

FACT SHEET

HEALTH CONCERNS AND ADVICE REGARDING SOLVENT EVAPORATION FROM ARCHITECTURAL PAINT

VOCs contribute negatively to air pollution by participating in the chemical reactions that take place in the atmosphere and produce a variety of air pollution effects including the effect known as "smog".

VOCs also contribute negatively to indoor air quality through emissions, both during and after curing, into the daily living environment. As a result, they can impact on individual health and well-being including personal allergic reactions.

What are Low VOC Paints?

The VOC solvents act to slow the initial drying by maintaining a "wet-edge" which gives a longer time to work with the product. So, when VOC solvents are removed, the coating must be formulated differently to compensate for the lower level of VOC solvents.

Application of Low VOC Paints

The application methods will also need to be altered to achieve the best finish.

Low VOC paints usually exhibit shorter drying times. This means that there is less time and opportunity for the paint to flow-out, which can result in slightly rougher surfaces. These surfaces will scatter light more inconsistently, which is often detected as uneven sheen, glossy peaks and flat troughs, patchiness, lapping or just an uneven "dry looking" appearance.

The move to low VOC paints means that application and drying properties can differ significantly from what the user is accustomed to, hence new application techniques will need to be adopted in order to accommodate these differences in properties, so that a consistently great looking finish can be produced.

Synthetic roller sleeves will usually produce a more uniform film thickness and a more consistent finish, when low VOC paints are being applied. They deliver a smoother, more uniform appearance with little or no evidence of lapping or blending problems.

On the other hand, lambswool roller sleeves generally deposit a lower and less uniform film thickness with more surface texture that scatters the light in more irregular ways. A lower film thickness means that less product is being applied which can further shorten the drying time and lessen the "wet-edge" of the painted surface.

Evidence also suggests that microfibre roller sleeves that deliver lower film thickness will also shorten the drying time and lessen the "wet-edge" of the painted surface.

When low VOC paints are spray applied they will need to be "back-rolled" to create a uniform texture profile. Regardless of which roller sleeve is selected, this "back-rolling" process needs to be carried out immediately while the

painted surface is still wet. Any delay is likely to result in a non-uniform texture profile.

The correct choice of roller sleeve and nap length for each product type will ensure that a more even coat of paint is applied which will reduce the likelihood of gloss variation and achieve more even drying time to improve back-rolling and resulting opacity. The impact of a correct choice will be most noticeable when low VOC paints are being used. Refer to table below.

Today, the surface coatings industry has responded to the health concerns of high VOC paints by developing new low VOC products.

A number of external bodies, including those listed in the References, have also established sets of standards to control the level of VOC solvents that can be incorporated into various architectural paints during manufacture.

References

Further information relating to low VOC paints can be found in:

- Australian Standard AS/NZS 2311 "the Painting of Buildings" Sections 1.5.2.6 and 4.22.

Additional information regarding VOC paints, VOC limits and Green Star ratings, where applicable, can be obtained from:

- The Green Building Council of Australia (www.gbca.org.au);
- Good Environmental Choice Australia Standard (GECA 23-2012); and
- Australian Paint Approval Scheme (APAS) D181 Volatile Organic Compounds (VOC) Limits.

Another useful resource is the Dulux Application Low VOC Paints.

PAINT	LOW VOC PRODUCT	STANDARD PRODUCT
Ceiling Flat	Up to 15 mm synthetic	Up to 15 mm synthetic or lambswool
Flat	Up to 15 mm synthetic	Up to 15 mm synthetic or lambswool
Matt	9-12 mm synthetic	9-12 mm synthetic
Low Sheen	9-12 mm synthetic	9-12 mm synthetic
Semi-Gloss	10 mm synthetic	10 mm synthetic
Gloss	8 mm synthetic	8 mm synthetic