



# When to Stop Sanding?

Depending on the finish, probably earlier than you think

BY ARI TUCKMAN

Sanding is most woodworkers' least-favorite activity. It's dusty, boring, and time-consuming—the sooner done, the better. But what is the right stopping point? When does moving to a finer grit no longer yield appreciable improvements in the finished surface? To find out, I did a semi-scientific study. I took boards of cherry, white oak, and tiger maple, cut each into six pieces, and sanded them to six different grits. I then divided each piece into thirds and applied a different finish to each section, because what really matters is not how the bare boards look, but their appearance with a finish. The results were both interesting and reassuring.

## Standard grits tested

Tuckman chose aluminum-oxide sandpaper graded to the FEPA scale (recognizable by the P prefix to the number) because it is the standard abrasive for sanding bare wood. He tested P120, P150, P220, P320, P400, and P600 grits because he previously had done most of his final sanding with either P220-grit or P320-grit and he wanted to see if either coarser or finer grits would make a noticeable change in the finished appearance of the wood.

### Six grits tested on three woods

I used a random-orbit sander for the majority of the sanding, progressing through the grits. This was followed by hand-sanding with a sanding block, with the grain, at the same final grit. I changed the disks when they began to wear out, but I used fresh paper on each board's final grit for both the random-orbit and the hand-sanding.

These three woods were chosen to see if wood grain or figure would





# Three different woods

Tuckman chose white oak, cherry, and tiger maple as test woods, not only because they are familiar furniture woods, but also to see if tight or open grain and figure would influence the best final grit.



## WHITE OAK

Would the open grain pattern on oak conceal the scratches left by coarser grits?

## CHERRY

As a blotch-prone wood, does cherry respond best to finer-grit sanding?

## TIGER MAPLE

Would the stripes be enhanced by a coarse final grit, or would they be left blotchy?

make any difference. I cut one long board of each species into six 17½-in. by 8-in. sections and machine-planed them flat. Once the 18 sections were sanded to the appropriate final grit, I removed the dust using a clean paintbrush and a vacuum.

## Three types of finish applied

After sanding, I used masking tape to separate each board into three sections. This allowed me to apply three different finishes to see if some are more sensitive to the final grit than others. I chose Danish oil for a minimal build, in-the-wood finish; shellac rubbed out with steel wool and then waxed for a medium-luster, thin film finish; and an oil-based polyurethane to give a more protective, high-gloss finish.

I used natural Watco Danish Oil, wiping on the first coat with a cotton cloth, and then wiping off the surplus. When dry, I applied a second coat and then wet-sanded using P400-grit wet/dry sandpaper and a sanding block. Then I wiped it dry to remove the surplus sawdust and oil. The next day, I applied a final coat in the same way as the first.

On the next section, I rubbed on Zinsser SealCoat shellac with a cotton cloth. I applied eight coats over two days, sanded lightly with P320-grit sandpaper on a sanding block, and then added two more coats. When dry, I rubbed the surface with 0000 steel wool, and applied a thin coat of paste wax, polishing with a cotton cloth.

# Three different finishes



## OIL

**A natural look.** On one end of each sample board, Tuckman wiped on three coats of Danish oil to give a lower-luster, in-the-wood finish.



## SHELLAC

**A medium-luster finish.** After building up a thin film of shellac, Tuckman dulled the surface with 0000 steel wool and then polished it with paste wax.



I brushed three coats of Zar oil-based, high-gloss, interior polyurethane on the final section, sanding between coats with P320-grit paper. The third coat was left untouched.

## Results: 220 or less in most cases

This test set out to answer the question of how much sanding is too much. Based on these results, I can feel confident putting the sandpaper down after using P150-grit if I'm using a film finish, P220-grit for an oil finish on non-blotchy wood, and probably P400-grit on blotchy-prone boards.

I used clear finishes only. If you regularly stain your wood, you may want to do your own test. In general, wood sanded with higher grits tends to absorb less stain than wood sanded to a coarser grit. I also didn't test soft woods or very hard tropical woods, but most furniture woods fall in the hardness range of my three test species.

You also should sand correctly, even if you stop at a lower grit. When using the coarsest grit, make sure to remove all the telltale ripple marks left by the jointer and the planer. After power-sanding at final grit, make sure that you remove any swirls left by the random-orbit sander by thoroughly hand-sanding with the grain.

I am thrilled by the results; as a weekend warrior, I already spend too little time in the shop. I have better things to do with that time than listen to my sander. □

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## VARNISH

**High-gloss protection.** Three coats of oil-based polyurethane left a high-gloss film finish typical of a kitchen tabletop.

# Results

Each sample board was sanded and had three finishes applied. The difference, or lack thereof, between the highest and lowest sanded grits is depicted in the photographs below.

## WHITE OAK

### HIGHER GRITS MAKE LITTLE DIFFERENCE

The oak boards showed the least difference over the range of grits. Under the shellac and polyurethane finishes, all six boards were identical. The Danish-oiled panels were slightly lower in luster with the coarsest two grades of grit than with the finest two grits.



## CHERRY

### HIGHER GRIT FOR BLOTCHY BOARDS

There was a slightly lower luster on the oil-finished P120-grit board compared to the P400- and P600-grit boards. Tuckman had expected to see some blotchy cherry, but the sample board behaved fairly well. However, from previous experience he would still sand cherry up to at least P400-grit if he were going to use an oil finish.



## TIGER MAPLE

### FIGURE IS NOT A FACTOR

Tuckman had expected the coarser grits to leave the stripes more porous, resulting in more finish penetration and more pronounced figure. Instead, the degree of figure was equal on the extremes of grit with all three finishes. As with the other woods, higher grits brought out a higher luster under an oil finish.

