



***Picea sitchensis* (Bong.) Carr.**

Family: Pinaceae

Sitka Spruce

The genus *Picea* is composed of about 30 species native to North America [12] and Eurasia [20]. The word *picea* comes from the ancient Latin name (*pix, picis* = pitch) of a pitchy pine, probably Scotch pine (*Pinus sylvestris* L.). The word *sitchensis* is for Sitka Island (now Baranof Island) in southeastern Alaska.

Other Common Names: Abete di Sitka, British Columbia sitka-spruce, coast west spruce, coast spruce, eipcea de menzies, epicea de Menzies, epicea de Sitka, epinette de sitka, great tideland spruce, menzies spar, Menzies spruce, menziesie, picea de Sitka, picea di Sitka, sequoia silver spruce, silver spruce, Sitka spar, Sitka spruce, sitka-fichte, sitkafichte, Sitka-gran, sitka-gran, sitkankuusi, sitka-spar, spruces d'america, tideland spruce, West Coast spruce, western spruce, yellow spruce.

Distribution: Sitka spruce is native to the Pacific Coast region from southern Alaska (Kodiak Island and Cook Inlet), southeast through southeastern Alaska, western British Columbia, western Washington, western Oregon and northwestern California.

The Tree: Sitka spruce trees normally reach heights of 160 feet, with diameters of 5 feet. A record tree was recorded to be 216 feet tall, with a diameter of 16.7 feet.

General Wood Characteristics: The sapwood of Sitka spruce is a creamy white to light yellow, while the heartwood is pinkish yellow to brown. It may be 3 to 6 inches wide or even wider in young trees. The wood has a fine, uniform texture and generally has a straight grain. It is moderately light in weight, moderately low in bending and compressive strength, moderately stiff, moderately soft, and moderately low in resistance to shock. On the basis of weight, it rates high in strength properties and can be obtained in clear, straight-grained pieces. It has moderately small shrinkage. It is not difficult to kiln-dry and can be worked easily (when free of knots). It has a low resistance to decay and is resistant to preservation treatments under pressure, but can be treated by a water diffusion process. Thin panels of Sitka spruce are highly resonant, making them desirable for piano sounding boards.

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	1.23	5700	2670	280	6.3	350	760
Dry	0.42	1.57	10200	5610	580	9.4	510	1150

^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	7.5	6.0	3.8
Radial	4.3	3.4	1.4
Volumetric	11.5	9.2	2.5
References: (185, 56, 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
Lower grades	T7-A5	NA	NA	NA	NA	NA
Upper grades	T12-B5	T12-B4	T11-B3	T5-B2	T5-B2	J

^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	294	294	287	287	287	290	288

^aReferences (28, 185).

Working Properties: Sitka spruce is easily worked if free of knots.

Durability: Sitka spruce is rated as slightly or nonresistant to heartwood decay (14).

Preservation: It is resistant to preservation treatments under pressure, but can be treated by a water diffusion process.

Uses: Lumber, pulpwood, sounding boards for high quality pianos, guitar faces, ladders, components for experimental light aircraft, oars, planking, masts and spars for boats, and turbine blades.

Toxicity: Working with fresh wood may cause dermatitis or other contact sensitivities (8,11&16).

Additional Reading and References Cited (in parentheses)

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