



Thuja plicata Donn ex D. Don

Family: Cupressaceae

Western Redcedar

The genus *Thuja* contains about 6 species world-wide native to North America [2] and Asia [4]. The word *thuja* comes from the Greek *thuis*, an aromatic wood (probably a juniper). The word *plicata* is derived from *pligate* (folded into plaits) most likely from the flat, folded appearance of the scale-like leaves.

Other Common Names: Albero della vita di Lobb, amerikanskt livstrad, amerikanskt livstrad, arbol de la vida, arborvitae, British Columbia red cedar, British Columbia cedar, California cedar, canoe cedar, cedar, cedro rojo del Pacifico, cedro rosso del pacifico, columinar giant arborvitae, giant arbor, giant arborvitae, giant cedar, giant thuja, gigantic cedar, gigantic red cedar, grand arbre de vie, Idaho cedar, jatte-tuja, Lobb's arborvitae, northwestern red cedar, Oregon cedar, pacific arbor, Pacific arborvitae, Pacific red cedar, red cedar, red cedar of the west, red cedar pine, reuzen-thuja, reuzenthuja, riesen-lebensbaum, riesenlebensbaum, riesenthuja, shinglewood, thuja geant, thuya de Lobb, thuya geant, thuya oriental, tuia gigantesca, Washington cedar, Washington red cedar, Westamerikaanse levensboom, western arborvitae, western cedar, **western redcedar**, western red redcedar.

Distribution: Western redcedar (*Thuja plicata*) grows in the Pacific Northwest and along the Pacific coast to Alaska. Western redcedar lumber is produced principally in Washington, followed by Oregon, Idaho, and Montana. The tree has been planted in Great Britain and New Zealand.

The Tree: Western redcedar trees reach heights of 200 feet with diameters of 16 feet. The trunk of older trees is buttressed, fluted and quite tapered.

General Wood Characteristics: The heartwood of western redcedar is reddish or pinkish brown to dull brown and the sapwood nearly white. The sapwood is narrow, often not over 1 inch in width. The wood is generally straight grained and has a uniform but rather coarse texture. It has very small shrinkage. This species is light in weight, moderately soft, low in strength when used as a beam or posts, and low in shock resistance. Its heartwood very resistant to decay.

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	0.31	6.48	35.8	19.1	1.65	34.5	1160	5.31
Dry	0.34	7.65	51.7	31.4	3.17	40.0	1560	6.83

^aWML = Work to maximum load.
Reference (59).

Drying and Shrinkage

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

	0% MC	6% MC	20% MC
Tangential	5.0	4.0	1.7
Radial	2.4	1.9	0.8
Volumetric	6.8	5.4	2.3
References: (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
Light Weight	T10-B5	NA	T10-B3	T7-A2	T7-A2	J
Heavy Weight	T5-F4	NA	T5-F3	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	290	290	289	290	290	296	NA

^aReferences (28, 185).

Working Properties: The timber works well with both hand tools and machine operations. It may splinter when worked on the end grain (mortising, etc.). It is subject to compression during planing and molding. It nails and screws well and takes both stains and paint satisfactorily (5).

Durability: Western redcedar is rated as resistant to very resistant to heartwood decay (14). It is not immune to attack by termites and furniture beetles (5).

Preservation: It is resistant to preservative treatment.

Uses: Western redcedar is used principally for shingles, lumber, poles, posts, and piles. The lumber is used for exterior siding, interior finish, greenhouse construction, ship and boat building, boxes and crates, sash, doors, and millwork.

Toxicity: May cause bronchial asthma and/or contact dermatitis (4,9&17).

Additional Reading and References Cited (in parentheses)

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