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APPROXIMATE AIR SEASONING AND KILN DRYING PERIODS FOR INCH LUMBER

The table of air seasoning and kiln drying periods for one-inch stock on the inside pages is based on average climatic conditions in the region in which the particular species is cut. In air seasoning those species which require a short drying time, the minimum period would be needed for stock piled in the spring or summer and therefore "on the sticks" during the best drying weather of the year. For species requiring a half year or more of good drying weather, very satisfactory results can be accomplished when the stock is piled in the fall. Wood dries more slowly and to a somewhat higher moisture content in late fall and winter than in spring and summer. It is therefore efficient practice to start the seasoning of slow-drying stock in the fall so that the moisture content comes to a minimum under effective conditions the following spring or summer. The long winters of the northern part of the country increase the maximum period required for species cut in that section, but not necessarily the minimum period. Local yard and weather conditions—that is, yard site, direction of prevailing winds, and variations in temperature and humidity—should be considered as well as the general seasonal factor in estimating time required for air drying.

In the portion of the table devoted to kiln drying, the minimum periods represent the fastest drying rates actually noted in commercial use, which are often attained at some sacrifice of quality. Conservative practice would in general call for a longer period.

Although a full tabulation of kiln drying periods is given for hardwoods green from the saw, the hardwoods are still, for the most part, air seasoned before

APPROXIMATE DRYING PERIODS FOR 1-INCH LUMBER

Species	DAYS REQUIRED TO			
	Air season 4/4 green stock to 20 per cent	Kiln dry 4/4 stock from		
		20 per cent to 6 per cent	Green to 6 per cent	Green to 12 per cent
		(Commercial schedule)	(Commercial schedule)	(Airplane schedule)
Upland white oak	240 to 300	6 to 12	20 to 45	25 to 35
Upland red oak	180 to 240	4 to 8	16 to 26	20 to 30
Lowland oak	360 to 400	6 to 14	20 to 50	40 to 60
Birch	150 to 200	5 to 8	11 to 15	15 to 20
Beech	150 to 200	6 to 8	12 to 15	16 to 20
Maple	150 to 200	5 to 7	10 to 14	15 to 19
Ash	70 to 110	4 to 7	12 to 18	16 to 20
Gum red	100 to 160	8 to 10	16 to 24	20 to 28
Gum sap	70 to 110	5 to 7	12 to 18	18 to 22
Hickory	150 to 200	8 to 14	20 to 40	25 to 32
Elm	80 to 130	4 to 6	10 to 15	15 to 20
Yellow poplar	40 to 70	4 to 6	10 to 13	15 to 18
Basswood	30 to 60	3 to 5	7 to 10	11 to 14
Cherry	150 to 200	5 to 7	10 to 12	15 to 18
Chestnut	85 to 125	4 to 8	8 to 12	10 to 13
Walnut	120 to 170	6 to 8	12 to 18	16 to 20
Mahogany	70 to 110	4 to 7	12 to 16	16 to 20
Magnolia	60 to 100	4 to 6	10 to 16	15 to 20
Tupelo	70 to 110	5 to 7	12 to 18	16 to 20
Southern yellow pine	40 to 70		2½ to 4	8 to 10
Western yellow pine	45 to 90		3 to 5	
Douglas fir	40 to 70		2 to 4	8 to 10
Northern white pine	60 to 150		4 to 5	
Western white pine	45 to 90		3 to 5	
Sugar pine	45 to 90		4 to 5	
Sitka spruce	45 to 90		4 to 7	8 to 10
Redwood	60 to 180		7 to 10	
Cypress	200 to 275		6 to 10	14 to 18
White fir	45 to 90		3 to 5	
Western hemlock	60 to 120		3 to 5	
Western red cedar	50 to 140		10 to 15	

entering the kiln. Factors affecting the period required for kiln drying of hardwoods are type of kiln, quality or standard of drying, width of stock, type of sawing (plain or quartered), and preponderance of heartwood or sapwood. The time for drying hardwoods, as might be expected, also varies with the product being manufactured. Flooring stock, for example, may be dried under less exacting conditions than furniture stock, and the general run of furniture stock may be dried under less exacting conditions than special items like saddle seat stock, for which moisture distribution and stress requirements are very rigid. Gum box boards 14 to 16 inches in width would take 25 per cent more time in the kiln than usual widths of stock.

The upper grades of the softwoods are put into the kiln green at the larger mills. Also common grades of southern and western pines are often kiln dried from the green condition, common grades of Douglas fir less often. Factors affecting time of kiln drying for softwoods are the same as for hardwoods (see above). The intended use of the material is a factor also. For example, some southern yellow pine manufacturers dry lower grades 2½ days, flooring strips 3½ days, and C and Better boards 6 inches or wider 4 days. Most northern white pine is manufactured by small mills and is sold air dried.

The requirements for airplane stock are such that mild drying schedules must be used, hence the time required is proportionately longer.

The drying periods tabulated in this note apply only to inch lumber. The drying time for thicker stock is more than proportional to the increased thickness. Instructions for drying such material, as well as more detailed drying schedules for inch lumber, are given in other Laboratory publications, particularly the Kiln Drying Handbook, and bulletins on "The Air Seasoning of Wood," and "The Kiln Drying of Southern Pine Lumber."