

Statproof® Conductive Acrylic Paint Application Instructions

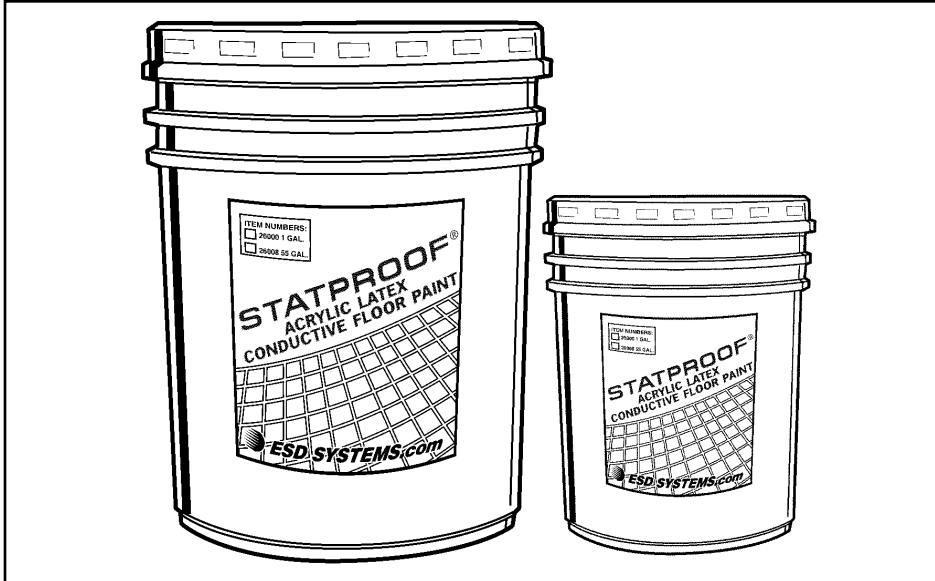


Figure 1. Statproof Conductive Acrylic Paint: Available in Grey and Light Grey
Grey: Item No. 26120, 5 Gallon; Item No. 26110, 1 Gallon
Light Grey: Item No. 26125, 5 Gallon

Description

ESD Systems.com Statproof® Conductive Acrylic Paint is a one part floor coating formulated to produce controlled dissipation of static electrical charges. Statproof® Conductive Acrylic Paint is very effective as a static control floor coating for electronics manufacturing, assembly, and storage. It is available in grey (similar to PMS 432) in 1 gallon containers as item no. 26110 and in 5 gallon containers as item no. 26120; and light grey (similar to PMS 429) in 5 gallon containers as item no. 26125.

General Guidelines

GROUNDING:

Conventional grounding practices like connecting painted surfaces to ground or internal building grounds are only required for applications of Statproof® Conductive Acrylic Paint that are not in excess of 20 square feet. For applications that are greater than 20 square feet, grounding should not be required. The electrical properties of conductive paint enable the surface to dissipate 5000 volts to zero in less than 0.01 seconds per FTMS 101C, Method 4046 without conventional grounds. The conductive paint becomes a capacitive reservoir that effectively drains static charges.

Foot grounders should be used in conjunction with flooring painted with Statproof® Conductive Acrylic Paint to properly ground personnel. For more information, please contact the ESD Systems.com factory.

Surface Preparation

The two most important characteristics for successful application of Statproof® Conductive Acrylic Paint applications are:

1. The surface must be clean, dry, dull, and smooth. Heavy dirt or grease build-up should be removed with a stripper or degreaser. Cleaning methods range from: sweeping, vacuuming, wire brush, air-blasting, water jet, steam cleaning, or stripping.
2. If the surface is concrete, it must be in good condition.

CONCRETE:

New concrete should cure for a minimum of 28 days before coating with Statproof® Conductive Acrylic Paint. Not all concrete is created equal -- concrete surfaces vary widely in physical and chemical qualities due to the way the concrete was formulated, poured, or finished.

There are several methods to prepare problem concrete. Each method depends on the condition of the concrete. Adhesion properties can be increased by profiling or roughing the surface through acid etching, rotary drum sanding, scarifying, or mechanically scratching the surface.

PRIMING:

Statproof® Conductive Acrylic Paint bonds well to clean, dry concrete. However, a standard industrial primer can be used on certain difficult to bond substrates and enhance the adhesion of Statproof® Conductive Acrylic Paint.

PREVIOUSLY PAINTED SURFACES:

The surface should be clean and free of dust, grease, wax, and soap residue. Wash with ordinary detergent and water. Rinse thoroughly with clean water and let dry. Glossy surfaces can be dulled by lightly sanding and then vacuuming and cleaning. Cracks and holes should be repaired before applying the Statproof® Conductive Acrylic Paint. Adhesion can be improved by using a standard industrial type primer.

UNPAINTED SURFACES:

Adhesion can be improved by using a standard industrial type primer. Metal should be primed with red oxide primer. Concrete, wood, plastics, and most other surfaces should be properly cleaned. Let dry and then apply Statproof® Conductive Acrylic Paint.

COVERAGE:

Statproof® Conductive Acrylic Paint will cover 300 to 400 square feet at a 1 to 1.5 mil thick dry film per gallon on a smooth surface. Coverage is less on coarse or textured surfaces. Two coats are recommended to achieve maximum performance from the paint.

Application

Always use in a well ventilated area or wear a suitable respirator. Wear appropriate eye protection such as splash goggles and impervious type protection gloves to protect hands.

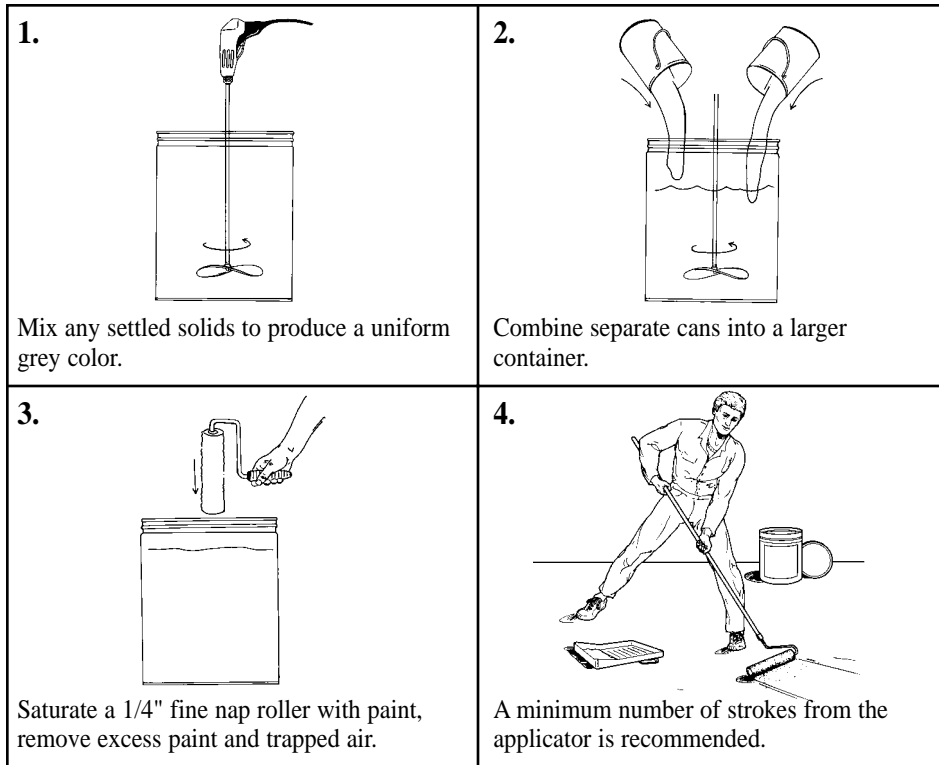


Figure 2. Paint Application with roller

APPLICATION BY ROLLER

1. Stir paint thoroughly to mix any settled solids to produce uniform grey color.

2. Combine separate cans of paint into one container to ensure uniform color distribution. It is recommended that a test area be coated to ensure that the adhesion and electrical performance of the paint is acceptable. (See Adhesion Testing, Figure 5.) If the test areas show inadequate adhesion, use an industrial floor primer/sealer.

3. Saturate a 1/4" fine nap roller or an industrial brush with paint. Remove excess paint and trapped air from the applicator by moving applicator several times in the paint tray.

4. A minimum number of strokes from the applicator on the substrate is recommended to minimize air bubbles.

APPLICATION BY SPRAY

Conventional Spray Gun: "E" fluid tip and needle and #704, 765 or 78 air gap.

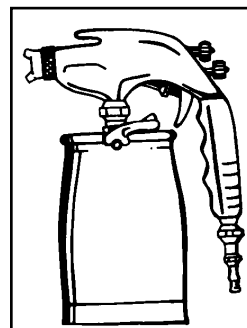


Figure 3. Spray paint application

Airless Spray: Spray gun and spray cap or suitable orifice diameter 0.020-0.025".

Mix paint thoroughly before using and stir occasionally when applying. No thinning necessary. Room temperature must be above 50°F.

A minimum of two coats of Statproof® Conductive Acrylic Paint is recommended for appropriate static protection.

Clean Up

Wash applicators with water immediately after painting. Remove paint spills promptly with a wet cloth. Close container after each use. Keep container from freezing.

DRYING

It is recommended that Statproof® Conductive Acrylic Paint be allowed to dry at a temperature in excess of 45°F until dry.

A minimum of 1 to 2 hours drying time should be allowed before applying the second coat. Wait a minimum of 12 hours drying time after the last coat before allowing light traffic on the coated area. At high humidity levels, a longer drying time may be necessary. Do not force dry.

Maintenance

Use sweeper, vacuum, or broom to remove dirt. Allow two weeks drying time before using a damp mop to clean the coated area. Do not use abrasive cleaners, floor rinse, or scrubbing machine to clean the floor.

Optional Finish/Sealer

ESD Systems.com Statproof® Conductive Acrylic Paint can be overcoated or sealed with Statproof® Floor Finish static dissipative coating to increase durability, enhance shine, improve ease of maintenance, and seal out dirt and debris. Statproof® is a polymer base floor finish/sealer that can be used as a top coat on the Conductive Acrylic Paint. Surface resistivity will then be in the 10⁶-10⁷ ohms range. Two coats are recommended. Three coats will improve electrical properties, durability and reduce frequency of maintenance. Ask for Tech Brief PS-2026 for more information on Statproof® Floor Finish.

Physical Properties

Type:

Water base acrylic coating

Color:

Grey, Light Grey

Vehicle Type:

Pure acrylic resin waterborne

Pigment Type:

Lead free, iron oxide, titanium dioxide and extenders

RoHS Compliance Statement

None of the following materials are intentionally added in manufacturing this product: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) as outlined in the Directive 2002/95/EC Article 4.1. See Desco Industries Inc. letter on-line at ESDSYSTEMS.COM.

Viscosity:

Light Grey 26" #3 Zahn cup
Grey 23" #3 Zahn cup

Solids:

Light Grey 24% by volume
Grey 20% by volume

Coating Density:

Light Grey 9.54 lbs per gallon
Grey 10.27 lbs per gallon

Gloss:

Light Grey 2 @ 60°
Grey 22 @ 60°

Temperature Range:

Wet: 33°F - 110°F
Dry: 33°F - 300°F (300°F not continuous)

Electrical Properties

Surface Resistivity:

10⁵ ohms/sq. per ASTM D257

Static Charge Decay:

<0.01 sec. per FTMS 101B, Method 4046

Charge Generation:

Zero per AATCC Step Test,
Method 134-1979

RTT:

10⁵ ohms per ANSI ESD-S7.1

RTG:

10⁵ ohms per ANSI ESD-S7.1

Testing

Representative areas should be tested for adhesion and electrical performance of the paint before applying paint to the entire floor. To best ensure consistent results, the test should be done at various locations.

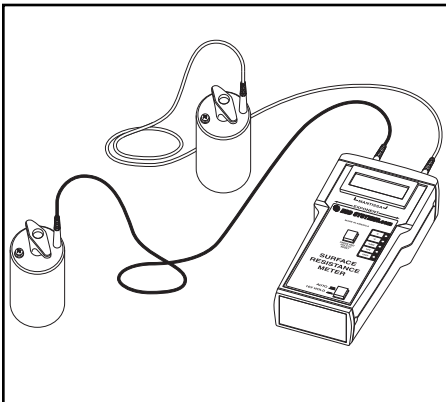


Figure 4. Testing Surface Resistivity of Floor with 41290 Tester.

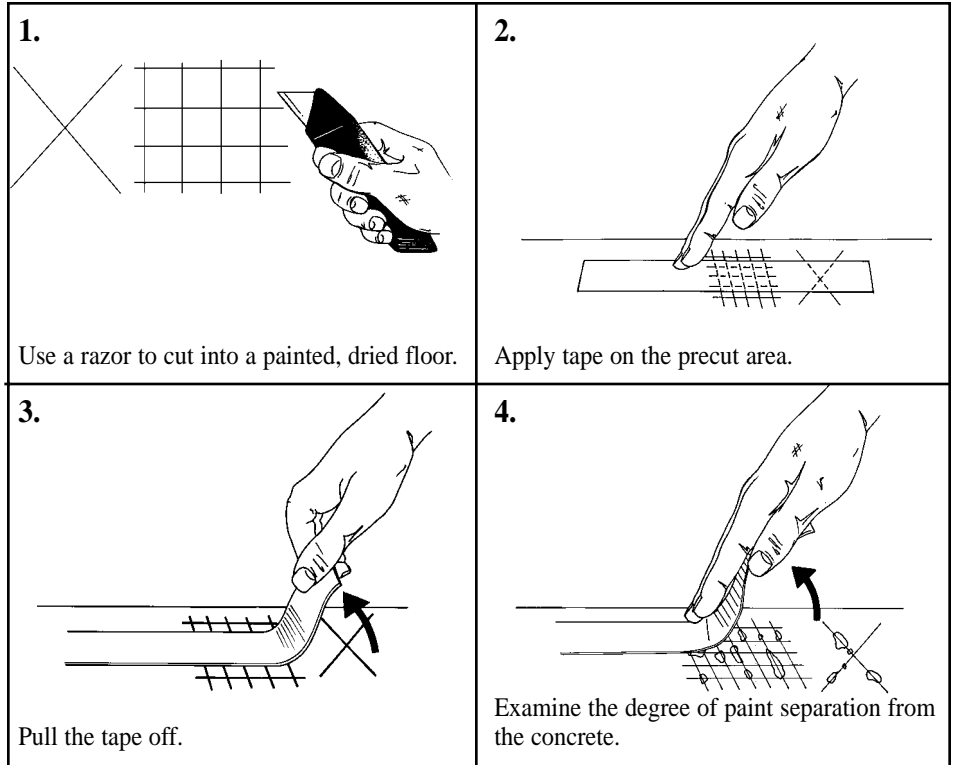


Figure 5. Adhesion Test on the painted floor.

ELECTRICAL PROPERTIES:

Test the surface resistivity, point-to-point resistance, and resistance-to-ground properties of coated area per ANSI ESD-S7.1 test method. For quick and easy verification of the paint's electrical properties, ESD Systems.com recommends the use of our 41290 Surface Resistance Test Kit (Figure 4). For more information request Tech Brief PS-2111.

ADHESION:

Allow newly applied paint to dry a minimum of 48 hours before proceeding with the test. At humidity levels over 55% RH, allow 72 hours of drying time before testing. Use a razor to cut a cross or a few perpendicular lines over a 3" by 3" area on several spots of the thoroughly dried area. Use a piece of masking tape to cover the marked area. Make sure the tape is thoroughly adhered to the test area. Pull the tape off the surface and examine the amount of paint which has peeled off during the test. If any significant portion is transferred to the tape, better surface preparation (acid etching, cleaning or sanding) should be done on the substrate to enhance the adhesion.

Limited Warranty

ESD Systems.com expressly warrants that for a period of one (1) year from the date of purchase, ESD Systems.com Conductive Acrylic Paint will be free of defects in material (parts) and workmanship (labor). Within the warranty period, a unit will be repaired or replaced at our option, free of charge. Call Customer Service at 508-485-7390 for a Return Material Authorization (RMA) and proper shipping instructions and address. You should include a copy of your original packing slip, invoice, or other proof of purchase date. Any unit under warranty should be shipped prepaid to the ESD Systems.com factory. Warranty replacements will take approximately two weeks.

Warranty Exclusions

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

Limit of Liability

In no event will ESD Systems.com or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.



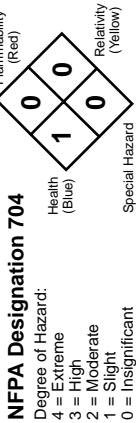
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Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.



Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

IDENTITY (As Used on Label and List)
STATPROOF® CONDUCTIVE ACRYLIC PAINT

Section I

Manufacturer's Name
ESD Systems.com

Emergency Telephone Number

Address (Number, Street, City State and Zip Code)
 19 Bringham St., Marlboro, MA 01752-3004

Telephone Number for Information
 (508) 485-7390

Date Prepared
 07-01-03

Signature of Preparer (optional)

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Light Grey % by Weight	Grey % by Weight
2-Butoxy Ethanol (CAS No. 111-76-2)	50		5-25	5-25
Butyl Alcohol (CAS No. 71-36-3)	50		1-5	1-5
Mineral Spirits (CAS No. 64741-41-9)	100		<1	<1
Butyl Carbitol (CAS No. 112-34-5)			<1	<1
Z-Ethyl-H-Hexanol (CAS No. 104-76-7)			<1	<1
Ethylene Glycol (CAS No. 107-21-1)			<1	N/A
Xylene (CAS No. 1330-20-7)			<1	N/A
Diethylene Glycol (CAS No. 111-46-6)			<1	N/A
Ammonium Hydroxide (CAS No. 1336-21-6)		35	<1	<1

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372, CAS 111-76-2 (5-25% by weight), CAS 71-36-3 (<1% by weight)

Section III - Physical/Chemical Characteristics

Boiling Point	212°F	Weight Per Gallon	Light Grey - 9.54 lbs Grey - 10.27 lbs
Vapor Pressure (mm Hg) @ 20°C	142	Melting Point	N/A
Vapor Density (AIR = 1)	>1	Evaporation Rate (Butyl Acetate = 1)	Slower than n-butyl acetate
Solubility in Water	61%		
Appearance and Odor	Colored liquid		

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	>250°F	Flammable Limits	Light Grey=Undetected, Grey=1.1% LEL, 11.2% UEL
Extinguishing Media	Any approved fire extinguishing agent: CO ₂ , DC, Foam		
Special Fire Fighting Procedures	Water may be used to cool down unopened containers in vicinity.		
Unusual Fire and Explosion Hazards	None		

Section V - Reactivity Data

Stability	Unstable	Conditions to Avoid	Open flames or sparks.
	Stable		X

Incompatibility (Materials to Avoid)
 Strong alkalis and oxidizing agents.
 Hazardous Decomposition or Byproducts
 Will not occur.

Section VI - Health Hazard Data

Hazardous Polymerization	May occur	Conditions to Avoid	
	Will Not Occur		X
Route(s) of Entry:	Inhalation? YES	Skin? YES	Ingestion? YES
Health Hazards (Acute and Chronic):	NTP? No	IARC Monographs? No	OSHA Regulated? No
Carcinogenicity:			
Signs and Symptoms of Exposure:			

ACUTE: Irritation of eyes and skin may occur with overexposure. Continued breathing of vapors may irritate respiratory tract causing headache, nausea and dizziness. CHRONIC: Unknown.

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled
 Eliminate all ignition sources. Wear appropriate impervious protection equipment and approved respirator. Contain spill with absorbent material and put into vapor tight containers. Prevent material from contacting water source or sewers leading to surface waters.

Waste Disposal Method: Dispose of accordance with local, state and federal regulations.

Precautions to be Taken in Handling and Storing:
 Store in compliance with good housekeeping procedures. Protect from freezing, and extreme heat. Store at temperatures above 45°F.

Other Precautions:
 Ground containers when pouring liquids and powders to avoid static charge buildup. Provide adequate ventilation during fume cutting coated surfaces.

Use NIOSH/MSHA approved organic vapor cartridge type to remove solid airborne particles and vapors

Section VIII - Control Measures

Respiratory Protection (Specify Type)
 Local Exhaust
 Mechanical (General)
 In confined space
 Other
 Protective Gloves:
 Impervious type required for long or repeated exposure.
 Eye Protection:
 Use safety eyewear to protect against splash of liquids.
 Other Protective Clothing or Equipment:
 Prevent prolonged skin contact with contaminated clothing.
 WorkHygienic Practices:
 Wash hands before eating, smoking, or using washroom facilities
 N/A = Not Applicable; N/E = None Established