FINISHING ESSENTIALS

- Blue shop towels or lint-free cotton rags
- Tack cloths
- 0000 steel wool
- Fine mesh paint filters
- Nitrile gloves
- Good, natural bristle brush
- Foam brushes
- Good, raking light source
- 220-, 320-, 400-grit sandpaper
- Mineral oil
- 6 mm plastic to cover work surface
- Empty jars and containers for finish
- Rottenstone

FINISHES USED IN CLASS

- Boiled linseed oil
- Waterlox Original Satin wiping varnish
- Waterlox High Gloss varnish

RECOMMENDED READING

Understanding Wood Finishing by Bob Flexner (Fox Chapel Publishing, 2010 revised edition)

Rob's Favorite Finishes

A great finish will be able to protect surfaces, yet not look like a a plastic shield that's covering the wood. Here's a guide to the finishes I use in my own furniture and where I use them:

WIPE-ON VARNISHES & POLYURETHANES

Wipe-on finishes are so easy to use, and they work just as well as a thicker varnish or polyurethane that has to be brushed. They simply take more time to build. I use these on irregular surfaces like table bases or chairs.

Great Wipe-On Finishing Products

- Waterlox Original
- General Finishes Arm-R-Seal
- Minwax Wipe-On Poly

VARNISH

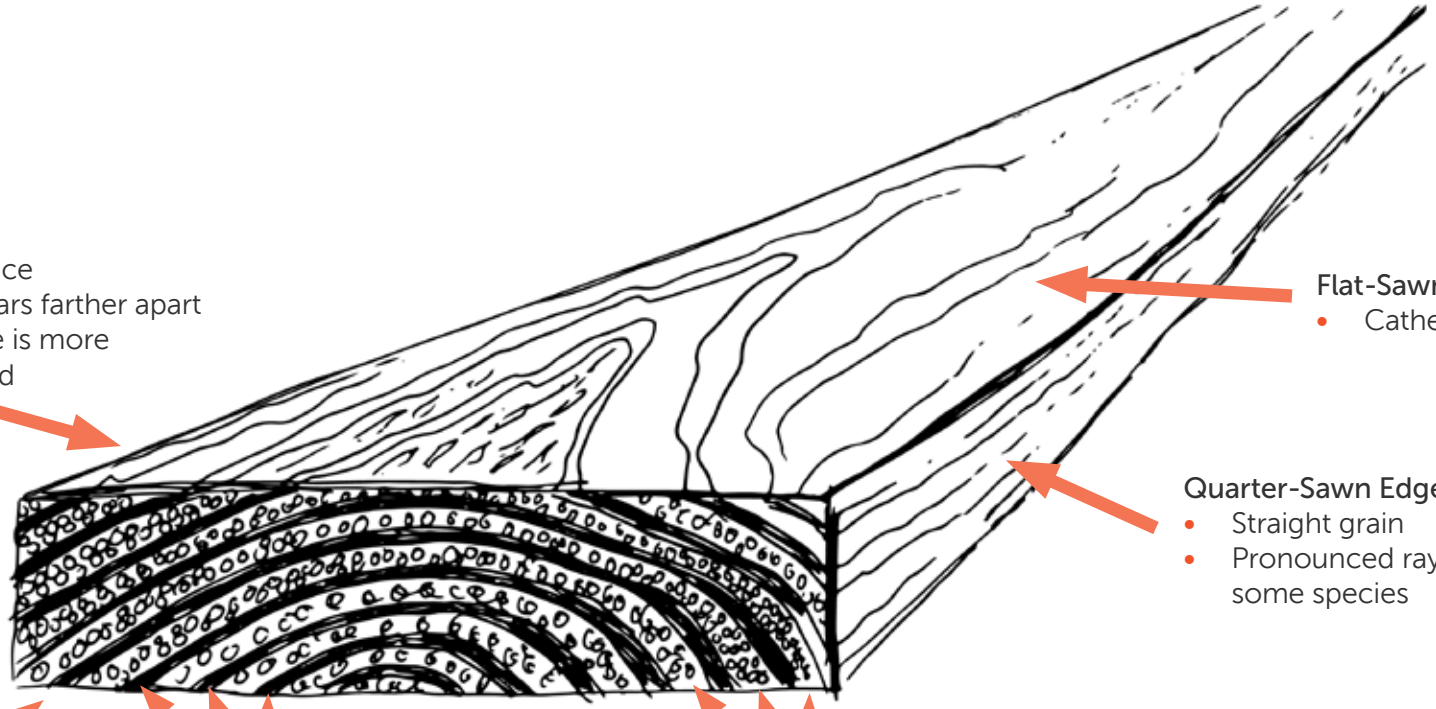
There is really nothing I love more that brushing out a beautiful finish. Varnish hardens well and rubs out to a superb surface. I use Waterlox high-gloss finish on all of my pieces. You'll notice that none of my work looks glossy. The key is all in the rub-out to finish it up. I use this finish on table tops and other flat surfaces that are easy to brush.

LACQUER

I use Deft Semi Gloss Lacquer on a lot of table bases and wall cabinets. This isn't the greatest finish in terms of durability, but it has every other finish beat it terms of how easy it is to work with. You need to be equipped to spray this finish for the best results. You can brush it, but it dries very fast and it's difficult to apply a thin coat. I like it because it dries quickly – as fast as 30 minutes if conditions are perfect. This allows me to apply up to three coats in one day. It sands very easily between coats and the last coat always goes on perfectly. There's no need to rub out a lacquer finish that has been applied properly. Each coat dissolves the last and melts together creating very professional-looking results.

Grain Structure Explained

This drawing shows the cell structure of wood and how it can affect our finishes.



Sapwood Face
- Softer surface
- Grain appears farther apart
- Curly figure is more pronounced

Flat-Sawn Face Grain
- Cathedral grain pattern

Quarter-Sawn Edge Grain
- Straight grain
- Pronounced ray fleck in some species

Heart Face
- Harder surface
- Usually more attractive
- Grain appears closer together

Late Growth
- Growth ring occurs in summertime (slower growth as the earth dries up)
- More dense
- Not porous
- Smaller

Early Growth
- Growth ring occurs in spring (water is in ready supply)
- Very porous

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Grain Structure Explained

The growth rings on the end grain of any board will tell you a lot of things. First, you can get a sense of how quickly the tree grew based on the distance between rings. A tree that took a longer time to grow will usually express a tighter, more attractive face than a fast-growing tree.

The two alternate growth rings are from the early growth, which occurs in the spring and the late growth, which occurs in the summer. Trees are dormant throughout the winter, so the wizened old guy who points out a spot on the growth rings and says, "That was from the hard winter of 1874," is wrong.

The early growth happens quickly, and this is when trees get the large part of their growing in. The early growth produces a thicker ring and is much more porous than the late growth. The late growth is slower and steadier, producing a smaller, more dense ring.

The end grain can also tell us where the board grew in the tree. One face of the board is called the heart face, and the other is the sapwood face. This refers to whether that face was pointing to the inside or outside of the tree.

As there are more growth rings exiting to the face on the heart face, this tends to be a tighter-grained, more attractive face. Sapwood faces will have grain that is spaced further apart, but curly figure is always more pronounced on this side of the board.

The end grain can also tell you what the face of the board will look like. In the diagram, you see a "flat-sawn" board. This shows a cathedral-grain pattern that is familiar to us all. The edge grain shows a quarter-sawn grain pattern. This will be straight grained and can show "ray fleck" from the medullary rays in the tree in some species.

How does this relate to finishing? In terms of finishing, the grain structure is mostly about texture, both tactile and visual. An open-grained wood will be very porous through the early growth and your hand can feel that difference on the face of the board. Stains and finishes will also absorb into those early growth pores much more than they do the late growth, giving a visual contrast to the two growth rings. No matter how much you sand an open-grained wood, this texture will always remain.

Semi-ring porous woods like black walnut have some of the characteristics of open-grained woods and also some from the closed-grain variety. Semi-ring porous woods are often a pleasure to work with. You'll notice a slight texture to these woods and they can be polished to a very smooth surface.

Closed-grain woods will still show the visual delineation between early and late growth, but since the pores are vastly more minute it does not translate to a textured look. This is why I can finish cherry or maple to be as smooth as a piece of glass.