

ELECTRAGUARD ESD EPOXY SPECIFICATIONS

Mission Critical Conductive Floor Paint



PRODUCT HISTORY AND

OVERVIEW: Our ElectraGuard ESD Epoxy was originally designed for use in providing static control for munitions applications in 1992. Over the years it has been further refined with patented advancements in structural integrity, conductivity and chemical resistance. ElectraGuard is a proven performer at a realistic price. ElectraGuard is a true two part epoxy. Unlike mere latex or

one part epoxy floor paints that may last a year or two, our ElectraGuard High Gloss System provides outstanding longevity and a ten year life expectancy. The system is well suited for application on a variety of flooring substrates including concrete, existing well bonded VCT, standard and antistatic vinyl tiles, steel, vinyl sheet goods and wooden subfloors. ElectraGuard may be applied with a roller or with an airless paint sprayer making it an excellent choice for use on walls, ceilings, bench tops, equipment racks and more.

ElectraGuard ESD Epoxy meets or exceeds the latest most stringent standards for Mission Critical Static Control. And, unlike ESD tiles, ElectraGuard is seamless for the optimum removal of dust and powder contaminants. Tiles rely on a random pattern of conductive elements interspersed in an insulative vinyl and a conductive adhesive to bridge the gaps between the tiles. Unlike ESD tiles our ElectraGuard features an amorphous electrical conductivity for 100% conductive contact with footwear and superior static control performance. This same amorphous conductivity makes it an excellent choice for shielding as well as static control. Tiles become slippery when wet where as ElectraGuard features inherent anti-slip properties. The electrical conductivity may be tailored for compliance to the recent DOD 4145.26-M standards. Leave "as is" for a low glare matte finish or top coat with ElectraThane, ElectraGlaze or ElectraSheen Sapphire for a diamond like shine, ultimate wear resistance and an ESD floor that consistently meets the latest ANSI/ESD S 20.20-2021 standards without fail.

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PHYSICAL PROPERTIES

Gloss Unsealed: Matte Finish
Gloss Sealed: 88 Min ASTM D1455-82
Colors: Light Gray, Medium Gray, Black, Beige, Emerald Green, Sky Blue
Slip Resistance per ASTM-D2047-5: 0.62 minimum (excellent)
Hardness: Shore 68
Viscosity: 400 to 600
Solvent: Alcohol, water-glycol ether
Flash point: >212 deg. F
Freeze / Thaw Stability: 0 - Do not freeze
Dry time at standard air flow: 8 hours (dry to the touch). Open for traffic in 12
Typical Coverage: 350 to square feet per gallon per coat
Compressive strength over vinyl tiles: Modified ASTM F 9700-00, >2,500
Compressive strength over concrete: DIN1691 equal to or greater than that of the concrete.
Indentation impact resistance per ASTM F1914: DIN EN average of <5%, max 10%
Abrasion resistance per ASTM D1044: SC10F wheel, 550 gm weight, cycles 10k, % loss 1.6
Resistance to wear: DIN EN660-1, M
Film thickness when dry: 1.1 mil per coat
Warranty: Life time electrical properties, 5 years wear (see details for specifics)
Resistance to chemicals: ASTM 925, DIN EN 423, slight change
Resistance to heat: ASTM 1514 $\Delta < 8$ average., max, $< \Delta E = 2.0$
Resistance to light: ASTM 1515 $\Delta < 8$ average., max, $< \Delta E = 6.0$
Fire resistance: DIN 4102, B1
Color fastness: ISO 105 BO2, >6
Critical radiant flux: ASTM E648, NFPA 253, >1.08 w/cm ² (class 1 interior floor finish, NFPA code 101
Shelf Life and Weight: 24 months, unopened at 70 deg F, +/- 10 degrees. Weight: 10 Pounds Per Gallon.
CA Prop 65: Compliant. No warnings
VOC Content: Meets Federal Guidelines at <350 g/l. Zero VOC when cured. NOTE: this product is available in quart containers that are exempted from State and Local VOC restrictions nationwide.
Slip Resistance per ASTM-D2047-5: 0.62 minimum (excellent)
Hardness: Shore 68

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Typical Electrical Resistance Properties Unsealed and Fully Cured*

ITEM	STANDARD TEST METHOD	UNSEALED ELECTRAGUARD
Electrical Resistance, Surface to Surface (PTP)	ANSI-ESD STM7.1-2020, EN1081, IEC61349-5-1. Tested @ 100 V / 10 V, 12% / 45% rH, results in ohm	>2.50E04 <1.0E06
Electrical Resistance Surface to Ground (RTG)		>2.5E04 <1.0E06
Electrostatic Propensity	AATCC 134-2001 / EN 1815 result in kV	<.5 PASS
Static Decay	MIL-Std 3010C, Method 4046 at 12% Relative Humidity (formerly FED-STD 101C, Method 4046)	<0.1 sec PASS
Combination resistance of technician, heel grounders and flooring	ANSI ESD S20.20-2021, 97.1	<1.0E09 Ohms. PASS
Tribogeneration	ANSI ESD S20.20-2021, 97.2 / IEC 61340-4-5	Does not exceed 100 volts. PASS (typical <10 volts +/- polarity)
Electrical Conductivity, High Velocity Medium and Light Gray	DOD 4145-26-M, (March 13, 2008) tested at 500 Volts, RTG/PTP	> 40 kV and <1 Meg Ohm. PASS
Electrical Conductivity, High Velocity Medium and Light Gray	NFPA 484-2015, tested at 500 Volts, RTG/PTP	> 40 kV and <1 Meg Ohm. PASS
Electrical Conductivity, High Velocity Medium and Light Gray	ASTM F-150, tested at 500 Volts, RTG / PTP	> 40 kV and <1 Meg Ohm. PASS
Electrical Conductivity, High Velocity Black Ice	NFPA 484-2015, tested at 500 Volts, RTG/PTP	> 20 kV and <1 Meg Ohm. PASS
Electrical Resistance, Surface to Surface Resistance to Ground	UL 779	PASS: No locations below 10,000 ohms, average readings > than 25,000 ohms.

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Note: Resistance values may be easily adjusted upwards with additional coats of ElectraThane

Typical Electrical Resistance Properties when sealed with 2 thin coats of ElectraThane and 1 thin coat of ElectraGlaze (fully cured)*

ITEM	STANDARD TEST METHOD	SEALED ELECTRAGUARD
Electrical Resistance, Surface to Surface (PTP)	ANSI-ESD STM7.1-2020, EN1081, IEC61349-5-1. Tested @ 100 V / 10 V, 12% / 45% rH, results in ohm	>2.5E04 <1.0E07
Electrical Resistance Surface to Ground (RTG)		>2.5E04 <1.0E07
Electrostatic Propensity	AATCC 134-2001 / EN 1815 result in kV	<.5 PASS
Combination resistance of technician, heel grounders and flooring	ANSI/ESD S20.20-2021, 97.1	<1.0E09 Ohms. PASS
Static Decay	MIL-STD 3010C, Method 4046 at 12% Relative Humidity (formerly FED-STD 101C, Method 4046)	< .02 sec
Tribogeneration	ANSI/ESD S20.20-2021, 97.2	Does not exceed 100 volts. PASS (typical <5 volts +/- polarity)
Electrical Resistance, Surface to Surface Resistance to Ground	UL 779	PASS: No locations below 10,000 ohms, average readings > than 25,000 ohms.

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ElectraGuard High Velocity (unsealed)

Color	Test Method	Results
Medium and Light Gray	DOD 4145-26-M, (March 13, 2008) tested at 500 Volts, RTG/PTP	> 40 kV and <1 Meg Ohm.
Medium and Light Gray	NFPA 484-2015, tested at 500 Volts, RTG/PTP	> 40 kV and <1 Meg Ohm.
Medium and Light Gray	ASTM F-150, tested at 500 Volts, RTG / PTP	> 40 kV and <1 Meg Ohm.
Black Ice	NFPA 484-2015, tested at 500 Volts, RTG/PTP	> 20 kV and <1 Meg Ohm.

Note: Resistance values may be easily adjusted upwards with an additional coat of ElectraThane to meet minimum DOD resistance levels for use in 240 volt applications.

*** Please Note:** The above readings are reflective of three coats applied to concrete and allowed to cure for a 3 week period prior to testing. Highly Insulative or conductive substrates such as ceramic or steel, damp concrete, exceedingly high ambient humidity, grounding techniques and coating thickness may alter your final results. Always pretest the coating to your internal specifications in a small inconspicuous area prior to full scale application. Resistance values may be easily adjusted upwards with additional coats of ElectraThane (applied with a microfiber mop) or ElectraGuard NC (rolled with a 1/4" nap roller). This process will allow the system to fall into the static dissipative range of >1.0E06 and <1.0E09.

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Typical Charge Generation

Floor Materials and Footwear

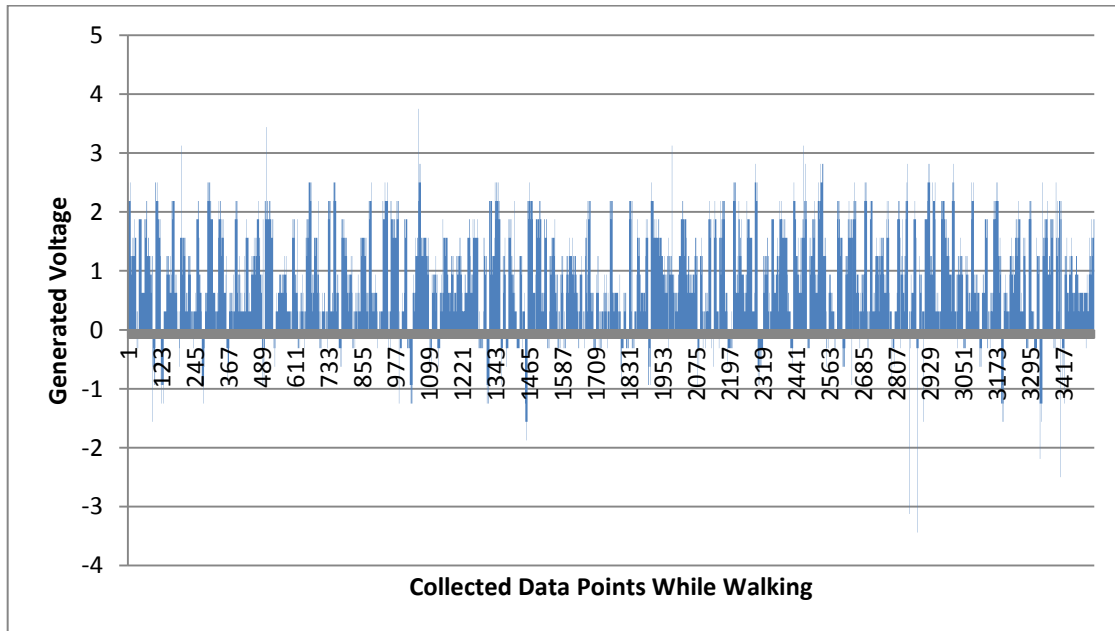
Charge Generation of Person in ESD Footwear

Testing per ANSI/ESD STM97.2 / ESD TR53 Flooring Section

Environmental Conditions: 28.7% rH, 71.1° F (avg.)

Devices used in this Testing: Monroe charge plate analyzer, Oscilloscope

Results: + 3.8 volts maximum. - 3.2 volts maximum



PN: EG-1, EG-CASE, EG-5, ElectraGuard ESD Epoxy Floor Paint		
United Static Control Products Inc	Document Number: SRC10109E	Original release date: 01/16/2003 1st revision date: 04/06/2007 2nd revision date: 06/09/2015 3rd revision date: 01/16/2017 4th revision date: 7/12/2017, PTP & RTG @ 500 volts added 5th revision date: 8/14/19, change table color for ease of print. 6th revision date: 6:12/20, Meets UL Standard 179 7th revision date: 6/12/20, conductivity < 1 meg ohm cured 8th revision date: 4/23/2021, VOC, quarts added recent 97.2 results