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## Certi-Shine Clear and Clear FSR Diamond Polishing Instructions

### Products:

- Certi-Shine Clear or Clear HB
- Certi-Shine Fusion
- Certi-Shine Fixative
- Certi-Shine Finish Coat Ultra
- Floor Preparation Products

### I. PLANNING

**A. Existing surface conditions must be taken into consideration prior to estimating and planning the installation. Some items to consider are; (note, this list is not intended to be absolute, other variables and unknowns may develop during the planning and installation stages)**

1. Determine if there are any coatings on the surface and what will be required to remove.
2. Check surface flatness for high and low spots
3. Inspect the surface for cracks and other defects. Consider repairs required. For cracks, pop-outs or holes see Section II B Grind and Hone.
4. Test the surface hardness. Generally, softer concrete consumes more diamonds than harder concrete. Also, consider how the surface was finished. Hard troweled surfaces usually require more surface preparation.
5. Verify equipment and electrical requirements.
6. Verify client's desired appearance. Stain(s), decorative saw cuts, exposed aggregate, shine, etc.

### II. FLOOR PREPARATION

#### **A. Clean (StarSeal EF Stripper, StarSeal EF Degreaser & Cleaner)**

1. Thoroughly clean the concrete surface, removing all coatings, dirt, oil and laitance with **StarSeal EF Stripper**. For less dirty concrete surfaces, use **StarSeal EF Degreaser and Cleaner**. Treat oil spots with **StarSeal EF Stripper** oil emulsifier and oil absorber materials.
2. Scrub with proper dilution of **StarSeal EF Degreaser and Cleaner** or a high pH detergent with an automatic scrubber capable of a minimum of 80 to 120 pounds of head pressure, equipped with medium to soft nylon/polypropylene brushes.
3. Scrub floor once without squeegee or vacuum. On second pass, drop the squeegee and remove all traces of soap residue and water solution.
4. Rinse and remove.
5. Allow to dry and inspect the surface before starting to grind.

## **B. Grind and Hone (Metal and Resin Bond Diamonds)**

1. Grind the floor within 1-5 inches of walls with 40s or 70s grit metal bond diamonds in a cross-hatching pattern (two passes at 90° to each other), using planetary or counter-rotating head machines or suitable polishing equipment with an overlapping capability. Depending on aggregate exposure requirements.
2. Examine the floor to evaluate hairline cracks, air voids, pop-outs. Apply Certi-Shine Fusion if required. (see Product Data Sheet OP225)

**NOTE:** If grinding is performed dry, the equipment should be fitted with a dust collection system.

3. Vacuum the floor thoroughly with squeegee attachment and inspect the surface for flatness, smoothness and test for absorbency, after each grit.
4. Continue grinding within 1-5 inches of walls, in a cross-hatching pattern (two passes at 90° to each other) until there is a uniform scratch pattern. Use 100-200 grit metal bond, followed by a 100 or 200 grit resin bond diamonds.
5. For edge grinding, alternate grinding the edges and the floor using a variable speed edge grinder fitted with a dust collector, or use a wet grinding process. You may need to use some or all of these grits depending upon the concrete: 40, 70, 150 Metals and 100, 200, 400, 800, 1500, 3000 Resins. Make sure to remove all of the scratches from the previous grit. Clean the edges after each diamond grit; inspect for scratches.

**NOTE: for small areas such as countertops, follow all procedures using a hand grinder. Inspect the surface for flatness, smoothness, and color uniformity.**

**NOTE: It is important to grind the floor flat. A flatter floor will produce greater reflectivity and a greater uniformity in shine. If the floor is not flat, the high spots on the surface will show sand and small aggregate, and the low areas will still have the cream or fines. This may contribute to uneven coloration and reflectivity.**

## **C. Surface Absorbency Test**

1. Perform surface absorbency test:
  - a) Drop dime-sized droplets of water onto the concrete. The concrete should darken/wet out, spread, and absorb completely.
  - b) If the floor fails the absorbency test, perform the procedure in Section II, D (Application of **Certi-Vex Concrete Etch & Efflorescence Remover** and **StarSeal EF Neutralizing Rinse & Cleaner**). Repeated etching may be required to obtain proper absorbency.
  - c) If floor does not pass absorbency test, perform Section D (Cleaning Concrete Pores), or contact Vexcon Chemicals for instructions.

## **D. Cleaning Concrete Pores (Certi-Vex Etch & Efflorescence Remover and StarSeal EF Neutralizing Rinse & Cleaner)**

**NOTE: Only perform this step when the surface absorbency test above fails.**

1. Try a small area with 50% **Certi-Vex Etch & Efflorescence Remover** and 50% water. Determine absorbance using test in Section 4. Test with increased and decreased acid-to-water ratios to determine proper dilution.
2. Apply the **Certi-Vex Etch & Efflorescence Remover** (in tested ratio) with a plastic pump-up sprayer in a uniform continuous pattern, leaving no fresh concrete uncovered. 150 sq.ft/gallon is a typical rate. This product, when applied at the correct strength, will appear whitish in color with bubbles while it is working.
3. When the whitish reaction has dissipated scrub evenly and thoroughly with an electric buffer (swing machine) equipped with medium to soft nylon/polypropylene brush.
4. Neutralize using the **StarSeal EF Neutralizing Rinse and Cleaner**, mixed at one pound per 5 gallons of warm water.

5. Apply with a pump up sprayer or pour out of the pail and scrub with the same electric buffer and brush making sure to scrub the entire area.
6. Rinse with water and vacuum the area dry. This can be done with a walk-behind scrubber or wet vac.
7. Repeat the neutralizing procedure until the floor no longer reacts.
8. Perform pH test using distilled water and pH strips. This must be performed prior to applying any **Certi-Shine** products.
9. Test the more vulnerable coarse or exposed areas, including cracks, spalls, corners, columns. Perform one test per 1000 sq.ft or as needed.

**E. pH Test Procedures – only needed for Etched & Neutralized concrete (Section D)**

1. Use only unopened distilled water for the pH tests; container seal must not be broken prior to the tests.
2. Dampen sections of the floor with approximately 1/4 cup of water and let stand for 5 minutes.
3. Apply pH paper strip to the floor surface in the wetted area.
4. Evaluate color of pH strip against color gauge and record results.
5. pH values must be between 9 and 11 for normal concrete (medium green on test paper).

**NOTE: If values are below these numbers, (light green to yellow or reddish), repeat neutralization until satisfactory results are achieved.**

### **III. INSTALLATION**

**A. Certi-Shine Clear (hardener & densifier)**

1. Apply **Certi-Shine Clear** at **200-300 sq.ft./gal** with a pump-up sprayer and an **EvenFlow Applicator** or microfiber pad 2 coats at 400-600 sq.ft/gallon , per coat or to rejection at 200 grit, hone
  - a) For dense floors dilute: add one part water to 4 parts **Certi-Shine Clear**
  - b) For porous floors apply undiluted
2. Do not allow the material to puddle. Spread out to an even coat as it absorbs into the concrete. Water may be added if the material becomes thick or slippery.

**NOTE: Additional light coats may be required to achieve 200 sq.ft./gal or until the material no longer absorbs into the concrete and the floor is densified to rejection.**

3. Keep wet with **Certi-Shine Clear** for a minimum of 60 minutes and redistribute from wet areas to dry areas as the product penetrates. Material should penetrate in and dry without leaving a film.
4. If some excess hardener/densifier does not penetrate, wash with water and remove from surface.
5. After **Certi-Shine Clear** application, wait until dry, 12 hours or overnight before high speed propane burnishing with a black pad.
6. The surface must be burnished with a high speed propane burnisher equipped with a black pad. If no further diamond polishing is to be performed, also burnish with the hogshair and white pads or diamond impregnated pads until desired gloss is achieved.

**NOTE: Walk slowly during burnishing to develop friction and heat. The floor temperature should reach 90-100°F / 32-38°C, or a minimum of 20°F / -6°C above the surrounding floor temperature.**

**B. Certi-Shine Fixative (unreacted silicate rinse) for FSR System: Skip this step if installing Certi-Shine Clear only System.**

1. Apply **Certi-Shine Fixative** to the previously densified and burnished floor (12 to 24 hours afterwards).
  - a) Use a plastic pump-up sprayer, **EvenFlow Applicator** or microfiber pad at 500-700 sq. ft/ gal.
  - b) Rinse off immediately after application.

**NOTE: There must be a person or two with either a wet mop and clean water or a walk-behind floor scrubber immediately behind the person applying the Certi-Shine Fixative.**

**NOTE: Do not allow the Certi-Shine Fixative to dry. If material dries, the floor will turn white. If this occurs rinse immediately with water and burnish with a black stripping pad. Rinse again with clean water and vacuum up water.**

**C. Polishing the Certi-Shine Clear**

1. After the application of **Certi-Shine Fixative** is completed: Diamond polish the floor with resin bond diamonds, utilizing the same techniques from the GRIND section II.2.
  - a) For a Silver Level shine, use 400 grit resin bond diamonds
  - b) For a Gold Level shine, use 400 and 800, and depending on the shine level desired, 1500's may be necessary
  - c) For a Platinum Level shine, use 400, 800, 1500 & 3000.
  - d) See Section II, B, 2 for procedures regarding edges.

**D. Certi-Shine Finish Coat Ultra (non-film forming stain protection) for FSR System: Skip this step if installing Certi-Shine Clear only System**

1. Apply **Certi-Shine Finish Coat Ultra** to clean concrete. Do not dilute. Apply with low-pressure (40 psi) pump-up or airless sprayer followed by spreading with **EvenFlow Applicator** or a microfiber pad.
  - a) Sprayer should be fitted with solvent resistant hoses and gaskets.
  - b) Care should be taken to ensure that the solution is applied and pulled out to an even, tight, thin coat.
  - c) **Certi-Shine Finish Coat Ultra** should be applied in multiple, thin coats that dry quickly. See Coverage Section.
  - d) Surface residues, pools and puddles should be spread out thoroughly until they completely penetrate into the surface.
  - e) Additional light coats may be required until the material no longer absorbs into the concrete.

**NOTE: Dry time is dependent on temperature, air flow, and relative humidity.**

- f) After thorough drying, there should be a very thin film on the surface.
- g) The floor must be burnished with a high speed propane burnisher equipped with a black pad to remove excess **Certi-Shine Finish Coat Ultra** from the surface.
- h) For additional gloss, burnish with the Hogshair and White pads. When burnishing is complete, there will be no surface film.

**NOTE: Walk slowly during burnishing to develop friction and heat. The floor temperature should reach 90-100°F / 32-38°C, or a minimum of 20°F above the surrounding floor temperature.**

**NOTE: If the Certi-Shine Finish Coat Ultra is not burnished the excess will black mark.**

**E. The Installation of the Certi-Shine Clear and Clear FSR floor is complete. The floor can be used as soon as it is totally dry.**

## IV. EQUIPMENT

### A. Professional quality equipment should be used at all times:

1. Quality diamonds
2. Sprayer: Industrial high-solids pump-up sprayer; Chapin or Hudson
3. EvenFlow Applicator System by Vexcon
4. Ultra-Trak by Fas-Trak or Microfiber pad

## V. MAINTENANCE

For more details, see **Technical Note TN 40 Certi-Shine Maintenance**. Floors prepared with the **Certi-Shine System** require little maintenance. General housekeeping is recommended to keep floors clean and looking new. Spills should be cleaned when they occur. Dirt may be rinsed hosed off with water. Heavily soiled areas should be cleaned by mop or by scrubbing with a floor machine equipped with a scrubbing brush and **StarSeal EF Degreaser & Cleaner** cleaning detergent. Rinse and allow the floor to dry. Every 2-3 years, a light coat of **Certi-Shine Finish Coat Ultra WB** can be applied and burnished.

## VI. COVERAGE

Coverage rates vary based on texture and porosity of surfaces. Please see individual product data sheets for coverage information and specific product application instruction. Always perform a test area prior to installation