FORESTRY FACTS

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What Is A Cord?

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A cord is a unit of measure applied to stacked roundwood, usually pulpwood or firewood. With firewood, the pieces may be split before the cordwood stack is formed. Since a cord is a measure of a loose stack of wood, it contains air space as well as solid wood and bark, and is therefore more of an indication of space occupied than actual wood measure. A standard cord contains 128 cubic feet of wood, bark, and air space, often measuring 4 feet high, 4 feet wide, with pieces 8 feet in length, or 4 feet high, 8 feet wide, with pieces 4 feet in length. Although the dimensions can vary, depending on the length of the pieces, the cubic-foot content is constant for a standard cord.

To estimate the number of standard cords in a stack (or truckload) of roundwood, use the following formula:

$$\text{Cords} = \frac{\text{height} \times \text{width} \times \text{length}}{128}$$

Where: height, width, and length of the stack are in feet.

A stack with irregular height is best measured by a series of height measurements. These should be taken at even intervals at right angles to the ground or truck bed. The average height is then determined from the series of measurements.

Sometimes we are interested in the solid wood contents of a cord, excluding the bark and air space. Or, we may want to know the amount of wood and bark only. In the Lake States, the average values (based on many measurements for a variety of species and conditions) are shown in the table on page 2.

CONTENTS OF A STANDARD CORD:	
Wood, bark and air space	**128 cu. ft.**
Wood and bark	**92 cu. ft.**
Solid wood	**79 cu. ft.**

Therefore, an average standard cord contains 62 percent solid wood, 28 percent air space, and 10 percent bark. Since these are average values, you should remember that some variability will be found, due to differences between species, diameter of the pieces, care in piling, and straightness of the pieces.

Sometimes the pieces are cut to very short lengths, as with firewood, and the face cord (or short cord) is used as the unit of measure. A face cord is 4 feet high, 8 feet wide, with pieces less than 4 feet in length. Firewood lengths are commonly 16 inches.

In the Lake States, pulpwood pieces or "sticks" are commonly cut to 100 inches in length. Therefore a pulpwood cord is 4 feet high, 4 feet wide, with pieces 100 inches long. The pulpwood cord actually contains 133 cubic feet of wood, bark, and air space.

Often we are interested in estimating the number of cords that we will obtain when standing trees are harvested. To do this we normally estimate the number of 8-foot sticks and the DBH (diameter at breast height) for each tree. These values are then used with a cordwood volume table to estimate the cords available. Numerous tables have been developed for this purpose. A table commonly used in the Lake States can be found in UW-Extension Bulletin G3332.

Sometimes we want to convert cordwood volumes to board feet and vice versa. This is often not very reliable because small trees suitable for pulpwood and firewood are not large enough to produce lumber. Therefore such a conversion should be viewed as an approximation only and used accordingly. It is probably safer to convert board feet of sawlog-sized wood to cords rather than converting cords to board feet, to avoid the problem with converting undersized wood. In the Lake States we often assume that 1000 board feet of sawtimber equals about 2.4 standard cords for softwoods (pines, spruce, fir, etc.), and 2.2 standard cords for hardwoods (oaks, maples, etc.)