

Q&A

VOC Compliant Acrylics

What are VOCs?

Due to the recent changes in Canada for EPA standards, solvent based coatings have been reformulated nationwide to contain lower VOCs (volatile organic compounds). Lower VOCs contributes to a cleaner environment for us all.

What significant changes have been made in the industry in regard to these new VOC regulations and acrylic sealers?

All solvent based acrylic sealers have to a VOC content of 400 grams/litre or less.

Are there VOCs in waterbased products?

Yes. Most consumers don't realize there are VOCs in waterbased products, they assume since they are waterbased, they are safe. This is not true. Waterbased acrylics do contain VOCs and the problem with these type of VOCs is that they are water soluble, which means they are easily absorbed into the human body which actually creates more problems health wise than the VOCs in solvent based acrylics.

With the solvent based Acrylics, how are the VOCs being reduced to meet the new standards?

There are 3 solvents that contain no VOCs. These are acetone, tert-butyl acetate and parachlorobenzotrifluoride (PCBTF). Most manufacturers have gone to the acetone solvent to reduce their VOCs. Cornerstone Coatings has chosen the tert-butyl acetate for all of their acrylics because of its significant benefit of a slower drying time and the health and safety benefits it has for consumers.

What is the differences between these 3 solvents?

ACETONE: Cheapest solvent of the 3 choices for the manufactures to use. Acetone is extremely flammable with a flashpoint of -18C. Acetone is easily the fastest drying solvent of the 3, but this characteristic causes several problems in the application of the acrylic sealer.

TERT-BUTYL ACETATE: Price for the solvent is midrange of the 3 for the manufacturer. Tert-butyl acetate is safe to use compared with acetone with a flashpoint of +5 C. Tert-butyl acetate is a slower drying solvent which has signifiant benefits in the application process for the consumer.

PCBTF: This solvent is not a viable option for manufacturers because it is extremely expensive. PCBTF has a lower flashpoint and is one of the slower drying solvents.

What is oxygenated solvent?

Oxygenated solvent is another term for ACETONE. Many consumers are aware of the dangers of acetone, so to appease this fear, it appears that some manufacturers have started using synonyms such as oxygenated solvent, 2-proponone, dimethylketone, dimethylketal, pyroacetic acid, pyroacetic ether instead of acetone.

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My tips keep plugging up when spraying the new VOC compliant acrylics?

What is causing the problem is the extremely fast dry time of acetone. Cornerstone Coatings has carefully chosen a slow dry solvent to combat this problem.

Why do manufacturers tell me to apply the new VOC acrylic sealer at 4 and 5am or after 9 pm at night?

Again, the culprit is the use of acetone in the acrylic sealer. Because of acetones extremely fast dry-time, the hotter the environment, the more problems you will have applying the sealer. This is a huge problem with contractors because they only have a small window to work in, and having huge restrictions on their time is unacceptable.

Cornerstone Coatings acrylics do not have these restrictions. You can apply our sealer anytime of day at normal application temperatures.

Why am I having poor adhesion now with VOC acrylics?

Inter-coat adhesion is achieved by the existing coating being re-emulsified to a certain degree with the acrylic you are applying. Anyone who has used acetone before knows how fast this solvent evaporates. This extreme dry time does not allow for inter-coat adhesion especially on older sealers.

Because of the slower dry time of Cornerstone Coatings acrylics the proper amount of time is allowed for the re-emulsification of the existing acrylic to get proper inter-coat adhesion.

Why can I not get an even finish with the new VOC compliant acrylics?

The acrylics that contain acetone dry too fast so they do not get an even finish.

Why am I getting strings and spidering when I roll on the new VOC compliant acrylics?

This typically only happens when you are using a VOC compliant sealer that contains acetone. The acrylic sealer starts to setup even as it is exposed to the air, and this makes the product impossible to apply and creates a stringy mess.

How safe are these new VOC compliant acrylic sealers?

The main safety issue we see is the flashpoint which indicates how flammable the solvent is. Acetone by far is the most flammable and therefore the most dangerous solvent to work with.

Cornerstone Coatings will not use acetone in any of their products for this reason.

Why are waterbased sealers now being promoted for decorative concrete instead of the new VOC compliant acrylics?

Many distributors carry acetone based acrylic sealers but they are failing because they are very difficult and impracticable to work with. The next option for these distributors is to promote the waterbased acrylics. Waterbased acrylics were not designed for stamped or exposed aggregate concrete, they are more designed for interior non-decorative flat surfaces.

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Will I see any difference using a waterbased sealer versus a solvent based sealer?

There are several differences. Waterbased sealers will not deepen the color of the decorative concrete. They tend to look very pale and washed out. Waterbased sealers also tend to flow into the low areas like the grout lines and puddle which leaves a white build on the grout lines. You can't just touch up an area with the waterbased acrylics, the whole surface will have to be redone. Waterbased acrylics tend to peel off or flake as it deteriorates. Waterbased acrylics have overall poor adhesion and do not last as long as the solvent based acrylics under normal wear and tear conditions.

Solvent based acrylics naturally deepens the colors and beautifies decorative concrete. This brings out the intensity and brilliance of the colors which is the whole idea of decorative concrete. Solvent based acrylics give an even finish. Solvent based acrylics can be easily touched up without having to re-coat the whole surface. When solvent based acrylics fail, they tend to lose their shine gradually with little peeling depending on the acrylic used. Solvent based acrylics that do not contain acetone have very good adhesion.

Are there safety issues with waterbased acrylics?

Yes. The VOCs in waterbased acrylics are easily absorbed into the human body. Protective clothing is highly recommended when using the waterbased sealers. Long-term exposure to waterbased VOCs can cause kidney and liver damage.

How long do waterbased acrylics last?

We have seen noticeable deterioration on some of the waterbased acrylics at about 6 months.

How can you tell if the waterbased acrylic sealer used is failing?

Typically you will notice peeling, flaking, loss of shine, and your surface will turn white with rain (water-blushing).

Will a waterbased acrylic give you the same look as the solvent based acrylic for decorative concrete?

No. Waterbased acrylic were never designed for decorative concrete. These 2 types of acrylics have totally different esthetic characteristics and purposes.

Will the waterbased acrylic last as long as a solvent based acrylic?

No. The waterbased acrylics life expectancy is about 1/2 that of solvent based acrylics.

Why are waterbased acrylics hard to work with for decorative concrete?

Waterbased acrylics will puddle in the grout lines and low areas on decorative and exposed aggregate concrete because of their high viscosity and flow rate. They are more suitable for flat surfaces.

Why do I get white spots with waterbased acrylics on decorative concrete?

The waterbased acrylics will absorb rain water, and cause whitening on the surface, regardless of how old the sealer is. Another source of white spots is the puddling of the product during application.

Does Cornerstone Coatings use Acetone in any of their acrylic sealers?

No. We do not believe acetone is the proper solvent to use to be VOC compliant. In our opinion it is the worst choice in regards to actually having a product that contractors can work with. Cornerstone Coatings uses tert-butyl acetate as the solvent of choice. It may be more expensive than acetone, but keeping to our core values of safety to the contractors and ease of use of the product, tert-butyl acetate was the clear choice of solvent to use.