

FluorGen Etch w/Primer / F-12

Description & Definition:

The definition of FluorGen is a micro generator of HF acid in situ or at the very surface of the concrete substrate. No fluorine or HF acid is macro generated or evaporated into the air so that it will affect the applicators in any way. The reaction is only carried out at the surface of the porous substrate and only when it makes contact with the calcium, calcium silicate, lime, aggregate and the silica of the concrete or the respective aggregate. Its primary feature is that it reacts within 3 to 15 seconds with only ammonia being the obvious by product of the reaction. It also reacts with and bonds to the aggregate materials, which other acid etching solutions cannot do. Unlike other etching systems that require the soaking of the concrete with hydrochloride, hydrofluoric, malonic, nitric and sulfuric acids and mixtures of the latter, Etch Prime does not soak the surface of the concrete. It only wets the surface to do its job of priming the concrete and its respective aggregate. It will etch even the organic fiber that may be present within the concrete mixture. In short, there is no acid present until the Etch Prime makes contact with the substrate's surface and then it is there for only a few seconds. Etch Prime is used at 600 square feet per gallon on old and very porous concrete and 1000 square feet on smooth and non-porous concrete. The surface is never soaked so the substrate never has to be rinsed or neutralized as the Etch Prime automatically adjusts the pH back up to 8.5 or higher in the reaction process. There is never excess acid in liquid form such as there is with other liquid acid etching systems which can be a hazard to the applicator. All contractors in the field who have used Etch Prime prefer it to any other method known.

Neutralization: FluorGen neutralizes the surface so that it is at the correct pH for most polymers such as epoxy, urethane, acrylics, AUS, polymeric or non-polymeric overlay. The Etch Prime prepares a substrate even for primers that are usually used for high production industrial floors that must handle heavy forklift traffic or truck traffic on highways. Our tests indicate quite clearly from extensive testing by third party that the adhesion runs 450 psi to 650 psi consistently. In some instances, value as high as 1000 psi was obtained. Conventional etching with the acid systems was 350 psi to 425 psi at best. These other acid systems provided no substrate improvement in floor integrity. The Etch Prime however etched all components of the concrete mixture with ease and densified the concrete substrate improving the concrete substrate internally. Concrete cohesion failures consistently occurred at greater depths with Etch Prime, indicating that greater energy was required to achieve failure, failure was in the concrete, not the coating bond line, and the concrete at the surface was strengthened by the treatment with Etch Prime. No etch product has ever done this in the market place. Therefore, the Etch Prime process promotes the polishing of concrete for all available polishing products. Etch Prime is the precursor for all substrate preparation whether polymeric coating, polishing or the overlay. Etch Prime is a necessary part of any patch for airport, highway or warehouse.

Cleaning the Concrete Surface: Understand before FluorGen is applied the concrete must be clean and free of any and all contaminants, like dirt, oils, coatings, silicone and all hardening products. If this condition cannot be satisfied by chemical cleaning, then grinding the surface will be necessary.

Advantages of the FluorGen Reaction

- ⇒ Etch Prime dehydrates the surface of the concrete.
- ⇒ The Etch Prime forms a synergism with the concrete and its own etching compound.
- ⇒ The Etch Prime makes a continuous film that is a breathable, permeable to porous concrete for gases but not liquids.
- ⇒ Subsequent coatings bond chemically to Etch Prime's densified composite surface.
- ⇒ Etch Prime's processes take only 15 seconds and total dry time about 20 to 45 minutes with normal floor temperature.

Summary: Acid-Less Etching Process for Concrete

Etch Prime has now created both a mechanical bond and a chemical bond between the concrete, the primer phase and subsequent reactive coatings (all common types except MMA). So the Etch Prime has become part of the concrete matrix by densification. While the primer part of Etch Prime is an actively functional species which reacts thoroughly with the next coating layer (reactive epoxies, urethanes, acrylics and silicones). The reaction between the primer part and the next coating layer is the same reaction that a properly designed hardener has with an epoxy or urethane resin system.

Floor Installers Comments on using FluorGen over the past few years,

- ◇ I would not have ever believed it, if I hadn't watch it being applied and how it reacts in the field. Now after I grind a floor and spray FluorGen down around 1,000 per gallon and wait 5 minutes. If any thing is still wet after 4 to 5 minutes that tell me some contaminant is still present, so I grind some more then spray again. I have used FluorGen for two years and not had one inch of any floor come up. Nashville, TN
- ◇ What sold me was a project where we couldn't grind or acid etch or heat the floor with a torch. We light scrubbed, rinsed and vacuumed dried. Then applied FluorGen allowed for it to dry and then applied a 3/16 SL Cement Urethane with no warranty. I gave the system 30 days or less. It's been 2-1/2 years and did I mention it was in a cooler! Atlanta, GA
- ◇ I use FluorGen even after I acid etch with hydrofluoric acid, shot blast or diamond grind a floor. You can not buy insurance for 5¢ per square foot. No Failures yet! Louisville, KY

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