

Two Great Fast Finishes

Every turner has their favorite finish, and the two described here are mine. The reason I like these two finishes is 1) that they provide a very protective finish that is stable and does not need to be “refreshed” over time, 2) they can be completed in a fraction of the time required for most other finishes and 3) they can produce any surface from flat to high gloss.

Finishes are what make people want to touch and feel a turning. If it is glass smooth (it does not have to be shiny) it is much more pleasing to the touch than if it is rough and gritty. Historically, sanding for furniture stopped at 220 grit, because stain penetration is reduced as you go to higher grits. However, turners generally do not use stains, so going to higher grits is desirable. Think in terms of reducing the wood surface roughness to less than the finish coat thickness. To achieve a smooth, pleasing surface it is necessary to sand either the wood or the finish or both. Going to higher grits when sanding the wood, simply means that you can use a higher grit when sanding the finish which prevents sanding through the finish. The quality of the CA finish described below is determined by the wood surface finish, since the CA finish is not sanded.

The two finishes discussed here are cyanoacrylate (CA) and water based urethane. Although both are robust finishes, they are applied in totally different manners.

CA Finish

- Great for pens, small bowls and platters – not good for pieces with surface irregularities such as wood burning, piercing or open grain woods
- Applied on the lathe at medium to high speeds
- Not applied like traditional CA finish
- A very thin finish
- Not very good for larger pieces due to method of application
- Dries almost instantly
- No sanding of the finish required during or after application, except for burnishing, if desired
- Can be buffed for higher gloss

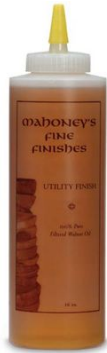
Water Based Polyurethane Finish

- Great for all pieces, especially those with surface irregularities
- Applied on/off the lathe with brush or spray
- Can be a very thick “glass-like” finish
- Good for both small and larger pieces
- Dries almost instantly
- Finish must be sanded
- Can be buffed to a “glass-like” gloss

CA Finish

The CA finish described here basically consists of sanding the unfinished wood surface to 4000 grit (Abralon for 2000 and 4000) and then applying the finish to the spinning wood as a mixture of walnut oil (WO) and thin or medium CA. The walnut oil probably slows the CA curing allowing the CA to form a very smooth and shiny surface. It applies a very thin coat with each application, so several coats are necessary. The WO/CA is applied using a folded paper towel ½” wide in bands of the same width, so multiple bands are necessary to cover the entire surface. There is no sanding after any of the coats, so

the surface quality is determined by the quality of the wood surface before application. However, the final coat can be burnished with 2000 and/or 4000 to remove any imperfections, especially if it is to be buffed. Remember, a CA finish applied in this manner is a thin film and any sanding will cut through to the wood.



I have only used walnut oil sold for finishing, but suspect walnut oil sold for food uses will work as well. Just try to get the lightest colored oil you can find so it will not darken the wood. Mahoney's Walnut Oil can be purchased at Woodcraft for about \$12 for 16 ounces.

Applying the CA Finish

1. Sand the piece through all of the grits up through Abralon 4000. This should produce a nice sheen on the wood surface and feel very smooth.
2. Fold half a paper towel to a strip about ½" wide.
3. Put on a glove – do not apply this without one unless you want the paper towel permanently attached to your finger.
4. Add a small drop of WO followed by a similar amount of CA.
5. Apply the finish as a band approximately equal to or twice the width of the paper towel to the piece turning at 700 – 1500 RPM. The first application should be at the lower RPM to get good penetration of the finish, whereas subsequent coats should be at the higher RPM to produce the shiny finish. Hold the applicator on the wood, moving quickly from side to side until it starts to get warm and cures, usually about 15 – 30 seconds. The paper towel now should have a hard, shiny surface. If it is not hard or if there is an "oily" film on the surface of the piece, there was probably too much WO. Wipe the excess WO off the off the surface and do another application. The first coat generally does not form a shiny surface on the paper towel, but all subsequent coats should if done correctly.
6. Apply the next band the same way, but halfway through go back over the prior band as well.
7. Continue until the entire piece has been coated. Now apply a second coat, but now go over the entire surface with each application. After the first coat, I generally increase the amount of CA relative to the WO up to 2 or 3 to 1.
8. After the third coat, buff the piece with a dry paper towel with the lathe running and spray the piece with accelerator. The finish will probably dull a little. Buff again with a paper towel and continue to apply additional coats until you achieve the desired finish. Do not use accelerator on the final coat because of the dulling effect unless you are going to burnish with Abralon.
9. For a 6" bowl, this should take about 10 - 15 minutes per side to achieve a nice finish. You can make it a flat finish with Abralon 4000 or buff it with white diamond and carnauba wax to get a high gloss. Although the finish is essentially dry after the last WO/CA application, I normally do not buff the surface until it has cured for a couple of hours.

Wood Turners Finish

Wood Turners Finish is a new, very fast drying water based polyurethane product from General Finishes designed to produce a high build coating in a very short time. Because it dries so quickly and cannot self-level, this finish will almost always need to be sanded to level it and remove surface imperfections. As a urethane, it sands very well when cured and will not clog the sandpaper. I normally sand the finish with 800 or 1200 grit. As a water based finish, it will raise the grain in the first and possibly second coat, so sanding is always necessary. Also, be careful when applying it to very thin turnings, especially when not coating the entire piece quickly. I have had water based poly cause cracks in a bowl due to non-uniform expansion from the water.

It is a water/oil emulsion that dries in two stages – first, evaporation of the water carrier and second, curing or crosslinking of the oil. During the water evaporation it will act as a water based finish and bead up on any oil based coating it is trying to cover. However, after the water evaporates, it acts like an oil based finish and can be brushed to get good coverage of an oil based surface. Like all oil based finishes that have started to cure, it will no longer self-level and will look pretty ugly. This is OK, since you will be sanding it anyway.



Wood Turners Finish can be purchased on-line or at Woodcraft. The WTF quart is about \$28, the pint about \$18 and the 8 ounce bottle about \$12.

It can be applied by wiping it on with a paper towel, with a good foam brush or spraying. Wiping puts on a very thin coat which will dry in about one minute but will require a lot more coats to build up a thick enough finish to sand (note that you cannot wipe it on with the lathe turning – it will cure too fast). Foam brush application applies a much thicker coating that will take about 5 minutes to dry. Spraying with an external mix airbrush, such as a Paasche Hobby External Mix Airbrush (<\$50 at Amazon) works well, both on or off the lathe (especially for large pieces) and will require 5 – 7 minutes to dry. When applying it with the lathe spinning, use a very low speed or the finish will all migrate to the outermost diameter and leave a stripe on the lathe bed, wall, ceiling and you. My preferred method is applying with a foam brush. You can speed up the drying with a hot air gun, however, this will cause the finish to cure a little rougher than if you let it dry at ambient temperature.

Applying the WTF

1. Sand the wood to at least 800 grit. Higher grits are not necessary, since the finish will be sanded.
2. Wipe on with a paper towel or paint on with a foam brush or spray on with an airbrush (diluted one part water to two parts WTF) .

3. Sand the first coat with 600 grit. Sand only until smooth, however, don't worry about sanding through the finish on the first coat – it is really acting like a sanding sealer. You should get a fine white powder on the sandpaper that will easily wipe off. If it gums up the sandpaper, it was not dry.
4. Apply a second coat, let dry and sand smooth with 800 or 1200 grit. This time be careful to sand only as much as necessary to level the finish, especially if you are wiping it on.
5. Repeat step #4 for at least one or more coats and sand with 1200 grit until the entire surface is “frosty” and uniform. It is not necessary to sand in between each of these coats. Just be careful not to sand through the finish.
6. You can stop here if you want a flat finish. Sand with Abralon 2000 and 4000 to get a semi-gloss finish. Burnish with old (worn out) Abralon 2000 or 4000 and buff with white diamond and carnauba to get a high gloss finish.

Tips for CA Finish

1. The application is technique dependent, so practice before applying to a good turning.
2. The finish blends well. I typically finish the piece while still in the chuck, then turn it around on a vacuum chuck and finish turning the bottom. If the CA finish is applied by the same technique as the rest of the piece, the bottom will blend well without showing any difference between the bottom and the rest of the piece.
3. Have patience and apply several coats.
4. The finish may dull a little over the first hour after applying. This is especially true if you use boiled linseed oil instead of walnut oil. I have not noticed any significant dulling with walnut oil.

Tips for WTF

1. Because WTF dries so quickly, it does not behave like traditional urethane finishes and will not self-level. Normally you would never go back over a traditional urethane finish because it would leave brush marks. With WTF, just apply it and re-brush if necessary. It will dry pretty ugly, but unlike traditional urethane finishes they are sanded out.
2. Remember that it is a water based finish. So, if you have both bare wood and some waxy or oil based surface (for example from oil pencil coloring) the first coat will bead up on the oil or waxy surface. To remedy this, apply a thick coat with a foam brush, wait until the water has evaporated but the finish is still wet, and brush over the uncovered area with the foam brush. Because after the water evaporates, the finish is now like an oil based finish and will cover the area easily. Once covered, subsequent coats will also cover well as long as you do not sand between coats.
3. Do not be discouraged by appearance of the first couple of coats. The goal is to get good coverage from several coats so you are just sanding the finish not the wood.
4. Do not sand the finish on the lathe as it removes too much finish. I use a sanding glove from the company of the same name to hold my Velcro 2” sanding disks and sand by hand off the lathe. Another option is to wrap a Velcro tie wrap around your two fingers and attach the sanding disk to that.