

Wood seasoning, splitting, and sawyer's hints

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Wood is essentially a tightly bound bundle of microscopic straws--hollow tubules made of flexible cellulose running along the line of the tree trunk or branch. When those are filled with water, it makes the wood heavy, of course. When the water evaporates, the tubules shrink a little bit, and the water is replaced with air. Wet wood has a water content of 80% or so. It practically drips out when you cut a tree in springtime. Lots of firewood is delivered at 40%, having been cut for a few months. Furniture is made from wood at 12-14%, which either takes a couple years air drying or an accelerated process with kiln drying. Once it gets to this low water content, it has equilibrated with the environment, and shouldn't warp or shrink too much more. Of course, take it to Utah, and it may get frisky again.

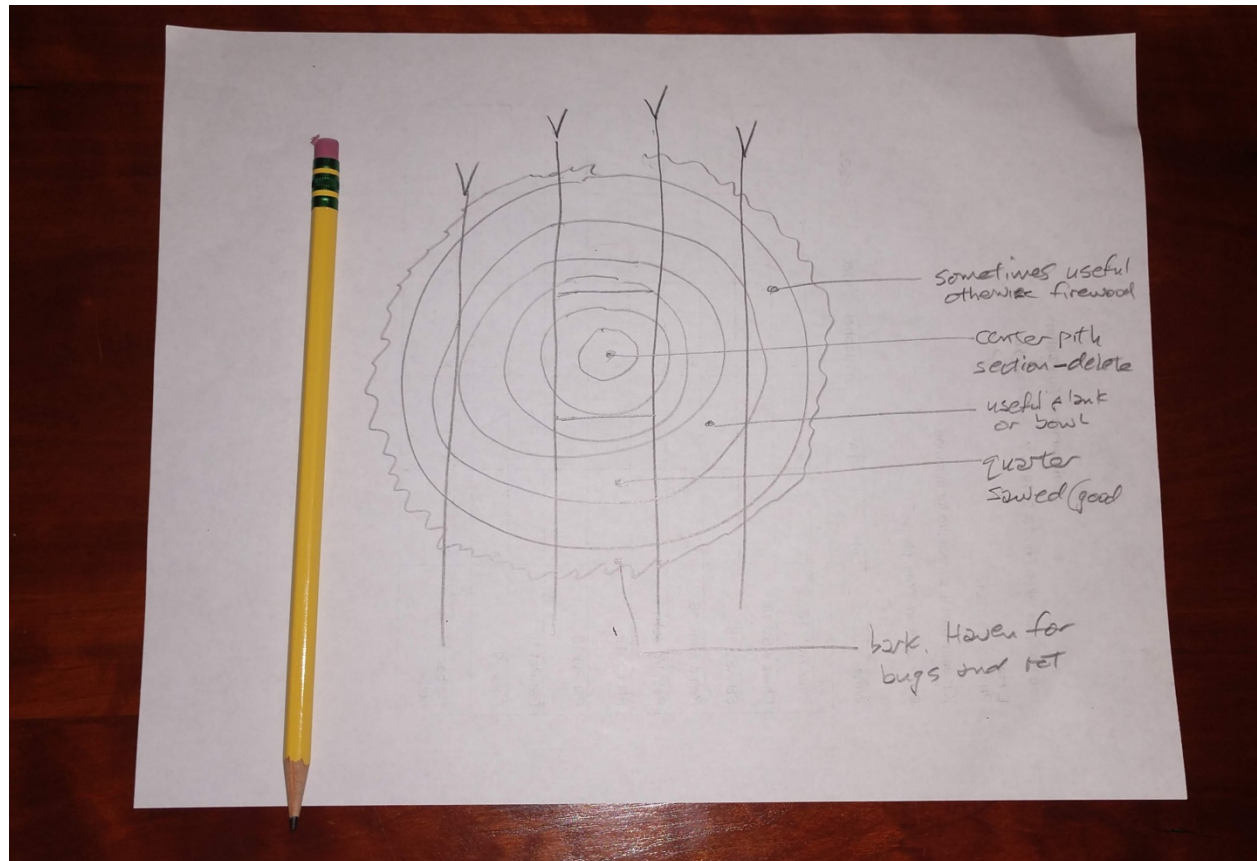
When the tubules shrink, so does the log, but in specific ways. The long axis does not shrink at all. So a wet stick 8 feet long will still be 8 feet long when it dries...true for all types of wood. It's why houses don't get shorter when the wood dries. However, it does shrink along the radius a small amount (2-3%). It shrinks even more along the concentric rings (3-10%). The variation is different for hard and soft woods, and also by species, and also by how fast the tree grew. There are many charts that tell you how much.

What that means is that a wet 2" x 6" plank will dry to something like 1 3/4 x 5 1/2". When the wood shrinks along the concentric growth rings, a board goes from flat to cupped. That's why you always put redwood decking with the center of the tree UP, so when it dries, it will develop a water shedding convex contour instead of a water-catching mold and algae goo farm. (Startling how few builders pay attention to this.)

A round cut from a tree MUST split, since you can't have shrinkage along the circumferential lines without making the ring smaller, so it has to give somewhere. It makes a radial crack starting at the center and stretching all the way out to the bark. There are virtually no exceptions to that, but some woods (live oak and madrone, included) start splitting awfully soon. It gets worse if the exposed cross cut end is hanging out in dry, warm air, as it will lose moisture quickly and start shrinking compared to the inner portions which dry more slowly. In that case, you can get lots more than just one crack, rendering the wood nearly useless for anything other than the fireplace. Using paint or a commercial sealer helps retard the fast water loss from the end grain. Also get the wood under a cover and out of the sun as soon as feasible to avoid hot/cold temperature cycles (bad for both wood and wine).

When I get fresh wood, I cut it either into slabs or chunks ASAP, and coat the end grain. In the process, I delete the center pith, as this is the absolute worst for splitting. That's really only good for firewood. The bark needs to come off, too, as untold numbers of insects and fungi get into that sweet sap line and start chewing away. The peripheral wood tends to be more vulnerable to bugs, and it's also wetter

and softer, so that's often sacrificed. It's why Con Heart Redwood (all red) costs more than Common Redwood which has worthless sap wood.



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