

ICT PS1 and PS1-LS Application Guide



Introduction

The ICT PS1 and PS1-LS Sealing Systems are hybrid concrete sealers, combining the benefits of reactive penetrating sealing technology and a micro-coating technology into a single product. These sealers provide excellent stain and abrasion resistance, requiring minimal maintenance for years of quality use and abuse. PS1 has a high sheen finish while PS1-LS has a low sheen finish.

The conditions where PS1 and PS1-LS will be used are as varied as the number of people who will use them. This guide provides information about how to apply these sealers, but we fully expect them to respond differently to all of the varied conditions they will face. We always recommend a small-scale test to determine suitability.

Concrete Surface Preparation

Preparing the concrete surface before sealing is an important first step to ensure success with any sealer. The concrete must meet four conditions before starting with the sealer application:

- It should be used on a quality high performance concrete surface.
- It should be properly cured.
- It should be properly processed.
- It should be clean and dry.

Curing

Standard practice is to allow the concrete to cure for 5-7 days after casting, adhering to good concrete curing practices. This ensures the cement matrix is maturing and the internal moisture levels have been reduced to low levels. For some concrete mixes this happens in a few days, for others it will take longer; you will need to set the time between casting and sealing based on the habits of the concrete you are working with. With Buddy Rhodes mixes, 5 days following casting is a good start, although more time should be given during cooler periods, and more time is always better if you have time to give.

Processing

The surface of the bare concrete should be processed to a visually matte finish, with a profile, or "tooth," prior to sealing. This ensures the sealer develops a good mechanical bond with the surface. The rougher the surface is, the better the sealer will adhere. Profiling also removes residual material or contaminants that would interfere with forming a good bond. Wax and form release agents routinely transfer to the surface of the concrete during casting, and these must be removed before sealing.

There are several ways to profile concrete surfaces. Acid Etching, Wet Sanding and Dry Sanding are three good options, described below.

Acid Etching: Acid etching provides a "tooth" for the sealer and dissolves any weak material in the substrate that may prohibit sealer from fully penetrating and adhering. Etching is most often performed on cream finishes, or concrete that's left untouched after it is demolded. Keep in mind acid etching mainly affects the cement paste, and will not change the surface of exposed glass, tile, or exposed stone such as quartz or granite. Etching may not entirely remove surface residue like wax or form release agents. For that we recommend light scrubbing with a non-woven abrasive pad. Muriatic acid substitutes are not recommended with ICT reactive sealers. These types of acids can cause inconsistent reactions with the sealer. After acid etching, rinse well with clean water to remove any acid residue.

Wet Polishing or Sanding: A popular and easy way to lightly work the surface without exposing sand grains is to hand-sand the surface using Buddy Rhodes hand pads. Use a 400-grit hand pad, as coarser grit can leave scratches and can be too aggressive. The hand pads should always be used wet to prevent scratching the concrete surface. Whenever possible use circular motions to minimize linear scratching patterns that may detract from the appearance. They're a great way to remove surface residue and to lightly smooth the concrete's surface. A wet-sanded surface can be etched to further enhance the microscopic tooth. When polishing a larger area or to remove material faster and efficiently, a pneumatic or electric polisher could be used.

Dry Sanding: A method of opening the surface of the concrete or smoothing the surface of the concrete with processing methods that do not depend on the use of water. These methods may include using the Buddy Rhodes hand pads dry (but always be careful of harsh scratches that may occur while using them dry) or using mechanical equipment such as orbital sanders or rotary polishers with dry diamonds pads. All tooling should be attached to vacuum equipment to control any dust that may occur during the surface processing. Using sandpaper dry is really only effective in removing bone paste, and the paper should be changed frequently as used paper may burnish the surrounding area.

Cleaning & Drying

The concrete surface should be cleaned after it has been profiled, since etching or sanding concrete creates very fine residue that must be removed before sealing. Non-woven abrasive pads can be used to remove the fine residue. Rinse well with clean water and wipe dry. After cleaning, allow the concrete to fully dry prior to applying sealer. Dry concrete lets the sealer penetrate into the concrete, whereas wet, damp or barely dry concrete does not. A good rule of thumb is to wait a minimum of 12 hours for the concrete to dry following total saturation. Cooler shop temperatures will slow evaporation, so if the temperature is below 70°F/21°C, give the concrete more time to dry out. When in doubt, wait 24 hours.

Environment

ICT PS1 and PS1-LS are reactive sealers that benefit from warm concrete conditions. Ideal temperatures for sealer application are between 70°F-95°F (21°C-35°C). Temperatures below 70°F will slow down evaporation and the cure time of the sealer. Temperatures above 95°F will increase the chance of the sealer flashing off too quickly, usually resulting in application marks.

Moisture and humidity also play an important role with these sealers. Because they are diluted with water, it's important that the moisture from the Priming and Finish applications dry out between applications. The sealer won't begin to fully crosslink (cure) until the water that's in the freshly applied sealer has evaporated. Higher humidity will slow the cure time.

Tools and Materials Required for Sealer Application

- Small Trigger Spray Bottles
- Microfiber Sponges
- Microfiber Cloth
- Clean Water
- Timer

ICT PS1 and PS1-LS Application Stages

Stage 1 requires multiple Primer Applications using diluted PS1 or PS1-LS.

Stage 2 requires multiple Finish Applications using undiluted PS1 or PS1-LS.

Stage 3 requires an application of Clean and Set.

Stage 1: Primer Applications

First Primer Application Technique: Begin by preparing a mixture of 1 part PS1 or PS1-LS to 1 part Water. Dampen a microfiber sponge with clean water. Pour some of the PS1 + Water mixture onto the surface of the concrete. Using the damp microfiber sponge, spread the mixture across the entire surface until it is fully covered with a clear film of sealer. Load the mixture into a spray bottle. Continue to spray and wipe the mixture onto the surface, maintaining an even, thin film for 10 minutes. Ensure the sealer does not puddle or dry out. Allow the first primer application to dry for 30 minutes. Rinse the applicator sponge with clean water.

Second Primer Application Technique: Dampen a microfiber sponge with clean water. Lightly spray a thin coat of the PS1 + Water mixture onto the sponge and the concrete surface. Wipe the mixture over the concrete surface to achieve a thin, evenly wet film of sealer. Keep the surface wet for 7 minutes. Allow the second primer application to dry for 30 minutes. Rinse the applicator sponge with clean water.

Optional Additional Primer Application Technique: Apply full strength PS1 for 1 to 2 applications, keeping the surface wet for about 1 minute. Continuous wiping helps work the sealer into the surface and into any pinholes that may remain. Allow 30 minutes of dry time between applications.

Wait at least 2 hours before proceeding with the finish applications. Remember that by priming you are adding water into the concrete. PS1, like many sealers, must dry in order for it to begin cross-linking, which is critical for achieving the stain and scratch resistance it offers. Moisture in the concrete, and moisture in previous coats of sealer will slow curing, as will cold and damp shops. Good practice is to be patient and wait longer.

Stage 2: Finish Applications

Finish Application Technique: The finish is applied in methods similar to the primer, except each coat of finish needs to be kept wet for only about 1 minute. This is because the finish does not need to soak in like the primer. Load full strength PS1 or PS1-LS into a spray bottle. Dampen a microfiber sponge with clean water. Lightly spray a thin coat of PS1 onto the sponge and the concrete surface. Wipe the PS1 over the concrete surface to achieve a thin, evenly wet film of sealer. Keep the surface wet for 1 minute. Allow the finish application to dry for 30 minutes. Repeat these steps for up to 4 finish applications.

The number of finish applications depends on the stain resistance required for a project. This usually ranges from 1 to no more than 4 applications: 1 application for surfaces that will see average use from expected staining agents, 4 applications for surfaces that will see high use and exposure (commercial kitchens, for example). Be aware that more than 4 applications builds up layers that slow the overall cure of the sealer system. This can ultimately lower the performance of the sealer.

Tip: If excess material needs to be removed from the surface, first squeeze out the microfiber sponge, then even out the excess sealer that remains on the concrete.

Stage 3: Clean and Set Application

Allow freshly applied Primer and Finish Applications to cure for a minimum of 2 hours before proceeding to the Clean and Set Application. Applying Clean and Set activates the early water repellency, hardness, and scratch resistance of the freshly sealed surfaces.

Clean and Set Wipe Down Surface Technique: Dampen a paper towel with Clean and Set. Evenly wipe the damp towel over all sealer surfaces. Allow the vapor residue to dry on the surface. After the residue has dried, use a clean cloth and water to wipe down surfaces, removing any Clean and Set residue.

Important Note:

For several weeks after applying the sealer you may notice the concrete darken in the areas where water and things are left on the surface. This is normal as the cross linking of the sealer continues. Darkening of the surface is not an indication that the sealer is not working. In fact it is a normal reaction as the sealer continues to cure.

Care and Maintenance

- Wipe up spills as they occur.
- Clean regularly with recommended non-abrasive cleaners such as Clorox Kitchen Cleaner or Windex Vinegar Multi-Surface Cleaner
- Soft abrasive cleaning sponges can be used such as Scotch-Brite Non-Scratch Scrub Sponges
- Never used a sealed countertop as a cutting board.
- Always use coasters or felt pads below anything with sharp edges.
- Avoid leaving potted plants or objects that will maintain wet contact in one spot with the counters for extended periods of time.
- Reapplication of sealer is recommend every 5-10 years...no stripping required.



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