



## Douglas-fir – the Canadian wood species that combines strength and elegance in its applications.



Douglas fir is truly one of the most versatile species from B.C. Canada: Its uses range from structural applications such as beams, posts and trusses in solid wood to mass timber applications such as GLT & CLT, to manufacture of doors/windows and their frames, to furniture and so on. Its unique working properties enable its use in applications that tests its strength and those where aesthetics play a significant role in selection of wood.

### Reason why Douglas-fir is valued by architects and manufacturers for furniture, door, door frames as well as structural applications?



**It is one of the finest timbers with a wide variety of applications because of its properties:**

It is valued for structural applications due to its excellent strength to weight ratio and availability in large dimensions. It is thus used for making arches, roof trusses, posts and beams etc.

It is widely used structurally as solid wood and also as engineered wood including mass timber such as Glulam and CLT (Cross Laminated Timber).

It is also highly prized for making solid wood doors and door frames due to its dimensional stability and attractive appearance due to its very nice grains. Besides, it has low T/R\* thus it is much less prone to shrinking and swelling compared to other woods, a property valued by manufacturers of door, door frames and windows.



It is also highly valued for millwork applications including furniture and cabinets. In fact, due to its straight grain and availability in long lengths with much lesser knots, Douglas fir is an excellent choice for the millwork applications.



It is considered very good for rustic flooring even in heavy traffic areas such as pubs in North America and is also often used for making vats, barrels, ships and boats, bridges and marine pilings.

\* (T/R = Tangential to Radial shrinkage ratio)

#### SOME LESSER-KNOWN FACTS ABOUT Douglas-fir

It's the only Canadian wood species named after a person. Its name Douglas pays homage to the Scottish botanist and collector David Douglas who introduced many of the species from B.C. Canada to Europe, while the botanical name *Pseudotsuga menziesii* respects Archibald Menzies who discovered the tree in 1791.

It is one of the world's best known timber species and the tree can often live well over 1,000 years. It is a large tree reaching heights of 85 metres on the Pacific coast and 42 metres in interior forests of B.C. Canada.

It plays a key role in wildlife conservation in B.C. Canada by providing habitat to wildlife. By virtue of their being so long-lived as trees, they provide deadwood cavities which birds, squirrels, bats and other native animals take shelter in. Being tall, they also make perfect nesting sites for large birds such as Eagles. Even the seeds of Douglas-fir are a favourite food of squirrels, mice and large birds.

Further, Douglas-fir bark is thick enough thus being not easily inflammable there by helps retard forest fires and protect the flora and fauna around and helps animal life in forests flourish save from the forest fires.

### Some Examples of Douglas fir Structural Applications in India



#### Working properties:

- Excellent strength and workability
- Good machining qualities (turns, planes and shapes well)
- Excellent screw holding and resistance to splitting
- Bonds well with a range of adhesives under a range of bonding conditions
- Excellent sanding, staining and finishing painting properties.
- Capable of being painted and coated with clear finishes that adheres well to wood surface
- Due to its low to moderate density values, it's easy to face laminate and edge glue



#### Interior fitouts



#### How Douglas –fir scores over traditional wood

It scores above the traditional woods on properties like:

- Stiffness (with an MOE 13440 v/s 10700 of Teak)
- Mortising
- Treatability
- Planing
- Turning
- Nailing
- Staining

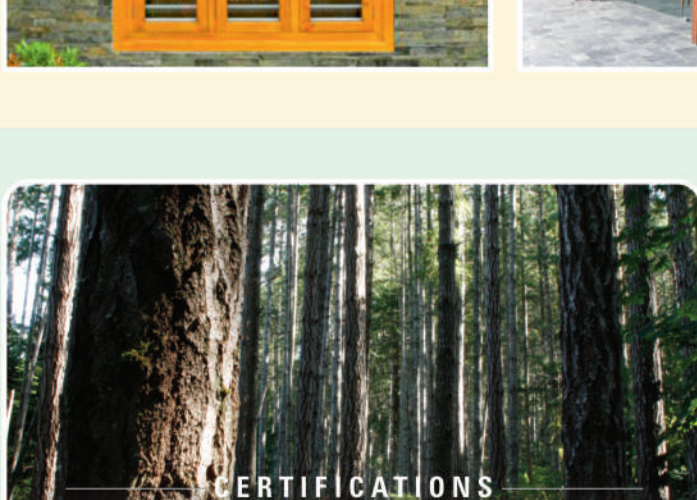
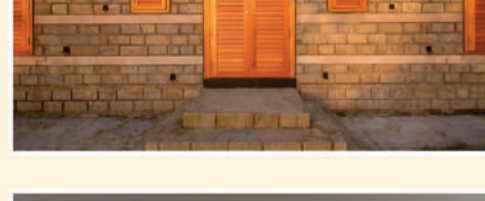
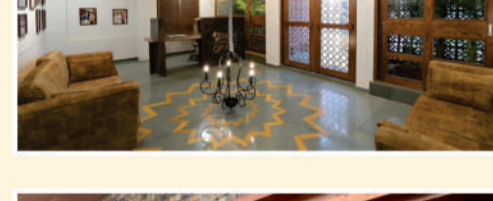
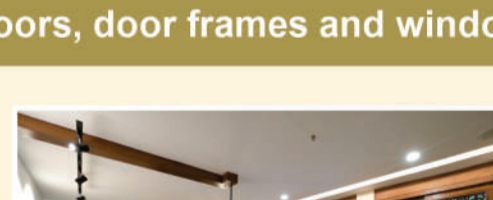
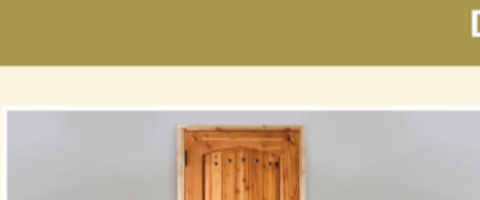
Low T/R (tangential to radial shrinkage ratio). Douglas-fir 1.6 v/s Teak 2.3

(MOE= Modulus of elasticity, which is commonly used to measure the relative stiffness and degree of deflection of material when force is applied and then released.)

It compares favourably with traditionally known woods for properties like density, strength, hardness, seasoning, durability and screw holding capacity.



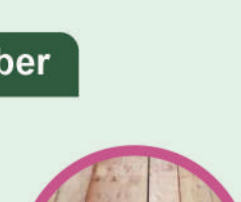
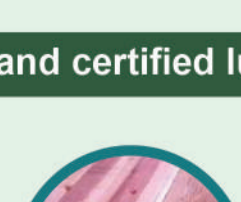
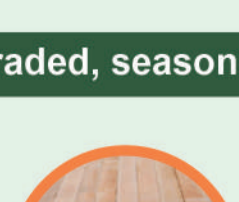
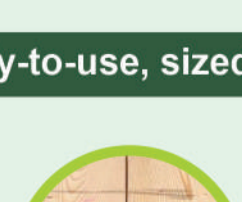
### Doors, door frames and windows



#### B.C., Canada - the world leader in sustainable forest management

All Canadian wood species, including Douglas-fir come from the sustainably managed forests of British Columbia, (B.C.) the westernmost province of Canada, on the Pacific coast. B.C. is acknowledged globally as a world leader in sustainable forest management, with over 50 million hectares of its forests certified by at least one of the two internationally recognised independent certification programs i.e., PEFC and FSC.

Ready-to-use, sized, graded, seasoned and certified lumber



Western hemlock

Spruce-pine-fir (S-P-F)

Douglas-fir

Western red cedar

Yellow cedar

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