



Surface-Prep Shootout

A contest in the *FWW* shop reveals two great paths to a perfect finish

One of the happiest moments in any woodworking project comes when you begin applying a finish. It's then that you see the wood's final appearance deepening in color and character before your eyes. But the results won't be satisfying if you haven't prepared the wood's surfaces for the finish, which tends to highlight flaws instead of disguising them. The surfaces must be smooth, flat, and free of milling marks, scratches, tearout, and other imperfections that can detract from the beauty of your work.

Preparing the surfaces usually means using one of two time-honored cutting technologies: sandpaper or handplanes. Which is best? To explore the question, we recently set up a friendly competition in our shop. Each contestant was given the parts for a Shaker table with tapered legs. Milled to final dimension and with the joinery already fitted, the parts were ready to be sanded or planed in preparation for a finish. We broadcast the event live on FineWoodworking.com, and invited local woodworkers to our shop to watch and judge the results.

Art director Michael Pekovich demonstrated handplanes and scrapers. Editor Asa Christiana used a random-orbit sander and hand-sanding. Afterward, each contestant applied a coat of Waterlox, a wiping varnish, as a way to check the results.

We put each contestant on the clock to see who crossed the finish line first. But we were even more interested in knowing whose finish looked best at the end.

As it happened, Mike and his handplanes appeared to prevail on both counts. He finished his prep with a half-hour to spare, and the audience judged his finish to be superior. In truth, if you follow either method carefully and thoroughly, you'll get great results.



Online Extra

To see the contest as it happened, go to FineWoodworking.com/extras.

‘No sharpening required: Sanding is a sure and simple way to get flawless surfaces’

BY ASA CHRISTIANA

When I started out as a woodworker, I didn't know much about sharpening and therefore couldn't get my hand tools to work well. So I used sandpaper to prepare surfaces for finishing. Sandpaper has a short learning curve, and I picked up most of the tips I needed from a great Taunton Press video on finishing by Frank Klausz.

Truth be told, I've since switched to handplanes for a lot of my surface prep. A few passes with my sharp No. 4, and I usually have a dead-flat surface ready for finish. But the handplane doesn't work with every type of wood and figure, so I still break out my random-orbit sander and trusty sanding blocks quite often.

I don't mean to say that sandpaper works better than handplanes and scrapers. But sandpaper is a great equalizer: It works on every wood and in nearly every situation, while handplanes must be perfectly tuned and razor sharp to work at all. With sandpaper and a few tips, anyone can create flawless surfaces.

My sense is that sanding is slower than planing and scraping, even when you factor in sharpening time for the hand tools. This shootout will test that assumption. Maybe sanding is easier and faster.



‘Handplanes flatten and smooth quickly, with no dust’

BY MICHAEL PEKOVICH

I did a lot of sanding in the 15 years between my first run-in with a dull, rusty handplane and my eye-opening test drive with a truly sharp one. Unfortunately, that's not an uncommon experience. A sharp handplane can work wonders, going from machine marks to a glass-smooth surface in minutes. A dull plane can do a lot of damage, both to your lumber and your psyche.

The good news is that it's easier than ever to start working with your first handplane. Years ago, your choices were to buy an inferior new plane that needed a lot of tune-up work or an old high-quality plane that also needed a lot of tune-up work. Today the market offers many excellent new planes that require little more than a five-minute sharpening before the shavings start to fly.

I still keep a scraper and fine sandpaper on hand to fix the occasional tearout, but my smoothing plane has eliminated the dusty hours of sanding that used to accompany every project. In addition to saving time and leaving a smooth surface, the handplane excels at creating dead-flat surfaces and crisp chamfers, hallmarks of fine woodworking that are impossible to achieve with sandpaper alone.



POWER SANDING: DEAL WITH DUST AND DON'T SKIP A GRIT



Better than a dust mask. Connect a shop vacuum to the sander's dust port to keep dust out of the air and avoid clogged sanding pads. Better vacuums switch on with the sander when the tool is plugged into an onboard power outlet.



Gang up parts. Start with a coarse grit, P80 or P100, to remove burns and mill marks. Avoid rounded edges on narrow stock by ganging two narrow pieces together. Note, this only works if the surfaces are level.



Change disks frequently. Don't be shy about using more than one disk of the same grit before moving to a finer abrasive. A worn or clogged disk will slow down the work.

HANDPLANING: START SHARP AND USE SIMPLE STOPS



Get sharp first. Using waterstones and a honing guide, Pekovich polishes a narrow band at the blade's beveled tip (top). He removes the burr with his finest stone (bottom). For more, see "A Visit to the Sharpening Doctor," FWW #206.



Easier than benchdogs. A simple planing stop clamped across the benchtop is all you need to secure the work, and it lets you quickly flip the piece or change to another.



Don't bother with hidden surfaces. To save time and wear on the blade, plane only the outside face and bottom edge of each apron. Afterward, chamfer the bottom edges with a block plane.



Scrape away the glue first. Christiana starts work on the tabletop by using a sharp paint scraper to remove the glueline in the middle of the panel.



Sand evenly. It is critical to work the surface evenly and systematically to guarantee it will end up flat. It's easy to linger in one area and create a hollow, which you may not notice until finish is applied.



Work in stages. Use each successive grit to remove the scratches left by the last one, until the abrasive is so fine (P220 or more) that the human eye can't see the scratches under a finish.



Holding narrow work. A simple L-shaped jig mounts in the vise and holds the leg securely during planing.



Mark the top end of the taper. Planing too much on the tapered area can cause the intersection with the flat area to move. To avoid this, draw a few pencil lines just below the intersection as a guide.



A piece of scrap keeps the workpiece level. To plane the outside faces, insert the taper's matching cutoff underneath to support the leg along its length.

FINISH BY HAND-SANDING



Shopmade paper cutter. Christiana's cutting jig uses an old hacksaw blade to trim sandpaper sheets squarely to fit on padded sanding blocks. The blocks hold the paper flat, ensuring that it will leave a flat surface.



Finish by hand. Begin hand-sanding with the last grit you used on the random-orbit sander, usually P220. Work the sanding block in the direction of the grain to remove the last swirl marks from the sander.



How to keep edges flat. Hold the workpiece in a vise, with the narrow edge horizontal. Use the sanding pad like a block plane, running your fingertips along the workpiece to keep the block flat and the edge square.

THE TOP GETS EXTRA CARE



Plane in two stages. First, level any high spots until the top is flat on both sides. After resharpening the iron, set the plane for a light cut and take a series of smoothing passes over the entire surface of the show side only.



Treatment for tearout. Pekovich typically uses a card scraper to remove any tearout.



Sandpaper? Because the scraped areas have a different scratch pattern than the planed areas, it's good to blend them by following any scraping with P320- through P600-grit sandpaper over the entire top.



Sanding block breaks edges, too. Easing the sharp edges makes them friendlier to fingers and more resistant to damage. Turn the block 45° for a few passes with P150-grit paper to create a light bevel.



When to stop. The final grit depends on the type of finish: P220 for shellac or polyurethane, or as high as P600 for an oil finish, especially on blotch-prone woods like cherry.

What they learned

ASA: SANDING IS STILL A SAFE FALLBACK

Mike beat me comfortably, but not by as much as I expected. He ran into some tearout, and that took some fussing to overcome. I had no such problem. Sandpaper handles the toughest grain without a hitch. But now I'm sure that it takes longer. A few online comments suggested using a belt sander for speed, but the random-orbit sander is easier to control.

Under a coat of oil, my tabletop had a tiny bit more blotching, but that might be due to the different boards we started with. And I'd say my legs and aprons were better, as his still had some tearout left.

On future projects, I'll stick to my usual approach: When the wood allows, I'll use handplanes. But trusty sandpaper is always my backup plan. Also, I think sanding is easier for beginners. Just work the surface evenly, move patiently through the grits, and use a block for hand-sanding.



How to tackle end grain. Start by lightly lubricating the plane's sole with paste wax. To avoid chipout at the far edge, take a few short passes from that end first. Then rotate the piece and work normally, stopping short of the far edge.



Dead flat and smooth. Careful surface preparation pays off, especially on your project's broadest, most visible surfaces.

MIKE: YES, PLANES ARE FASTER, BUT DON'T RUSH

I've always contended that handplaning was faster than sanding, so it's nice to know that I haven't been laboring under a false assumption. That said, I planned on half an hour to prepare these parts and it took twice as long. As always, the devil was in the details. With perfectly straight-grained lumber, planing is a breeze, but in the real world, that's rarely the case. The quartersawn grain on the legs was especially tricky and prone to tearout. I spent extra time scraping those parts, and would have done even more if I hadn't been keeping an eye on the game clock.

During the contest, I used just one bench plane and a block plane to show that you don't need to buy a lot of handplanes to get started. But I wound up doing a lot of adjusting for heavy and light cuts. Normally, I'd have set up a No. 5 jack plane for flattening parts quickly and a No. 4 for final smoothing. That would have saved some time and effort.