



Calocedrus decurrens (Torr.) Florin

(syn. Libocedrus decurrens Torr.)

Family: **Cupressaceae**

Incense-Cedar

The genus *Libocedrus* contains about ten species native to North America [1], South America [1] and the western Pacific from New Zealand to China [8]. It is sometimes placed in the segregate genus, *Calocedrus* Kurz. The word *libocedrus* is from the Greek, drop or tear, and *Cedrus*, cedar, referring to the resin drops. The word *decurrens* means decurrent, referring to the scale leaves running down the twig.

Other Common Names: Amerikaanse potlood-ceder, bastard cedar, California calocedar, California incense cedar, California post cedar, Californische witte ceder, cedar, cedre a crayons, cedro bianco, cedro bianco di California, cedro de incienso, geurende ceder, heyderie, incense cedar, juniper, Kalifornisch fluss-zeder, libocedro, libocedro de California, libocedro dell'america, pencil cedar, post cedar, red cedar, rod-ceder, roughbark cedar, weihrauch-zeder, weihrauchzeder, white cedar, Witte cedar.

Distribution: Incense-cedar is native to the mountains from western Oregon in higher Coast Ranges and Sierra Nevada to southern California and extreme western Nevada. Also in northern Baja Peninsula of Mexico.

The Tree: Incense-cedar trees commonly reach heights of 30.48 meters, with diameters of 1.52 meters and an age of 500 years. Record trees reach 45.72 meters in height, with 2.74 meter diameters.

General Wood Characteristics: The sapwood of Incense-cedar is a creamy white, while the heartwood is light brown to light reddish brown. The heartwood has an aromatic, spicy odor, and is highly resistant to decay, even in the wettest of conditions. It holds paint extremely well, has an unusually straight grain, and has high dimensional stability. It also has a low coefficient of thermal conductivity, that is, it works well in structures that are kept dry but are subjected to considerable temperature fluctuations. It works well with hand tools and machines well, forming smooth surfaces. It glues and nails well, but blunt nails should be used to avoid splintering the wood. It is rated as moderately low to low in strength, shock resistance, stiffness and hardness.

Weight: Basic specific gravity (ovendry weight/green volume) 0.35; air-dry density (air-dry weight/air-dry volume) 384 kg/m³.

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	0.35	5.79	42.7	21.7	2.55	44.1	1730	5.72
Dry	0.37	7.17	55.2	35.8	4.07	37.2	2090	6.07

^aWML = Work to maximum load.
Reference (12)

Drying and Shrinkage

Type of shrinkage	Percentage of shrinkage (green to final moisture content)		
	0% MC	6% MC	20% MC
Tangential	5.9	4.2	1.7
Radial	3.3	2.6	1.1
Volumetric	7.7	6.1	2.5
References: 0% MC (10) 6% (12) and 20% MC (11).			

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	T11-B5	NA	T10-B4	NA	NA	NA

^aReference (2, 10).

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	290	290	289	290	290	289	296

^aReferences (2, 10).

Working Properties: Incense-cedar works well with hand tools and machines well, forming smooth surfaces. It glues and nails well, but blunt nails should be used to avoid splintering the wood.

Durability: Incense cedar is rated as resistant or very resistant to heartwood decay.

Preservation: No information available at this time.

Uses: Incense-cedar is used principally for lumber and fence posts. Nearly all high grade lumber is used for pencils (#1 species for pencil stock) and venetian blinds. Some is used for chests and toys. Other products are poles and split shingles. It is also used for sheathing under stucco or brick veneer construction, mudsills, rafters, window sashes, greenhouse benches, nursery flats, boardwalks, grave linings, casket shooks, exterior siding, sheathing, sub-flooring, interior paneling, closet lining, pencils, toys, “mothproof” chests, novelties, fence posts, rails, poles, grape stakes, trellises, feed troughs, farm outbuildings, railroad ties, shingles, and fuel wood.

Toxicity: May cause contact dermatitis and/or eczema (3, 8& 13).

Additional Reading & References Cited (in parentheses):

1. Anderson, A. B. and Zavarin, E. The influence of extractives on tree properties III. Incense cedar (*Libocedrus decurrens* Torrey). Journal of The Institute of Wood Science. 1965; 15:3-24.
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, DC: USGPO, USDA Forest Service, Ag. Handbook No. 541; 1979.
7. McDonald, P. M. Incense-Cedar... an American wood. Washington, DC, USA.: USDA Forest Service, FS-226; 1973.
8. Mitchell, J. and Rook, A. Botanical dermatology: plants and plant products injurious to the skin. Vancouver, BC: Greenglass Ltd.; 1979.
9. Powers, R. F. and Oliver, W. W. *Libocedrus decurrens* Torr. Incense-Cedar. in: Burns, R. M. and Honkala, B. H., tech. coords. Silvics of North America. Volume 1, Conifers. Washington, DC: USDA Forest Service; 1990; pp. 173-180.
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. Woods, B. and Calnan, C. D. Toxic woods. British Journal of Dermatology. 1976; 95(13):1-97.