

Wood Finishing With Oil

There is a certain amount of mystery revolving around oil finishes, with good reason. A good oil finish, while fairly easy to accomplish, is rare to find these days. It's a very low tech process which, when done well, produces a magnificent finish, but it is a time consuming procedure which requires considerably more effort than simply brushing or spraying on a topcoat such as varnish or lacquer. Primarily, an oil finish is IN the outer surface of the wood rather than ON the surface, which is the property that makes it such an attractive finish.

Originally, boiled linseed oil was the material of choice, and it was typically mixed with equal parts of thinner, such as turpentine, and occasionally small amounts of varnish and/or bee's wax were added. Linseed oil is an oil extracted from flax, and the term 'boiled' is misleading but very important. Boiled linseed oil is not actually boiled, but rather oxygenated, a process that changes the polymer structure of the oil, which causes it to eventually dry and harden. Raw linseed oil will never dry, and does not make a good finishing material. Even boiled linseed oil dries quite slowly, and the addition of varnish or driers is common these days to speed drying and provide faster build of the finish. Tung oil is another commonly available finishing material, though more often than not, off-the-shelf tung oil finishes are not true tung oil at all, but rather a mixture of the materials I've previously mentioned. Tung oil has become a somewhat generic term, encompassing many varieties of oil finishes.

My favorite oil finish is Watco(tm) Danish oil finish, the ingredients of which are a closely guarded secret -- it's safe to say, however, that it is also a mixture of oil, varnish, thinner, and driers. It's my favorite for the simple reason that it's been around for many, many years, and the manufacturers have in general been quite obstinate about not meddling with the recipe for the stuff, which makes it far more predictable than most finishes.

After several years of working with Watco and other oil finishes, it became quite apparent to me that the manufacturers were more interested in promoting and marketing these products with the focus upon 'quick and easy finishing' as opposed to helping the user achieve striking results. An old finishers' adage concerning the application schedule for oil finishes went as follows:

Once a day for a week
Once a week for a month
Once a month for a year
Once a year forever after.

Well, that's a lot of work, and most people are not interested in maintaining this schedule, nor are most furnituremakers delighted at the prospect of having a piece in the finishing process for three months or more before it can safely be delivered to the client. Many manufacturers of oil finishes have addressed this problem by advertising their products as a 'wipe-on, wipe-off' finish, leading the user to believe that a simple one or two-step

application is all that's required... and while that will provide a finish of sorts, it won't be anything to get excited over or write home about. In fact, the next time you find yourself in the wood finishing section of your local paint, hardware, or home center and see any finish product that boldly proclaims that you can now have a beautiful hand-rubbed finish in 2 hours, you have my blessing (and my gratitude) if you just smirk and walk away. Fortunately, the correct process to achieve a gorgeous, truly hand-rubbed oil finish lies somewhere between the two extremes. Try this procedure once, and you'll probably never be able to see one of those 2-hour products again without laughing out loud. If you really want to spite the manufacturers, a common recipe for home-brewed oil finish is to mix equal parts of boiled linseed oil, turpentine or mineral spirits, and plain oil-based (gloss, not satin) varnish or spar varnish (spar includes some UV inhibitors). The finishing procedure is the same.

The object of oil finishing is threefold:

- 1) Seal the wood.
- 2) Fill open pores and grain.
- 3) Make it lustrous, without a notable surface film.

Poorly done oil finishing, which we see a lot of, accomplishes the first objective, but not the other two, leaving a finished piece that is fairly well sealed, but entirely lackluster and uninspiring. In my opinion, this is what you end up with most of the time by following the manufacturers' instructions.

So I re-wrote the instructions. Specifically, I re-wrote the instructions for Watco Danish Oil finish, because it's the product I personally use most often, but other oil finishes are very similar, and the method works well with tung oils and other oil finishes.

Drying times are approximate, and at least in my shops, Watco dries more slowly than the container's instructions would lead you to believe. It's not imperative, but it is desirable that previously applied coatings be thoroughly dry before moving on to the next step, which in my environment generally takes anywhere from 1 to 3 days.

----- IMPORTANT SAFETY NOTE -----

Note that any rags and cloths you use are very susceptible to spontaneous combustion. This can occur when the solvents attempt to evaporate from your rags but do not have sufficient air to evaporate into. I won't make any recommendation concerning what you should do with your finishing cloths, nor will I take any responsibility should your shop catch fire. Watco and other manufacturers recommend submerging used cloths in water to prevent spontaneous combustion, and this is certainly the most foolproof method. My own method is to take my rag(s) and drape it somewhere near my work piece where it will get plenty of air circulation, and allow it to dry there. That way I can tell how dry the finish on the wood is by checking to see how stiff the rag is.

Also note that I recommend Watco Satin Wax in the final steps of the finishing procedure. This is a liquid wax (which allows you to wet-sand the first wax coat), and as of this writing, is available in either natural (white) or dark (walnut). Use the color that most closely matches your wood. If your piece falls somewhere in between (i.e., mahogany), you can mix the two colors to achieve an appropriate intermediate color.

Watco itself is also available in colors, but I've never found a need for anything but the natural variety. My finishing method is not endorsed by Watco or anybody else -- indeed, if they've ever heard of me it would be quite a surprise. Use it at your own risk and discretion. I will guarantee, however, that following it closely will provide a finish that equals or exceeds French polishing in terms of that unquantifiable quality that causes people to seem unable to keep their hands off of your work. In my mind, a well-done oil finish is one of the most sensual things on earth. And now (finally...):

WATCO FINISHING INSTRUCTIONS

Disregard the instructions on the container.

Sand surfaces to at least #280 grit. Remove dust (you may not be able to see it, but there is loose sandpaper grit mixed with the dust which will interfere with subsequent operations.)

Wet surfaces with WATCO Danish Oil. Keep wet for at least one hour, reapplying at ten minute intervals. If your workpiece is small enough, place it in a 'bath' of the oil and 'baste' it.

Wipe off all excess oil. Especially with large-pored, open-grained woods such as walnut, ash, mahogany, oak, etc., oil will seep from the pores for several hours. Check the surface at least every 1-2 hours, wipe it down, and repeat until no more seepage occurs. *Note: Obviously, it's best to start finishing early in the day.

The oil seepage will be lessened if your workpiece and your environment are cooling rather than warming up.

Allow the piece to dry for 48 hours (or more).

Wet the piece with oil again, and keep it wet for a minimum of 20 minutes.

Wet sand with #400 grit. Sand with the grain, and add more oil as necessary by wetting the surface of the sandpaper. Spend some extra time and oil on the end grain, where the oil will be absorbed much more readily. Wet sanding causes the wood's pores to absorb a slurry of oil and dust. When adding more oil during the wet sanding, take care not to wash away this slurry. If this step isn't done thoroughly, the end grain will never seal, and will never produce a sheen similar to the rest of the piece.

Repeat step 4. (There should be little seepage this time.)

Allow to dry thoroughly.

If the surface is still very flat (dull), repeat step 7 with #500 grit.

Wet sand with #600 grit, wipe off, dry for 48 hours. By now your piece should have that 'baby's butt' smoothness, and the wood's pores will be filled and level. If not, you took a shortcut somewhere, so repeat this step again after allowing the finish to dry thoroughly.

*Note that you can continue wet sanding, (which is actually polishing) with finer grits for as long as you like. For very fine work, I frequently continue up to 1000 grit and finer. Just be sure to let the piece dry between each grit.

Apply WATCO Satin Wax. To enhance the sheen slightly, you can wet sand with #1000 grit paper or a fine 'Scotch-Brite' pad. I don't use or recommend steel wool, as it shreds easily and generally makes a really hideous mess. The wax is difficult to rub out if it's been allowed to dry too completely, so work on manageable-sized sections, or get a helper for this task. If you've been adequately anal-retentive about making sure the wood's pores are completely filled, you can use a paste wax rather than the Satin Wax with very good results. The reason I recommend Satin Wax is because it re-dissolves itself with subsequent applications.

Let dry (about 10 minutes). Rub off excess wax (soft cotton cloth), buff (rub hard) with a clean, soft cloth. I don't recommend power buffers.

Dry for 8-12 hours, reapply wax, and repeat step 13.

You're finished!

Satin Wax can be reapplied any time to polish & clean previously oiled/waxed surfaces.

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