Product Information Sheet

March 1, 2013

PSC System 25xx Densifer / Hardener
Components 2510 Clear Basecoat
2511 Repellant

PSC System 25xx is a proprietary water-soluble inorganic silicate based compound that deeply penetrates concrete surfaces to seal, densify, harden and waterproof them. It can be applied 7 to 10 days after the concrete has been poured; it is odorless and easy to apply. PSC 25xx Basecoats contain lithium.

Through a chemical reaction process PSC System 25xx develops internal bonds which densify the concrete substrate into a hard, chemically cured homogenous concrete mass that resists abrasion, contamination of various liquids (petroleum etc.) and water. This chemical reaction in concrete begins immediately after application and continues through the next six months.

The molecular structure of the components of PSC System 25xx is perfectly adjusted to allow it to densify and harden the concrete while at the same time allowing the surface of the concrete to breathe, thus permitting moisture vapor to transmit naturally into the air.

PSC System 25xx is safe to use, it's odorless, VOC compliant formula permits its use in occupied areas without concern, and it can be applied in the proximity of foodstuffs. The deeply penetrating chemical action leaves no film and will not change the natural non-slip texture of the concrete floor.

PSC System 25xx is an economical alternative for concrete substrates, it will not yellow, chip, peel or show unsightly wear patterns with use; there will not be any tire marks. The more the floor treated with PSC System 25xx is used and the older the treated surface gets, the better it will look.

PSC System 25xx can be applied approximately 7 days following final finishing operation of the new concrete surface after all surface water has evaporated and the concrete surface is hard. There is no need for an acrylic or resin curing compound or sealer.

PSC System 25xx is approved by CFIA (Canadian Food Inspection Agency) for use in Registered Establishments handling and processing food stuffs.

PSC 2511 is clear water based penetrating sealer to be used as a topcoat for PSC System 25xx. It repels the intrusion of water, salts, food acids, oil and deicer salts into concrete substrates. It can be applied with a low pressure or airless sprayer followed by backrolling with a ¼ "nap roller.

Uses
- New or existing concrete, interior or exterior.
- Concrete floors, pavements, loading docks and decks.
- Renovation of aged concrete.
- Warehouses, distribution centers, manufacturing plants.
- Meat and poultry processing plants.
- Educational, medical, utility, public and multi-residential buildings.

Advantages
- Meets VOC and Leeds requirements.
- Efficient, saves on labor.
- Can be used on new or old floors.
- Maximum penetration properties to support the contractor for quick turnaround time.
- Stops dirt penetration.
- Resistant to water, industrial chemicals, oils and food stains.
- Protects floor during construction.
- Water based, no VOC (2511 Repellant has a VOC content of 5%)
- Odorless, no fumes.
- Extends the life of the floor.
- Virtually no maintenance.

- Increases reflectivity of the floor.
- Allows for application of safety lines, company logos etc.
- 2511 repellant topcoat not only resists, but repels water and certain liquids.
- PSC epoxies, 2100, 2102, 2300, 2301, 2302, 2304 and 2306 can be used for safety line and company logo applications.

PSC System 25xx is designed to

- Seal and protect concrete from spillage.
- Protect concrete from animal fats and acids.
- Harden and dustproof concrete surfaces.
- Resists water and oil penetration.
- Allow concrete to breathe.
- Minimize shrinkage and cracking.

How does PSC System 25xx perform?

- It penetrates deeply and reacts chemically with calcium ions in the concrete thus reducing the porosity of the concrete substrate.
- Treated floors become permanently hardened within a few weeks and develop an easy to clean, low to medium sheen. Substrates can be burnished to produce a high sheen. Concrete will continue to harden for the next 180 days.

General data

- Type : Proprietary alkali silicate.
- Specific gravity : 1.15 to 1.2
- VOC : 0 (PSC 2511 Repellant contains 5% VOC)
- Solids : Basecoat 25%
  2511 Repellant topcoat 12 %
- Flash point : None
- Appearance : 2510 Clear, 2511 Clear
- Odor : Odorless
- Solubility : Water-soluble
- Shelf-life : Typically 1 year when stored in unopened containers under normal conditions.
- Storage : Store at temperatures above 5 C (41 F) and below 35 C (95 F). Do not allow to freeze.

Coverage

PSC 2510 Clear 250 to 400 sq. ft. / gallon (6.15 m2 / L to 7.8 m2 / L). PSC 2511 Repellant topcoat, 400 to 600 sq. ft. / gallon (9.8 m2 / L to 14.75 m2 / L).

Coverage will vary according to porosity and texture of the substrate.

Preliminary substrate inspection and surface preparation

New concrete

Freshly finished concrete surfaces, minimum 7 days old, require no surface preparation if PSC System 25xx components are applied after the final finishing operation instead of a resin or acrylic curing compound. On areas where forms have been recently removed, all form oil or breaking compound residue must be removed.

Existing concrete

To remove all dust and dirt, sweep all areas to be treated with a fine bristle broom or hose off with water and let stand until completely dry. The surface must be free from all contaminates which could inhibit the penetration of PSC System 25xx components into the pores of the concrete. Any curing or coating agents, residue, oil, contaminants and laitance must be chemically or mechanically removed before the components of PSC System 25xx are applied. Contaminants may be removed by scrubbing with PSC 0100 Cleaner Degreaser, followed by thoroughly rinsing and scrubbing with clean water.

Grinding

If grinding is required in order to remove contaminants from the floor, grind with 40 or 70 grit bond diamonds using a rotary planetary floor grinding machine. If grinding dry, the machine should be equipped with a dust collection system. Continue grinding in a cross hatch pattern with 400, 800 or 1500 (as needed) grit electroplated diamonds removing all scratches from the previous grit by grinding the substrate within 1 to 3 inches from the wall. Finish with grit 3000 if required. Vacuum the substrate thoroughly using a wet/dry vacuum after each grind.

Surface absorbance test

Test for absorbance by applying water to the prepared substrate. The substrate should immediately absorb clean water without any surface beading effect.

Application of sulfamic acid (only if absorbance test fails)

If the absorbance test fails, apply diluted sulfamic acid at an approximate rate of 100 sq. ft. per gallon (up to 150 sq. ft. / gallon for smooth, prepared surfaces) using a mop or plastic sprayer. Scrub it in with an acid resistant brush and let the material foam as reaction with efflorescence occurs. Neutralize with a solution of baking soda (1lb of baking soda to 5 gallons of water) using a hand sprayer to the treated surface to neutralize acid.

Rinse all salts and residual acid thoroughly with clean water and allow the surface to dry. Excess water can be removed with a vacuum. Repeat neutralizing and rinsing procedures until floor no longer reacts to neutralizing solution.

Perform pH testing. After acid etching has been applied and neutralized, and prior to application of PSC System 25xx, test for pH on the slab in order to determine if any residual acid etch is present.

- Dampen a section of the slab with approx. 1/2 pint (100ml.) of water (distilled water) and wait 5 minutes.
- Apply a pH test paper strip on the wet slab.
- pH value must be between 9 and 11, medium green, on the test strip. If value is below this, light green to yellow or below, repeat neutralization until proper results are achieved. Pay attention that not all strips use the same color scheme.

Application

General

PSC System 25xx is not a film forming system, but should fully saturate the concrete for maximum effect. Perform enough applications for PSC System 25xx to saturate (but not puddle) the concrete.

New concrete (min. 7 days old)

The product must be mixed in the container for 2 to 3 minutes. Spray undiluted PSC 2510 on the concrete surface with a low pressure sprayer following final preparation operation and after all surface water has evaporated. For dense floors PSC 2510 can be diluted at a ratio of 1 part water to 4 parts of PSC 2510. Apply PSC 2510 to the entire area at approx. 300 to 400 sq. ft. / USG. Keep the entire surface wet for 30 minutes by spraying PSC 2510 or by broom move excess materials from low spots to saturate dry spots. Keep PSC 2510 from drying for a full 30 minutes.

As PSC 2510 begins to penetrate into the surface, lightly sprinkle the surface with water to aid penetration.

As PSC 2510 begins to dry second time, flush the surface with water and squeegee the surface to remove any excess material and other impurities that were brought to the surface.

Normally, one coat is all that is required; however, depending on the texture and porosity, a second application may be required. The second application can be installed 2 to 4 hours following the first and is recommended to assure maximum densification and protection from contaminant penetration. Each application must penetrate thoroughly before proceeding with next. After drying for 45 to 60 minutes, squeegee or vacuum up excess material. If all of the material has been absorbed, let the concrete dry.

To produce a liquid repellant substrate, apply PSC 2511 Repellant as instructed.

The surface must be burnished with a floor buffing machine using a black stripping pad.

Broom or rough finished concrete surfaces

Follow the basic application methods as described above. Move excess materials with broom instead of squeegee for newly placed concrete. Rough finished concrete will absorb PSC 2510 quickly. After 30 minutes, final flushing with water may not be necessary unless puddles of PSC 2510 remain on the surface. Do not let unabsorbed material stay on the surface.

Attention

To ensure full penetration of PSC 2510, all treated surfaces must remain wet for a minimum of 30 minutes. Failure to remove all excess material from floor surfaces may result in unsightly white stains.

Existing concrete (28 days plus)

Mix the product in the container for 2 to 3 minutes. Saturate the surface with undiluted PSC 2510 by sprayer, squeegee or broom. If dry spots appear, move excess material onto them or re-spray them immediately so that entire surface is wet with PSC 2510 for a minimum of 30 minutes.

If after 30 to 40 minutes most of PSC 2510 is absorbed into the surface, broom or squeegee any excess material from the low spots so it may be absorbed into the surface or completely removed from the surface. Flush floor clean with water.

In order to produce “diamond sheen” on the floor, mechanical means may be used at this stage as an alternative. Use a floor polishing machine with a non aggressive pad to help work PSC 2510 into fully cured concrete during application. To produce a liquid repellant substrate, apply PSC 2511 as instructed.

The substrate must be burnished with a floor buffing machine using a black stripping pad.

Polishing and grinding for exposed aggregate look.

After the application of PSC 2510 is completed, the floor can be wet diamond polished with electroplated diamond grits, using the technique as described in the section 'Grinding". Use grit 800 for low sheen, grit 1500 for medium sheen and grit 3000 for high sheen. If the last grit from grind was 400, for polishing low sheen use 800, if the last grit for grind was 600, for polishing use 1500 and so on, when polishing the first grit level must be two times above the grit used at the end of grinding. After each pass use clean water and mop or wet vacuum to clean the substrate thoroughly.

PSC 2511 Repellant

After above procedures have been completed, a final coat of PSC 2511 is applied. Apply with an airless sprayer and backroll with ¼" nap roller.

Apply PSC 2511 Repellant in multiple, thin coats, so that the substrate remains wet for a few minutes before penetrating into concrete. Apply at a rate of 300 to 600 sq. ft. / gallon. All surface pools and puddles must be leveled from low spots to higher with broom or squeegee until they completely penetrate into the surface. Apply additional light coats until the material is no more absorbed into the concrete.

After the substrate has dried, this usually takes approx 12 to 24 hours; the substrate must be burnished with a floor buffing machine equipped with black stripping pad in order to remove excess 2511 Repellant from the surface. If the substrate is not burnished, excess material may leave black spots. Full repellency will take approx. 2 days to develop.

Safety lines

PSC water based epoxies, 2100 WB EpoxyPrime and PSC 2102 WB EpoxyCoat, can be applied for safety lines on the concrete before the substrate is treated with PSC System 2510. The concrete must have cured a minimum of 10 days before applying 2100 or 2102. PSC 100 % solid epoxies can be used for safety lines as well; however, minimum cure of concrete for applications with 100 % solid epoxies is 28 days.

First apply the safety lines according to PSC specifications and specifyers blueprints. Let the epoxy cure, and then apply PSC System 2510 over the whole substrate to be treated including the safety lines and with a cotton rag wipe the material, PSC 2510, off from the safety lines.

Company logos, pictures, text etc. can be applied on the substrate using the same technique as described above.

Drying time

The components of PSC 2510 penetrate into concrete in approximately 30 to 60 minutes per application, this depending somewhat by temperature, humidity and job conditions. Each application must penetrate fully before proceeding with next.

A floor treated with PSC 2510 must be completely dry before accepting traffic. Allow 24 hours before subjecting to heavy traffic. If using 2511 Repellant as topcoat, allow 48 hours to dry before allowing heavy traffic.

How to get best performance

- Always mix the product in the container before application.
- Do not apply at temperatures below +5 C (41 F) or above +35 (95 F).
- Protect from freezing.
- Install joint sealants prior to application of PSC 2510. If this is not possible, test first for adhesion.
- Spray application will yield best results.
- In order to produce "diamond sheen", use a mechanical polishing machine between coats or following application.
- Application method and concrete porosity will affect final appearance of PSC 2510. White residue signifies too strong a mix or the surface reaching maximum hardness. The surface should be flushed with clean warm water, swept with a stiff bristle broom, and then allowed to dry. If any further applications remain, a dilution may be required to avoid the same problem.
- Protect metal, glass and brick from coming into contact with PSC 2510. If accidentally applied to these surfaces, wash them with clean water within 30 minutes.
- For subsequent coating applications, consult Polymer Science Corporation's technical service.
- For use over PSC 26xx Overlays, consult Polymer Science Corporations area management or technical service.
- One application of PSC 2510 is usually enough. Repeat applications will ensure complete densification of concrete surface.

Limitations

PSC System 25xx is not a film forming product. Therefore it may not hide serious imperfections or excessive wear of the concrete substrate. For extremely porous, worn or stained concrete surfaces, various epoxy coatings or mortars manufactured by Polymer Science Corporation may be recommended. Contact Polymer Science Corporations area management for assistance.

Trouble shooting

Problem observed	Possible causes
PSC 25xx does not penetrate into concrete on the edges of the slab. Concrete curls up by the walls.	Release agent of forms has not been removed properly. PSC 25xx did not penetrate into edges of slab due to above.
Concrete curls up by the control joints.	Control joints were not properly sealed with joint filler.
PSC 25xx does not penetrate into patterned concrete or overlay.	Release agent of patterns has not been removed from the concrete or overlay surface.

Risks
PSC System 25xx contains alkaline silicate. Contact with skin or eyes may cause burns. Causes respiratory irritation. Ingestion may cause burns or other harms. Intentional misuse by deliberately inhaling the contents may be harmful or fatal.

Precautions
Keep out of the reach of children. Prevent contact with skin, eyes and clothing. Wash thoroughly after handling. Do not breathe vapors. Use only with adequate ventilation. Do not take internally. Use impervious gloves, eye protection and if used in poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with federal, provincial, state and local regulations. All label warnings must be observed until container is commercially cleaned or reconditioned.

First aid
In case of eye contact, flush thoroughly with water for at least 15 minutes. Seek immediate medical attention. In case of skin contact, wash affected areas with soap and water. If irritation persists, seek medical attention. If inhalation causes physical discomfort, move into an area of fresh air. If breathing discomfort persists or any breathing difficulty occurs or if swallowed, seek immediate medical attention.

Proposition 65
This product does not knowingly contain materials listed by the state of California as known to cause cancer and birth defects or other reproductive harm.

Packaging
- 5 USG Pail (18.93 L)
- 55 USG Drum (208 L)

Safety
We certify that PSC System 25xx is formulated without lead, mercury, asbestos and chromates.

Maintenance
Good housekeeping practices, such as regular and frequent mechanical scrubbing and polishing with non aggressive pads, washing, wet mopping and sweeping are to be followed in order to maximize densification and resulting polish of hard trowelled surfaces, as well as to assure maximum performance and life expectancy of PSC System 25xx treated surfaces.

Warranty Disclaimer
We guarantee our Products to conform to the specifications of Polymer Science Corporation. Polymer Science Corporation makes no warranty or guarantee, express or implied, including warranties of fitness for a particular purpose or merchantability, respecting its Products. Liability, if any, is limited to refund of purchase price or replacement of the Product. All consequential damages, labor and cost of labor are hereby excluded.

For orders and inquiries from Canada, US and Mexico, call toll free 1-866-793-3503, or fax your orders to PSC's customer service at 403-287-2766. In Colombia, call 313-598-2763.

Polymer Science Corporation develops and manufactures specialty chemicals, industrial and architectural coatings of highest quality. Ask the people who use them.