



## BRITISH COLUMBIA WOOD SPECIES SUITABILITY FOR INDIAN FURNITURE MANUFACTURING



In furniture products, customers focus on beauty of design, functionality, appearance, and strength. Manufacturers of furniture for the Indian market have a long tradition of working with wood species to create highly crafted pieces that are passed down through the generations. Today's modern customers want to have the same high quality wood furniture with modern sleek designs and quick easy installation.

Attractive grain, colour and strength are wood qualities prized in furniture products. Light coloured wood species offer the flexibility to remain light in colour or to be stained to resemble a wide range of other species which are darker in colour. Whether it is light or dark coloured furniture, it is all a matter of what is currently in style in the market. Most of the wood species from British Columbia (B.C.) that are available in India are light in colour when compared to the traditional wood species historically used by Indian craftsmen. Therefore, they have high versatility as they can be given clear or light lacquers to maintain their lustrous lighter sheen, or

be stained to mimic a variety of well known species such as Teak, Sheesham or Sal. Western red cedar is one B.C. species with a naturally darker finish which is highly prized for its deep rich colour.

The most versatile furniture wood species from B.C. is western hemlock as it machines, glues, sands and finishes well and is non-resinous. It has straight grain which permits planing to a fine finish, and is free of grain tear-out which is often found with wood species with spiral or interlocked grain such as those found in some tropical hardwoods. The closed grain characteristic of western hemlock produces a finish that does not require filling or extensive preparation before a coating is applied.

Douglas fir machines well, although it needs to be kiln dried properly so that the resin is set or crystallized. Its grain is also closed and it offers the same benefits as noted for western hemlock. For outdoor furniture western red cedar is an ideal wood on account of its workability, attractive colour, its natural durability, and scent similar to Deodar (*Cedrus deodara*).

Laminating or edge gluing is a key process in furniture making as panels are often glued together to achieve the desired width and/or thickness. Western hemlock, Douglas fir and western red cedar are easy to laminate using any type of glue and require no special

prior preparation. All straight grain wood species require pre-drilling of screw holes to prevent splitting. As with all wood species, the application of an appropriate coating will increase the lifespan of the wood product and enhance its natural beauty.

## COMPARATIVE PHYSICAL, WORKING AND OTHER PROPERTIES OF WOOD SPECIES FOR USE IN FURNITURE

	BRITISH COLUMBIA WOOD SPECIES			INDIAN WOOD SPECIES
TRADE NAME	Douglas fir	Western hemlock	Western red cedar	Teak
BOTANICAL NAME	<i>Pseudotsuga menziesii</i>	<i>Tsuga heterophylla</i>	<i>Thuja plicata</i>	<i>Tectona grandis</i>

### PHYSICAL PROPERTIES

STIFFNESS / MOE <sup>1</sup> (AIR DRY)	Mpa	13500	12300	8270	11000
STRENGTH / MOR <sup>2</sup> (AIR DRY)	Mpa	88.6	81	53.8	88
DENSITY (AIR DRY)	kg/m <sup>3</sup>	487	429	339	650
HARDNESS (SIDE GRAIN)	N	2990	2740	1470	4600
STABILITY (SHRINKAGE-OVEN DRY)	Tang. % (T)	7.4	8.5	4.5	5.8
	Radial % (R)	4.8	5.4	2.1	2.5
	T/R ratio	1.5	1.6	2.1	2.3

### WORKING PROPERTIES Ratings are based on a scale from 10 (excellent) to 1 (poor)

PLANING	8	7	7	8
TURNING	9	8	5	7
MORTISING	10	8	6	7
SCREW HOLDING	9	7	5	8
STAINING	10	8	9	9

### OTHER PROPERTIES

DURABILITY	Fair	Poor	Good	Good
TREATABILITY	Fair	Good	Difficult	Difficult

<sup>1</sup> MOE refers to the Modulus of Elasticity which is commonly used to measure the relative stiffness and degree of deflection of the material when force is applied and then released.

<sup>2</sup> MOR refers to the Modulus of Rupture which is commonly used to measure the relative strength of the material under pressure. This is often referred to as "bending strength", as it measures how much the material will bend before it breaks from the force applied.

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