



Pinus radiata D. Don (Pinus insignis Douglas ex Loudon)

Family: Pinaceae

Radiata Pine

Radiata pine is one of over 40 species in the Yellow Pine Group. The word *pinus* is the classical Latin name, while *radiata* means radiate or rayed, referring to the markings on the cone scales.

Other Common Names: insignis, insignis pine, insignis-pijn, insignispijn, insular pine, insular two-leaved pine, monterey fohre, Monterey kiefer, monterey kieffer, monterey nmanty, Monterey pine, Monterey small-coned pine, nearly smooth-cone pine, nearly-smooth cone pine, pin de Monterey, pin radiata, pin radiata, pino de Monterey, pino di Monterey, pino insegne, pino insigne, radiata pijn, **radiata pine**, Radiatakiefer, radiatamanty, radiata-tall, remarkable cone pine, remarkable pine, small-coned Monterey pine, smooth-cone pine, spreading-cone pine.

Distribution: Native to the central coast of California from sea level to a maximum elevation of 1,000 feet. Planted extensively in the southern hemisphere mainly in Chile, New Zealand, Australia, and South Africa.

The Tree: In native stands, may reach heights of 70-110 feet and diameters of 2-3 feet. Plantation grown trees may reach a height of 80-90 feet in 20 years. Following data is mostly for plantation grown wood.

General Wood Characteristics: Heartwood light brown to pinkish brown; distinct from the paler creamy white sapwood. Growth rings mostly wide and distinct, false rings may be common; grain usually straight; texture moderately even and fine; moderate to high luster in sapwood; odor slightly resinous.

Weight			
Moisture content	Specific gravity	Weight	
		lb/ft ³	kg/m ³
Green ^a	NA	25	401
12% ^b	NA	33	529
12% ^c	NA	34	545
12% ^d	NA	32	513
12% ^e	NA	28	449
Ovendry ^a	0.33	NA	NA
Ovendry ^b	0.43	NA	NA
Ovendry ^c	0.44	NA	NA
Ovendry ^d	0.42	NA	NA
Ovendry ^e	0.38	NA	NA

^aReference (1), ^bReference (8), ^cReference (9), ^dReference (19), ^eReference (20).

Mechanical Properties

Property	Green	Dry
MOE ^a	0.93 ¥ 10 ⁶ lbf/in ²	1.18 ¥ 10 ⁶ lbf/in ²
MOE ^b	NA	1.66 ¥ 10 ⁶ lbf/in ²
MOE ^c	1.29 ¥ 10 ⁶ lbf/in ²	1.62 ¥ 10 ⁶ lbf/in ²
MOE ^e	1.06 ¥ 10 ⁶ lbf/in ²	1.37 ¥ 10 ⁶ lbf/in ²

MOR ^a	4.85 ¥ 10 ³ lbf/in ²	9.10 ¥ 10 ³ lbf/in ²
MOR ^b	NA	12.7 ¥ 10 ³ lbf/in ²
MOR ^c	6.41 ¥ 10 ³ lbf/in ²	11.98 ¥ 10 ³ lbf/in ²
MOR ^d	NA	12.6 ¥ 10 ³ lbf/in ²
MOR ^e	5.88 ¥ 10 ³ lbf/in ²	11.01 ¥ 10 ³ lbf/in ²
C _l ^a	1.97 ¥ 10 ³ lbf/in ²	4.90 ¥ 10 ³ lbf/in ²
C _l ^b	NA	7.00 ¥ 10 ³ lbf/in ²
C _l ^c	3.03 ¥ 10 ³ lbf/in ²	6.33 ¥ 10 ³ lbf/in ²
C _l ^e	2.59 ¥ 10 ³ lbf/in ²	5.90 ¥ 10 ³ lbf/in ²
C [^] _l ^b	NA	0.52 ¥ 10 ³ lbf/in ²
WML ^e	NA	NA
Hardness ^c	498 lbf	792 lbf
Hardness ^e	500 lbf	625 lbf
Shear _l ^b	NA	1.64 ¥ 10 ³ lbf/in ²

^aReference (1), ^bReference (8), ^cReference (9), ^dReference (19), ^eReference (20), (all are from 2-inch standard).

Forest Products Laboratory toughness 154 in-lbf for green material (5/8 in specimen), Reference (9).

Drying and shrinkage

Type of shrinkage	Percentage of shrinkage (green to final moisture content)		
	0%MC ^a	6%MC	20%MC
Tangential	6.7	NA	NA
Radial	3.4	NA	NA
Volumetric	10.7	NA	NA

^a Air or kiln dries rapidly with little degrade. Movement in service is rated as medium. Reference (9).

Kiln drying schedule^a

Condition	4/4, 5/4, 6/4 stock	8/4 stock	10/4 stock	12/4 stock	16/4 stock	British Schedule 4/4, 5/4, 6/4 stock
Standard	T13-C4S	NA	NA	NA	NA	K

^aReference (5 & 21).

Working Properties: The timber machines easily though the grain tends to tear around large knots. Easy to nail and glue; takes paint and varnish well.

Durability: Sapwood prone to attack by stain fungi and vulnerable to boring insects. Heartwood durable above ground.

Preservation: Sapwood readily treated with open tank and pressure methods. Plantation grown stock is mostly sapwood. Heartwood moderately resistant.

Uses: Veneers and plywood, pulp and paper, fiber and particleboard, light construction, boxes and crates, millwork.

Toxicity: May cause allergic contact dermatitis (11, 16 & 22).

Additional Reading & References Cited (in parentheses):

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