

## Wood Drying

Wood fresh off a tree is very wet and burns poorly. This page gives a brief overview of results for wood drying, particularly for the sizes of wood that might be used in cooking fires. All wood was hardwood crabapple, from the author's trees. In the author's experience, the ease of burning firewood is a strong function of moisture content, with about 0.18 moisture content (18%) being the upper limit for reasonable burning. Drier is better, but if wood can be dried to this level it should burn well.



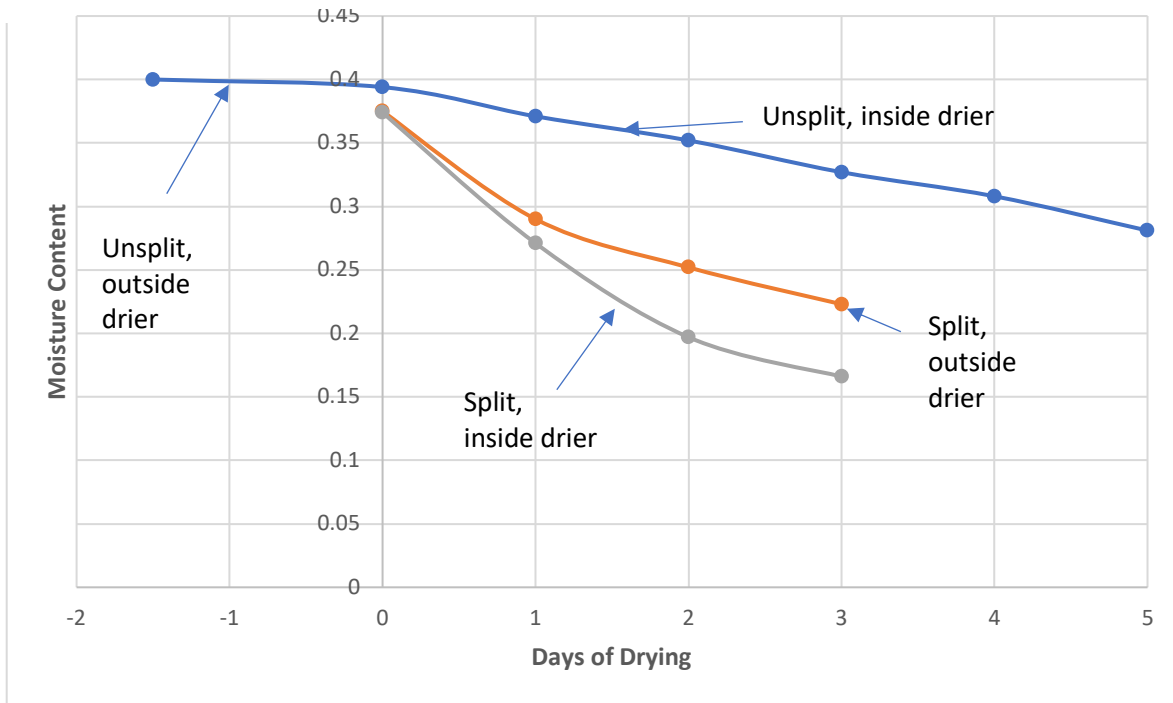
**The drying tests for unsplit wood are shown, with the transparent top cover removed.**

This page gives an overview of the results for wood of 55-60 mm diameter, split and unsplit. Other sizes of wood dry similarly, though smaller wood dries faster and larger wood dries slower, as would be expected. It makes a large difference whether the wood is split lengthwise or not split, with split pieces drying much faster.

All wood drying was done on days that were sunny or partly sunny. For the samples of wood dried outside the collector, they were dried under cover, not in direct sunlight. All samples were protected from rain and dew between tests.

Details of other wood drying tests are contained in this document: [Solar Household Energy Bank Complete Guide](#)

One might ask, is it more effective to split the wood and not put it in the collector, or leave the wood unsplit and put it in the collector? One could potentially save themselves the work of splitting the wood. The figure below shows data for the pieces in the 55-60 mm range.



**This shows the drying rates of pieces of wood in the 55-60 mm size range.**

For the unsplit wood it can be seen that it dried little in the 1.5 days before going into the drier, then dried faster, about 5 times faster, inside the drier. The split wood dried faster whether it was inside or outside the drier, and fastest of all inside the drier. Thus, if one already has split wood it may not be necessary to dry it in the drier. If one has unsplit wood it is necessary to dry it as fast as possible. If one has the luxury of waiting 8-10 days to dry unsplit wood in the drier, one could do this instead of splitting the wood, saving themselves the work of splitting it.

The Solar Household Energy Bank can pull about 1 kg of water per square meter per day from objects to be dried before condensation and humidity in the drier become a problem. If the top layer gets a lot of condensation, then you should use fewer rocks along the sides of the device, allowing a little more air to circulate through the system and carry away the moisture. A little condensation is OK, but if the condensation gets so thick as to drip on the things you are trying to dry, then the system should be made more open. The air circulating through the system will also depend somewhat on how windy is the weather.