

## High Compressive Strength Flooring System (HCS)

### PRODUCT DESCRIPTION

Tera-Gem III troweled HCS Flooring System is a high compressive strength, tough wearing 100% solids, seamless epoxy – aggregate composite overlayment for commercial and industrial environments. This product has excellent adhesion to concrete, and wood substrates. This product can also be installed to vertical surfaces and ceilings. The Tera-Gem III HCS System is a nominal 1/8" or ¼" thickness composite consisting of the following:

**PRIMER:** A two-component moisture tolerant epoxy primer. Other primers can be substituted depending on application.

**BASE COAT:** A three component, troweled polymer composite consisting of epoxy resin (with or without inorganic pigments), curing agent, and selected graded silica aggregates.

**TWO SEAL COATS:** Consists of the Tera-Gem III HCS liquid components with inorganic pigments. Other sealers may be added depending upon application and texture demands.

### PHYSICAL PROPERTIES

Compressive Strength	(ASTM C-579)	15,500 psi. AFTER 7 DAYS
Flexural Strength	(ASTM C-580)	5,500 psi.
Tensile Strength	(ASTM C-307)	3,000 psi.
Flammability	(ASTM 635)	Self Extinguishing
Impact Resistance	(Mil F 52505 Sec 4.4.2.11)	No cracking or delamination at 16/ft./lbs.
Water Absorption	(ASTM C-413)	0.25%
Bond Strength, Primer	(ASTM 4541)	>400 psi

#### **Physical Properties-Binder Cured 7 days**

Tensile Strength	(ASTM D 638) psi	5,000 psi
Flexural Strength	(ASTM D 790) psi	15,640 psi
Flexural Modulus	(ASTM D 790) psi	5.24 x 10 <sup>5</sup>
Hardness	(ASTM 2240)	Shore D - 84
Abrasion Resistance	(ASTM 4060) CS10 Wheel	1000 cycles, wt. loss (gm) - .041 gm
Water Spot Resistance	72 deg. F. 8 hr. cure	Pass

#### **Application Properties**

Mix Ratio	2A : 1B by volume
Pot Life (minutes)	30-40 @ 77 deg. F
Application Temp.	(F. Min) 50 deg .F

When placed by trained applicators, Tera-Gem III HCS will provide a long lasting, easy to maintain floor that will stand up even in the most demanding of environments.

## SUGGESTED USES

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Tera-Gem III HCS is suitable for process areas, warehouses, forklift traffic areas, food process plants, beef and beverage plants, distilleries, dairies, electronics plants, clean rooms, hospitals, commercial and restaurant kitchens, and sanitary facilities.

## CHEMICAL RESISTANCE (PARTIAL LIST)

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<u>Reagent</u>	<u>Film Integrity</u>	<u>Method</u>
10% Nitric Acid	No Effect	ASTM-D-1308
10% Phosphoric Acid	No Effect	ASTM-D-1308
10% Hydrochloric Acid	No Effect	ASTM-D-1308
20% Sulfuric Acid	No Effect	ASTM-D-1308
5% Acetic Acid	No Effect	ASTM-D-1308
20% Sodium Hydroxide	No Effect	ASTM-D-1308

### NOTE:

- Although the HCS system performs well in many chemical environments, it is not recommended for continuous immersion service.
- The end user should supply information regarding chemical concentrations, service temperatures and cleaning procedures to verify correct use of product. Review full chemical resistance charts for additional chemical information. Contact TL technical department for information regarding specific applications.
- Staining or a white blush will occur if the new floor is not allowed to cure fully (7 days) prior to allowing water, chemicals, etc. to stand on the surface.

## SURFACE PREPARATION

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Concrete surfaces must be free from surface contaminants, laitance, curing compounds, oils, greases, dirt, chemical contaminants, delaminated coatings, etc. The surface must be sound. Concrete compressive strength must be a minimum of 3,000 psi. New concrete should be cured for a minimum of 28 days, preferably by wet cure. User must notify manufacturer if conditions differ from above. If hydrostatic moisture test results are in excess of 10lbs. then a moisture vapor barrier coating will be required in order to warranty application against failure due to hydrostatic moisture. To properly prepare concrete surfaces, the concrete may be steel shot-blasted, ground, scarified, or prepared using another approved technique.

## SYSTEM APPLICATION

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### PRIMER:

Use Tera-Gem III HCS liquid A & B components as primer. Use a clean bucket and mix 2 parts of A to 1 part of B by volume. Stir with a mechanical agitator for 1-2 minutes. Distribute mixed material evenly over the floor surface using rollers or squeegees. Spread rate will vary from 70 to 150 sq. ft. per gallon depending on surface. Do not apply over standing water or let primer set before applying the base coat (aka body coat, troweled coat).

### BASECOAT (aka Body Coat, Troweled Coat):

Use a clean container and mix Tera-Gem III HCS liquid components at a ratio to 2 parts A to 1 part B by volume. To one weight equivalent of mixed liquid components add approximately 7 weight equivalent of aggregate. Mix all components

using an electrical drill motor agitator or a plaster mixer. Mix all components for 2-3 minutes or until uniformly mixed. Transfer to installation area and trowel to a thickness of 1/8" to 1/4". Other thicknesses are possible.

#### **SEALERS/ANTI-SKID:**

To seal the epoxy/aggregate composite for easier cleaning and to assure a non-skid property, apply two pigmented seal coats using the Tera-Gem III HCS liquid components. Mix in the same manner as described in the primer step. Apply the first seal coat (aka flood coat). Let the surface cure. Prep floor between coats by sanding the surface. Mix and place the second seal coat (aka topcoat) similarly to the first coat, application rate is approx. 125 sq. ft. per gallon. During the second seal coat process, if an anti-skid is required, incorporate graded silica aggregate to desired texture. See anti-skid recommendations for texture options.

#### **MATERIAL HANDLING**

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Epoxy resins and curing agents have certain handling hazards. Users should become familiar with the information contained in the MSDS sheets for each formulated systems. Observe warning indications on the labels for each component.

#### **PACKAGING**

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Tera-Gem III HCS epoxy system is available in pre-measured gallon, 3 gallon kits, 15 gallons kits and 165 gallon kits.

#### **NOTES**

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The following information is available online at [www.teralite.com](http://www.teralite.com):

- Material Safety Data    - Color Selection    - Anti-Skid Recommendation    -Maintenance Suggestions
- Chemical Resistance

The technical data furnished is true and accurate to the best of our knowledge. However, no guarantee of accuracy is given or implied. We suggest that the user evaluate these recommendations and suggestions in conjunction with their specific application. Tera-Lite, Inc. / Revolan Systems warrant its products to be free from manufacturing defects conforming to our most recent material specifications. In the event of liability, we will be limited to the replacement of material at the material value only and at the sole discretion of Tera-Lite Inc. /Revolan Systems. We assume no responsibility for coverage, suitability of application, performance, or injuries resulting from use.