

DOUGLAS FIR

Technical Wood Sheet (Pseudotsuga menziesii)

Botanical Name(s): Pseudotsuga menziesii.

CITES: This species is not listed in the CITES Appendices (Washington Convention 2023). Notes. Originally from North West of North America, DOUGLAS FIR is widely used in reforestation in France and Europe. This sheet presents the properties of fast-growing European plantation woods. These properties are different from those of the "Oregon Pine", old and slow growing, coming from its original growing area.



DESCRIPTION OF LOGS

Diameter	From 50 to 80 cm
Thickness of sapwood	From 5 to 10 cm
Floats	Pointless

DESCRIPTION OF WOOD

Colour reference	Pinkish brown
Sapwood	Clearly demarcated
Grain	Straight
Interlocked grain	Absent

PHYSICS AND MECHANICS

Values for mature wood at 12% moisture content. 1 MPa = 1 N/mm²

Property	Avg. value
Specific gravity	0.54
Monnin hardness	3.2
Coef. volumetric shrinkage	0.46 % / %
Ratio St/Sr	1.5
Fibre saturation point	27 %
Thermal conductivity (λ)	0.19 W/(m.K)
Lower heating value	18,720 kJ/kg
Crushing strength	50 MPa
Static bending strength	91 MPa
Modulus of elasticity	16,800 MPa

NATURAL DURABILITY & PRESERVATION

Resistance to fungi	Class 3-4 — moderately to poorly durable
Dry wood borers	Class D — durable*
Resistance to termites	Class S — susceptible

* sapwood demarcated, risk limited to sapwood

PRESERVATIVE TREATMENT REQUIREMENT

Against dry wood borers	Not required
Temp. humidification	Requires appropriate preservative treatment
Perm. humidification	Requires appropriate preservative treatment

SAWING AND MACHINING

Blunting effect	Normal
Sawteeth recommended	Ordinary or alloy steel
Cutting tools	Ordinary
Peeling / Slicing	Good / Good

Notes: Risks of clogging of saw blades and tools due to resin pockets.

ASSEMBLING

Nailing and screwing	Good
----------------------	------

COMMERCIAL GRADING

Appearance grading for sawn timbers. According to European standard EN 1611-1 (October 1999) Possible grading (on 2 sides): G2-0, G2-1, G2-2, G2-3, G2-4 Possible grading (on 4 sides): G4-0, G4-1, G4-2, G4-3, G4-4 Visual grading for structural applications According to European standard EN 1912 (2012) and associated national standards, strength classes C14, C16, C18, C20, C22, C24, C30 and C35 can be provided by visual grading. Strength classes C18, C24 and C30 can be provided by visual grading according to French standard NF B 52-001-1 (2018). Fire safety Conventional French grading. Thickness > 18 mm: M3 (moderately inflammable) Thickness < 18 mm: M4 (easily inflammable) DOUGLAS FIR D-s2, d0 Euroclasses grading. Default grading for solid wood, according to requirements of European standard EN 14081-1+A1 (August 2019). It concerns structural graded timber in vertical uses and ceiling with mean density upper 0.35 and thickness upper 22 mm. End-uses - Exterior joinery - Exterior panelling - Glued laminated - Heavy carpentry - Interior joinery - Interior panelling - Poles - Ship building - Veneer for back or face of plywood - Wood frame house Temporary micro-architecture display - Forum Bois Construction, Lyon 2016; Built for: France Douglas; Architect: Patriarche & Co - France (© Jean-

DRYING

Drying rate	Rapid to normal
Risk of distortion	Slight risk
Risk of casehardening	No known specific risk
Risk of checking	Slight risk
Risk of collapse	No known specific risk

MAIN LOCAL NAMES

France (temperate timber)	Douglas
France (temperate timber) Pin	d'oregon
France (temperate timber) Sapin de	Douglas
Germany (temperate timber)	Douglasie / Douglastanne
United States	(temperate timber) Douglas
DOUGLAS	fir FIR

END-USES

- Exterior joinery
- Exterior panelling
- Glued laminated
- Heavy carpentry
- Interior joinery
- Interior panelling
- Poles
- Ship building
- Veneer for back or face of plywood
- Wood frame house

Claude Chazelon). Main local names Country Local name
France (temperate timber) Douglas France (temperate
timber) Pin d'oregon France (temperate timber) Sapin de
Douglas Germany (temperate timber) Douglasie Germany
(temperate timber) Douglastanne United States (temperate
timber) Douglas fir DOUGLAS FIR