
Natural Decay Resistance	Non-durable	Should not be used under high decay hazard conditions.
Treatability	N/A	

Commercial Availability

Bigleaf maple is moderately available. Appearance and millworking grades are produced according to National Hardwood Lumber Association (NHLA) rules. Common grades include Select and better, #1 shop, and frame grade.



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