



Pinus lambertiana Dougl.

Family: Pinaceae

Sugar 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 and *lambertiana* is used in honor of Aylmer Bourke Lambert (1761-1842), from England, author of a classical illustrated work on the genus *Pinus* (including related conifers) and also a patron of botany.

Other Common Names: Big pine, California sugar pine, Californische, gigantic pine, great sugar pine, Kalifornisch zucker-kiefer, pin de Lambert, pin geant, pin gigantesque, pino de azucar, pino gigantesco, purple-coned sugar, pine, shade pine, socker-tall, sockertall, sugar pine, suiker-pijn, true white pine, zuckerkiefer.

Distribution: Sugar pine is native to the mountains from western Oregon, south through California in the Sierra Nevada to western Nevada and southern California.

The Tree: Sugar pine trees attain heights of over 200 feet with diameters of 3 to 5 feet. They may reach ages of 500 years.

General Wood Characteristics: The sapwood of sugar pine is a creamy white to pale yellow, while the heartwood is buff to light brown, sometimes with a red tinge. With respect to mechanical and physical properties, sugar pine resembles eastern white pine and western white pine. It is light weight, moderately soft, and has a straight, even grain with an even texture. It is easy to work with tools, has low shrinkage, high dimensional stability and seasons without warping or checking. It is low in strength, shock resistance and stiffness. It has no characteristic taste or odor.

Mechanical Properties (2-inch standard)

	Specific gravity	MOE Gpa	MOR MPa	Compression		WML ^a Kj/m ³	Hardness N	Shear MPa
				Parallel MPa	Perpendicular MPa			
Green	0.34	7.10	33.8	17.0	1.45	37.2	1200	4.96
Dry	0.38	8.20	56.5	30.7	3.45	37.9	1690	7.79

^aWML = Work to maximum load.
Reference (56).

Drying and Shrinkage

Type of shrinkage	Percentage of shrinkage (green to final moisture content)		
	0% MC	6% MC	20% MC
Tangential	5.6	4.5	1.9

Radial	2.9	2.3	1.0
Volumetric	7.9	6.3	2.6
References: (56, 192, 185).			

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
Lower grades						
Light	T9-E7	T7-E6	NA	NA	NA	NA
Heavy	NA	NA	NA	NA	NA	NA
Upper grades						
Light	T5-E6	T5-E6	T5-E5	NA	NA	NA
Heavy	T5-F6	T5-F6	T5-F5	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
Heavy	304	305	305	304	305	NA	NA
Light	303	303	306	303	303	305	307

^aReferences (28, 185).

Working Properties: Sugar pine is easy to work with tools and hold nails well.

Durability: Sugar pine is rated as slight resistant to nonresistant to heartwood decay (11).

Preservation: No information at this time.

Uses: Boxes, crates, food containers, millwork (doors, sashes, trim, siding and panels), sheathing, subflooring, roofing, foundry patterns, piano keys, and organ pipes.

Toxicity: In general, working with pine wood may cause dermatitis, allergic bronchial asthma or rhinitis in some individuals (3, 8 & 15).

Additional Reading and References Cited (in parentheses)

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