Charge-Guard™ Conductive Epoxy Application Instructions

Made in the United States of America

Description

Charge-Guard™ Conductive Epoxy is a low-odor, high-solids cyclo-aliphatic epoxy containing carbon nanotube technology for enhanced scratch-resistance and better electrostatic discharge (ESD) control than traditional ESD flooring systems. Designed as a top coat, it withstands heavy traffic and chemical spills, and inhibits microbial growth, all while maintaining its ESD properties. It can be applied to a variety of surfaces, including properly treated concrete, wood, metal, and non-glazed tile.

FINISH AND COLOR

- Gloss
- Color: See color options at StatguardFlooring.com/StatguardFlooringCatalog/Epoxy/Charge-Guard/
- Round-shaped surface texture is easy to clean with microfiber pads

COMPONENTS

Charge-Guard™ 2-Part Epoxy, 1.5-Gallon Kit

- Part A: Epoxy ESD Conductive, 1 gallon
- Part B: Epoxy ESD, 1/2 gallon
- Color: Epoxy ESD Colorant, 16 oz
- Texture: Anti-Slip Bead 50/100, 32 oz

SURFACE PREPARATION

Charge-Guard™ Conductive Epoxy is designed to be installed over a primer/sealer system. Before installing, the substrate must be sound, meaning all necessary concrete repairs have been completed, and it must be clean, dry, and free of any contaminates, moisture, materials, or particles that may hinder material's adhesion to concrete.

Charge-Guard™ Conductive Epoxy must be applied by a qualified and trained professional. For proper adhesion, Statguard Flooring recommends installing a base layer tailored to the substrate's use, irregularities, and moisture levels. The base layer may consist of a single prime coat or include sand broadcasts or up to a half-inch of polymer concrete for added strength.

MIXING AND APPLICATION

Premeasure components to make sure you are using the correct mix ratio. Combine components according to mix instructions. Continue mixing until the coating's consistency is uniform. The coating must remain thoroughly mixed during the application to ensure a uniform cure.

Add colorant to Part A and mix until color is uniform. Add Part B and continue mixing for up to 1 minute. Add texture and continue to mix until color and consistency are uniform. Total mixing time: 2 minutes.

Keep a wet edge while applying product. Wear spiked shoes when walking on material.

MIXING AND APPLICATION

Standard Kit Mix Ratio	1 gal A:1/2 gal B:16 oz Colorant:32 oz Anti-Slip
Mixing Drill	low-RPM, low-torque drill with Jiffy double-bladed mixer
Mixing Directions	Add Colorant to Part A and mix until color is uniform. Add Part B and continue mixing for up to 1 minute. Add texture and continue to mix until color and consistency are uniform. Total mixing time: 2 minutes.

Coverage Rates

APPLICATION	COVERAGE RATE
Applied as Top Coat, 5-7 mils	400 SF per kit

Average Application Time

Ambient Temperature	50°F, 50% RH	70°F, 50% RH	90°F, 50% RH
Working Time	35 min	25 min	15 min
Return to Service (Foot Traffic)	36 hrs.	24 hrs.	24 hrs.
Full Cure (Vehicle Traffic)	7 days	7 days	7 days

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STORAGE AND APPLICATION TEMPERATURES

Ideal Storage Environment	Dry, Out of Direct Sunlight, 60-80°F
Material Temperature During Application	50-70°F and 5°F Above Dew Point
Minimum Substrate Temperature During Application	5°F Above Dew Point
Recommended Application Temperature for Material	50-90°F, <90% RH (Relative Humidity)

APPLICATION TEMPERATURES

- When temperatures increase, material cures faster. Material cures slower when temperatures decrease. If application temperatures are outside of those recommended, contact Service@StatguardFlooring.com. Apply material when temperature is decreasing—adhere to the Dew Point Calculation Chart available at StatguardFlooring.com/pdf/Dew-Point-Calculation-Chart.pdf.
- DO NOT apply under direct sunlight.
- DO NOT install under inclement weather conditions.
- Application times are based on test results compiled by lab technicians in a controlled setting. All times were recorded using 1-quart samples.
- Coverage rates are for estimating purposes only. Factors such as waste, unusual/abnormal substrate conditions, and other unforeseen jobsite conditions may affect actual product yields and are the responsibility of the installer.

PRECAUTIONS AND LIMITATIONS

- This material was designed as a top coat and is required for the system to achieve the desired electrostatic properties.
- Prime Coat: A prime coat may be required if stem walls are highly absorbent, if outgassing is suspected or prevalent, or if concrete is very porous or in poor condition. All concrete repairs must be completed before installing any system.
- Apply with 5-7 WFT-mil blade.
- DO NOT apply any single coat greater than 7 mils (215 SF/gal) thick.
- DO NOT let material puddle on floor—this will cause white spots to appear when the coating cures.
- UV Resistance: Epoxy will amber over time. If color stability is important, contact Statguard Flooring.
- In an effort to ensure Charge-Guard™ Conductive Epoxy meets the published specifications for use in your environment, an installed test patch for new applications is recommended.

SAFETY, TESTING, AND WARRANTY

- Safety: Personal protective equipment and safety conditions must be considered before using any product. Review all relevant and current documentation including Safety Data Sheets (DescoIndustries.com/pdf/SDS-9034-US.pdf).
- Testing before installation: Test and look for any unknown site conditions and/or defects. To ensure desired results are achieved, the system should be tested in a small area on site before full installation begins.
- Testing after installation: After completion of the installation, test according to ANSI/ESD S20.20: ANSI/ESD STM 97.1, STM 97.2 and STM7.1, as well as any testing required by the facility's ESD program.
- Warranty: For warranty to be upheld, Statguard Flooring Pre-Job checklist must be completed. All materials used to treat the substrate and clean the system must be manufactured by or approved for use by Statguard Flooring (Service@StatguardFlooring.com, 781-821-8370).

MAINTENANCE

- Statguard Flooring recommended Maintenance products:

Normal Cleaning
Floor Cleaner:
StatguardFlooring.com/StatguardFlooringCatalog/Maintenance/ESD-Floor-Cleaner/

Heavy Cleaning
Floor Neutralizer
StatguardFlooring.com/StatguardFlooringCatalog/Maintenance/Floor-Neutralizer/46022/

Floor Stripper
StatguardFlooring.com/StatguardFlooringCatalog/Maintenance/Floor-Stripper/

Floor Cleaner:
StatguardFlooring.com/StatguardFlooringCatalog/Maintenance/ESD-Floor-Cleaner/

EPOXY SYSTEM OF FULLY CURED COATING

PROPERTIES	TEST METHOD	TYPICAL VALUES
Conductive System Resistivity	ASTM D257, ANSI/ESD S7.1	2.5 x 10^4 and <10^6 ohms
Body Voltage Generation (with Dissipative Footwear)	ANSI/ESD STM97.2	15V
Abrasion Resistance	ASTM D4060	15-20 mg
Adhesion Strength over Concrete	ASTM D4541	400 psi, concrete failure
Adhesion Strength over Sand	ASTM D4541	500 psi, sand/natural quartz failure
Compressive Strength	ASTM D695	13,700 psi
Flame Spread/ Critical Flux	ASTM E648	Class 1
Flame Spread/ Rate of Burning	ASTM D635	Self-extinguishing
Flexural Strength	ASTM D790	9,000 psi
Hardness (Shore D)	ASTM D2240	85
Impact Resistance	ASTM D2794	120 in-lbs.
Indoor Air Quality	CA 01350	Compliant
Microbial Resistance	ASTM G21	Passes, 0 growth
Modulus of Elasticity	ASTM D790	5.0 10^5 psi
Moisture Vapor Permeance	ASTM E96	0.08 perms
Tensile Elongation at Break	ASTM D638	5%
Tensile Strength	ASTM D638	7,800 psi
Thermal Coefficient of Linear Expansion	ASTM D696	18.0 x $10^{(-)6}$ in/in/°F
Water Absorption	ASTM D570	<0.05%
Moisture Vapor Emission Rate	ASTM F1869	8- lbs.
Relative Humidity	ASTM F2170	<80%

EPOXY SYSTEM AND STAIN RESISTANCE

1 = Best for chemical resistance: Chemical has no adverse effects on fully cured coating; remove within 24 hours.
2 = Low potential for stain: Chemical has no adverse effects on fully cured coating if removed within 24 hours.
3 = High potential for stain or degradation: Chemical must be removed within 24 hours of exposure.
NR = Not recommended

Acetic Acid (Component of Vinegar), 10%	1
Acetic Acid, 30%	2
Acetone	NR
Ammonia, 30%	1
Ammonium Hydroxide, 30%	1
Antifreeze (Coolant)	1
Benzene (Component of Crude Oil)	3
Benzyl Alcohol	3
Betadine, 11%	NR
Boric Acid, 4%	1
Brake Fluid, DOT 3	1
Chromic Acid, 10%	3
Chromic Acid, 30%	3
Citric Acid, 30%	1
Ethanol, 95%	NR
Ethyl Acetate, 99% (Food/Beverage Facility)	NR
Formaldehyde, 37%	3
Premium Gasoline	1
Hydraulic Fluids (Machinery, Automobile, Aviation)	2
Hydrochloric Acid, 10%	3
Hydrochloric Acid, 30%	3
Hydrofluoric Acid, 10%	1
Hydrofluoric Acid, 30%	3
Hydrogen Peroxide, 10%	NR
Hydrogen Peroxide, 50%	NR
Iodine, 2%	3
Isopropyl Alcohol	3
Jet Fuel	1
Lactic Acid, 30% (Dairy Facility)	NR
Lime Juice	2
Magnesium Hydroxide	1
MEK (Methyl Ethyl Ketone)	NR
Methanol	NR
Methylene Chloride	NR
MIBK (Methyl Isobutyl Ketone)	NR
Mineral Oil	1
Motor Oil, SAE 30	1
Mineral Spirits	NR
Mustard, Yellow	2
Nitric Acid, 30%	NR
Oleic Acid	1
Oxalic Acid, 10%	1
Phosphoric Acid, 20%	3
Potassium Hydroxide, 30% (Alkaline Batteries, Soap Manufacturing)	1
Propylene Glycol	1
Silver Nitrate, 20% (Photo Labs)	3
Hydraulic Fluid (Aviation), Skydrol LD-4	2
Sodium Chloride, 20%	1
Sodium Hydroxide (Caustic Soda), 50%	1
Sodium Hypochlorite (Bleach), 10%	2
Sodium Hypochlorite (Bleach), 30%	3
Sodium Persulfate (Bleaching and Oxidizing Agent)	3
Sulfuric Acid, 37% (Battery Acid)	NR
Tannic Acid, 20%	3
Tartaric Acid, 10%	1
Transmission Fluid	1
Urine, Dog or Cat	1
Urea (Nitrogen-Rich Fertilizer)	1
Vinegar, Distilled	1
Water (Hard Water from Well)	1
Whisky	1
Wine, Cabernet Sauvignon	2
Xylene	3

Pigments or colorants may affect working times, reduce chemical resistance, or increase potential for stain. Coatings tested at ambient temperature over 1-3 days' exposure to chemical. To ensure desired results are achieved, products should be tested on site before installation.

DISCLAIMER: The information contained in this document is intended for use by Charge-Guard™ qualified and trained professionals. This is not a legally binding document and does not release the specifier from their responsibility to apply materials correctly under the specific conditions of the construction site and the intended results of the construction process. The most current valid standards for testing and installation, acknowledged rules of technology, as well as Charge-Guard™ technical guidelines must always be adhered to. The steps given in this document and other mentioned documents are critical to the success of your project.

Desco Industries Limited Warranty
See the Desco Industries Limited Warranty:
DescoIndustries.com/Warranty.aspx