

Wood BTU Values/Firewood Characteristics

With increased energy prices, more and more people are showing interest in burning wood. Many people are particular when it comes to the types of wood they want to burn in their fireplaces. Typically, oak, hickory, and ash are sought. Each species has its own burning qualities, but on a weight basis, all species of wood generate the same amount of heat. What makes species like oak and hickory more desirable?

The answer lies in the density, or weight per unit of volume. For example, a cubic foot of oak weighs considerably more than the same volume of soft maple. More maple would have to be cut and used to get the same amount of heat as a lesser volume of hickory or oak.

There are several hardwoods, such as osage orange and black locust, that have higher densities, and, therefore, higher heat values per cord. These woods, however, are harder to split, harder to start burning, and especially in the case of osage orange, tend to pop or spark.

Wood should be seasoned- in other words, allowed to dry, before using as firewood. Moisture content of the wood should be below 20 percent. This usually takes at least six to nine months of drying time after cutting fresh wood to lower moisture content to this level. Burning wood with higher moisture contents produces more smoke and less heat. The smoke produced from burning “green” wood also adds to creosote buildup in chimneys, creating a potential fire hazard.

One way to estimate moisture content is to look at the ends of the wood pieces. If you see small splits in the ends, it is a good indicator its moisture content is low. Another test is to knock two pieces together. Dried wood has a distinct clinking sound, while green wood will have a more subdued sound.

Below is a table showing general characteristics of different types of wood burned in Illinois

Characteristics of Firewood			
Wood species	Million BTU's per cord	Spark characteristics	Ease of starting
Red /Black Oak	24.4	few	difficult
White /Bur Oak	26.5	few	difficult
Shagbark Hickory	28.6	some	moderate
Hard Maple	23.7	some	moderate
Silver Maple	19.5	few	moderate
Sycamore	20.7	few	moderate
Osage orange	30.7	many	difficult
Black locust	28.1	few	difficult
Green ash	23	few	moderate
Black walnut	22.3	few	difficult
Cottonwood	16.1	some	easy