

Les Casteel
30 minute Ebonizing Demo
Woodturners of Southwest Missouri
October 26th, 2013

- 1) Introduction: 3 methods you can use
- 2) My Problem Solving Matrix:
 - a) **Define The Problem**
 - b) I had a customer order for an "Ebonized" rocker
 - i) How to "Ebonize" Wood?
 - ii) Definition: What is Ebonizing? Make wood look like ebony
 - iii) What is Ebony? **Ebony** is a dense black wood, in the genus (family>Genus>Species) *Diospyros*, but may also refer to other heavy, black (or dark colored) woods from unrelated species. Ebony is dense enough to sink in water, is finely-textured and has a very smooth finish when polished. Comes from the tropics (Jamaica, Sri Lanka, Africa, India, Ceylon, pacific rim islands).
 - iv) What else?
 - (1) Some say that ebonizing wood is not the same thing as simply coloring wood. When you ebonize wood you should be causing a chemical reaction that makes the material turn black. The benefit to this process is opacity. When wood is stained you often can't see the grain. When wood is ebonized you should be able to see some of the grain through the color.
 - (2) When we use the term 'ebonizing' for finishing we are describing a dark black-brown stain or glaze," says Bob Levey of Bob Levey Decorative Finishing Inc. in Basalt, Colo. "When a designer asks for ebony, they want a brown that borders on black."
 - (3) Black finish is also called Ebony
- 3) **Research Possible Solutions**
- 4) **Pick the best solutions**
- 5) **Test the Solutions**
- 6) **Rank the solutions and use the one that is the best for you**
- 7) First Method: Vinegar/Steel (Iron Acetate)
 - a) Comments: When searching for "Ebonizing" this method will come up more than any other.
 - b) Methodology: A solution of Iron Acetate brushed on the wood causes a reaction with tannins in the wood.
 - c) Ingredients:
 - i) Heinz white vinegar "cleaning grade"
 - ii) Plastic bottle w/ special lid (holes)
 - iii) #0000 steel wool

- iv) Simple Green Cleaner
 - v) 2 plastic straws
 - vi) Coffee filters & funnel
 - vii) paper towels
 - viii) disposable paint brush
- d) Process:
- i) Start 1 week ahead
 - ii) Soak steel wool in Simple Green solution, to remove oil, and rinse thoroughly
 - iii) Drill 1/8" holes in lid of Gatorade or orange juice bottle to let gases escape
 - iv) Separate & stuff the steel wool into the bottle
 - v) Pour in enough vinegar to cover the steel wool. Bubbles should start to form within minutes of the vinegar contacting the steel wool.
 - vi) Use the straws and lid to hold the steel wool under the vinegar.
 - vii) In about a week, strain the solids out of the solution and store in another plastic bottle.
 - viii) Raise the grain at least twice. First sand the wood using #220 or #320 (don't go any finer). Then wipe the wood lightly with damp cloth. Let dry, sand to remove raised grain. Repeat a couple times. The wood should be super smooth now.
 - ix) Apply solution with a brush
 - x) Caution!! Even though this stuff is clear it stains just about anything. Including the brush you use.
 - xi) This staining method relies on the wood having enough tannic acid to react with the iron. This limits the wood choices and makes the results unpredictable. Oak is commonly used because of its high tannic acid content, and walnut is a very reliable wood for ebonizing. But even within these species there are a lot of variations.
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- xii) A wash of a strong solution of common black tea will sometimes help increase the amounts of tannin on the wood. Steep 10-15 tea bags in a quart of hot water to make a really strong brew. The tea will be used to add tannin to wood.
 - xiii) *The other solution is to use a powder from a South American evergreen, called quebracho extract (Quebracho is about \$7-\$12 a pound). It can be purchased from online sources. Soak the wood surface with bark tea, wait until the surface moisture absorbs into the wood, then add the iron solution. Follow up with a bark tea "rinse."*
- e) Iron Acetate/ Vinegar-Steel
- i) PROS of Iron Acetate
 - ii) CONS of Iron Acetate
 - (1) needs a bunch of ingredients & materials
 - (2) several steps, concerns about temperature

- (3) inconclusive results that vary, needs testing
- (4) takes 1 week to prepare
- (5) smells
- (6) doesn't work well on non-tannin woods, tea or quebraco booster
- (7) not light fast, non archival
- (8) will often mix with the finish
- (9) very thin finish
- (10) lots & lots & lots of water
- (11) can go to rust very easily
- (12) brushes are ruined for future use

8) Second Method: Leather Dye (Water or Alcohol based)

a) Methodology:

- i) apply and let dry, repeat if needed

b) Ingredients: bottle of black leather dye

c) Process:

- i) sand the wood with #220 apply dye and let dry, (applicator is built into the bottle)

d) Leather Dye

i) PROS Of Leather Dye:

- (1) cheap & quick (especially if small amount is needed)
- (2) ready to use
- (3) readily available
- (4) seems to work on most types of common wood
- (5) easy to apply
- (6) dries fast, applicator built in
- (7) you can always touch up your shoes

ii) CONS of leather dye:

- (1) not light fast
- (2) non archival
- (3) limited shelf life
- (4) dries as a very thin film on wood
- (5) easy to control
- (6) seems a bit "charcoal gray" color
- (7) penetration seems limited in figured or closed grained wood

9) Third Method: Archival grade India Ink

a) comments: Cheap and easy to find

b) methodology:

- i) Apply with paint brush
- ii) brushes wash with alcohol

c) ingredients:

- i) Use "Dick Blick" or "Speedball" India Ink
- ii) artists paint brushes or cotton swabs or foam brush

d) Process: Apply and let dry, knock down grain, repeat if needed

e) Archival India Ink

i) PROS of Archival India Ink

- (1) Its Archival & light fast
- (2) Water Proof
- (3) Inexpensive and goes far
- (4) Unlimited shelf life
- (5) Dead, Cold black color
- (6) Covers any wood exceptionally well
- (7) Brushes clean with household alcohol very well
- (8) Foam brushes can be used as well
- (9) Penetrates deeper than the other two methods
- (10) Dries quickly
- (11) Grain usually shows through
- (12) very limited grain raising (can be rubbed with steel wool after completing)

ii) CONS of Archival India Ink