



Our mill saws a bit of dry hemlock successfully. But now we are sawing some dry spruce and we are having trouble. Do you have any ideas??

First, don't saw dry stuff. Band and circular head saws were designed to saw green logs. Everything about their tooth geometry, and their feed and speed relationship was engineered for sawing fresh timber.

If you are going to try to get your saws to do something that they were not designed to do, you will have to make a few changes in the direction of a compromise. Part of what makes green softwood different from green hardwood is that it tends to be fuzzier and a little softer.

Let's first talk about the process of setting up your saw to either process hardwood or softwood and then you will see where I am going with this. A saw that is set up to saw mostly hardwood should still be able to handle softwood okay. Likewise, a saw that is setup to saw mostly softwood shouldn't have any trouble handling some hardwood. But if you want an ideal setup for one or the other, there are a few differences to consider.

I consider 8,000 SFPM to be the best rim speed for sawing frozen and unfrozen hardwoods. That would translate to roughly 550 RPM on a 56" saw. For frozen and unfrozen softwoods I would recommend 9,000 SFPM or roughly 615 RPM on a 56" saw. A lot of hardwood mills are running more like 9,000 SFPM while plenty of softwood mills are running more like 10,000 SFPM and that will work, but the slightly slower speeds happen to be better and more efficient.

Hardwoods require a slightly slower speed than softwoods because the wood is denser. If you were intentionally sawing steel, you would run your saw a lot slower because steel is a bit harder than most hardwoods. I say "most" because it seems

that hard maple at ten degrees below zero acts like it is way harder than steel.

Because softwoods are fuzzier than hardwoods, they require a slightly wider kerf than the hardwoods do. A 9/32" kerf will work for both, but a 5/16" kerf would be preferable in softwoods. When you use a 9/32" kerf in hardwoods, as the kerf wears to 17/64" it will still work fine and even as it approaches 1/4" it will most likely work okay. But if you saw predominately softwoods with 9/32" bits, you will find that as soon as that kerf gets anywhere near 17/64" you will start having problems. Whereas if you had started with 5/16" bits, you would have been much better off as they wear down to 9/32".

Inserted tooth circular saws will run the same hook angle regardless of the species being sawn, but technically the harder wood can stand a slightly duller hook angle while the softer woods will require a slightly sharper hook angle.

All saws should be kept as sharp as possible, as much as possible. But the fuzzier the log, the more important it becomes to keep your teeth exceptionally sharp to be able to cut as clean as possible.

Now, getting back to the difference between dry hemlock and dry spruce, I believe that dry spruce is probably fuzzier than dry hemlock. Of course the hemlock knots seem to get harder as they dry. If dry spruce is fuzzier than dry hemlock, it is safe to say that the difference between sawing those two is similar to the difference between sawing dry softwoods and green softwoods, and therefore much like the difference between sawing green hardwoods and green softwoods.

So, the answer to your question is to run more kerf and keep the bits sharper and make sure the hook angle is at least as sharp as the original hook angle. If you are running 9/32" bits, go to 5/16". If you are already running 5/16" bits, either swage them more often or throw them away sooner. And of course don't forget my earlier recommendation of figuring out a way of avoiding having to saw dry timbers.

A note for our regular readers: Sawmill forum will now run every other month, rather than monthly. Questions about sawmills and their operation can be sent to Casey Creamer, saw doctor and president of Seneca Saw Works, Inc., PO Box 681, Burdett, NY 14818, (607) 546-5887. You can also reach out by email: casey@senecasaw.com.

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