



Bubble Formation on Stamped Concrete



Avoid bubbles



Use ChemMasters' bubble-resistant sealers

Insight Into What Works & Why

No matter how well stamped concrete is installed, it doesn't meet customer expectations until it has the right sealer applied to it. Sealers are responsible for color development, wetting out and highlighting the antiquing release, as well as providing the "wet look" associated with most stamped concrete. As a result, sealer performance is critical.

One potential problem with sealers used on stamped concrete is bubble formation. Bubbles may not be readily noticed on many concrete finishes, but are quite visible and unacceptable on decorative finishes like stamped concrete.

As you've probably found, bubbles can be quickly knocked down with a xylene (or xylol) wash, but under the right conditions can reappear hours later. They seemingly grow out of nowhere, initiating a dreaded "call back" for which there is no additional compensation.

What causes bubbles to form in sealers that appear bubble-free at the time of application? Bubble formation can be the result of several factors:

- **Fast Solvent Evaporation** – Low-VOC solvents evaporate quickly at the surface. Characterized by immediate bubble formation as trapped solvent cannot evaporate into the atmosphere.
- **Outgassing** – Concrete surfaces contain many capillaries and pores. As air in these void structures warms, it expands. Sealer that is still in a pliable phase can "blow a bubble" under this pressure/expansion. Outgassing is most common in deep recesses and joints.
- **Over-Application** – If the wet coating is too thick, it will trap solvent as the surface skins over.
- **Solar Energy** – No surprise here... a surface is warmer in the sunlight, increasing bubble formation.
- **Air Movement** – Interestingly, a brisk wind can skin over a sealer faster than high temperatures, trapping solvent beneath the surface.
- **Solvent Entrapment** – Entrapped solvents cause the sealer to remain pliable for extended periods, making it more susceptible to delayed bubble formation. Resealed concrete is more prone to solvent entrapment due to additional coating thickness.
- **Decorative Sealers Reapplied When the Gloss has Diminished, Not When the Sealer is Gone** –

Solvent that keeps new sealer liquid also re-dissolves old sealer, introducing solvent deeper into the coating where it becomes trapped.

- **Entrapped Air** – Vigorous rolling, particularly when re-sealing, can entrap air into the sealer.

Bubble formation is far more common in states and provinces with low-VOC limits because of the use of rapidly-evaporating solvents. As a result, many manufacturers' instructions restrict use of low-VOC sealers to the coolest times of the day (early morning and later evening), and out of direct sunlight. Although these instructions are marginally effective, they're not very realistic for most contractors who work throughout the day when the sun is likely shining. It's no wonder contractors are frustrated.

To make matters worse, restoration of user-friendliness to low-VOC sealers is not easy in this day of solvent regulation. Manufacturers are limited to a short list of VOC-exempt solvents dictated to them by government agencies. Many contractors have bounced around from product to product, manufacturer to manufacturer, without satisfaction. Finally, the time has come to solve the bubble issue for low-VOC sealers!



Tech Tips: Use ChemMasters' Bubble-Resistant Sealers

ChemMasters has introduced two new, low-VOC, non-yellowing products that are specially formulated to be bubble-resistant. Polyseal™ EZ is a bubble-resistant cure & seal available at a price that is competitive to most low-VOC products currently on the market. Stamped & Decorative Concrete Sealer 400-A is a high performance, premium sealer. Both are designed to be bubble-resistant, even during midday heat and direct sunlight.

If you have bubble problems when working with stamped concrete, keep the following tips in mind:

1. Use ChemMasters' specially formulated, bubble-resistant products like Polyseal EZ



Polyseal™ EZ Cure & Seal

A low-VOC cure & seal with impressive hot weather performance. Specially formulated to be bubble-resistant and slow-evaporating in direct sunlight and middle-of-the-day heat.

Provides excellent cosmetics for decorative applications such as exposed aggregate and stamped concrete. Also provides high quality curing, sealing and dust-proofing for broom finished concrete.

and Stamped & Decorative Concrete Sealer 400-A. They let you work all day, in elevated temperatures and direct sunlight.

2. Thin to win! Don't over apply sealer which may trap solvents and form bubbles. Adhere to the manufacturer's recommendations.
3. If necessary, apply two thin coats instead of one thick coat.
4. Be careful when re-sealing. Don't apply sealer so often that the coating becomes too thick. (You may want to restore the finish with ChemMasters' Gloss Restorer™ SRT)
5. Brush out your joints. Outgassing will occur where excess sealer accumulates, forming bubbles in the coating.
6. Roll gently so as not to entrap air in the coating.



Stamped & Decorative Concrete Sealer 400-A

Specially formulated as a non-bubbling, slow-evaporating sealer for stamped and decorative concrete in low-VOC states. Provides 200-300% longer working time during application, is less prone to blushing or whitening from over-application, with no residual bubbles in the coating.



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