

Dyes Can Do It All

Color bare wood without blotching, tint topcoats, and touch up blemishes

BY TERI MASASCHI

Coloring wood strikes terror in the hearts of most woodworkers. After spending six months building a piece, potentially ruining it in an hour is a definite cause for anxiety. Much of this caution stems from bad experiences applying typical hardware-store wood stains to bare wood. These mostly pigmented stains can cause results that are too dark, blotchy, and muddy. Far from enhancing the wood, the effect is to ruin the appearance.

Rather than throw out the baby with the bathwater and forswear ever coloring wood, switch to dyes. Like pigments, dyes also are called stains, but instead of lying on top of the wood like a pigment stain, they penetrate the wood. This ability enhances wood by



TYPES OF DYES

Dyes come in three main groups: as powders to be mixed with water, alcohol or mineral spirits; in ready-to-use form as a non-grain-raising liquid; or as concentrates to be added to clear finishes. Each group has different uses and characteristics.



POWDERED DYE



NON-GRAIN-RAISING DYE



offering figure-revealing transparency. Dyes come in a range of colors from subtle wood tones to brilliant primaries, and they can be applied to bare wood, combined with clear coats, or used as touch-ups. Dyes come in powdered form, concentrates, and ready-to-use liquids. The trick is to know where and how to use each type.

Dye bare wood for the greatest change in color

Whether you are seeking the rich tones of antique cherry or vibrant color on a more contemporary piece, you'll get the most impact by applying a dye to unfinished wood. However, this is something of a high risk, high reward situation.

Water-soluble dyes are your first choice—The most commonly available dyes are powders dissolved in water. Often termed aniline dyes (although no longer made from this product), water-soluble dyes provide great flexibility in how they can be mixed and also how they can be used.

Water-soluble dyes can be brushed, ragged, or sponged on, or sprayed with a spray gun or a plant mister. Their slow drying time means they can be manipulated with a damp cloth to correct uneven color, which makes them suitable for applying to large areas such as tabletops. They come in a greater range of colors than any other type of dye, and if you can't find the perfect color you can blend two or more dissolved colors. Unlike many finishing products, dye powders have an almost infinite shelf life if kept in the dark.

The main disadvantage of water-soluble dyes is their tendency to raise the grain: Any water, whether clear or dyed, will raise the grain when applied to bare

PICK A COLOR, ANY COLOR

While most woodworkers reach for a wood tone to give their pieces a more distinguished or aged appearance, brighter colors play an important role. Walnut and mahogany are often dyed yellow before adding a shade of brown to bring out the color contrasts in the wood. Contemporary furniture makers use bright colors as accents, or to make the whole piece stand out.



DYE CONCENTRATE

TYPE OF DYE	SAMPLE BRANDS	BEST USES	LESS THAN IDEAL USE	TOPCOAT COMPATIBILITY	COMMENTS
Waterborne dye powder	W.D. Lockwood, J.E. Moser, TransFast	Applied to bare wood	Tinting other dyes or clear finishes	All finishes. Seal with shellac before a waterborne finish.	Widest range of colors; cheapest dye
Oil-based dye powder	W.D. Lockwood, J.E. Moser	Tinting oil-based finishes	Dyeing bare wood	Will color-lift. Seal with shellac.	Best for tinting oil-based products
Alcohol-based dye powder	W.D. Lockwood, J.E. Moser	Touching up color	Dyeing bare wood	Will color-lift. Seal with shellac.	Use concentrates for tinting shellac.
Non-grain-raising dyes	Solar-Lux, Mohawk Ultra Penetrating Stain	Dyeing bare wood	Tinting other dyes or clear finishes	All finishes. If shellac, spray first coat (gun or aerosol).	Add retarder for large surfaces; add reducer for lighter tones.
Dye concentrates	TransTint, Wizard Tints, Sherwin-Williams	Tinting all clear finishes	Staining bare wood (must be mixed)	All finishes. If shellac, spray first coat (gun or aerosol).	Expensive but goes a long way

Dyeing bare wood gives the boldest results

WATERBORNE DYE



Raise the grain. Before applying a waterborne dye, the wood grain must be raised. Wipe the surface with a cloth dampened with distilled water. After the wood is dry, lightly sand the surface with P220-grit sandpaper.

Dissolve and strain the dye. Waterborne dyes should be dissolved in hot water in the ratio of 1 oz. of dye to 1 qt. of water. The easiest way to measure smaller amounts of dye is using a plastic medicine cup (top right). After the mixture has cooled, pour the liquid through a fine paint filter to remove any grains of undissolved dye (bottom right). Waterborne dyes can be applied with a cloth, sponge, paintbrush, spray gun, or plant mister (far right).



wood. To get around this problem, raise the grain before applying dye. First, dampen the sanded surface with a cloth moistened with distilled water. Avoid tap water, as any minerals may react with tannin in the wood. Allow the wood to dry and then de-whisker the surface by lightly hand-sanding with the grain using P220-grit sandpaper. If you raise the grain and then smooth the surface, the dye will not raise the grain as much.

The typical mix suggested by the supplier is 1 oz. of powder to 1 qt. of hot (not boiling) distilled water. Because you are unlikely to need a quart of dye, the easiest way to measure fractions of an ounce is to use the plastic measuring cup that comes with liquid cough medicine (also available at pharmacies). These cups measure volume, not weight; to account for this, fill slightly beyond the desired level when pouring in the dye powder.

Allow the mix to cool, then strain it through a fine paint filter, or a plastic funnel lined with cotton cloth or a coffee filter.

If you add way too much powder to the water, eventually no more will dissolve and you will end up with sludge at the bottom of the container rather like a pigment stain. If a dye this concentrated is applied to the wood, it will leave a powdery residue. Remove this residue with a cloth after it dries, or you may have a problem when finishing over it.



NON-GRAIN-RAISING DYE



Apply fast-evaporating dyes quickly. Non-grain-raising (NGR) dyes need to be applied fast to avoid overlapping streak marks (above). However, you can blend away uneven NGR color by wiping the surface with a damp cloth (right).

Dyes for bare wood that resist fading—Another type of dye suitable for bare wood is classified as a metallized or premetallized dye. Commonly known as non-grain-raising (NGR) stains, their biggest benefit is superior lightfastness compared to waterborne dyes. Away from intense light, waterborne dyes work fine, but NGRs are better near a sunny window (for more on lightfastness of dyes, see *FWW* #187, pp. 120-21). A second advantage is that there is no need to raise the grain before applying an NGR dye.

NGRs come ready to use in a blend of ethanol, methanol, and retarder. Common brand names are Solar-Lux, Mohawk Ultra Penetrating Stain, and Super Penetrating NGR stains. This same dye is also available as a concentrate under brand names TransTint, Wizard Tints, and Sherwin-Williams Dye Concentrate. You can use these to tweak the color of the non-concentrated NGRs to augment their rather limited range of colors. To dilute NGRs, it is best to use a purpose-made extender.

The easiest way to apply NGRs for even color tone is with a spray gun. Applied by hand, they are more troublesome because of their rapid evaporation. On a large project, it is difficult to work fast enough to maintain a wet edge and avoid streaking, and at the same time achieve an even color density. To deal with streaking, you can add 10% of a purpose-made retarder to slow down the drying time, and while the stain is still damp, to some extent you can even out the color with a water-dampened cloth.

Tint a clear finish for added flexibility

So far we have covered dyeing bare wood only, but you also can add dye to a clear finish. You'll save a little time by



Spray NGR dye for best results. With the gun set up to apply a fine spray, you can apply thin layers of color until you achieve the look you want in an even density.

For subtle color, tint the finish

Dyes are often used to bring out the best in figured woods, but what if you don't want to alter the overall color of the piece? The board on the left had an alcohol-based dye applied to the bare wood, and was then clear coated. While the figure is enhanced, the overall tone has darkened considerably. The board on the right was finished with Danish oil tinted with an oil-based dye dissolved in mineral spirits. The figure pops but the overall color is almost the same.



DYE APPLIED TO BARE WOOD

DYE ADDED TO CLEAR FINISH

OIL-BASED FINISHES



Dissolve oil-based dyes in mineral spirits first. After the powder dissolves, add the mixture to the clear oil finish of your choice (right).

applying the dye and finish in one step, but the main advantage is a more subtle shift in color. The result is comparable to the filters placed in front of lights in theaters, casting a delicate hue over the whole set.

A wonderful use for tinted oil finishes is on highly figured woods. Most people use oil to pop the stripes in tiger maple, for example, but if you apply a tinted oil, it will make the stripes much more pronounced without coloring the whole board as much. To tint an oil-based finish, it's best to use an oil-based dye powder, although somewhat confusingly the powder must be dissolved in mineral spirits and not oil before being added to the clear finish. This mixture will thin the finish, so use as little mineral spirits as possible.

The best tinting agents for shellac, lacquer, and waterborne finishes are the concentrated NGRs. Drop by drop, these bottles of powerful color can transform a tone rapidly. From clear shellac, you can make buttonlac, garnet, orange, or even green shellac.

SHELLAC, LACQUER, AND WATER-BASED FINISHES



Add dye straight to the finish. A drop or two of concentrated dye can alter a clear finish to almost any color you want.

HOMEMADE GARNET SHELLAC

A few of drops of medium walnut and a drop of Bordeaux added to clear shellac (left) will produce a color similar to that of garnet shellac (right).



A dye for perfect touch-ups



Blend away a blemish. With a piece of glass as a palette, use an artist's brush to blend a dab of shellac and an alcohol-soluble dye powder. Apply the dyed shellac to the colorless area for an invisible repair.

Other benefits from tinting a clear coat include correcting the overall tone of a project, or, in combination with a base dye, creating a deep, rich color on woods like maple that are normally difficult to darken.

A special dye for touch-up work

Occasionally while leveling a clear coat you might sand through some dye to the uncolored wood below. If you restore old furniture, you will come across areas of missing color. In both cases, a third type of dye powder excels at covering up mistakes and blemishes. Dip the end of an artist's brush into a 1-lb. cut of shellac and immediately pick up a bit of alcohol-soluble dye powder. Mix the two on an impermeable surface

such as a plate or a piece of glass to create your touch-up "paint" to fix areas of color loss.

Don't be afraid of dyes

The message to first-time users: Definitely try dye. As with all new products and techniques, there is a learning curve, so try them out on sample boards before attempting the final project.

When you've mastered the art of applying dye to your work, whether as a base color, a tinted clear coat, or just a touch-up technique, you will know that you have joined the ranks of professional finishers. □

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Finishes may lift the dye



Keep the dye out of the finish. If you brush on a waterborne finish over a waterborne dye, you are liable to dissolve some of the latter. The solution is to apply a coat of shellac between the two.



How to seal an alcohol-based dye. Brushing shellac over an NGR dye is liable to dissolve some of the dye. The solution is to spray on a light coat of shellac with either a spray gun or an aerosol.

SOURCES OF SUPPLY

DYE POWDERS, SOLAR-LUX, WIZARD TINTS

Woodworker's Supply
www.woodworker.com
800-645-9292

TRANSTINT, DYE POWDERS

Homestead Finishing
www.homesteadfinishing.com
216-631-5309

MOHAWK STAINS

Wood Finisher's Source
www.woodfinisherssource.com
888-822-0974