

Application and Maintenance Program Statfree® ESD Protective Floor Care Products



Figure 1. Statfree® Floor Finish

Description

Desco Statfree® Zinc-Free Floor Finish is formulated utilizing a highly unique polymer chemistry. The Statfree® formulation provides a highly effective ESD protective flooring surface, providing protection for floor surfaces most prone to generate high levels of static charges. The Statfree® proprietary polymer formula provides consistent and rapid charge dissipation without the use of heavy metal cross-linking agents commonly used in other ESD protective floor finish products. Statfree® Floor Finish is a free flowing liquid emulsion, which can be easily applied to any hard surface or sealed floor including vinyl, linoleum, rubber, asphalt, sealed or painted wood, terrazzo and concrete. Statfree® dissipates charges from personnel and equipment alike, and prevents tribocharging (static charge generation) while building a clear, high gloss floor surface that resists wear.

This Floor Finish's unique chemistry allows it to maintain its dissipative electrical properties in both low and high humidity environments. The Statfree® polymer formula provides electrical properties which significantly lower charge generation when compared to conventional acrylic floor finishes. Statfree® is UL listed for slip resistance for added user safety.

SAFE WALKING SURFACE

UL Classified as to slip resistance only. Statfree® provides superior electrical properties along with a safe walking surface. Underwriters Laboratory has evaluated Statfree® and tested it to their slip resistance standards. To ensure employee safety and to mitigate user's liability exposure, it is important to use floor finish that has been successfully tested for slip resistance, and is properly installed and maintained.

General Guidelines

Desco Statfree® Floor Finish eliminates static charges from building up on personnel and equipment, reducing the potential hazard of ESD related failures in sensitive environments. Unlike most conventional static control acrylic floor finishes which rely on zinc cross-linking technology, Statfree® is free of zinc and other heavy metals. This is important to users being monitored, or those desiring to reduce metal discharge into their waste water. Statfree® durability and low cost make it ideal for use as a protective overcoat on expensive conductive floor tiles.

For maximum effectiveness Statfree® Dissipative Floor Finish should be used as part of a comprehensive maintenance program that includes use of other Floor Care products such as Statguard® Floor Stripper and Floor Cleaner, and Statfree® Spray Buff and Burnishing Restorer. Proper attention paid to the application and maintenance of Statfree® Floor Finish will result in increased durability and enhanced ESD control performance.

NOTE: Statfree® Dissipative Floor Care products do not have a set life span. The chemicals are not known to degrade over time when stored at the proper temperature conditions as stated in the Material Safety Data Sheet. We also recommend that these products be stored in their original containers and be sealed when not in use.

Grounding (Typically Not Required)

Conventional grounding practices, such as electrically connecting Desco Statfree® Floor Finish to earth or building ground is required only for applications of floor finish that are less than 50 square feet. For applications that are greater than 50 square feet, grounding is not required. The capacitance of large installations of Statfree® Floor Finish is vastly greater than the capacitance of the human body. This enormous difference in capacitance allows the treated floor to act as a theoretical charge reservoir or natural ground. The capacitance and surface resistance of Desco Statfree® treated floors will decay a 5000 volt charge to 0 in less than 0.1 seconds when tested to Federal Test Method Standard 101C, Method 4046. Desco Statfree® Dissipative Floor Finish exceeds industry accepted static decay requirements.

Foot grounders should be used. It is recommended that foot grounders be worn on both feet. For additional information on Desco foot grounding products ask for Technical Bulletin [TB-2020](#).

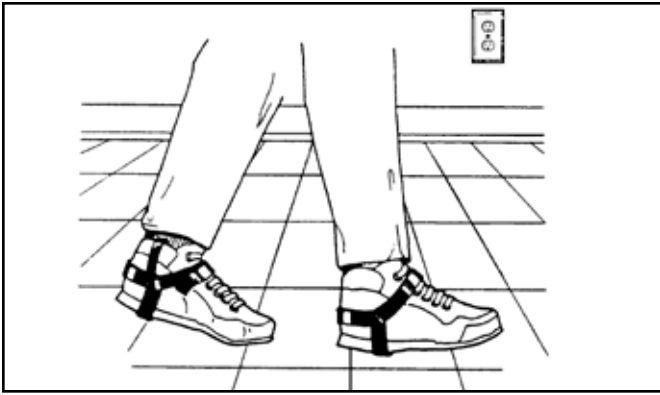


Figure 2. Foot grounders should be used on ESD protective flooring

Floor Preparation - Surface

CONCRETE

Two measures are used to determine a good concrete surface for Statfree® Floor Finish:

1. The surface should be sealed.
2. The surface should be cleaned of all contaminants.

SURFACE

Surface to be finished should be clean, dry, and smooth. Heavy dirt or grease build up should be removed with a stripper or degreaser. DO NOT use Statfree® on surfaces colder than 45° F.

SEALING

Surface preparation is absolutely critical for porous materials such as concrete. Proper preparation simplifies application, increases durability and ensures proper performance. Industrial grade polyurethane, vinyl or acrylic base sealers are recommended to seal highly porous floors before the application of Statfree® Floor Finish. Enamel sealers can be used for bare wood, while enamel undercoat with rust inhibitors are recommended for metal surfaces. DO NOT use Statfree® on surfaces colder than 45° F.

New concrete should be allowed to cure for 60 days before sealing. Concrete surfaces do not all have the same physical and chemical properties. They vary widely due to the variety of ways concrete can be formulated, poured or finished.

There are several methods to prepare problem concrete. Each method depends on the condition of the concrete. Cleaning methods range from: sweeping, vacuuming, wire brush, air-blasting, water jet, steam cleaning, or stripping. Concrete surfaces are very porous and should be properly sealed prior to the application of Statfree® Floor Finish.

Adhesion properties for the concrete sealer can be increased by profiling or rouging the concrete surface through acid etching, rotary drum sanding, scarifying or mechanically scratching the surface. The concrete sealer will reduce the porosity of the concrete and provide a smooth level surface for the finish. The sealer also provides a barrier to prevent any water migrating up through the surface of the concrete.

No Sealer Application: Sealing is recommended for increasing coverage and correcting problem concrete surfaces that are not dry or free from grease, oil, etc. If the subfloor surface is dry, level, and free from dirt, grease, oil, paint, sealer, old adhesives, and other foreign materials it may be suitable to applying Statfree® finish directly onto the concrete.

COVERAGE

Desco Statfree® Dissipative Floor Finish covers approximately 2000 square feet per gallon per coat on smooth surfaces. Coverage is less on coarse or textured surfaces. With 18% solids, Statfree® Floor Finish is easier to apply with significantly better productivity than competing brands.

DRY TIME

It is recommended that Statfree® be allowed to dry to the touch. At higher relative humidity levels, a longer drying time may be necessary. Do not use force air drying. Wait 6 hours before allowing light traffic, 12 hours before regular traffic, 48 hours before any wet maintenance, and 72 hours before heavy equipment and floor truck traffic.

CLOSE CONTAINER AFTER EACH USE. KEEP FROM FREEZING. DO NOT TAKE INTERNALLY.

Floor Stripping



Figure 3. Statguard® Floor Stripper Item No. [10442](#), 5 gallon container

Stripping the floor is recommended for first time application of any finish. New tiles are supplied with a protective factory finish that protects during installation but should be stripped away prior to any floor finish application. Properly maintained floors should be stripped one to three times annually, depending on traffic and buildup of contaminated finish. Statguard® Floor Stripper is recommended to strip multiple layers of floor finish or coatings.

Equipment needed:

- Push broom
- Single pad 175 RPM stripping machine (with black or brown stripping pad)
- Mops
- Statguard® Stripper, Item #[10441](#)
- Buckets
- Wet vacuum

1. Always use in a well ventilated area or wear a suitable respirator. Wear appropriate eye protection such as splash goggles and impervious type protective gloves.
2. Sweep away all loose dirt and contaminants.
3. Dilute Statguard® Floor Stripper 3:1, Three (3) parts HOT water to one (1) part stripper.
4. Apply stripper liberally to around 200 square foot area in need of stripping. Using a clean string mop to apply diluted stripper, uniformly distribute the solution. Let the solution stand for 3 to 8 minutes. Do not allow it to dry.
5. Scrub the treated floor with the stripping machine at 175 rpm using a stripping pad soaked in stripping solution.

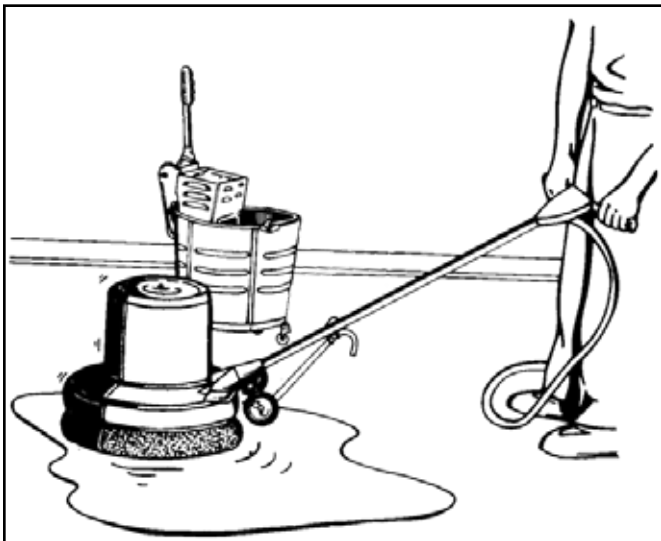


Figure 4. Stripping floor

6. Pick up the loosened floor finish using a wet vacuum or mop. Repeat steps 3 and 4 as required.
7. Thoroughly rinse the floor two to three times with clean water to remove all spent chemicals. NOTE: If rinsing is not completed thoroughly, the remaining chemicals will soften new finish as it is applied, thereby diminishing its durability.
8. Pick up the rinse water with a wet vacuum or mop.
9. Inspect floor to be sure all stripper and old finish has been removed. Allow floor to dry thoroughly before applying any new floor finish.

For additional usage information and a MSDS sheet on Desco Statguard® Floor Stripper, ask for Technical Bulletin [TB-2089](#).

It is recommended that the stripped surface be tested after rinsing to ensure that high pH residues do not remain. Some high pH strippers will leave a residue behind even after several rinses. A high pH can affect the floor finish curing time as well as other properties of the finish. To test for high pH residue, test either the rinse water or the floor

using either a pH measurement instrument or a piece of pH indicating litmus paper. A safe pH level will be between 7.0 (neutral) and 9.0 (mildly, alkaline). Two sources for litmus paper are Micro Essential Laboratory, Brooklyn, NY 11210 or Fisher Scientific, Fair Lawn, New Jersey 07410.

Floor Finish Application

It is recommended that three coats of Statfree® Floor Finish are put down in the initial application.



Figure 5. Statfree® Dissipative Floor Finish
Item No. [81012](#), 2.5 gallon
Item No. [81013](#), 5 gallon
Item No. [81030](#), 55 gallon drum

Equipment needed:

- Statfree® Dissipative Floor Finish
- Clean rayon (or cotton blend) mop dedicated to Statfree® use only
- Clean bucket, and wringer dedicated to Statfree® use only

If Statfree® freezes, allow it to thaw to 70°F before application.

1. Always use in a well ventilated area or wear a suitable respirator. Wear appropriate eye protection such as splash goggles and impervious type protective gloves.
2. Pour Dissipative Floor Finish into a clean bucket. Apply using a damp clean rayon or cotton mop. Make sure to use a dedicated mop, do not use a mop that has been used to strip or mop floors. Coat the floor uniformly, avoiding excessive foaming.
3. Allow the first coat to dry for 60 minutes, then apply a second coat. Do not use force air drying.
4. Repeat step 2 for the third coat.
5. Allow last coat to dry overnight or minimum of 6 hours before permitting any kind of floor traffic on the newly coated area. An overnight curing time is preferred.

6. Allow minimum of 48 hours of drying time before performing any wet maintenance (restoring and spray burnishing) on the newly coated floor.

Floor Finish Maintenance

DRY MOP PROGRAM

Keep the floor surface clean. Use an untreated dust mop or push broom daily or as needed to remove accumulated dirt and insulative contaminants.

Statguard® Dissipative Floor Cleaner

Desco's Statguard® Dissipative Floor Cleaner is specifically formulated to clean floors treated with Statfree® Dissipative Floor Finish. Statguard® Floor Cleaner is formulated with dissipative agents that will rejuvenate and improve the static dissipative properties of floors treated with Statfree® Floor Finish.



Figure 6. Floor maintenance with Statguard® Dissipative Floor Cleaner, Item No. [10566](#), 5 gallon, concentrate

Desco's Dissipative Cleaner effectively cleans without leaving behind any harmful residue that can dull the surface or impede dissipation properties. Statguard® Cleaner is a non-alkaline detergent with a neutral pH, which requires no rinsing. Use the following procedure to clean treated floors with Desco Statguard® Cleaner. This product is also recommended for use on conductive floor tile.

CLEANING SCHEDULE

Heavy to moderate traffic floors should be cleaned 1-2 times per week. Light traffic floors should be cleaned once a week or as needed.

Equipment needed:

- Push broom
- Mop (dedicated to Statguard® use only)
- Buckets
- Statguard® Dissipative Cleaner, Item #[10566](#)

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

2. Dry mop the surface to be cleaned.

3. Dilute Statguard® Dissipative Cleaner, two (2) quarts of cleaner concentrate to five (5) gallons of clean water.

4. Thoroughly mix the cleaner concentrate before pouring the cleaner into the bucket. Use a clean untreated mop (dedicated to Statguard® use only) to damp mop the area. Wring out excess fluid and do not flood a treated floor with water. Do not use scrubbing machine to clean the floor.

5. Allow 20 to 40 minutes drying time before walking on the cleaned area.

Clean only with Statguard® Cleaner, do not damp mop with plain water or with a high alkaline or high residue cleaner. Using harsh detergents can damage a treated floor's static dissipative properties, or can turn the no-zinc finish white.

For additional usage information and a MSDS sheet on Desco Statguard® Floor Cleaner, ask for Technical Bulletin [TB-2090](#).

Statfree® Dissipative Spray Buff

Regular spray buffing will help to maintain floors treated with Statfree® Floor Finish at peak performance and appearance. Spray buffing with Statfree® Dissipative Spray Buff will remove light surface soil while reviving the high gloss and electrical properties of the treated surface.

SPRAY BUFF SCHEDULE

Heavy to moderate traffic floors should be spray buffed 1-2 times per week. Light traffic floors should be buffed once a week or as needed.



Figure 7. Desco Statfree® Spray Buff, Item No. [81050](#), ready-to-use, 1 quart spray bottle, case of 12

Equipment needed:

- Push broom
- 175-1500 RPM buffing machine
- Statfree® Spray Buff, Item #[81050](#)

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

2. Sweep away all loose dirt and contaminants. Do not spray buff on a dirty floor. If the floor is soiled, first perform the cleaning procedure using Desco's Statguard® Floor Cleaner.

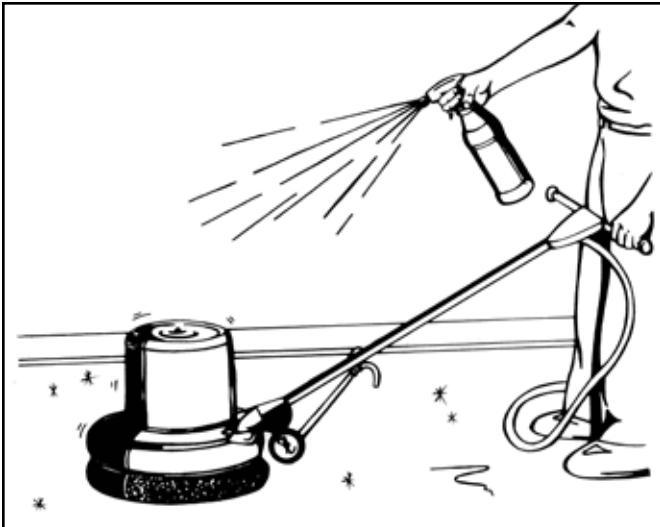


Figure 8. Spray buffing with Desco Statfree® Dissipative Spray Buff

3. Lightly spray a small area with the Statfree® ready-to-use Dissipative Spray Buff. Treat a small area at a time.

4. Buff the sprayed area at 175-300 RPM using a red pad or at 1000-1500 RPM using a white or beige pad. Buff area until clean and glossy. All black marks and scuffs should be removed. The area must be buffed while in a liquid state.

5. After high speed buffing, dry mop the entire area with an untreated mop.

For additional usage information and a MSDS sheet on Desco Statfree® Dissipative Spray Buff, ask for Technical Bulletin [TB-2048](#).

Statfree® Burnishing Restorer

Statfree® Burnishing Restorer is a ready to use formulation that renews the unique protective properties and gloss of Statfree® Dissipative Floor Finish with less of an investment in time, effort and money. Static decay properties, surface resistance characteristics and durability of the floor finish can be extended dramatically. The Restorer extends the re-coat cycle and significantly reduces the cost of maintenance.

BURNISHING RESTORER SCHEDULE

Heavy to moderate traffic floors should be treated 2-4 times per month. Light traffic floors should be treated once a month or as needed.

Equipment needed:

- Push broom
- 1000-1500 RPM burnishing machine (with a white or beige pad)
- Statfree® Burnishing Restorer, item #[81061](#)



Figure 9. Statfree® Burnishing Restorer, Item No. [81061](#), ready-to-use, 5 gallon container

1. Dry mop the coated area to remove loose dirt from coated floor.

2. Use a clean untreated string mop to apply a thin coat of restorer onto floor. Allow it to dry 20 to 40 minutes.

3. Burnish the coated area with a 1000 to 1500 RPM rotary machine and a clean beige burnishing pad.

4. Dry mop the entire burnished area again.

For additional usage information and a MSDS sheet on Desco Statfree® Burnishing Restorer, ask for Technical Bulletin [TB-2049](#).

Statfree® Dissipative Floor Finish Physical Properties

Base:	Acrylic Polymer
Description:	Aqueous Acrylic Emulsion, Non hazardous material as defined in (29 CFR 915.4)
Abrasion Resistance:	Exc. Crockmeter @ 50% RH
Color:	Light blue opaque, dries clear
Density:	8.42 lbs/gal
Freeze/Thaw Stability:	Exc. 3 Cycles @ -10°C
pH:	8.5 - 9.0
Slip Resistance:	UL Classified*
Solids:	18%
Solvents:	Water
Thermal Stability:	Exc. 50°C/1 month
Viscosity:	3.3 cps
Working Humidity:	Range 30-80% RH

*Underwriters Laboratory (UL) tested and classified as slip resistance only. UL Classification Number SA6524.

Electrical Properties

Surface Resistance: 10E6 – 10E9 ohms per ESD-S7.1
Charge Generation: Zero per AATCC Step Test Method 134-1979
Charge Decay: 5000v - 0v in < 0.1 seconds

Testing

It is recommended that applications of Statfree® Dissipative Floor Finish be tested periodically to ensure that insulative contaminants such as dirt and grime are not building up on surface. For optimal performance the surface should be regularly maintained and kept cleaned. Testing for either point to point resistance (RTT) or point to ground resistance (RTG) will indicate if the floor finish needs maintenance. If the surface is clean, high resistance readings usually indicate that the floor finish is becoming worn and is in need of replenishing of solids. These solids are worn away over time due to normal floor traffic. Hence, the high floor traffic areas will need more frequent maintenance than low traffic areas. Maintenance is typically required if resistance measurements are above 10^{10} ohms.



Figure 10. [19635](#) Meg Pocket Megohmmeter

VERIFICATION TESTING

For quick and easy verification of surface resistance, Desco recommends the use of our [19635](#) Pocket Megohmmeter. For detailed information on the Pocket Megohmmeter ask for Technical Bulletin [TB-2083](#).

MEGOHMMETER TESTING

Desco recommends the ESD Association's Standard 7.1 test procedure along with a megohmmeter for determining both RTT and RTG measurements. The Desco 19780 Surface Resistance Test Kit will provide all the necessary equipment to test in accordance with the above mentioned ESD Association standard. For detailed information on the Surface Resistance Test Kit ask for Technical Bulletin [TB-3014](#). ESD-S 7.1 is available from the ESD Association, 7902 Turin Rd., Suite 4, Rome, NY 13440-2069, (315) 339-6937, www.esda.org.



Figure 11. [19780](#) set up to test resistance point to point

Limited Warranty

Desco expressly warrants that for a period of one (1) year from the date of purchase, Desco Statfree® Static Dissipative Floor Care products will be free of defects in material. Within the warranty period, the material will be tested and replaced at Desco's option, free of charge. Call Customer Service at (909) 627-8178 (Walnut, CA) or (781) 821-8370 (Canton, MA) 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. Warranty replacements will take approximately one week.

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 Desco 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.

Section V - Reactivity Data

Stability	Unstable		Conditions to Avoid Excessive heat and freezing temperatures. Avoid contact with acids.
	Stable	X	

Incompatibility (Materials to Avoid)

None known

Hazardous Decomposition or Byproducts

CO, CO₂, and unidentified organic compounds

Hazardous Polymerization	May occur		Conditions to Avoid
	Will Not Occur	X	Not Applicable

Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Minor irritation	Minor irritation	Dilute with water

Health Hazards (Acute and Chronic):

Acute: Continuous skin contact may cause dermatitis. Eyes: possible irritation to possible permanent injury. Skin: moderate irritation to possible allergic reaction. Inhalation: may cause discomfort to nose, throat. Ingestion: discomfort to collapse, coma.

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	None	None	None

Signs and Symptoms of Exposure:

May result in irritation of skin, eyes, and respiratory tract.

Medical Conditions

Generally Aggravated by Exposure None known.

Emergency and First Aid Procedures

Inhalation: Move subject to fresh air. Skin: Wash with soap and water. Ingestion: Drink several glasses of water (do not induce vomiting). Contact a physician. Eyes: Flush 15 minutes with water.

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken In Case Material is Released or Spilled

Keep spectators away. Dike and contain spill with inert material (e.g. sand, earth). Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.

Waste Disposal Method

Coagulate the emulsion by the stepwise of Ferric Chloride and Lime. Remove the clear supernatant liquid and flush to a chemical sewer. Incinerate the solids and the contaminated diking material according to local, state, and federal regulations.

Precautions to be Taken in Handling and Storing

Wear gloves, goggles, and protective clothing.

Other Precautions

Shipping Information

DOT shipping names: NOS

DOT Hazard Class: None

DOT Labels Required: None

Freight Description: Floor Finish

Section VIII - Control Measures

Respiratory Protection (Specify Type)

Wear suitable respirator (MSHA/NIOSH-approved) where exposure limits are exceeded.

Ventilation	Local Exhaust	Special
	Mechanical at point of contamination release	None
	Mechanical (General)	Other
		None

Protective Gloves

Impervious / Neoprene

Eye Protection

Chemical splash goggles (ANSI Z-87.1).

Other Protective Clothing or Equipment

Wear protective clothing to prevent contact with product. Eyewash station.

Work/Hygienic Practices

N/A = Not Applicable; NE = None Established