Surface Armor™ System FAQ

1. Pre-treating Concrete with Ecobeton®-USA Vetrofluid®

Ecobeton®-USA's Vetrofluid® SA should always be used to pre-treat the concrete being resurfaced prior to applying the GST Internationals Surface Armor™ product. Before applying the Vetrofluid® SA to the concrete, the concrete must be properly cleaned, removing all organic and non-organic debris to ensure full and proper penetration of the Vetrofluid® SA. Most cleaners and degreasers may be used for pre-cleaning the concrete, however, manufacturers' recommendations for their proper use must be followed. If cleaners or degreasers ARE used for cleaning, it is mandatory that power washing be the final step prior to the Surface Armor™ application.

During the months when the weather is 50° Fahrenheit on average or lower, allow a MINIMUM of 5 days after the LIGHT application of the Vetrofluid®, before applying the Surface Armor™. On warmer days, allow a minimum of 12 hours after a light coat of Vetrofluid® SA is applied. Any contaminants within the concrete will be pushed out by the Vetrofluid® SA as it cures. The contaminants that are displaced by the initial application of the Vetrofluid® SA, should be thoroughly rinsed off (power washed) prior to the Surface Armor™ application. Once the Surface Armor™ application has fully cured, apply another LIGHT coat of Vetrofluid® SA.

NOTE: Minimum temperatures for application and curing should be 40° Fahrenheit during the entire process (Including nights). Freezing temperatures may cause failure. When applying the Surface Armor™ in cooler temperatures, it is recommended to keep the EA Primer and the Surface Armor™ at room temperature. Using a torch to heat the substrate prior to placement may also be done to promote the bonding and curing process.

2. Application Rates of Vetrofluid® SA for pre-treatment and post-treatment

Ecobeton®-USA's Vetrofluid® SA should be applied at a rate of approximately 250-300 sq ft/gal as a pre-treatment on the hard-troweled (smooth) concrete surfaces to be repaired.

Application on porous or broom finished concrete should be applied at a rate of approximately 150-250 sq ft/gal. Any excess or pooling on the surface should be back rolled or removed immediately during application. Using a broom to disperse the material after it is sprayed on the surface will ensure proper dispersion. Excess material left to cure on the surface will be a bond breaker for the Surface Armor™ product.

After the Surface Armor™ has been applied and has fully cured, application of the Vetrofluid® SA should then be done at a rate of approximately 250-300 sq ft/gl. Any excess left on the surface after application should be back rolled or removed. Brooming the Vetrofluid® SA will provide a uniform finish.

3. Surface Armor™ application information

Once the area to be resurfaced has been properly cleaned and the Vetrofluid® SA has fully cured (see above), mix and apply your first coat of the Surface Armor™ micro-topping following the instructions clearly defined on the bag. Over-application is very common, so keeping your mil build to a minimum is extremely important. Using down pressure with the squeegee trowel should help eliminate over-application of the lifts. 1-2 millimeters per lift should be the maximum desired thickness.

Once the first lift has fully cured (changed color), apply a second lift if necessary, following the same procedure. Mixing ratios with the Elephant Armor® Primer can vary based on how much "fill" needs to be achieved on the first coat. If spalling or cracking is prevalent, mixing at a higher ratio of Surface Armor™ may be required. A 3:1 ratio would be recommended for the initial coat, followed by a 2:1 ratio (more fluid) on the second and final coat. For extremely thin cracks or micro-fractures of less than 1/8", a 2:1 ratio (highly flowable), is recommended. Surface Armor™ MUST be fully cured prior to the final LIGHT coat of the Vetrofluid® SA product.

NOTE: When mixing ratios are shown for Surface Armor™, it is imperative to understand the first number listed is the Surface Armor™ powder and the second number listed is the Elephant Armor® Liquid Primer. These measurements are by volume, not weight.

4. Vertical Surface application methods

The mixing ratio of Surface Armor™ applications on vertical surfaces should be at 3:1 to limit the potential of runs or streaks. Working the material from the bottom to the top using a GST Squeegee Trowel is the preferred method. If applying Surface Armor™ to stair treads and risers, it is advisable to complete the vertical application prior to the horizontal application. A paint brush or a damp sponge should be used to blend the transition areas together and should be done once the material is in place. Misting the Surface Armor™ with water and using a sponge, brush or smooth roller is an acceptable technique for achieving your desired finish.

5. Other Application tools and equipment

While the primary application tool for applying the Surface Armor™ will remain the GST Squeegee Trowel, there are a multitude of other tools and equipment that can be used during the application process. These tools may include nap rollers, sponges, paint brushes, chip brushes, microfiber pads, steel trowels, etc. Spray equipment is highly recommended for larger scale vertical applications such as CMU block walls. Multiple types of spray equipment can be used but should be tested prior to full scale application. A ratio of 3:1 is the desired consistency for spraying vertical applications. Once the material has been applied on the vertical surface, finishing tools will be required to achieve the desired results.

6. Grinding, sanding and broom or textured finishes

The use of aggressive grinding equipment should only be used for the preparation of the area to be treated with the Surface Armor™ System. Any major spalls or displaced concrete should be filled with GST's Elephant Armor® mortar, allowed to fully cure, and then ground back to its proper elevation prior to the placement of Surface Armor™. Surface Armor™ can be finished with multiple textures, including smooth, broomed, and stamped. Applying a broom finish should be done only on the final coat of Surface Armor. Once the product has been squeegeed into place, the brooming must be performed immediately. It is best to utilize multiple personnel in order to perform the brooming as the material is being applied. If the finish is not to its desired quality, it can quickly be re-sanded once cured, and another coat can be applied.

Light textured stone stamps or rollers may be used to give texture to the Surface Armor™ on both vertical and horizontal applications. It is mandatory that the mil build of the coat to be stamped be thicker than the standard application and only be done on the final coat being applied. A 3:1 mix will give the desired consistency for stamping or artistic texturing. A standard liquid release (bubblegum release) should be used as is done with traditional stamping. If the stamp finish is going to be stained, do NOT apply the final coat of Vetrofluid® SA. Once the stain has been applied and has cured, traditional film forming protective sealers should be used to protect the finish and achieve the desired look.

A smooth finish can also be achieved using the Surface Armor™ System utilizing a GST Squeegee Trowel and if necessary, a sanding wheel. Apply the Surface Armor™ to the properly prepared concrete using the squeegee trowel, while being careful to limit any ridges, lines or displacements. Two coats are mandatory to achieve a smooth finish and will allow for more aggressive sanding of the Surface Armor™, once fully cured. It is important to use the proper diamond sanding pads. The higher the grit, the smoother the finish that can be attained. Once the desired smoothness has been achieved, the area should be properly cleaned, be dust free and the final LIGHT application of the Vetrofluid® SA should be applied.

7. Asphalt applications and other substrates

Surface Armor™ is not limited to just concrete restoration but is highly effective as an asphalt resurfacer. Make sure that the asphalt to be resurfaced does not have any coating or sealer on it prior to applying Surface Armor™. The asphalt surface must be properly cleaned and free of any contaminants, dirt, or debris. Surface Armor™ is highly effective on aging asphalt that has minor cracking, however it should not be used on asphalt that is severely degraded or has a heavily alligatored texture.

Once the surface had been properly prepped and is clean and dry, follow the standard application methods shown on the Surface Armor™ label. SSD (Surface Saturated Dry) is not recommended or required on asphalt. It is important that over-application is avoided, so using sufficient downforce with the squeegee trowel is mandatory. Vetrofluid® SA is NOT to be used on the asphalt as a preparation product. After the second coat has been applied and is fully cured, a light coat of the Vetrofluid® SA should be applied.

8. The use of color in the Surface Armor™ System

Surface Armor™ readily accepts most types of color systems, including Liquid Pigments, Powder Pigments, Acid Stains, Latex Stains, Dyes and Paints. The only coloring system that is NOT compatible is Granular Pigments. Both liquid color and powder color should be added to the Surface Armor™ during the mixing process with the GST Elephant Armor® Primer. It is critical to keep your mixing ratios consistent as color will vary based on the powder to liquid ratio.

9. Surface Armor™ substrate preparation

Mechanically roughen or high-pressure water jet (typically 4500 psi minimum water pressure) the existing concrete substrate tom an ICRI concrete surface profile (CSP) of CSP4 or higher. This must remove any unsound concrete, oil, grease, curing compounds, coatings, or other materials that may affect proper bonding. To remove contaminants on exisiting concrete surfaces that have penetrated the concrete substrate, apply Ecobeton®-USA's Vetrofluid® at a rate of 250-300 square feet per gallon. Wait a minimum of 72 hours after the Vetrofluid application and rinse the concrete surface with high pressure water to remove any contaminants from the surface. This can be used as the final rinse prior to the Surface Armor application. Vetrofluid will also reduce water vapor transmission from the existing concrete substrate. The concrete substrate must be Saturated Surface DRY (SSD), and free of standing water.