



***Ulmus* spp.**

Family: Ulmaceae

Elm

Elm (*Ulmus* spp.) contains about 45 species native to Asia [11], Europe and the Mediterranean [6], South and Central America [7] and North America [7]. All species look alike microscopically. The word *ulmus* is the classical Latin name.

Soft Elms

Ulmus americana-**American elm**, American soft elm, American weeping elm, American white elm, Florida elm, gray elm, gray hard elm, rock elm, springwood, soft elm, swamp elm, water elm, white elm

Ulmus rubra-gray elm, Indian elm, it slips ooo-hoosk-ah, moose elm, red elm, red wooded elm, rock elm, **slippery elm**, soft elm, sweet elm

Hard Elms

Ulmus alata-cork elm, mountain elm, red elm, southern elm, wahoo, wahoo elm, water elm, whahoo, **winged elm**, witch elm

Ulmus crassifolia-American red elm, basket elm, **cedar elm**, red elm, rock elm, small leaved elm, southern rock elm, Texas elm, water elm

Ulmus serotina-Red elm, **September elm**

Ulmus thomasii-Canadian rock elm, cliff elm, cork elm, corkbark elm, corky elm, corky barked elm, hickory elm, northern cork elm, northern corkbark elm, **rock**

Distribution

The eastern to midwest United States.

The Tree

Elm trees can reach a height of 100 ft (30 m), with a diameter of 3 ft (1 m). They may be infected with the Dutch elm disease, caused by a fungus (*Ceratocystis ulmi*), especially in shade trees.

The Wood

General

The sapwood of elm is nearly white, while the heartwood is light brown to brown with a reddish tinge. The wood has no characteristic odor or taste.

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			
<i>Ulmusalata</i> (winged elm)								
Green	0.60	8.3	63.4	25.5	4.34	150	5,071	8.96
Dry	0.66	11.4	102.0	46.7	7.03	159	6,850	16.3
<i>Ulmusamericana</i> (American elm)								
Green	0.46	7.6	49.6	20.1	2.48	81	2,758	6.89
Dry	0.50	9.2	81.4	38.1	4.76	90	3,692	10.4
<i>Ulmuscrassifolia</i> (cedar elm)								
Green	0.59	8.1	63.4	23.2	4.14	138	4,893	9.10
Dry	0.64	10.2	93.1	41.5	6.55	128	5,871	15.4
<i>Ulmusrubra</i> (slippery elm)								
Green	0.48	8.5	55.2	22.9	2.89	106	2,936	7.65
Dry	0.53	10.3	89.6	43.9	5.65	116	3,825	11.2
<i>Ulmusthomasii</i> (rock elm)								
Green	0.57	8.2	65.5	26.0	4.21	136	4,181	8.76
Dry	0.63	10.6	102.0	48.6	8.48	132	5,871	13.2

^aWML = Work to maximum load. ^bReference (90). ^cReference (98).

Drying and Shrinkage

Type of shrinkage	Percentage of shrinkage (green to final moisture content)		
	0% MC	6% MC	20% MC
<i>Ulmusalata</i> (winged elm)			
Tangential	11.6	–	–
Radial	5.3	–	–
Volumetric	17.7	–	–
<i>Ulmusamericana</i> (American elm)			
Tangential	9.5	7.6	3.2
Radial	4.2	3.4	1.4
Volumetric	14.6	11.7	4.9
<i>Ulmuscrassifolia</i> (cedar elm)			
Tangential	10.2	–	–
Radial	4.7	–	–
Volumetric	15.4	–	–
<i>Ulmusrubra</i> (slippery elm)			
Tangential	8.9	7.1	3.0
Radial	4.9	3.9	1.6
Volumetric	13.8	11.0	4.6
<i>Ulmusthomasii</i> (rock elm)			
Tangential	8.1	6.5	2.7
Radial	4.8	3.8	1.6
Volumetric	14.9	11.3	4.7

References: 0% MC (98),
6% and 20% MC (90).

Kiln Drying Schedules^a

Condition	Stock				
	4/4, 5/4, 6/4	8/4	10/4	12/4	16/4
Standard	T6-B3	T3-B2	T3-B2	T3-B1	T3-A1

^aReferences (6, 86).

Working Properties: Elm is moderately heavy, hard and stiff, with excellent bending and shock resistance. It is difficult to split because of its interlocked grain.

Durability: Rated as slightly or nonresistant to heartwood decay.

Preservation: Slippery elm is classed as permeable to preservatives, and rock elm, resistant.

Uses: Boxes, baskets, crates, cheese boxes, slack cooperage, furniture, caskets, hockey sticks, veneer, pulp and paper manufacture.

Toxicity: No information available at this time.

Additional Reading and References Cited (in parentheses)

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