



Global Sealer  
Technologies

**Elephant  
Armor®**



# Surface Armor™ System

*The Ultimate Thin-mil Concrete & Asphalt Resurfacing System*



Surface Armor™



Elephant Armor® Primer



Ecobeton-USA® Vetrofluid®

## Features and Benefits

- Fills and hides small spalls and cracks.
- Brings surfaces back to a 'like new' appearance.
- Significantly increases lifecycle of applied surface.
- Accepts Color Pigments.
- Can be finished smooth or textured.
- Fast and easy to apply.
- Interior and exterior use, including drive surfaces.
- Can be applied over concrete or asphalt.
- Can be applied to vertical surfaces.
- Extremely abrasion resistant.

GST International's Surface Armor™ System is a polymer modified, thin-mil single component, two-coat cement based resurfacing system for use on existing concrete or asphalt surfaces. Surface Armor™ contains an ultra-fine aggregate and can be applied as a smooth or textured finish. Surface Armor™ can be applied with a roller, trowel, GST Squeegee Trowel or most types of spray equipment.

Surface Armor™ is a structural micro-topping for resurfacing concrete and asphalt, including heavy vehicular applications. Surface Armor™ readily accepts liquid and powder pigments. For best results when adding a pigment, do a test on a small area to ensure desired tint and tone.

Surface Armor™ can also accept paint after installation and the final application of Ecobeton®- USA Vetrofluid®.

The Surface Armor™ System includes the Surface Armor™, EA Primer and the Ecobeton®- USA Vetrofluid®.

The Surface Armor™ System requires the application of Ecobeton®- USA Vetrofluid® which allows it to sustain heavy use, including vehicular traffic.

**For more information on Ecobeton® Vetrofluid, visit [www.ecobeton-usa.com](http://www.ecobeton-usa.com)**

This product is made from the finest raw materials available and manufactured to proven formulation under strict quality control for its intended use. However, results obtained with the use of this product under a variety of conditions may depend on circumstances beyond our control. GST International, Inc. and the sellers therefore disclaim any responsibility for damage of any kind. The only warranty extended, expressed or implied, is for defective material.

GST International shall not be liable for any incidental, consequential or damages arising directly or indirectly from the use of Elephant Armor® products.

**PATENTED**

*Surface Armor™ is ideal for filling minor cracks and spalls, resurfacing sidewalks, driveways, warehouse floors, loading docks, bridges, airports, malls and much, much more.*

# Introducing GST's Surface Armor™ System

## Tram rail resurfacing, International Airport - NV.



Ecobeton®-USA Vetrofluid® sprayed on prior to Surface Armor™ application.



2 coats of Surface Armor™ were applied for durability and texture.



Surface Armor™ replaces traditional epoxies for long lasting, visually attractive appearance and functions at a reduced cost and expedited timeframe.

## Sidewalk crack repair and resurfacing, International Airport - Nevada.



Sidewalk panel prior to crack fill with first Surface Armor™ coat.



Using a trowel to complete first coat of Surface Armor®.



Applying second coat of Surface Armor™ to surface prior to brooming.



Finished panels showing a new appearance. Inset photo shows Ecobeton-USA Vetrofluid® being applied as the final step of the Surface Armor™ System.

# Using Surface Armor® with Elephant Armor®

## American Airlines hangar floor repair at International Airport – Queens, NY.



Photo showing extensive damage to the concrete around the drains, including a 3" 'point load' depression in the parking area at the jet's nose gear.



A combination of Elephant Armor®, followed by a wear coat of Surface Armor™, was used to complete this major repair. The volume fill, spall and deep crack remediation were performed with Elephant Armor® after Ecobeton-USA® Vetrofluid® was applied to stabilize the existing concrete surface. Surface Armor™ was then used to micro-top the repair, enhancing the surface appearance. A final application of Ecobeton-USA® Vetrofluid® was then applied to greatly improve durability and extend the lifecycle. Elephant Armor® and the Surface Armor™ System significantly reduced costs versus a 'remove and replace' scenario.



Clean cuts are made around the perimeter of area to be repaired.



All loose unstable concrete is chipped away to provide a solid surface.



Area to be repaired is washed and all loose material is removed.



A coat of Ecobeton-USA Vetrofluid® is applied to stabilize the existing concrete.



A coat of EA Overlay Primer is applied over the repair area.



Elephant Armor® is applied in 3 panels to fill and level the repair area.



Elephant Armor® is easily placed and levelled with GST Rollers and Squeegee Trowels.



The last panel is ready to be filled and levelled with the two outside panels.



The center panel is filled with Elephant Armor® to the level of the two outside panels.



A coat of Surface Armor® is applied over the entire repaired (filled) area.



The second damaged area on the outside perimeter of drain is now overlaid with Elephant Armor®.



Finished repair ready for a coat of Ecobeton-USA Vetrofluid®.

# GST Surface Armor™ Concrete Resurfacing System

## Warehouse floor panel resurfacing – Reno, NV.



Damaged and unsightly warehouse floor panel prior to resurfacing.



First coat of Surface Armor™ being applied with a GST Squeegee Trowel.



A no-slip broom finish is applied after the second coat of Surface Armor™.



Applying Ecobeton-USA® Vetrofluid® as the final step.

Warehouse floor panel brought back to 'new' appearance and ready for heavy forklift traffic. A light broom finish was applied to reduce a 'slip and fall' hazard.

## Fuel tank farm wall repair and resurfacing – Las Vegas, NV.



Surface Armor™ is sprayed on the degraded block wall after an initial application of Vetrofluid®.



A standard pool trowel is used to spread the Surface Armor™ and achieve an even thickness.



Using a grout float to apply the desired finish prior to the final application of Vetrofluid®.



A newly resurfaced CMU block wall with a 'like new' appearance, eliminating the visual cracks and discoloration. The wall is now waterproof and structurally sound.

# Surface Armor™ is the Ultimate Thin-mil Concrete Resurfacing System

## Franciscan University – Steubenville, OH.



Ageing concrete showing cracking and calcium being released and formation of mold due to water retention.



Apply Surface Armor® vertically using a brush, then use a Squeegee Trowel to remove brush marks.



A damp sponge is used to smooth out the Surface Armor® and give it a soft texture.



Surface Armor's ease of use and quick set time, allowed the base to be permanently repaired with a minimum disruption to the sanctuary in less than 2 hours!

## Asphalt driveway resurfacing with Surface Armor™, Haddenfield – NJ.



Worn out asphalt driveway prior to applying Surface Armor™.



Applying Surface Armor™ is quick and easy with a GST Squeegee Trowel.



Driveway is given a new visual and service life with a final application of Ecobeton-USA® Vetrofluid®.



Powder pigment was added to the Surface Armor™ to achieve a similar finish to the original asphalt. The 1250 ft<sup>2</sup> driveway was completely resurfaced in approximately 5 hours.

# Surface Armor™ is the Ultimate Thin-mil Concrete Resurfacing System

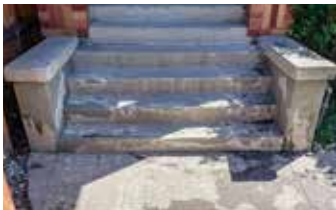
## Residential stair and landing reconstruction, Reno - NV.



Severely spalled and degraded stairway, properly cleaned and sealed with Ecobeton® Vetrofluid®



Elephant Armor® DOT used to fill all spalls, deep cracks and displacements. Forming not required.



Elephant Armor® reconstruction complete, now ready for Surface Armor™ permanent micro-topping.



Restoration complete in 5 hours using one bag of Elephant Armor® DOT and one bag of Surface Armor™ without the need for the traditional and extremely costly, time consuming deconstruction/reconstruction process greatly extending its life-cycle.

## E. Frank Hopkins Seafood Co, loading dock overlay, Philadelphia - PA.



Constant vehicular traffic in a refrigerated wet environment has caused extensive wear.



Clean floor with Pro-Grade Cleaner before applying Ecobeton® Vetrofluid.



Applying Surface Armor® is quick and easy with a GST Squeegee Trowel.



Surface Armor® is a heavy duty cementitious micro-topping that accepts liquid or powder pigments. *(not compatible with spray dried granular pigments)*

# Surface Armor™ System

## Technical Data & Application Instructions



### DESCRIPTION

GST International's Surface Armor™ System is a polymer modified, thin-mil single component, two-coat cement based resurfacing system for use on existing concrete or asphalt surfaces. Surface Armor™ contains an ultra-fine aggregate and can be applied as a smooth or textured finish. Surface Armor™ can be applied with a roller, trowel, GST Squeegee Trowel or most types of spray equipment.

Surface Armor™ is a structural micro-topping for resurfacing concrete and asphalt, including heavy vehicular applications. Surface Armor™ readily accepts liquid and powder pigments. For best results when adding a pigment, do a test on a small area to ensure desired tint and tone.

It can also accept paint after installation and the final application of Ecobeton®- USA Vetrofluid®. ([www.ecobeton-usa.com](http://www.ecobeton-usa.com))

The Surface Armor™ System includes Surface Armor™, EA Primer and the Ecobeton®- USA Vetrofluid®. ([www.ecobeton-usa.com](http://www.ecobeton-usa.com))

Surface Armor™ is ideal for filling minor cracks and spalls, resurfacing sidewalks, driveways, warehouse floors, loading docks, bridges, airports, malls and much, much more.

The Surface Armor™ System requires the application of Ecobeton®- USA Vetrofluid® which allows it to sustain heavy use, including vehicular traffic. ([www.ecobeton-usa.com](http://www.ecobeton-usa.com))

### FEATURES / BENEFITS:

- Fills and hides small spalls and cracks.
- Brings surfaces back to a 'like new' appearance.
- Significantly increases lifecycle of applied surface.
- Accepts liquid and powder pigments.
- Can be finished smooth or textured.
- Fast and easy to apply.
- Interior and exterior use, including drive surfaces.
- Can be applied over concrete or asphalt.
- Can be applied to vertical surfaces.
- Extremely abrasion resistant.

### SHELF LIFE

2 years in its original unopened packaging. Do not expose to moisture or high humidity.

### PACKAGING

- 10 lb (4.5 kg) plastic pails
- 50 lb (22.7 kg) plastic lined bags
- Elephant Armor® (EA) Primer comes in 1 and 5 gal. containers.
- Ecobeton®- USA Vetrofluid® comes in 2 gal. containers.

### COVERAGE/YIELD

A 50 lb. bag of Surface Armor™, with a two coat application, will cover approximately 200 ft<sup>2</sup> and a 10 lb. pail 40 ft<sup>2</sup>. Coverage can change based on the mixing ratio and existing substrate condition. For all applications, a second coat is mandatory. Additional coats may be required to achieve the desired finish. Note: Coverage rates are approximate.

### PRIMARY APPLICATIONS

Walkways, curbs, ramps, slabs, spalls, cracks, airports, bridges, ICF walls, parking structures, tunnels, dams, malls, industrial plants or anywhere a high strength concrete resurfacing material is called for.

### PRECAUTIONS / LIMITATIONS:

- Use required Safety Equipment and Best Practices.
- Do not over-work or over-trowel the overlay.
- Follow ACI Hot Weather concrete 305R-99 procedures.
- Do not apply Surface Armor™ at temperatures below 40° F (4° C) or to frozen surfaces.
- Consult the Safety Data Sheet, available at [www.gstinternational.com](http://www.gstinternational.com), in all cases before use.

### DIRECTIONS FOR USE

#### Surface Preparation:

Surfaces to be treated with the Surface Armor™ System must be clean, sound and free from contaminants that can act as a bond breaker (such as oil, grease, dirt, curing compounds, acids, etc.)

The surface may require pre-treatment with GST International Degreaser Pro or Pro-Grade Cleaner, followed by power-washing to clean the contaminated surface.

Once the surface is clean and free of contaminants, apply one coat of Ecobeton®-USA Vetrofluid® at a rate of 130 ft<sup>2</sup>/gal. to stabilize the surface. Allow 12 hours cure time prior to the placement of Surface Armor™.

Priming – Priming is not necessary with Surface Armor™.

#### Mixing

Standard mix design in most applications is 2:1, meaning 2 parts Surface Armor™ with 1 part EA Primer, by volume. A mix ratio of 4:1 (highly viscous) should be your maximum ratio, and a mix ratio of 1:1 (highly flowable) should be your minimum ratio. Adjust your ratio based on the flow-ability and material consistency required for the specific application.

Mix the dry contents in a clean and dry bucket to 'fluff' the material prior to adding the EA Primer. Add the EA Primer and mix thoroughly using a ColloMix Xo-55 Duo or other types of mortar mixers. For small amounts of material (10 lbs or less) a ½" drill with an egg beater bit is acceptable.

Mix for approximately 60 seconds or until the Surface Armor™ achieves the consistency desired. NOTE: Surface Armor™ has a short workability period with an initial set time of 15-20 minutes.

#### Initial Application of Ecobeton-USA® Vetrofluid®

All concrete that Surface Armor™ will be applied to, must be thoroughly cleaned and pre-treated with Ecobeton-USA® Vetrofluid®. (Allow 24 hours prior to Surface Armor™ application.)

#### Application of Surface Armor™:

Evenly place the first coat of Surface Armor™ to the surface using a trowel, roller or GST Squeegee Trowel. Allow the first coat of Surface Armor™ to fully dry (approx 60 minutes) prior to placing the second and final coat. The final coat may be textured using a standard concrete broom or other finishing method. Finishing texture should be done immediately upon placement of the second coat.

Surface Armor™ can also be applied using appropriate spray equipment for vertical applications. It is recommended that the spray equipment selected is tested prior to starting the project. Coverage may decrease with vertical applications, depending on the substrate and thickness required.

#### Final Application of Ecobeton-USA® Vetrofluid®

Once the Surface Armor™ has cured (1-3 hours, depending on the ambient temperature) a single light coat of Ecobeton®- USA Vetrofluid® must be applied to the newly finished surface. Using a low-pressure sprayer, apply the Ecobeton®- USA Vetrofluid® in one even coat at an application rate of approximately 200 ft<sup>2</sup>/gallon. To avoid any surface pooling, use a clean concrete finishing broom to evenly disperse the Ecobeton®- USA Vetrofluid®.

For additional durability, especially in high traffic areas, a second application of Ecobeton®- USA Vetrofluid® should be applied at a rate of approximately 300 ft<sup>2</sup>/gallon, 8-12 hours after the initial application. Allow 1-2 hours prior to opening the surface to foot traffic and 12 hours prior to opening to vehicular traffic.

Note: wait 5 to 7 days after Ecobeton®- USA Vetrofluid® application for light surface cleaning and 21 days for heavy surface cleaning.

(For comprehensive application instructions, visit [www.ecobeton-usa.com](http://www.ecobeton-usa.com))

#### Clean-Up

Surface Armor™ is fast curing, have additional water on hand to clean the mixer blades and other tools as they are used.

For information sheets and videos, visit [www.gstinternational.com](http://www.gstinternational.com)

**IMPORTANT, Any major spalls or displacements to the area being treated should be repaired using GST International Elephant Armor® DOT Mortar prior to the placement of Surface Armor™. Be sure to refer to Elephant Armor® DOT Mortar installation instructions as they differ from the Surface Armor™ instructions.**