



## **STARSEAL PS CLEAR SYSTEMS** **INSTALLATION INSTRUCTIONS**

StarSeal PS Systems can be used successfully over new or existing standard or colored concrete. It also can be applied to shake on color applied concrete, and to acid stained concrete. To achieve the proper results, it is necessary to follow the instructions listed below with a great degree of accuracy.

**IMPORTANT:** Review and understand all instructions prior to commencing your project.

1. Do a test area(s) of 4'x4' prior to starting the installation. A test area is an important part of the successful installation of any Starseal PS system. By performing this test, the proper floor preparation, material application rates and system installation procedures will all be well defined in advance of the full installation.
2. Contact Vexcon for any questions of technical service need prior to installation at 1.888.VEXCON1.
3. Your client should approve the test area(s).

### **STARSEAL PS CLEAR:**

#### **Product: STARSEAL PS CLEAR**

##### **Application: Existing Concrete or Shake Applied Colored Hardener**

- 1.) Power sweep floor area, blow-out corners and column footings. Use sweeping compound to control airborne dust. Thoroughly clean the concrete surface, removing all coatings, dirt, oil and laitance with **Certi-Vex® Concrete Stripper**. To remove stains use **Certi-Vex Super Degreaser & Cleaner**. Detail scrub with high pH detergent. Double scrub floor with automatic scrubber capable minimum of 80 to 120 pounds of head pressure, equipped with black stripping pads. Use proper dilution of high pH detergent. Scrub floor once without squeegee or vacuum. On second pass, remove water solution. Detail scrub with high pH detergent. Power rinse surface removing all traces of soap residue. Remove all water and residue and inspect the surface. A mechanical grind followed with application of **Certi-Vex Concrete Etch & Efflorescence Remover** may be necessary to open the concrete surface pores. Perform a water absorbency test by applying water to a representative portion of the prepared concrete floor. A properly prepared surface, when dry, will immediately absorb clean water without any surface beading effects. See Certi-Vex Etch & Neutralization Section. If grinding/polishing, see Polishing Section.
- 2.) Apply a solution of **StarSeal PS Clear** diluted 1 part of clean water to 4 parts of StarSeal PS Clear to the surface with sprayer or applicator at 200-600 sq.ft./gal (5.0-7.5 m<sup>2</sup>/L) depending on porosity of concrete surface. For porous concrete floors do not dilute. See Coverage Section.
- 3.) After the material penetrates totally into the concrete reapply. Additional light coats may be required until the material no longer absorbs into the concrete.
- 4.) Do not allow the material to puddle. Spread out to an even coat as it absorbs into the concrete.
- 5.) If material starts to gel on the surface, rinse with clean water and broom out.
- 6.) If white film starts to form, rinse immediately since all of the absorption and initial reaction is complete.
- 7.) After letting the surface dry 45-60 minutes, rinse any areas that may be slightly slippery with water, or squeegee excess material from the surface. If all material has absorbed and no gel forms do not rinse.
- 8.) Let surface dry.
- 9.) Once dry, usually 4-5 hours after the last application of StarSeal PS Clear the surface may be burnished or if desired, diamond polished with appropriate polishing equipment to achieve the desired level of gloss. See Polishing Section.
- 10.) The floor can be used as soon as it is totally dry.

##### **Application: Freshly Placed Concrete**

- 1.) Apply **StarSeal PS Clear** at full strength to the concrete immediately after the final finishing and gauging water is absorbed, at 200-300 sq.ft./gal (5.0-7.5 m<sup>2</sup>/L) by sprayer or applicator. See Coverage Section.
- 2.) Keep the surface wet with StarSeal PS Clear by reapplying to dry spots, but do not puddle.
- 3.) If gel forms on the surface it should be rinsed with clean water to remove excess material and alkali. If a white film starts to form the material should be rinsed with clean water immediately.
- 4.) For maximum curing results the surface must be kept damp over 72 hours. It is important not to puddle water on the concrete, but only to keep it moist with a fine spray of water periodically (wet cure) or apply a plastic film. Apply burlap or curing blankets that are wetted to keep them moist must be applied over the surface to cure.
- 5.) Do not subject the floor to traffic until dry.
- 6.) After the 72-hour curing period, the surface may be burnished then if desired, diamond polish with appropriate polishing equipment to achieve the desired level of gloss. The surface must be free of all standing water and dry. See Polishing Section.
- 7.) The floor can be used as soon as it is totally dry.

## **STARSEAL PS CLEAR FSR:**

### **Products: STARSEAL PS CLEAR, STARSEAL FIXATIVE and STARSEAL FINISH COAT**

#### **Application: Existing Concrete or Shake Applied Colored Hardener**

- 1.) Power sweep floor area, blow-out corners and column footings. Use sweeping compound to control airborne dust. Thoroughly clean the concrete surface, removing all coatings, dirt, oil and laitance with **Certi-Vex® Concrete Stripper**. To remove stains use Vexcon **Certi-Vex® Super Degreaser & Cleaner**. Detail scrub with high pH detergent. Double scrub floor with automatic scrubber capable minimum of 80 to 120 pounds of head pressure, equipped with black stripping pads. Use proper dilution of high pH detergent. Scrub floor once without squeegee or vacuum. On second pass, remove water solution. Detail scrub with high pH detergent. Power rinse surface removing all traces of soap residue. Remove all water and residue and inspect the surface. A mechanical grind followed with application of **Certi-Vex® Concrete Etch & Efflorescence Remover** may be necessary to open the concrete surface pores. Perform a water absorbency test by applying water to a representative portion of the prepared concrete floor. A properly prepared surface, when dry, will immediately absorb clean water without any surface beading effects. See Certi-Vex Etch & Neutralization Section. If grinding/polishing, see Polishing Section.
- 2.) Apply a solution of StarSeal PS Clear diluted 1 part of clean water to 4 parts of StarSeal PS Clear to the surface with sprayer or applicator at 200-300 sq.ft./gal (5.0-7.5 m<sup>2</sup>/L) depending on porosity. For porous concrete floors do not dilute. See Coverage Section.
- 3.) After the material penetrates totally into the concrete reapply. Additional light coats may be required until the material no longer absorbs into the concrete.
- 4.) Do not allow the material to puddle. Spread out to an even coat as it absorbs into the concrete.
- 5.) If material starts to gel on the surface, rinse with clean water and broom out.
- 6.) If a white film starts to form, rinse immediately since all of the absorption and initial reaction is complete.
- 7.) After drying 45-60 minutes, rinse any areas that may be slightly slippery with water, or squeegee excess material. If all material has absorbed and no gel forms no rinsing is necessary.
- 8.) The surface must be burnished with a high speed burnisher or floor buffing machine equipped with a black stripping pad.
- 9.) Apply **StarSeal Fixative** by sprayer, roller or applicator @ 400-800 sq. ft/ gal. to the previously treated floor. Apply 12-24 hours after StarSeal PS application. Rinse off immediately after application. There must be a person or two with either a wet mop and clean water or a walk behind floor scrubber that has water in it and a squeegee immediately behind the person applying the Fixative. Do not allow the StarSeal Fixative to dry. If material dries the floor will turn white. If this occurs then rinse immediately with water and burnish with a black stripping pad. Rinse again with clean water and vacuum up water. If diamond polishing, polish to achieve the desired level of gloss 4-5 hours after application of StarSeal Fixative. See Polishing Section.
- 10.) **StarSeal PS Finish Coat** should not be diluted or altered. Apply with low-pressure (20-PSI) airless spray equipment, roller or lambs wool applicator. Sprayer should be fitted with solvent resistant hoses and gaskets. If using brushes or rollers care should be taken to ensure that enough solution is applied.
- 11.) StarSeal Finish Coat should be applied in light applications with sufficient material applied so that the surface remains wet for a few minutes before penetration into the concrete. See Coverage Section. Surface residues, pools and puddles should be broomed out thoroughly until they completely penetrate into the surface. Additional light coats may be required until the material no longer absorbs into the concrete. Do not over apply. IMPORTANT: After thorough drying, usually 12-24 hours depending on temperature and relative humidity, the floor must be burnished with a high speed burnisher or floor buffing machine equipped with a black stripping pad to remove excess Finish Coat from the surface. If not burnished the excess will black mark. Polish with a hogs hair or white pad for gloss.
- 12.) The floor can be used as soon as it is totally dry.

#### **Application: Freshly Placed Concrete**

- 1.) Apply **StarSeal PS Clear** at full strength to the concrete immediately after the final finishing and gauging water is absorbed, at 200-300 sq.ft./gal (5.0-7.5 m<sup>2</sup>/L) by sprayer or applicator. See Coverage Section.
- 2.) Keep the surface wet with StarSeal PS Clear by reapplying to dry spots, but do not puddle.
- 3.) If gel forms on the surface it should be rinsed with clean water to remove excess material and alkali. If a white film starts to form the material should be rinsed with clean water immediately.
- 4.) For maximum curing results the surface must be kept damp over 72 hours. It is important not to puddle water on the concrete, but only to keep it moist with a fine spray of water periodically or apply a plastic film. Apply burlap or curing blankets that are wetted to keep them moist must be applied over the surface to cure.
- 5.) Do not subject the floor to traffic until dry.
- 6.) After the 72-hour curing period, the surface must be burnished. The surface must be free of all standing water and dry.
- 7.) Apply **StarSeal Fixative** by sprayer, roller or applicator @ 400-600 sq. ft/ gal. to floor previously treated with StarSeal PS Clear. Apply 12-24 hours after StarSeal PS application. Rinse off immediately after application. There must be a person or two with either a wet mop and clean water or a walk behind floor scrubber that has water in it and a squeegee immediately behind the person applying the Fixative. Do not allow the StarSeal Fixative to dry. If material dries the floor will turn white. If this occurs then rinse immediately with water and burnish with a black stripping pad. Rinse again with clean water and vacuum up water. If diamond polishing, polish to achieve the desired level of gloss 4-5 hours after application of StarSeal Fixative. See Polishing Section.
- 8.) **StarSeal PS Finish Coat** should not be diluted or altered. Apply with low-pressure (20-PSI) airless spray equipment. Sprayer should be fitted with solvent resistant hoses and gaskets. If using brushes or rollers care should be taken to ensure that enough solution is applied.
- 9.) StarSeal PS Finish Coat should be applied in a single saturating application with sufficient material applied so that the surface remains wet for a few minutes before penetration into the concrete. See Coverage Section. Surface residues, pools and puddles should be broomed out thoroughly until they completely penetrate into the surface. Additional light coats may be required until the material no longer absorbs into the concrete. Do not over apply. IMPORTANT: After thorough drying the floor must be burnished with a high speed burnishing machine and a black stripping pad to remove excess Finish Coat from the surface. If not burnished the excess Finish Coat will black mark.

## **5. COVERAGE:**

Coverage rates vary based on texture and porosity of surfaces. The following is a guide for estimates only. Always perform a test area prior to installation.

Rough Finish	200-300 sq.ft./gal (5.0-7.5 m <sup>2</sup> /L)
Fine Broom Finish	300-400 sq.ft./gal (7.5-10 m <sup>2</sup> /L)
Hard Trowel Finish	500-600 sq.ft./gal (12-15 m <sup>2</sup> /L)

## **6. POLISHING:**

### **A. FINAL BURNISHING - STARSEAL PS CLEAR:**

1. To achieve a surface gloss apply a thin coat (600-700 sq.ft./gal) of StarSeal PS Clear. When the material has penetrated, but not dried, fit a polyester stripping pad to a high-speed buffing machine and run the machine over the floor to yield a gloss.
2. For a high gloss finish, **do not** apply the thin coat of StarSeal PS Clear, as described above until the floor has been prepared as follows:
  - a. Sand or polish the floor with medium carborundum sanding paper or diamond pad attached to the machine.
  - b. Sand or polish the floor with a fine carborundum sanding paper or diamond pad attached to the machine.

### **B. DIAMOND GRINDING/POLISHING: The steps below are intended as a guide only. Procedures will vary depending on the floors condition and overall desired appearance. In addition, floor grinding and polishing requires a great degree of experience in the proper use of this type of equipment. It is recommended that the installer who wishes to grind and polish concrete receive the proper training required prior to attempting this type of installation.**

- a. **MECHANICAL GRIND:** Prior to application of StarSeal PS Clear or StarSeal PS Clear FSR thoroughly clean the concrete by following the specific installation instructions contained in this document. Grind the floor starting with 80 grit or less diamond tooling. Pick up and remove all slurry. Continue grinding with a 120 grit followed by a 200 grit and finish with 400 grit. Pick up and remove all slurry. Inspect the floor which must be level and tested for absorbency as instructed prior to StarSeal PS application.
- b. Apply the StarSeal PS System following all installation instructions contained in this document.
- c. For high gloss polished floor, after the last application of StarSeal PS Clear,(Systems #1 & #3), or StarSeal Fixative in StarSeal Clear FSR System, diamond polish the floor with 600 to 1800 grit diamond tooling depending on the degree of gloss desired. Pick up and remove all residuals.
- d. Complete final StarSeal PS System installation as instructed in this document.

## **7. INSTRUCTIONS FOR INTEGRALLY COLORED CONCRETE:**

1. Clean the floor thoroughly as instructed for existing concrete contained in this document.
2. Dilute the StarSeal PS Clear with one part of clean water to four parts of StarSeal PS Clear.
3. Apply to surface with a sprayer or applicator at 300-400 sq. ft. per gallon.
4. The StarSeal PS Clear should penetrate evenly into the colored concrete with greater absorption into the more porous areas and less on the more dense areas. As soon as the porous areas absorb the material, and the denser areas start to gel slightly, rinse the StarSeal PS Clear off the floor with plenty of water and squeegee or vacuum up water. Repeat rinsing the surface with water until all excess material is removed.
5. Let floor dry.
6. Apply second coat using the same procedure as above. The object is to get material absorbed into the porous areas to even out the sheen without over applying to the more dense areas.
7. It is crucial not to let a heavy coating of StarSeal PS Clear dry on the colored floor. This can cause whitening. Follow instruction in #4 carefully.
8. Repeat until an even sheen develops.
9. Immediately after the last rinsing, while the floor is wet, burnish with a horse hair bristle brush on a waxing or buffing machine.
10. Continue following installation instructions for StarSeal Fixative and StarSeal PS Finish Coat contained in StarSeal PS Clear FSR Section of this document.

## **8. INSTRUCTIONS FOR ACID STAINED CONCRETE:**

1. Clean floor with detergent cleaner – rinse well with clean water. Do not acid etch previously acid stained floors.
2. Wash floor with a baking soda water solution of one pound baking soda, five gallons water. Follow neutralization procedures below.
3. Follow installation instructions for integrally colored concrete above.

## **9. APPLICATION OF Certi-Vex Concrete Etch & Efflorescence Remover & Neutralization:**

1. Perform all procedures in this section and if the results of water absorbency tests are not satisfactory repeat until satisfactory results are achieved.
2. Apply full strength by mop or plastic sprayer.
3. Scrub in with broom.
4. Material will foam as reaction with efflorescence occurs.
5. Neutralization:
  - a. Make a solution of 1lb of baking soda to 5 gallons of water.
  - b. Apply with power wash pick up tube (or hand sprayer) to the previously acid treated surface to neutralize acid. (Material will foam in contact with acid).
6. Rinse all salts and residual acid thoroughly with clean water.

7. Allow to dry or vacuum access water.
8. Repeat neutralizing and rinse procedures until floor no longer reacts to neutralizing solution.
9. Perform surface absorbency test by applying water to a representative portion of the prepared concrete floor. A properly prepared surface, when dry, will immediately absorb clean water without any surface beading effects.
10. pH Testing: After the material has been applied, cleaned and neutralized, and prior to application of any StarSeal PS System, perform pH test on floor slab to determine if any residual Etch material is still present. Perform one test per 100 sq.ft. of floor surface. Perform test as follows:
  - a. Dampen sections of the floor with approximately 1/4 cup of water and let stand for 5 minutes.
  - b. Use only unopened distilled water for the pH tests, container seal must not be broken prior to the tests.
  - c. Apply pH paper strip to the floor surface in the wetted area.
  - d. Evaluate color of pH strip against color gauge and record results.
  - e. pH values must be between 9 and 11 for normal concrete (medium green on test paper).
  - f. If values are below these numbers, (light green to yellow or below), repeat neutralization until satisfactory results are achieved.

#### **10. SURFACE ABSORBANCY TEST**

Perform surface absorbency test by applying water to a representative portion of the prepared concrete floor. A properly prepared surface, when dry, will immediately absorb clean water without any surface beading effects. If the floor fails the absorbency test perform section #5 Application of Certi-Vex Concrete Etch & Efflorescence Remover & Neutralization after Surface Grind, as below in Section 4. Repeated etching may be required to obtain proper absorbency. If floor does not pass absorbency test, contact Vexcon Chemicals for instructions.

#### **11. EQUIPMENT:**

- Professional quality equipment should be used at all times
- a. Sprayer: Industrial pump airless - Manufactured by Chapin or Hudson
  - b. EvenFlow Applicator or 1/4" nap roller - Natural Mohair

#### **12. MAINTENANCE:**

Floors prepared with the StarSeal System require little maintenance. General housekeeping is recommended to keep floors clean and looking new. If cleaning is required, spills should be cleaned when they occur. Dirt may be hosed off with water. Heavily soiled areas may be cleaned by mop or by scrubbing with a floor machine equipped with a scrubbing brush and **Certi-Vex® Super Degreaser & Cleaner** cleaning detergent. Rinse and allow to dry. If a floor wax is desired, although not required, follow the instructions above and after floor has been cleaned and is dry wax floor with a commercial paste wax. Buff to desired shine. Strip with a neutral wax stripper and reapply paste wax semi annually or as required. Every 2-3 years a light coat of StarSeal Finish Coat WB can be applied and burnished.