

# Tips for Turning Spalted Wood

How to overcome the challenges and reveal the beauty within

BY SERI ROBINSON

**R**ichly colored and patterned woods are prized by turners, but exotic species and burls can be both pricey and hard to turn. Spalted woods offer an easier path to eye-catching work.

Spalting, internal coloring caused by wood-eating fungi, can enliven otherwise bland woods with striking, organic color patterns ranging from yellows, greens, and blues to oranges and reds and everything in between. Dark lines in beautiful patterns are also common.

Spalting fungi are just as likely to make beautiful colors and patterns in domestic woods as in exotic ones, so spalted wood might be as close as your firewood pile. Check out “Sourcing spalted wood,” on p. 54.

By the way, spalting fungi are not inherently dangerous to work. Wood dust, however, is a known human carcinogen, so, just as with unspalted wood, wearing a respirator, or an N95 or N99 mask, is a must when sanding spalted wood.

## Turning spalted wood is easier than machining it

Spalting is the start of the decay process. Under a microscope, you can see how the fungi digest the walls of wood cells, leaving behind holes. This increases the permeability of the wood and decreases its density, making spalted wood difficult to machine. Softer areas tear out on jointers and planers, and it can range from scary to dangerous when you hit a pocket of lower resistance on a table saw or bandsaw. Further, spalted wood is inappropriate for structural components. These characteristics of spalted wood were no impediment to its use in marquetry, where small pieces could be worked by hand and set on a backboard.



*Oregon maple spalted with elf's cup, a fungus often used in marquetry through the 1700s, when it was replaced by artificial dyes.*



*Quilted Oregon maple spalted with turkey tail fungus, shaggy bracket fungus, and various types of blue-staining fungi.*





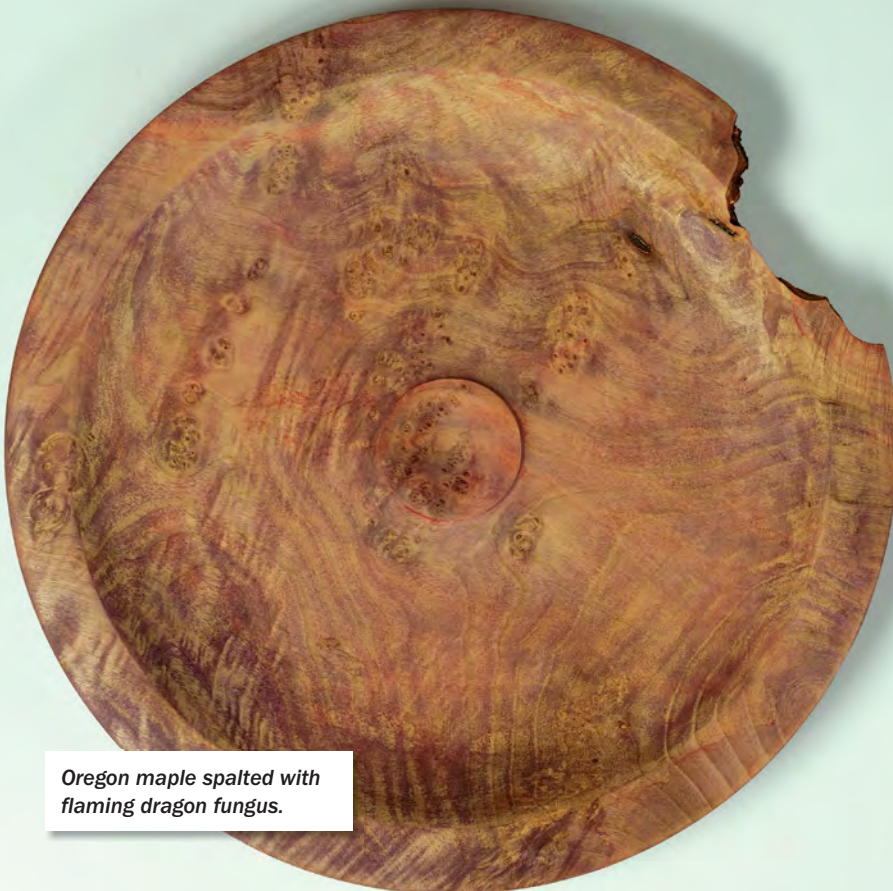
*Oregon maple burl spalted with turkey tail fungus.*



*Oregon maple spalted with turkey tail and beefsteak fungi.*



*Oregon maple spalted with turkey tail and golden mango fungi.*



*Oregon maple spalted with flaming dragon fungus.*



*Oregon black walnut burl spalted with turkey tail fungus.*

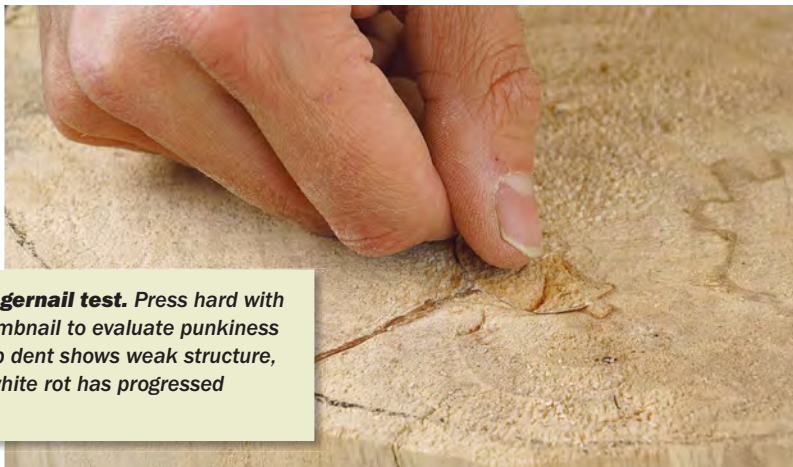


# Setting up for success

Spalted wood is weaker and less consistent than sound wood, so you'll need to slow down and use very specific techniques. But it's well worth the extra effort.



**Choose blanks wisely.** To evaluate rough material and preview the spalting within, cut it open on the bandsaw and saw off the edges.



**TIP**

**The fingernail test.** Press hard with your thumbnail to evaluate punkiness and rot. A deep dent shows weak structure, found where white rot has progressed significantly.



**Slow the speed.** Keep the speed lower than usual, especially while blanks are still irregular. This will help keep them on the faceplate, and also encourage you to take lighter cuts, another key to success.



**Go with a traditional bowl grind.** Unlike a fingernail grind, which has swept-back wings and more aggressive cutting action, a traditional bowl-turning gouge is only swept back slightly. Keep it sharp as you work.

## Sourcing spalted wood

Spalted wood might be as close as your firewood pile or local big-box store, hiding in piles of standard oak, maple, and pine. Some stores even carry “blue” or “denim” pine with blue spalting.

You can also find spalted lumber at retail hardwood stores, from independent, local businesses to chains like Rockler and Woodcraft. There are also specialty retailers online, such as Cook Woods, who will ship you spalted turning blanks in a variety of species.

You can also spalt your own lumber by introducing various types of fungi to sound wood. I covered that process and more general information for furniture makers in a 2008 article titled “Spalted Wood” (FWW #199), along with a number of blogs on [FineWoodworking.com](http://FineWoodworking.com).

Wherever you get your spalted wood, it will be much easier to turn if it is fully dried, because moisture exacerbates the differences in density between spalted and sound areas.

Retail material is likely to be kiln-dried and have a low level of overly soft punkiness. You'll pay a premium for it, but it will pay you back on the lathe.

## Online Extra

For more information on spalting, including how to spalt your own wood, go to [FineWoodworking.com/308](http://FineWoodworking.com/308).



# Turning the outside of a bowl

Robinson uses a faceplate while turning the exterior and adds a small foot that will be held in a chuck for turning the interior.



**Faceplate tips.** Figure out which part of the blank will be the top of the bowl, and attach the faceplate to that side. Use a faceplate with at least eight holes, so extra screws can be used, and use fatter screws if possible (#10 are best).



**Engage the tailstock for added support.** Keep cuts light to minimize tearout and avoid blowing up the piece or popping it off the faceplate.

Woodturning, by contrast, is one of the best ways to work with spalted wood. For one thing, turned work isn't always functional or structural. Another advantage is the control that turning offers. While most woodworking machines tend to spin at a fixed speed, with the blade brought to the wood at a set angle under continuous pressure, these factors can be varied on a lathe and adjusted on the fly.

With the right tools and techniques, you can minimize tearout as you turn, and produce smooth cuts in all sorts of spalted wood. And that's a good thing, because spalting makes it harder to clean up major problems in the usual way—by sanding the piece while it's spinning on the lathe.

**Stabilizers usually aren't necessary**—Some turners think that in order to turn spalted wood successfully, it must be fully stabilized by injecting resin or glue into it. But some of the punkiest pieces can be turned successfully using the techniques outlined in this article. That said, I do sometimes stabilize cracks and punky areas with a squirt of cyanoacrylate (CA) glue.

## Choose blanks and forms wisely

Just because you can turn any piece of spalted wood successfully, that doesn't mean you should. Not every piece deserves to be turned. You'll need to balance its beauty with the potential tearout, stabilizing, and sanding you're willing to put up with.

And no matter how good you get at evaluating spalted blanks, you can still expect a failure rate of roughly one-third, in my experience, from big damage, cracks, and unexpected degrees of rot.

**Consider the type of spalting**—White rot is the most destructive type of spalting. If it's too advanced, your spalted wood is firewood. However, some white-rot fungi secrete dark pigments that build up at the edges of colonized areas, creating so-called zone lines, which can be very beautiful. These can make white rot



**Start riding the bevel when you can.** As soon as a section is fully round and continuous, start riding the bevel and taking even lighter cuts. This will let you remove earlier tearout and create a relatively smooth surface.



**Turn a foot.** Disengage the tailstock and turn a small foot at the base of the bowl. A skew chisel works best here, helping you match the angle of the dovetail jaws on your chuck. Once the blank is round, you can turn up the speed and finish the exterior.



# Turning the inside of a bowl

Remount the bowl using a four-jaw chuck to secure it. The same techniques that were used on the outside of the bowl can be used for the inside.

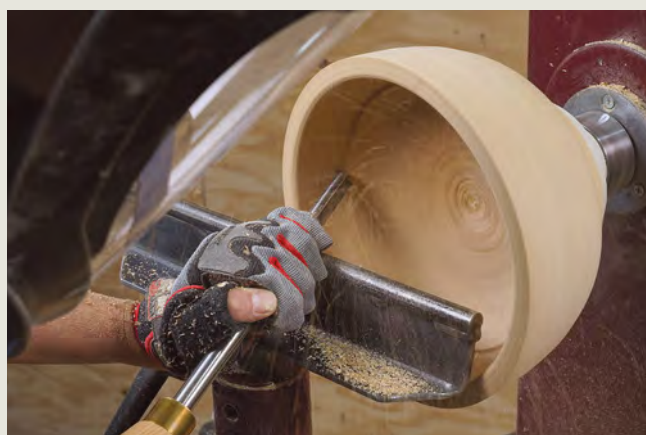


**Switch to a chuck.** Flip the blank and grab the foot in a four-jaw chuck. Dovetail jaws will hold a spalted foot better than straight jaws will. Follow the same approach as before, making light cuts and riding the bevel of the tool as soon as the surface allows. After the interior is turned, Robinson often sands away the foot, using the same setup shown on the opposite page.



## Alternative for fragile stock

If a blank seems too punky to support a reliable foot, you can use the faceplate as you turn both the exterior and interior. In this case, screw the faceplate to the bottom of the bowl blank. Use the same turning methods as before.



worth dealing with. Pigmentation, specifically any coloring other than that of white rot, is less damaging to the wood structure.

**Bowls and platters work best**—When starting out turning spalted wood, stick with basic forms and thicker walls. Wide bowls and platters are ideal, as they offer lots of support for the cutting forces and showcase spalting beautifully.

Spindles can also be turned from spalted wood. There aren't that many uses for non-structural spindles, however, so I've focused on bowl and platter forms in this article.

## Secrets of success

Faster speeds usually make wood easier to turn. But spalted wood has dramatic differences in density, which can throw blanks out of balance, so slower speeds are advisable.

It's especially important to go slow when roughing spalted blanks to round; stay at speeds below the point at which the lathe starts shaking. This will help faceplate screws maintain their hold and also force you to make light cuts, which will help you avoid blowing up the piece.

Using rough, aggressive cuts to quickly round a rough blank will take big chunks out of spalted material. Because heavy sanding isn't really possible on this material, you need to take lighter, relatively clean cuts to start with. Scraping tools are another no-no, for the same reasons.

While your initial cuts will inevitably cause some tearout, it can be eliminated as soon as the surface is fully round and unbroken. This is done by keeping the bevel of the tool in contact with the wood as you lever the tip into the cut. Riding the bevel will prevent the tip from diving into softer sections.



# Sanding and finishing

Spinning a piece on the lathe for sanding doesn't work well with spalted wood. Robinson spins the abrasive instead of the work.



**Use an abrasive pad.** A 2-in. disk holder and soft hook-and-loop backing pad (available from [WoodturnersCatalog.com](http://WoodturnersCatalog.com)) goes in the drill press, set at a high speed, and the work is held by hand. Sand as lightly and evenly as you can (above). Alternatively, the work can stay on the lathe (not spinning), and the sanding mandrel can go in a handheld drill, set on its highest speed (right). Robinson frequently starts at 220 grit, and always goes to 600 at least, continuing up to 2000 in many cases.



Because aggressiveness is the opposite of what we want in spalted material, a traditional bowl-gouge grind is best. This grind falls in the middle between the two extremes—flat “bottom feeders” and pointy fingernail grinds—offering a bevel that is wide enough to make a smooth transition between the side and bottom of a bowl.

**Sanding and finishing are different**—Your first goal is to avoid tearout in the first place, which will prevent excessive sanding. But sanding is still necessary.

The problem with sanding spalted wood in the usual way, while the piece is spinning on the lathe, is that the softer areas will be removed much more quickly than sound ones, leading to an increasingly bumpy surface.

The best way to sand spalted projects is to spin the sandpaper, not the project, using a small mandrel that can be mounted in a drill press or handheld drill. The sandpaper takes the form of hook-and-loop disks, attached to a soft foam pad.

I'm usually able to start sanding at 220 grit, and it doesn't take long to remove tool marks and smooth out the surface. Then I move up through 600 grit at least, going as high as 2,000 to produce a buttery soft surface that shows off the spaltting beautifully, and needs no finishing at all.

I avoid finishes on spalted wood. The worst are oil-based finishes, whether they build a film or not, because of the way they penetrate spalted wood unevenly, creating a varying sheen.

If you must finish a spalted piece—because it will be used and handled often, for example—water-based acrylic finishes, such as Deft Acrylic, work well, as do true lacquers, like Deft's brushing and spray-can versions. □

*Seri Robinson is a professor of wood science, and an avid woodturner.*

## When to fix it and when to pitch it



**CA glue is a good stabilizer.** Robinson is not a fan of stabilizing a whole blank with glue or resin, but does use cyanoacrylate glue at times, to stabilize dangerous cracks and small areas of severe rot.



**Know when to give up.** Because this blank combined a lot of advanced white rot with an end-grain orientation, the tearout was too extreme to deal with. Failure is somewhat common with spalted material, so don't be disheartened.