



Pinus strobus L.
Family: Pinaceae
Eastern White 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 *strobis* is the Latin name for pine cone, from the Greek *strobos* (whirling around) and *strobilos* (pine cone). The species *Pinus strobus* is composed of two varieties; the typical Eastern White Pine (*Pinus strobus* var. *strobus* L.) and Chiapas White Pine (*Pinus strobus* var. *chiapensis* Martinez [*P. chiapensis* (Martinez) Andresen]), native to the mountains of southern Mexico and Guatemala.

Other Common Names: American white pine, American yellow pine, apple pine, ayacahuite vidriosa, balsam pine, bor vajmutov, borovice tuha, Canadian white pine, Canadian yellow pine, chiapas pine, chiapas white pine, Chiapas-pijn, chiapas-tall, cork pine, eastern pine, eastern white pine, kahikatea, Minnesota soft white pine, Minnesota white pine, New England pine, northern pine, northern white pine, Ottawa pine, Ottawa white pine, pattern pine, pin baliveau, pin blanc, pin blanc canadian, pin de Chiapas, pin du lord, pin jaune, pin potiron, pin Weymouth, pino ayacahuite, pino canadiense, pino di Chiapas, pino stobo, pino Weymouth, pumpkin pine, Quebec pine, Quebec yellow pine, sapling pine, seidenkiefer, silver pine, simafenyó, soft pine, soft cork white pine, soft pine, soft white pine, sosny wejmutka, spruce pine, strobe, strobo, strobis, tonawanda pine, Weymouth pine, Weymouth-pijn, Weymouth-pijn, weymouthpijn, Weymouths kiefer, weymouthsden, weymouthsfohre, weymouthskiefer, Weymouth-tall, weymouth-tall, Weymut-tall, weymut-tall, white pine, white soft pine, Wisconsin white pine, yellow pine.

Distribution: Eastern white pine is native to North America from Newfoundland, the Anticosti Islands and the Gaspé Peninsula of Quebec, west to central and western Ontario and extreme southeast Manitoba, south to southeastern Minnesota and northeastern Iowa, east to northern Illinois, Ohio, Pennsylvania and New Jersey and south to northern Georgia and northwest South Carolina. It is also locally distributed in western Kentucky, western Tennessee and Delaware.

The Tree: Eastern white pine grows to heights of 100 feet with a diameter of 3 to 6 feet. Historically, it has grown to heights of 200 feet with diameters of 6 feet. Current national champions are taller than 140 feet. Most of the large trees had been logged prior to the late 1800's.

General Wood Characteristics: The heartwood of Eastern white pine is a light brown, sometimes with a reddish tinge, turning darker on exposure. The sapwood is white, tinged with yellow. It has a uniform texture, is easily worked with tools, shrinks little, easily kiln dried, is straight grained and has a high ability to stay in place. It has medium strength values, is easily worked and take stains, glue and finishes well. It also has good nail-holding ability. It is light weight, moderately soft, moderately weak, not stiff, and low in shock resistance.

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	0.34	0.99	4900	2440	220	5.2	290	680
Dry	0.37	1.24	8500	4800	440	6.8	380	900

^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	6.1	4.8	2.0
Radial	2.1	1.8	0.8
8.2	6.6	2.7	3.3
References: (56, 178, 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-C5	NA	T9-C4	NA	NA	NA
Antibrown-Stain	276	NA	277	NA	278	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	308	NA	309	NA	NA	NA	NA

^aReferences (28, 185).

Working Properties: It is easily worked with tools, is straight grained and has a high ability to stay in place. It takes stains, glue and finishes well. It also has good nail-holding ability.

Durability: Eastern white pine is rated as moderately resistant to heartwood decay (12).

Preservation: The heartwood is rated as moderately resistant to preservative treatment, while the sapwood is permeable (4).

Uses: The bark is used to produce white pine tar, an antiseptic and expectorant. The wood is used for furniture, patterns, matches, boxes, sashes, doors, trim, caskets and toys. The tree is a popular Christmas tree.

Toxicity: In general, working with pine wood may cause dermatitis, allergic bronchial asthma or rhinitis in some individuals (3, 7 & 14).

Additional Reading and References Cited (in parentheses)

1. Betts, H. S. Eastern White Pine (*Pinus strobus*). Washington, DC, USA: USDA Forest Service, 301226-54; 1954.
2. Boone, R. S.; Kozlik, C. J.; Bois, P. J., and Wengert, E. M. Dry kiln schedules for commercial woods - temperate and tropical. Madison, WI: USDA Forest Service, FPL-GTR-57; 1988.
3. Hausen, B. M. Woods injurious to human health. A manual. New York, NY: Walter de Gruyter; 1981.
4. Henderson, F. Y. A handbook of softwoods. London: HMSO; 1977.
5. Hyam, R. and Pankhurst, R. Plant and their names. A concise dictionary. Oxford, UK: Oxford University Press; 1995.
6. Little, Jr. E. L. Checklist of United States Trees (Native and Naturalized). Washington, D.C.: U.S. Government Printing Office, USDA, Forest Service, Agriculture Handbook No. 541; 1979.

7. Mitchell, J. and Rook, A. Botanical dermatology: plants and plant products injurious to the skin. Vancouver, BC: Greenglass Ltd.; 1979.
8. Northeastern Lumber Manufacturers Association. Northeastern white pine, its grades and uses. New York, NY, USA.: NLMA; 1950.
9. Record, S. J. and Hess R. W. Timbers of the new world. New Haven, CT: Yale University Press; 1943.
10. Simpson, W. T. Dry kiln operator's manual. Madison, WI: USDA Forest Service, FPL Ag. Handbook No. 188; 1991.
11. Summitt, R. and Sliker, A. CRC handbook of materials science. Vol. 4. Boca Raton, FL: CRC Press, Inc.; 1980.
12. USDA. Wood handbook: wood as an engineering material. Madison, WI: USDA Forest Service, FPL Ag. Handbook No. 72; 1974.
13. Wendel, G. W. and Smith, H. C. *Pinus strobus* L. Eastern White Pine. in: Burns, R. M. and Honkala, B. H., tech. coords. Silvics of North America. Volume 1, Conifers. Washington, DC: USDA Forest Service; 1990; pp. 476-488.
14. Woods, B. and Calnan, C. D. Toxic woods. British Journal of Dermatology. 1976; 95(13):1-