Green Remodeling with Eco Friendly Paint

Topics - Painting

Looking for a way to make your house beautiful? There are many ways to update an old home, but whether you're tearing down walls or just adding a little color, one thing you'll definitely need is paint.

Virtually hundreds of paint choices fill the shelves of your local hardware store, so selecting a healthy, dependable, and eco friendly paint *can* take a bit of time, unless . . . you are equipped with the knowledge of a few key qualities that set eco paints apart from the rest. Before we dip our brushes into that bucket, let's look at some reasons why run-of-the-mill paint can be hazardous to our health and to the environment.

Potential Hazards of Paint

According to the EPA, the concentration of pollutants inside your home is several times higher than what you'll find outside, due to the lack of ventilation in rooms compared to the open spaciousness of the great outdoors. Without proper ventilation, airborne chemicals collect indoors and eventually cause damage to our bodies. Headaches, dizziness, fatigue, asthma, cancer, and heart disease are all potential side effects of indoor air pollution. Although the contamination cannot be attributed to any single source, paint and paint-related chemicals play a significant role inside a typical home.

The airborne chemicals released during painting, after the paint is dry, and as paint is removed, fall into a category of pollutants known as volatile organic compounds (VOCs) —potentially carcinogenic carbon-based chemicals that evaporate easily and contribute to indoor air pollution. Harmful compounds in the VOC category range from formaldehyde to pesticides to cleaning chemicals. They can be up to ten times more concentrated indoors than outdoors, in both rural and industrial locations. However, VOCs contribute significantly to air pollution out of doors as well. VOCs are released in the highest concentrations during paint application, but most paint will continue to emit harmful fumes for years afterwards.

> *The quality of many natural paints is commonly criticized because, in times past, colors tended to fade and you could not wash the walls without a touch-up following close behind. Newer eco paints, especially some newer lime washes, are more durable, washable, and longer lasting than those that came before them—some are even used for the restoration and preservation of national monuments!*

Low-VOC Paints

Due to environmental regulations and increasing consumer demand, paint companies have developed new house paints that emit little or no VOCs. This is achieved by using water as a base instead of traditional, petroleum-based oil solvents. "Low-VOC" paints must meet the EPA standard of a maximum 200 grams volatile compound per liter of paint. Varnishes are awarded a limit of 300 grams. Although this is already less than half the VOC content of typical

paints, Green Seal—a non-profit organization dedicated to improving environmental standards for paint and other products—has developed a certification process that limits low-VOC paints to 50 grams of VOC per liter. Look for the Green Seal on paint products to ensure only the lowest VOC paints are used in your home.

Ultra low-VOC paints are labeled "zero-VOC." These paints can sometimes cost a bit more than the regular cans, but the EPA restricts this label to paints with less than 5 grams of volatile compound per liter. Check to make sure that the products contain little or no formaldehyde, ammonia, or acetone—non-petroleum compounds that can adversely affect indoor air quality. Biocides and fungicides that prevent mildew growth and extend the shelf life of paint are also commonly added, despite their toxicity and their tendency to off gas for years after application.

Eartheasy provides a list of companies that produce low-VOC paints and directs you to Web sites where low-VOC options can be purchased.

Natural Interior Paints

A natural paint does not contain heavy metal or any VOCs. Natural paints and wood finishes are often composed of natural plant dyes, oils, and waxes. A number of environmentally conscious companies manufacture these products in all of the expected forms—paint, primer, finish, sealer, stain, wax, etc.—but many consumers find the costs overwhelming. Let's take a look at our natural options to see how they measure up.

Clay Paint

Clay paint is one of the most common natural paints—it is composed of earth-based minerals and uses mostly water as a solvent. If you enjoy an earthy, adobe look for your home, a coat of organic clay paint may be a good choice for your green home remodeling project. Colors range from natural earth tones to an assortment of blue, white, and orange tints. Clay paints adhere readily to most surfaces found inside a house, requires only two coats like most standard paints, and also function as an effective odor-absorber. The downside is that these paints are usually more expensive than petroleum-based paint and do not come in as wide a range of colors or textures.

If you wanted to paint your trim bright red or neon yellow, clay would not suit your needs. Also, clay paints can only be used indoors and clay-painted walls cannot be scrubbed, washed, or wiped down after they are stained or dirtied (without risking damage to the paint job), thus requiring touch-up painting to cover damaged spots. Although this problem can be remedied with a low-VOC sealer, you will have to commit a few extra dollars to purchase this premium product on top of your already costly clay paint.

Lime Wash

A reasonably inexpensive green alternative to traditional paint is lime wash. Limestone, a calcium-based mineral, is combined with water to form a simple, natural paint that is the basis of all whitewashes. Lime wash can be used indoors or outdoors and forms a unique, glowing finish that comes in a variety of colors. Surfaces that take well to lime washing differ from traditional paint surfaces because lime wash actually sinks into its subsurface, leaving a coat of calcium crystals that wears off the surface over time and creates a characteristic antique look. Because of this, lime wash can only be used with porous materials such as brick, wood, plaster, and concrete—drywall and painted surfaces do not take lime wash effectively. Lime wash is applied in thin coats, several of which may be needed for a thorough paint job. Although 100% natural, limestone is corrosive to both eyes and skin, so wear gloves and goggles during application.

The quality of natural paints is commonly criticized because, in times past, colors tended to fade and you could not wash the walls without a touch-up following close behind. Newer eco paints, especially some newer lime washes, are more durable, washable, and longer lasting than those that came before them—some are even used for the restoration and preservation of national monuments!

Milk Paint

Another time-tested natural paint is milk-based paint. Casein, a protein found in milk products, is separated from the milk and mixed with water, clay, and earth pigments to form a thick, eco-friendly paint. Casein paint is a form of tempera paint, a fast-drying egg-based paint that has been in use since the days of ancient Egypt. Today, it is purchased in a dry, powdered form. The powder must be mixed with water and then used immediately (usually within hours to days) to prevent the paint from clumping before it reaches its destination. Milk, like clay, is intended as an interior paint and only comes in a matte finish.

Exterior Paints and Finishes

Unfriendly chemicals are often required to toughen paints slated for use in the great outdoors. Natural paints are rarely tough enough for outdoor use, so the variety of environmentally friendly outdoor paint is not nearly as extensive. Fortunately, the problem of VOCs is far less detrimental in outside painting projcts, as the air dilutes the effect of VOCs and awards outdoor paints and finishes a little leeway that is not given to indoor-use options. Outdoor coatings may call themselves eco-friendly as long as the product does not contain heavy metals or toxins.

Green remodelers concerned about outdoor air pollution do have options for low-VOC outdoor coverings. For those of us who are determined to find a completely natural exterior coating, the options are generally limited to stain, finish, or lime wash. For environmentally friendly low-VOC paints, browse these brands and others on the net or store shelves:

BioShield Paint
earthBorn Paints
Ecos Organic Paints
Safecoat
St. Astier Lime Paints (especially their Natural Hydraulic Limes, which are non-toxic, recyclable, salt and bacteria resistant, and inhospitable to mildew)
YOLO Colorhouse

Green Seal provides a list of certified paints and coatings.

Paint Removal

Some paint projects require removing a coat of paint before applying a new one. If you are trying to renew an old piece of furniture or get the paint of your beautiful wooden floor, you are going to need a paint stripper.

Before purchasing a remover, check the type of coat that you are trying to remove. A paint requires a different solvent than a wood finish, and different finishes necessitate separate strippers as well. Check that you are using the right product for the job—it will save you hours of elbow grease in the long run. To remove a coating from an upright surface (such as a wall), consider getting a remover that is a little pasty so that it stays in place after being applied to the surface.

Paint strippers are often petroleum based, which brings up the problem of VOCs, but they also contain a particularly harmful chemical called methylene chloride or, dichloromethane. If you can't find a methylene-free remover at your local hardware store, look on the internet—there are a few eco friendly manufacturers available on the web. Be careful though, a methylene-free stripper still contains some pretty harsh chemicals. When performing your paint removal project, keep your workspace well ventilated and use gloves to keep unwanted compounds from absorbing through the skin.

A warning for readers who plan to remove paint: Before removing an old paint project from your walls, test for lead, especially if the surface was painted prior to 1980. Lead testing kits can be purchased at hardware stores nationwide. If your paint does contain lead, you may need a professional paint removal service to clear this toxin of your home without risk of contamination.

Painting Tips

If you are planning to try some of the environmental paint options presented in this article, here are a few tips you might find useful:

Paints that do not contain VOCs are often water-based, which means they can be damaged by freezing temperatures. Store your paints indoors and time your order carefully—the paints can be damaged by cold weather during shipping.

Store paint cans upside down. This will ensure that the lids are on tight, and will prevent air from flowing in and out of the can, which causes the paint to thicken and dry. A healthy can of paint saves the environment and your bank account.

If you are using a combination of water and oil-based paints, be sure to use separate brushes for each one. As we all know, oil and water don't mix, and trying to combine paints on a brush will result in a poor finished product.

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