

The Complete Woodworking Video Collection

Finishing Techniques

Overview of Finishing Product Categories

Top Coat Characteristics

Note on brush selection: When brushing a finish, the best results will come from a natural bristle brush for all finishes, except water-based finish.

o Oil

- Cures slowly compared to other finishes
- Satin sheen, not glossy
- Relatively soft, really can't build it to a thick finish like you can with film finishes
- Very easy to repair a scratch
 - Just wipe a new coat of oil on to surface
- Does not have great water or alcohol resistance
- Don't over apply.
 - Needs exposure to air to cure. Too thick a layer, and it won't dry properly.
 - If you apply it too thick and it won't dry, scrub the surface with fine steel wool soaked in mineral spirits or naphtha, wipe off excess, start again.
 - Satin oil finishes can be brought to a higher sheen by waxing over the oil, but this requires long-term maintenance. If you ever want to re-oil the surface, you'll need to clean off the wax with mineral spirits or naphtha.
- Most oils are actually oil/varnish blends.
- Application tips
 - Wipe on with rag
 - Build up finish with thin coats
 - Be sure to properly dispose of rags
 - o Can spontaneously combust
 - o Don't leave rolled up in corner. Drape over surface

o Shellac

- Solvent is denatured alcohol
- Made from a resin secreted by bugs
- Most shellac contains wax
 - Settles to bottom of can
 - Wax adversely affects bond if varnish or lacquer is used over shellac
- Shellac has a shelf life. After shelf life has expired, it won't dry well
 - Test by applying to non-porous surface
 - Allow to run down surface
 - After about 15 minutes dry time, should not be soft. If it is, don't use it.
- Extremely user-friendly and easy to apply
 - Dries fast so shop dust can't settle into finish
 - Not as harmful to breathe, in small amounts, as lacquer and varnish
- Scratches easily
- Not very water or alcohol resistant
 - Not a great choice for a table top
- Easy to repair on existing furniture
 - Each layer melts, chemically, into previous layer
- Application tips
 - Brush with a natural or synthetic bristle brush
 - Don't over brush
 - o Don't brush as much as paint or varnish
 - Shellac dries quickly and over brushing will mess up the dried areas
 - Allow about 2 hours between coats
 - Don't need to sand between coats, unless you're removing nibs from finish
 - o Use steared sand paper so it doesn't clog too fast
 - o Change paper frequently
 - Dewaxed shellac (SealCoat) is often used as an "in between" coat to make sure layers bond
 - o Want to apply a lacquer over a poly? Abrade the poly, apply dewaxed shellac, abrade the shellac, apply the lacquer
 - Characteristics make it a good choice for toys, small projects

o Lacquer

- Solvent is lacquer thinner
- Widely used in professional furniture industry
 - Most, or all, furniture in your house is probably finished with lacquer
- More resistant, than oil or shellac, to alcohol and water
- Dries quickly,
 - Great feature if you're finishing in a dusty shop
- Highly flammable
- Long term repairs possible, since each layer melts, chemically, into previous layer
- Less prone, compared to varnish, to run or sag on vertical surfaces.
- Refinishing? Can be "washed" off of existing pieces using lacquer thinner
- Negative: Can blush in humid weather
 - Moisture from air gets into finish
- Negative: toxic solvents
 - Wear a respirator mask when working with lacquer
- Application tips
 - Lacquer can be used as sanding sealer, but sanding sealer sands easier, less "cornering," clogging sandpaper
 - Best way to apply lacquer is by spraying
 - o Unless specified as brushing lacquer, most lacquers dry too fast to be brushed
 - o Look for a brushing-specific product
 - Brushing lacquers can also be sprayed
 - o Alternative, get lacquer in an aerosol can
 - After first coat is dry, sand to remove nibs using steatite paper, 280-grit
 - Remove sanding dust
 - o Dust that is lacquer dust will chemically melt into next coat, so it's OK if some is still on surface.
 - Subsequent coats: not necessary to sand between coats, unless you're removing flaws
 - It takes more coats of lacquer to get build than it will of varnish

o Varnish

- Solvent is mineral spirits
- Excellent resistance to water, wear, heat, alcohol
- Choice of amateur woodworkers who don't have spray equipment
 - Slow to cure
 - o About an hour before dust proof
 - o Over night to next coat
 - Plenty of time to brush it out
 - Negative to slow cure, can get shop dust in finish
- Difficult to repair or strip
 - Like having layers of plastic, fairly impermeable to solvents or strippers
- Highly protective
 - Going for an outdoor application? Get spar or marine varnish
 - o Called a long-oil varnish
 - o More flexible than standard varnish
 - Allows for greater amount of wood movement
 - o Marine varnish, as opposed to spar, generally includes UV inhibitors to prevent sunlight damage. Spar varnish does not
- Polyurethane is in the varnish family
 - More protective than varnish
 - o More scratch resistant
 - Toughness can also make it difficult for layers to stick to each other
 - o Abrade between each coat
 - Doesn't hold up well under UV, unless finish has UV inhibitors specified
- Application tips
 - Easy to brush, hard to spray
 - If possible, finish in a room other than where you sand
 - Put clean paper under your work
 - o Newsprint rolls from printing offices, or resin paper from home center
 - Seal wood first
 - o Use a varnish sanding sealer or varnish thinned by half with mineral spirits for first coat
 - Mix this in a separate container
 - Brush in same direction as grain
 - o Don't allow any puddles or runs
 - Allow to cure overnight
 - Sand with steared paper, 280-grit
 - Remove sanding dust with tack cloth
 - o Dust will not redissolve into finish, as lacquer will
 - Apply next coat of varnish
 - o If desired, thin 5-10%

- Thinning makes it even easier to brush
 - Allows time for bubbles to pop out of finish
- “Tip off” each coat while wet
 - o hold brush perpendicular to surface
 - o brush lightly with grain
 - o if finish comes with brush, wipe off on edge of varnish can
- Allow to dry overnight
- Sand with 280-grit stearated paper
- If varnish was thinned, do one extra coat
 - o Three coats instead of two on top of sealer
- Don’t apply if less than 60-degrees
 - o Cold and damp retards drying
 - o Difficult to brush out varnish if it’s over 90-degrees
 - Slow curing time by adding 5-10% min spirits

o **Water-based finish**

- Minimal fumes
- Dries slower than lacquer, but faster than varnish
 - More prone, than lacquer, to airborne dust particles
 - Harder to brush out than varnish
- Easy clean up
- Typically doesn't yellow
- Minimal, if any, fire hazard
- Can be a bland looking finish
 - Solvent based finishes add color, typically amber, which accentuates grain of wood
 - May not be an issue on stained wood
 - May have to stain wood you otherwise wouldn't have to get tone you want
- Raises grain
- About the same wear, water, alcohol resistance as lacquer
- Application tips
 - Plan on dewhiskering or sanding down whiskers after first coat
 - Possible to thin finish up to 10-20% with water to make brushing easier, but best if you don't
 - Brush with synthetic bristle brush
 - o Natural bristles get too soft
 - Keep coat thin
 - o Common for coat to have an orange peel
 - Don't panic. It should level out
 - o Especially important to keep coats thin to prevent drips and runs on vertical surfaces
 - Even if you dewhiskered you'll probably have whiskers to sand off now
 - o Allow thorough drying, couple hours is usually enough
 - o Sand with 280-grit steared paper
 - Remove dust with brush or compressed air
 - o Don't use a tack cloth.
 - Residue will interfere with next coat
 - Working quickly, apply second thin coat
 - o Don't overwork finish, or it will foam
 - Dry off brush, remove foam with tip of brush
 - Apply two to three coats total to get protection
 - Don't use steel wool to sand between coats. Tiny particles left on the surface between coats can rust.