REPORT

Protec III LSF with Acrylic Membrane

Understanding More About: Membrane Cure, Hardener & Densifier

Protec III LSF with acrylic membrane is two products in one and works on two different levels. First the acrylic component is integral to ensuring that new power trowel surfaces are cured properly. Protec III LSF with Acrylic Membrane is the only hardener and densifier on the market that meets ASTM C309, the rest are considered curing aids. What usually happens when using the typical liquid hardener is that you will end up with plastic shrinkage cracking on the surface of the concrete, which lessens the integrity of the concrete surface, this can even happen with the product Protec III Chem Rx. This is the main reason Cornerstone Coatings spent over three years designing and field testing Protec III with Acrylic Membrane. When using Protec III with Acrylic Membrane, plastic shrinkage cracking of the surface is virtually eliminated, increasing the durability of the concrete surface, as where a standard liquid hardener will not prevent these problems.

On the second level the hardening and densifying component of Protec III with Acrylic Membrane is one of the smallest on the market (0.001 microns) and penetrates and chemically reacts with the weak bonds in the concrete surface, these weak bonds are called calcium hydroxide or free lime. These weak bonds make up 25% of the concrete paste. When this reaction is complete the weak bonds are now turned into strong bonds called tri-calcium silicate crystals. The result is a dust free, hardened concrete surface.

Very Easy To Apply

Applying Protec III with Acrylic Membrane is the easiest product to apply. Spray the product down at 300ft^2/gallon (7.4 m^2/litre) and walk away, you are done. There is no scrubbing and no wetting down with water and scrubbing the floor again, like you find when applying the

typical liquid hardener. What applicators tend to notice when using other liquid hardeners is when they apply the product at the recommended rate, they will also have to scrub and wet down the concrete with water and then still have to squeegy the excess product off and dispose of the remaining residue. This residue is considered hazardous waste by the industry and has to be disposed of according to local regulations, which does not include dumping on the ground or washing down the drain.
Note: Protec III Chem RX has a very small molecular size that does not need to be scrubbed and wet down with water, simply apply and roll out any puddles that form.

The one draw back of Protec III with Acrylic Membrane is that when the product is applied in high wind conditions it dries out too fast. We feel in these conditions, the product is not as effective as it should be and therefore isn't recommended in high wind environments.

What To Expect When The Floor Is In Use

When the floor has been treated with Protec III with Acrylic Membrane and is now in use, the acrylic component does wear away over time, how fast it wears away depends on the amount of use on the floor. The acrylic component is a high-end resin and is resistant to hot tire pick up during this time. As the acrylic is worn away, the hardener component is polished by this same wearing process leaving the floor with a even shine. Sometimes it can be hard to see where the acrylic ends and the bare concrete starts, unless it is closely inspected.

What Is Happening To Dry Shake Hardeners

Protec III LSF with Acrylic Membrane is compatible with dry shake hardeners and is highly recommended over dry shake hardeners. Using Protec III LSF with Acrylic Membrane will not guarantee that the dry shake hardener will not delaminate, but will greatly reduce delaminations of dry shake hardeners. With all the changes in the concrete industry in the last number of years, dry shake hardeners are having a lot of problems with their ability to be effective with today's mix designs.

The Incompatibility of Dry Shake Hardeners and Today's Mix Designs

Dry shake hardeners are typically made up of aggregates, integral color, portland cement and some incorporate plasticizers. In today's concrete mix designs, the need for water reducers is what is causing the problems for dry shake hardeners, they need water to work. When there is not enough water for dry shake hardeners, two typical problems happen. The first is the inability to pound in the specified amount of dry shake hardener into the concrete surface, and the second is not having a proper reaction needed to make the dry shake hardener work properly. Concrete companies do not make their mix designs thinking, what would be best for the dry shake hardener industry. The dry shake hardener industry is one of the fastest changing industries we've seen in the last 19 years, as far as a product being discontinued. Today, the number of manufactures of dry shake hardeners has decreased dramatically. In the last two years most distributors will not sell dry shake hardeners and it is predicted in the next 5 to 10 years that the dry shake hardener industry will be virtually non-existent.

Conclusion - Liquid Hardeners Are Filling the Void

Liquid hardeners are filling this void in the market with mixed results. The key to a good liquid hardener and densifier is the ability to penetrate the concrete surface. All liquid hardeners have to penetrate the concrete surface to work and be effective. This is where Protec III LSF with Acrylic Membrane excels in the market place and is leading the way in the hardening and densifying of concrete.