

A natural solution to painting and decorating

by Gill Tesh

As a starting point for this article I am taking “natural” paints, oils, waxes and decorating materials to mean those in which the ingredients are skilfully chosen for a specific function and the production involves relatively simple processes. They contain little or no synthetic material, particularly petrochemical solvents which emit vapours known as volatile organic compounds (VOCs).

With the current debate about sustainability and the drive to reducing carbon emissions it is surprising that natural paints aren't much more widely used in this country. In our experience it is home owners who have been most receptive to using these environmentally friendly paints and this is probably not surprising given that they are going to live with them! However, anecdotal evidence suggests that specifiers and decorators are now much more open to using them than they were two to three years ago. Outside of the conservation world, there are still relatively few examples of major projects using natural paints in this country but they aren't hard to find in Europe and Scandinavia – Biofa oils and waxes have been used extensively in the Norwegian Sami Parliament and Oslo Airport, in the German Volkswagen Exhibition Hall and the Chateau de Chenailles in France has been painted internally and externally with their paints. In this country the prestigious Jubilee Library in Brighton has just been decorated with Biofa emulsions and silicate paint.



The USPs (unique selling points) of Natural decorating materials

It should be remembered that although some of these products may appear very primitive compared to the chemical cocktail of modern synthetic paints, knowledge of them has survived hundreds, if not thousands of years so they have a proven track record. It is encouraging to see the growing development of modern production over the last forty years or so; before which they were largely made up by painters and decorators on site to their own recipes.

Unlike the vast majority of synthetic paints, many natural products also have inherent beneficial properties - they aren't just decorative finishes. Obvious examples of this are limewash and silicate masonry paint, both highly alkaline and therefore biocidal. Due to their composition they are also naturally fire-resistant and silicate paint is washable – worth considering for use in public communal areas.

Many modern paints designed to be washable contain epoxy resin and are therefore flammable. Likewise there a range of natural oils and waxes on the market that are tough and durable but also enrich and revitalize wood without giving users serious headaches from the fumes they emit.

Manufacturing advantages – because the ingredients of these paints are naturally occurring and they contain very little if any synthetic material, the production process doesn't result in mountains of polluting and toxic chemical waste in the production and the waste is largely biodegradable i.e. solid matter can be composted.

Health benefits - Natural products don't pose the same risk to health as synthetic paints although even natural materials can cause allergic reactions. Painters & decorators notoriously suffer from a range of highly unpleasant and sometimes life-threatening conditions - cancers, lung infections, dermatitis - from regularly inhaling paint fumes and handling paints. The occupants of newly decorated buildings run the same risk and many complain of allergic reactions. Specifiers should think about the long-term adverse effects of paint vapours particularly in buildings which cater for those at a vulnerable age or in poor health – hospitals, schools, clinics etc. There has been a move to vapour-free paints in recent years, but there are concerns that the chemistry involved may result in even more hazardous paint.

Structural Benefits - In terms of the health of the building, acrylics in paints will trap moisture in the walls and won't accommodate naturally occurring movement. This can be particularly detrimental to older buildings with solid wall construction that were never designed to be “shrink-wrapped” in plastic paints. It is extremely important to take a wider view when planning décor, to consider breathability and vapour permeability in the structure and to avoid introducing complex volatile chemicals into the building.

User-friendly information: A minimum amount of research into the difference between natural and synthetic paints will expose the lack of information on the composition of the latter. The level of VOCs emitted by decorating products arenormally labelled on tins but the symbols may be meaningless without information & education. One major paint manufacturer appears to offer Data sheets and MSDS sheets to specifiers on their website but we were unable to access them. Perhaps this is not surprising when you find out that these paints contain a cocktail of detergents, fungicides, preservatives, carcinogenic solvents and sometimes toxic metals. By contrast most natural paint manufacturers list the paint ingredients on their packaging and on their websites and at least one distributor supplies not only technical sheets for each product but also has a glossary of ingredients on their website.

Given the benefits why aren't they used more widely?

There is no denying that generally speaking modern paints are durable, consistent, quick-drying and offer a huge range of colours. Specifiers and professional decorators will all have their tried and tested favourites and the large paint manufacturers offer inducements to their professional customers to continue using their products. They also have huge marketing and R&D budgets.

Coupled with this is the perception that “natural” products are designed for “tree huggers” and not for professional users. However many of these paints have been in commercial production for decades now and continue to improve. Natural emulsions can look and behave much like their synthetic counterparts but are tension-free, breathable and pleasant to use. Natural gloss paints tend to take longer to dry because they don't contain aromatic hydrocarbons (a very effective but hazardous petro-chemical solvent). Oils found in paints and varnishes normally dry by oxidation (absorbing oxygen from the air) but to speed this process you will often find aliphatic hydrocarbons – an innocuous petrochemical derivative - in combination with citrus oil. Kreidezeit produce a Stand Oil paint that contains no petrochemical solvents at all. The slower drying times have to be put into the balance with health and environmental benefits.

Costs Smaller manufacturers are never going to be able to compete on cost until demand allows them to grow, but some brands of paints are surprisingly inexpensive. Ethically we should be prepared to support this industry and pay the price for healthier products. As suppliers, we are confident in recommending the brands we stock and the vast majority of our customers, whether professionals or DIYer are very happy with them.

GLOSSARY OF NATURAL AND TRADITIONAL PAINTS AND DECORATING MATERIALS

Casein

Also known as “milk paint” or “casein distemper”. Nowadays manufactured from casein (milk protein), lime, chalk and marble dust. Comes in powder form to be mixed with water and pigment. A breathable paint with a soft chalky finish which can be used on walls and furniture but is unsuitable in damp environments.

Distemper

Like casein, a glue based paint traditionally made with rabbit-skin glue and chalk and sometime bound with oil. Often found on ceilings of old buildings and almost impossible to paint over with other paints.

Claypaint

As the name suggests these paints are derived entirely from natural clays which are very opaque, regulate moisture in the air and absorb odour.

Natural Gloss and eggshell paints

Similar in appearance to synthetic glosses and eggshells but due to innocuous solvents used they take longer to dry and should be applied very thinly.

Limewash

Ancient paint made from slaked limestone and water. Commonly includes other ingredients such as linseed oil, tallow, skimmed milk and pigments for durability and colour. Works best on traditional lime mortar or permeable surfaces. Main characteristics: breathable and very alkaline therefore biocidal, fire-resistant and historically used to protect and restore stone.

Marmorino



Decorative plaster made from lime putty and coarse marble dust to give attractive open textured finish.

Natural Emulsions

Typically the solvent is water, the binders are natural oils, resins, or soya alkyds and the fillers chalk, talc and or limestone. Cellulose or starch are sometimes added for stabilizing emulsions and adjusting viscosity.

Oils and waxes

A wide range of natural oils and waxes are available on the market – some very familiar such as linseed oil and beeswax – often used in combination with less familiar such as Safflower oil and Carnuaba wax to give very hard wearing, enhancing finishes to wood, slate, terracotta, cork and even cement.

Silicate masonry paint

Designed as a more durable form of limewash and similarly very alkaline, breathable, biocidal and fire resistant. Made from Potassium Silicate (water glass). Bonds with a mineral surface by silicification and is non-film forming. Can be used internally or externally. Some brands such as Biofa make internal silicate paints without any animal products so these are suitable for Vegans.

Venetian Plaster



Decorative plaster made from lime putty and fine marble dust which can be burnished to a sheen to give a range of richly decorative marble-like effects

Gill Tesh is a partner at Mike Wye & Associates, suppliers of traditional building and decorating materials

<http://www.mikewye.co.uk/index.htm>

www.earthbornpaints.co.uk

www.natural-building.co.uk

www.villanatura.co.uk

www.arplastering.co.uk