TOOL TEST

Wiping Varnishes

Which products work best for wiping *and* brushing

THE BEST CAN DO IT ALL

Some varnishes can be wiped on for easy application (left) or brushed on a tabletop for added protection (below left). As a bonus, if that brushed surface is uneven or has a lot of dust in it, you can sand lightly and then add a last wiped-on coat (below) for a flawless final surface.

BY MARK SCHOFIELD

The wrinkle test. *The common test for a finish's ability to cure as a film is to drop some into a shallow dish and wait.*

It's no surprise that so many woodworkers love wiped-on finishes: They are hard to mess up, and the oil soaks in and highlights the carefully chosen hardwood below, adding an elegantly low sheen. But a thin, wiped-on finish doesn't offer enough protection for a high-wear area such as a tabletop or chair seat. In those cases you reach for a brush to build a thicker finish.

That's why the ideal finish could be brushed and wiped on equally well. You could use that one finish in a variety of combinations, such as wiping it on a table base where there's less wear, and brushing it on the top for durability. And with only a single can on the shelf, you would save money and waste less.

There are finishes that promise to work for brushing and wiping. Officially classed as "wiping varnishes," they basically are oil-based varnishes that are thinned with solvent, and then, unfortunately, sold under a bewildering variety of names.

Fine Woodworking asked me to test these finishes to find out which ones work best for both brushing and wiping. Preparing for this test, I knew it wasn't going to be easy to identify all of the possible candidates. I contacted each relevant finish manufacturer and simply asked which of their products could be both wiped and brushed. Like the names and instructions on the cans, the manufacturers' answers were not very clear. A few were confident their finishes could be applied both ways; a few stated categorically that their wiping finish couldn't be brushed; and some fence-sitters said they didn't recommend brushing "but it would probably work." Based on their answers, I identified 16 finishes to test. Where there were different luster levels available, such as gloss, satin, etc., I went with the gloss version. The only exception was Zar Ultra Max poly, which was available only as semi-gloss, but looked like gloss anyway in practice.

Once I had the finishes in hand, I first made sure that every one was a true wiping varnish, which is simply a thinned varnish, and not an oil-varnish blend or simply oil. After this initial test, one finish—Sam Maloof Poly/Oil Finish—fell out of the running.

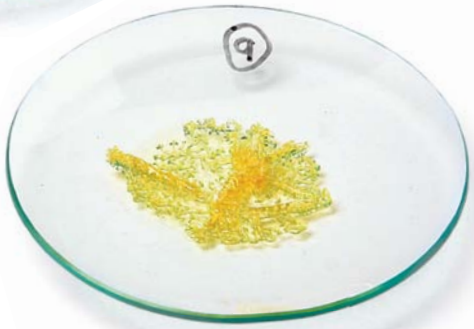
How the testing was done

Although I wanted the same thing from each finish—easy application and great results on a variety of woods—I knew that each product has differences, such as the amount of solids in the finish and therefore how long it takes to build a film. So I treated each one as an individual, working to get the best from it. For the wiped-on samples I was looking simply for an even sheen.

IS IT A WIPING VARNISH?

Most finishes, if thin enough, can be wiped on. But for a finish to be brushed successfully, it must cure level and hard when applied as a thicker film. A simple test tells the tale.

True wiping varnish. *All but one of the finishes cured hard and level, proving they would work when brushed.*



Oil finish. *An oil finish or oil-varnish blend, when dry, will have a wrinkled or rubbery surface, which makes it unsuitable for brushing.*

For the brushed-on samples I wanted to build enough of a film to protect the top of a dining table, and create a dead-smooth surface. While inconsistencies in the wood, like pores and minor irregularities from planing or sanding, will show in the surface of a wiped-on finish, I wanted those all to be filled and smoothed out by the brushed-on film. The number of coats it took to achieve each of these results varied (see chart, pp. 40-41), which means that some of these finishes will take longer to apply than others, a factor I weighed as heavily as looks and durability.

I tried each product on two common furniture woods. I used curly maple to see how each finish popped the figure and how its color impacted a pale wood. I also tested each finish on cherry because of its neutral color and popularity. I sanded each board

Tough tests

Schofield wiped and brushed each product on two types of woods: plain cherry and figured maple. Then he evaluated the appearance and toughness of each finish.

First coat. *Schofield divided each cherry sample board down the middle, wiping finish onto one half (the other half was for brushing), letting it soak in, and then wiping it off.*

Better build. *Schofield let each brushed-on coat cure for 24 hours before sanding with P320-grit paper and applying another one. He stopped when the surface was a smooth film with no irregularities.*

Sanding between coats. *He sanded the first coat of each wiped-on finish with P400-grit paper. All of the finishes sanded easily enough.*

As many coats as necessary. *He applied as many coats as it took to get an even sheen.*

to P220-grit using a random-orbit sander, continuing up to P400-grit for the wipe-on boards. Thinner finishes require a smoother surface for best results.

Wipe-on application varied—Some wiping varnishes get sticky quicker than others. So I wiped on the first coat liberally, allowed it to soak in for the length of time recommended by the manufacturer, and then wiped off the surplus. If no time was specified on the can, I checked each finish after 10 and 15 minutes, wiping it off if it was starting to get sticky, and leaving it for 20 minutes if not.

A coat of oil-based finish needs at least 12 hours to dry before sanding. To be safe, I waited 24 hours before sanding the first coat with P400-grit paper and a cork-faced block. Then I vacuumed off the dust and wiped on more coats, waiting 24 hours each time.

Additional tests for brushed finishes—I chose a natural China-bristle brush for the brushing test, except for the two oil/water hybrids, where I used a foam brush. I allowed the first coat to dry 24 hours before sanding. A brushed surface is a little bumpier than a wiped one, so I sanded with P320-grit. I repeated these steps, sanding each coat, until I was happy with the look.

After letting the finishes cure for a week, I evaluated them for clarity, depth, and how well they enhanced the wood's figure and natural shimmer. I then rubbed them out with steel wool and wax to better represent a typical final surface, and tested them for durability and protection. All of the finishes rubbed out fairly easily.

To determine wear-resistance, I used a set of 12 pencils with leads graduated from a soft 6b to a hard 4h to try to scratch the surface. All the finishes were at least moderately scratch-resistant, but a few offered a higher level of hardness. To see if the brushed-on finishes offered enough protection for a tabletop, I left some red wine under a glass for 24 hours on each maple board. The good news is that all 15 finishes were undamaged.

There was also some variation in the amount of color that the finishes imparted on the maple, whether brushed or wiped. The

Photos, except where noted: Asa Christiana

APPEARANCE

All angles. *Schofield looked at the finishes at a low angle to detect problems with surface quality, and also looked at them head on to evaluate color, depth, clarity, and how well they enhanced figure.*

Thick and thin. *The best finishes were beautiful both brushed on thick and wiped on thin.*

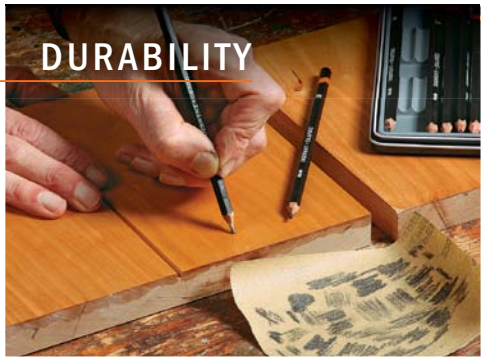
Color varies. *Schofield used the maple samples to evaluate color. The darkest finish was Waterlox (left), while Formby's Tung Oil Finish (right) added the least color.*

Trouble with oil/water hybrids. *The Zar Ultra Max finish (shown) was plagued by fish-eyes when brushed. The Wood Turners Finish left cherry looking gray.*

PROTECTION

The wine-glass test. *To test the impermeability of the brushed finishes, Schofield dipped the base of a glass in red wine and left it on a sample board for 24 hours. In every case, the dried wine simply wiped off (below), leaving no trace.*

DURABILITY



The scratch test. *Using a set of pencils with 12 levels of hardness, Schofield attempted to scratch each finish.*

Toughness varied. *Most of the finishes were scratched by the hardest pencils, but a few were unblemished.*

Wiping varnishes, head to head

To come out on top, a finish had to wipe and brush well, beautify the wood, and produce the desired level of sheen and protection in the fewest possible coats.

PRODUCT	STREET PRICE/QT.	COATS NEEDED		SURFACE QUALITY		SHIMMER/ DEPTH*	FIGURE**	SCRATCH TEST
		WIPING	BRUSHING	WIPING	BRUSHING			
Formby's Tung Oil Finish	$14	3 to 4	4	Excellent	Very good	Excellent	Excellent	Good
AUTHOR'S BEST OVERALL CHOICE General Finishes Arm-R-Seal	$17	3	3	Excellent	Excellent	Excellent	Excellent	Very good
General Finishes Seal-A-Cell	$20	3 to 4	4	Very good	Very good	Excellent	Very good	Good
General Finishes Wood Turners Finish	$28	3	4	Fair	Very good	Fair	Very good	Good
Minwax Antique Oil Finish	$20	3 to 4	5	Good	Good	Very good	Excellent	Good
AUTHOR'S BEST VALUE CHOICE Minwax Fast-Drying Polyurethane	$10	3 to 4	3	Excellent	Excellent	Excellent	Excellent	Very good
Minwax Tung Oil Finish	$26	3 to 4	4	Excellent	Very good	Excellent	Excellent	Good
Minwax Wipe-On Poly	$21	3 to 4	5	Very good	Very good	Excellent	Excellent	Good
Phoenix Finish-All	$22	4	5	Fair	Very good	Fair	Very good	Good
Sutherland Welles Murdoch's Hard Sealer	$41	5	4	Fair	Good	Fair	Good	Good
Sutherland Welles Wiping Varnish	$46	2	3	Good	Excellent	Excellent	Excellent	Excellent
Watco Wipe-On Poly	$20	3	4	Very good	Very good	Excellent	Excellent	Good
Waterlox Original Sealer/Finish	$30	4	5	Good	Very good	Excellent	Excellent	Good
Zar Tung Oil Wipe-On Finish	$17	3	3	Excellent	Very good	Excellent	Excellent	Excellent
Zar Ultra Max Wipe-On Poly	$36***	4	5	Poor	Poor	Fair	Very good	Excellent

* Tested on cherry

** Tested on curly maple

Photos, this page and opposite: John Tetreault

GENERAL FINISHES ARM-R-SEAL

MINWAX FAST-DRYING POLYURETHANE

COMMENTS
Takes one more coat than the winners, but results are beautiful. Adds the least color to light woods.
Gives beautiful results with only three coats, wiped or brushed. More scratch-resistant than most.
Very thin finish builds slowly but has good depth and shimmer. Not able to build as thick a film as others.
Oil/water hybrid. Finish dries fast and sands easily, but doesn't penetrate or add shimmer. Also, gray-looking on maple.
Thin finish builds very slowly, especially when brushed. Pops figure well.
Designed for brushing, but also wipes easily. Builds quickly with beautiful results and above-average toughness.
Top-notch results but builds slower than some and offers moderate scratch-resistance.
Thin finish requires more coats to build when brushing, but yields good results. Second-least color change on maple.
More of a sealer than a finish. Required many coats and results were dull.
More of a sealer than a finish. Never really built whether wiped or brushed on.
Thick, fast-building, beautiful, and tough. Best brushed finish in test, but hard to wipe on evenly.
Good build and great looks but more dust nibs than others, perhaps due to longer drying time.
Darkest finish was slow to build. Even five brushed coats left a somewhat irregular finish.
Good build but very thick. Brushed-on coats were a little uneven. Tied for highest scratch-resistance.
Hybrid oil-water mix. Too sticky for wiping evenly, and brushed-on coats became a mass of fish-eyes (dimples).

***Not available in quart size; $18/pint

darkest finish was the Waterlox, followed closely by the Sutherland Welles Wiping Varnish and the Zar Tung Oil Wipe-On Finish. The finish that turned the maple least yellow was Formby's Tung Oil Finish, followed closely by Minwax Wipe-On Poly.

The bottom line

While this test revealed a few specialists—thin finishes that wipe beautifully but don't build much, and thick finishes that brush on clear and tough—I was looking for finishes that do it all. A number of these products fill the bill, but two edged out the rest when all factors were considered. General Finishes Arm-R-Seal is my pick for the Best Overall finish. It applies quickly and easily by brush or rag, builds quickly with fewer coats than most, looks great thick or thin, and rubs out easily with steel wool.

On sale for as low as $10 a quart, Minwax Fast-Drying Polyurethane is a steal. Meant for brushing, its low viscosity also makes it excellent for wiping. You might have to wipe on an extra coat compared to the Arm-R-Seal, but the results are almost identical, the price is lower, and the finish is more widely available. □

Mark Schofield was FWW's resident finishing expert for 13 years.