

TECHNICAL ADVICE

APPLICATION

Low VOC paints



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What **What are low VOC paints?**
Low VOC paints are those that contain less “Volatile Organic Compounds” (VOC) or VOC Solvents than traditional coatings.

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

Why **Why are VOCs an issue?**
High levels of VOC solvents contribute to the formation of pollution and reduce the indoor air quality. In order to minimise the level of VOCs released during construction, external bodies such as the **“Green Building Council of Australia” (GBCA)** established “Green Star” Industry Standards in order to control the level of VOC solvents that can be incorporated into various paints during manufacture. Dulux® is currently a member of the Green Building Council of Australia.



green building council australia



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The **“Good Environmental Choice Australia”** standard (GECA 23-2012) stipulates even tighter levels of VOC solvents allowable for products that wish to carry their stamp of approval.

Consumers and contractors continue to demand good performance from paint products but as the environmental requirements continue to increase in the market, new paint technologies must therefore be developed in order to keep pace with this demand for quality and performance. This directly impacts on the way products can be formulated.

How does it occur 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 & 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 difference is properties, so that a consistently great looking finish can be produced.

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Solution A better understanding of the reasons why low VOC paints are generally perceived as more difficult to apply than traditional paints will highlight the importance of modifying application techniques and application equipment in order to achieve the desired appearance, finish and outcome.

What type of roller sleeve is best suited for low VOC paints?

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 “backrolled” to create a uniform texture profile. Regardless of which roller sleeve is selected, this “backrolling” 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.

Prevention “Wet-edge” and drying problems can be minimised or eliminated by using the recommended roller sleeve and nap length for each product. Please refer to table below.

	Low VOC product	Standard product
Ceiling Flat	Up to 15mm synthetic	Up to 15mm synthetic or lambswool
Flat	Up to 15mm synthetic	Up to 15mm synthetic or lambswool
Matt	9-12mm synthetic	9-12mm synthetic
Low Sheen	9-12mm synthetic	9-12mm synthetic
Semi Gloss	10mm synthetic	10mm synthetic
Gloss	8mm synthetic	8mm synthetic

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.

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Tips & tricks

1. Worn roller sleeves should be replaced on a regular basis to maintain uniform film thickness and consistent results.
2. Immediately after 2-3 full drops of paint are applied, the wet paint should be “levelled-off” (if roller applied) or “backrolled” (if spray applied) in order to maintain a uniform final appearance.

References

Further information relating to low VOC Paints can be found in the Australian Standard AS/NZS 2311 “The Painting of Buildings” Sections 1.5.2.6 & 4.22

Additional information regarding VOC Paints, VOC limits and Green Star ratings can be obtained from the “Green Building Council of Australia” (www.gbca.org.au) or the “Australian Paint Manufacturers Federation” (www.apmf.asn.au/documents/lowvocpaint.html).

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