



***Pinus jeffreyi* Grev. & Balf.**

Family: Pinaceae

Jeffrey Pine

The genus *Pinus* is composed of about 100 species native to temperate and tropical regions of the world. Wood of pine can be separated microscopically into the white, red and yellow pine groups. The word *pinus* is the classical Latin name. The word *jeffreyi* is used in honor of the trees discoverer, John Jeffrey (1826-1853), Scotch botanical explorer who collected seeds and plants in Oregon and California (1850-1853) for introduction in Scotland. Jeffrey pine was first classified as a variety of ponderosa pine, and has identical wood properties of ponderosa pine.

Other Common Names: Blackbark pine, blackwood pine, bull pine, Jeffrey pijn, Jeffrey pine, Jeffrey's pine, Jeffrey-tall, peninsula black pine, peninsula pine, pin de Jeffrey, pino de Jeffrey, pino di Jeffrey, pino negro, pinos, ponderosa pine, redbark pine, redbark sierra pine, sapwood pine, truckee pine, western black pine, western yellow pine.

Distribution: Jeffrey pine is native to the mountains of southwestern Oregon south in California through the Sierra Nevada to western Nevada and to southern California. Also in northern Mexico.

The Tree: Jeffrey pine trees reach heights of 200 feet, with diameters of 6 feet. A survivor of early timber harvests was measured at 175 feet tall and 7.5 feet in diameter. Jeffrey pines trees may live to 500 years of age.

General Wood Characteristics: Jeffrey pine is identical to ponderosa pine, with respect to its mechanical and physical properties. Both are in the Yellow Pine Group. The following general information is for ponderosa pine. The heartwood is yellowish to light reddish brown or orange and the wide sapwood is nearly white to pale yellow. In young trees, the sapwood can make up over half of the volume, while in older trees, the sapwood may be two inches or more wide. The wood of the outer portions of saw timber size is moderately light in weight, moderately low in strength, moderately soft, moderately stiff, and moderately low in shock resistance. It is moderately weak in bending and in endwise compression. It is straight grained (but can be dimpled on the tangential surface) and has moderately small shrinkage. It is quite uniform in texture and has little tendency to warp and twist.

Mechanical Properties (2-inch standard)

	Specific gravity	MOE x10 ⁶ lbf/in ²	MOR lbf/in ²	Compression		WML ^a in-lbf/in ³	Hardness lbf	Shear lbf/in ²
				Parallel lbf/in ²	Perpendicular lbf/in ²			
Green	0.37	.98	5000	2370	350	4.7	340	690
Dry	0.42	1.24	9300	5530	790	6.6	500	1210

^aWML = Work to maximum load.
Reference (153).

Drying and Shrinkage

Type of shrinkage	Percentage of shrinkage (green to final moisture content)

	0% MC	6% MC	20% MC
Tangential	6.7	5.0	2.1
Radial	4.4	3.1	1.3
Volumetric	9.9	7.7	3.2
References: (153, 192).			

Kiln Drying Schedules^a

Conventional temperature/moisture content-controlled schedules^a

Condition	4/4, 5/4 stock	6/4 stock	8/4 stock	10/4 stock	12/4 stock	British schedule 4/4 stock
Standard	T9-C6	T7-C5	T7-C5	T7-A4	T7-A4	L
Anti-brown stain	T7-E6	NA	T7-E5	NA	NA	NA

^aReference (28, 185).

Conventional temperature/time-controlled schedules^a

Condition	Lower grades			Upper grades			
	4/4, 5/4 stock	6/4 stock	8/4 stock	4/4, 5/4 stock	6/4 stock	8/4 stock	12/4, 16/4 stock
Standard	291	291	291	299	300	301	302

^aReferences (28, 185).

High temperature^a

Condition	4/4, 5/4 stock	6/4 stock	8/4 stock	Other products
Standard	400	400	400	NA

^aReferences (28, 185).

Working Properties: Jeffrey pine (ponderosa pine) works easily with both hand and machine tools. It finishes and glues well, but the presence of knots make painting difficult. It is resistant to splitting when nailed, but is rated average in nail holding ability.

Durability: Jeffrey pine (ponderosa pine) is not durable unless treated with a preservative, under conditions favorable to decay. It is rated as slightly to nonresistant to decay. Can be susceptible to attack by drywood termites, ambrosia (pinhole borer) beetles, longhorn beetles and Buprestid beetles.

Preservation: Like ponderosa pine, the sapwood of Jeffrey pine is permeable to preservatives, while the heartwood is moderately resistant to preservative treatments.

Uses: Jeffrey pine (ponderosa pine) is used mainly for lumber and to a lesser extent for piles, poles, posts, mine timbers, veneer, and railroad crossties. The clear wood is especially well suited for millwork, such as window frames, doors, shelving, moldings, sash doors, blinds, paneling, mantels, trim, and built-in cases and cabinets. Lower grade lumber is used for boxes and crates. Much of the lumber of intermediate or lower grades goes into sheathing, subflooring, and roof boards. Knotty Jeffrey pine is used for interior finish. A considerable amount now goes into particleboard and paper.

Toxicity: In general, working with pine wood may cause dermatitis, allergic bronchial asthma or rhinitis in some individuals (4,9&12).

Additional Reading and References Cited (in parentheses)

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