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APPROXIMATE AIR-DRYING AND KILN-DRYING PERIODS FOR 1-INCH LUMBER

The air-drying periods for 1-inch lumber given in table 1 are based on climatic conditions for the region in which the particular species is cut. The periods apply particularly to hand-stacked piles varying in width from 6 to 16 feet. Lumber in unit packages, commonly about 4 feet wide, piled by machine would presumably dry in shorter periods. The minimum periods given apply to lumber piled during the good drying weather, generally during spring and summer. Lumber piled too late in the period of good drying weather to reach 20 percent moisture content, or lumber that is piled during the fall or winter, will not reach a moisture content of 20 percent until the following spring. This accounts for the maximum periods given in the table. Local yard and weather conditions and yard layout should be considered as well as general seasonal factors in estimating the periods required for air drying.

In the portion of the table devoted to kiln drying, the minimum periods represent the fastest drying reported in forced-air-circulation kilns. Sometimes quality is sacrificed in favor of fast drying. Where the product requires uniformly dry, stress-free lumber, longer drying periods may be necessary.

Although table 1 lists kiln-drying periods for lumber green from the saw, the hardwoods are generally air dried to some extent before kiln drying. Softwoods that are kiln dried are loaded into the kiln green from the saw. Factors affecting the period required for kiln drying are type of kiln, quality or standard of drying, width of stock, type of sawing (plain or quartered), moisture content, and preponderance of heartwood or sapwood. The time required for kiln drying, as might be expected, also varies with the product being manufactured, some products requiring low moisture contents, uniformity of dryness and stress-freeness, and others requiring a somewhat lower quality of drying.

The drying periods given in table 1 apply only to 1-inch lumber. The increase in drying time for thicker stock is theoretically nearly proportional to the square of the thickness but commercial experience indicates it is somewhat less than this.

A list of Laboratory publications that give information on the seasoning of lumber is available on request.

Table 1.--Approximate drying periods for 1-inch lumber¹

	:				
Species	:	Days required to --			
	:	-----			
	:	Air dry :	Kiln dry 4/4 stock from --		
	:	4/4 green:	-----		
	:	stock to :	20 percent	:	Green to
	:	20 percent:	to 6 percent	:	6 percent
	:	-----			

HARDWOODS

Alder, red.....	:		:	3-5	:	6-10
Apple.....	:		:	4-7	:	10-15
Ash:	:		:		:	
Black	:	60-200	:	5-7	:	10-14
White	:	60-200	:	4-7	:	11-15
Aspen (quaking and	:		:		:	
bigtooth).....	:	50-150	:	3-5	:	6-10
Basswood.....	:	40-150	:	3-5	:	6-10
Beech.....	:	70-200	:	5-8	:	12-15
Birch:	:		:		:	
Paper.....	:		:		:	3-5
Yellow.....	:	70-200	:	5-8	:	11-15
Buckeye, yellow.....	:		:	5-8	:	12-16
Butternut.....	:		:	5-8	:	10-15
Cherry, black.....	:	70-200	:	5-7	:	10-14
Chestnut.....	:	60-150	:	4-8	:	8-12
Chinquapin.....	:		:	7-12	:	22-28
Cottonwood, black.....	:		:	4-8	:	8-12
Dogwood.....	:		:	5-8	:	12-16
Elm:	:		:		:	
American.....	:	50-150	:	4-6	:	10-15
Rock	:		:	5-8	:	13-17

Table 1.--Approximate drying periods for 1-inch lumber¹ (continued)

Species	Days required to --		

	Air dry	Kiln dry 4/4 stock from --	
	4/4 green:	-----	
	stock to	20 percent	Green to
	20 percent:	to 6 percent	6 percent
	-----	-----	-----

HARDWOODS (con't)

Blackberry	:	4-6	:	7-11
Hickory.....	60-200 :	4-12	:	7-15
Holly.....	:	5-8	:	12-16
Hophornbeam (ironwood):.....	:	5-8	:	12-16
Laurel, California :	:	:	:	:
(Oregon myrtle).....	:	5-7	:	10-15
Locust, black.....	:	5-8	:	12-16
Madrone.....	:	8-11	:	15-20
Magnolia.....	40-150 :	4-6	:	10-15
Mahogany.....	60-150 :	4-7	:	12-15
Maple:	:	:	:	:
Silver (soft).....	:	4-6	:	7-13
Sugar (hard).....	50-200 :	5-8	:	11-15
Oak:	:	:	:	:
California black.....	:	6-10	:	25-35
Live.....	:	:	:	30-40
Lowland.....	100-300 :	:	:	:
Red.....	70-200 :	5-10	:	16-28
Tan.....	:	7-12	:	24-30
White.....	80-250 :	6-12	:	20-30
Osage-orange.....	:	5-8	:	12-16
Persimmon.....	:	5-8	:	12-16

Table 1.--Approximate drying periods for 1-inch lumber¹ (continued)

	:				
Species	:		Days required to --		
	:		-----		
	:	Air dry :	Kiln dry 4/4 stock from --		
	:	4/4 green:	-----		
	:	stock to :	20 percent	:	Green to
	:	20 percent:	to 6 percent	:	6 percent
	:		-----		

HARDWOODS (con't)

Sweetgum:	:	:	:	:	
Heartwood	70-300	:	8-12	:	15-25
Sapwood.....	60-200	:	5-7	:	10-15
Sycamore.....	:	:	4-7	:	6-12
Tupelo:	:	:	:	:	
Black.....	70-200	:	4-6	:	6-10
Water.....	70-200	:	5-7	:	6-12
Walnut, black.....	70-200	:	5-8	:	10-16
Willow, black.....	:	:	5-8	:	12-16
Yellow-poplar.....	40-150	:	3-6	:	6-10

SOFTWOODS

Baldcypress.....	100-300	:	4-8	:	10-20
Cedar:	:	:	:	:	
Alaska yellow.....	:	:	:	:	4-6
Eastern red.....	:	:	2-3	:	6-8
California incense.....	:	:	:	:	3-6
Northern white.....	:	:	:	:	8-10
Port Orford white.....	:	:	:	:	4-8
Atlantic white.....	:	:	:	:	8-10
Western red.....	:	:	:	:	10-15
Douglas-fir:	:	:	:	:	
Coast type.....	20-200	:	:	:	2-4
Intermediate type.....	:	:	:	:	4-7
Rocky Mountain type.....	:	:	:	:	4-7

Table 1.--Approximate drying periods for 1-inch lumber¹ (continued)

Species	Days required to --		
	Air dry	Kiln dry	4/4 stock from --
	4/4 green:		
	stock to	20 percent	Green to
	20 percent:	to 6 percent	6 percent

SOFTWOODS (con't)

Fir:				
Alpine.....				3-5
Balsam.....				3-5
Grand (lowland				
white).....				3-5
Noble.....				3-5
Pacific silver.....				3-5
Red.....				3-5
White.....				3-5
Hemlock:				
Eastern.....				3-5
Western.....	60-200			3-5
Larch, western.....	60-120			3-5
Pine:				
Eastern white.....	60-200	2-3		4-6
Lodgepole.....				3-5
Ponderosa.....	15-150			3-6
Red.....				6-8
Southern yellow				
Loblolly.....	30-150			3-5
Longleaf.....	30-150			3-5
Shortleaf.....	30-150			3-5
Sugar:				
Light.....	15-90			3-4
Sinker.....	45-200			5-10
Western white (Idaho).....				3-5
Redwood:				
Light.....	60-185	3-5		10-14
Sinker.....	200-365	5-7		20-24
Spruce:				
Eastern.....	90-200			4-6
Engelmann.....	20-120			3-5
Sitka.....	40-150			4-7
Tamarack (eastern larch).....				3-5