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The greening of paint

An eco-paint buyers guide



Paints have become more eco-friendly in recent years, but there are still traps to look out for. Daniel Wurm explains the advantages of using environmentally friendly paints.

THE painting industry has undergone a tremendous transformation over the last 10 years. Back in 2006, I was the only painter in Melbourne to have phased out toxic solvent-based paints. The rest of the industry looked at me as some kind of tree-hugging hippie when I spoke about the dangers of VOCs (volatile organic compounds) to human health and the environment. The last time I wrote for *ReNew* it was still difficult to find low- and zero-VOC paints, and recycling of waste was a massive issue.

Fast forward to 2016, and I am pleased to say that my industry has taken huge strides down the path of sustainability. It's a good news story that I am happy to tell. Green is not just a fashion statement: it's becoming standard practice. Let's look at some of the developments and see how far we've come.

First of all, low-VOC paints now make up the majority of paint sold. Almost all painters have at least tried them and all manufacturers have introduced low-VOC versions of their paints. In many cases, even their cheaper trade lines are now low-VOC. This means that low-VOC paints are available from all paint stores.

In addition, over 500 painters across Australia have been trained to identify and use low-VOC paints, and even apprentices are being taught about them as standard practice. No one argues about the health risks of solvent paints anymore; we all know there are issues and we all want to protect our health.

If any painter tries to tell you that low-VOC or zero-VOC paints will cost more or won't last, simply walk away and find another painter. If they haven't got the message yet, they probably never will! Almost all major projects including schools and hospitals now



Image: The Natural Paint Company

↑ Truly natural paints use simple materials from the earth and plants. Here you can see a selection of natural pigments used by The Natural Paint Company in their products. Note that even natural pigments can contain toxic materials (although these don't!). Some natural pigments may contain cadmium (yellow, orange and red) and chromium (dark green), which should be avoided.

have low-VOC paints specified.

Low-VOC paints are categorised according to their use. For example, the Australian Paint Approval Scheme classes low-VOC low-sheen paints as having less than 5g per litre of VOCs. We could argue about which standard to use when measuring VOCs, but that is about as interesting as watching paint dry, and VOCs are only part of the issue.

More than VOCs

I prefer to look at the whole-of-life cycle perspective. For example, some

manufacturers now offer zero-VOC paints across their range and are independently certified by a recognised eco-label. Why not support these manufacturers, who have shown transparency in their manufacturing process? GECA certification (www.geca.org.au) looks at where the raw materials were sourced and what effect the manufacturing process has on the environment. To me, there is little point in choosing a low-VOC paint if the manufacturer is still producing toxic paint; true sustainability can only be achieved when manufacturers look at it holistically.

"I prefer to look at the whole-of-life cycle perspective. For example, some manufacturers now offer zero-VOC paints across their range and are independently certified by a recognised eco-label. Why not support these manufacturers?"

→ Some natural paint systems use liquid pigments instead of powders, such as this selection from Bio Products.



Natural paints

Natural paints are paints that are manufactured using the least amount of processing. All paints are made from chemicals, but we now know that the more humans alter raw materials, the higher risk there is of those chemicals affecting our health and the environment. I like to think of natural paints as the 'bio-dynamic' products of the painting industry; not everyone wants to use them, they cost more, but they minimise exposure to toxic chemicals. Natural paints are made from ingredients such as linseed oil, minerals, earth pigments, lime and beeswax. They may be a good choice for people with allergies. See the table at the end of this article for a condensed list of suppliers of natural and low-toxicity paints. The full table will be available on the *ReNew* website at www.renew.org.au/sustainable-houses/136-paint-guide.

I don't recommend natural paints for exterior applications; the whole point of using paint is to protect a building from premature deterioration and sometimes plastic is the best way to do it!

Exterior painting options

However, if you really desire to use natural paints inside and out, then there are some exterior paint options you may want to consider.

The best natural paints to use outdoors are mineral-based paints, such as Murobond's Cement Paint. Some of these options can be combined with waterproofing undercoats for a longer lasting and more weatherproof result. However, mineral-based paints do not flex and should only be used on masonry surfaces, never on flexible surfaces such as wood.

Although synthetic exterior paints may come with long warranties, even up to 15 years, the expected lifespan of natural mineral-based exterior paints seems to be no more than 10 years, so you should expect to repaint after this time.

A number of manufacturers make natural enamel paints that they rate as suitable for outdoor use. A typical example is the Bio Enamel range from Bio Products, which gives a hard finish suitable for outdoor trims

and surfaces. Another exterior enamel is the VINDO Natural Gloss Oil Paint from Livos.

However, while manufacturers state their outdoor suitability, my experience has been that when used outdoors, natural enamels will degrade much faster as they lack the UV inhibitors of synthetic paints. So, I do not recommend natural enamels for outdoor use, but if using them, keep their use to areas which see little sun and weather, or expect to repaint them every few years.

Are all VOCs bad?

Commercial paint manufacturers have worked to reduce the levels of VOCs in their paints as VOCs, regardless of source, are contributors to smog.

Some VOCs are also quite toxic, so the reduction of VOC levels has come with an added bonus of making paints safer to use. Not all VOCs are toxic, and it varies from paint to paint, but the natural paints tend to contain less toxic VOCs than synthetic paints.

For example, one solvent used in some natural paints is citrus oil, and in particular, D-limonene. While it is a VOC, it is also considered generally non-toxic (you eat citrus peel in fruit cake without ill effect, after all), although it can be an eye and skin irritant in concentrated form. So, the lower the VOCs, of any type, the better.

There is, however, a class of synthetic solvents considered safe and to be a better alternative than even citrus-derived solvents—isoaliphates (also known as non-aromatic compounds). These (mostly)

petroleum-derived chemicals are extremely pure and quick to evaporate and dissipate, so do not prolong off-gassing. They are also not absorbed by the human body. A number of natural paint manufacturers use these compounds for the solvent as the least toxic solvent available.

Note though that any chemical that individually makes up less than 1% of the total volume of the paint does not have to be listed in the MSDS (materials safety data sheet), and a single paint product may contain multiple chemicals at less than 1% volume each, although the combined volume of them may be a significant percentage of the whole.

We recommend sticking to natural paints for interior use when possible, although ultimately you need to weigh up all sides of the equation, check the contents of each paint option, and select the option that works best for you—a very low VOC synthetic paint might be a better option than a higher VOC natural paint.