



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 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			
<i>Ulmusalata</i> (winged elm)								
Green	0.60	1.21	9,200	3,700	630	21.7	1,1140	1,30
Dry	0.66	1.65	14,800	6,780	1,020	23.1	1,540	2,370
<i>Ulmusamericana</i> (American elm)								
Green	0.46	1.11	7,200	2,910	360	11.8	620	1,000
Dry	0.50	1.34	11,800	5,520	690	13.0	830	1,510
<i>Ulmuscassifolia</i> (cedar elm)								
Green	0.59	1.17	9,200	3,370	600	20.0	1,100	1,320
Dry	0.64	1.48	13,500	6,020	950	18.6	1,320	2,240
<i>Ulmusrubra</i> (slippery elm)								
Green	0.48	1.23	8,000	3,320	420	15.4	660	1,110
Dry	0.53	1.49	13,000	6,360	820	16.9	860	1,630
<i>Ulmusthomasii</i> (rock elm)								
Green	0.57	1.19	9,500	3,780	610	19.8	940	1,270
Dry	0.63	1.54	14,800	7,050	1,230	19.2	1,320	1,920

^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>Ulmuscassifolia</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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