



Application Instructions

Statguard® Static Dissipative Floor Finish



Figure 1. Statguard® Floor Finish Item No. 71046, 10 litres

Description

Statguard® Static Dissipative Cross-Linked Floor Finish is used to dissipate static charges as well as prevent triboelectric (static charge generation) charges while providing a clear, high gloss finish that resists wear. Statguard® Static Dissipative Floor Finish is a free flowing liquid emulsion, which can be applied on any hard surface or sealed floor including vinyl, vinyl asbestos, linoleum, rubber, asphalt, sealed or painted wood, terrazzo and concrete. Statguard® technology eliminates the need for static control tile or floor mats. Statguard® dries in one hour and is ideal for clean room and electronic manufacturing, assembly, and test areas. This floor finish is for use in environments with relative humidity of 30-65%.

SAFE WALKING SURFACE

UL Classified as to slip resistance

only. Statguard® provides superior electrical properties along with a safe walking surface. Underwriters Laboratory has evaluated Statguard® 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

Statguard® eliminates triboelectric generated charges before costly damage can occur from personnel who approach static sensitive work areas. Statguard® also drains static charges from personnel who forget to reattach their wrist straps

minimizing the damage that could occur from handling. Even when using conductive tiles, a triboelectric charge is generated. When Statguard® is applied over conductive tiles, the enhanced floor tile eliminates the charge generation due to walking across the floor.

Generally accepted industrial stripping and floor finish application procedures are to be followed as outlined on page 2.

NOTE: Statguard® Static Dissipative Floor Finish does 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 the product be stored in its original container and be sealed when not in use.

GROUNDING

Conventional grounding practices like electrically connecting Statguard® Static Dissipative Floor Finish to earth ground or internal building ground are required for applications of static dissipative floor finish that are less than 5 square meters. For applications that are greater than 5 square meters, the capacitance of Statguard Floor Finish is MANY, MANY times greater than the capacitance of the human body model. The difference in capacitance is so great that the Statguard® treated floor acts as a theoretical reservoir or natural ground. The capacitance and surface resistance of the Statguard® treated floor will decay a 5000v charge to zero in 0.05 sec. per FTMS 101B, Method 4046. Statguard® far exceeds the acceptable static decay time of less than 0.1 seconds.

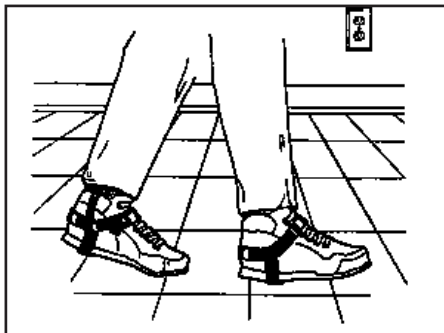


Figure 2. Foot grounders should be used on ESD protective flooring.

Foot grounders should be used in conjunction with any properly grounded conductive or static dissipative flooring. It is recommended to wear foot grounders on both feet. Ask your Charleswater Representative for Technical Bulletin PPE-5006.E for more information.

CONCRETE

Two measures are used to determine a good concrete surface for Statguard® 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 Statguard® on surfaces colder than 7°C.

SEALING

Surface preparation is absolutely critical for porous materials such as concrete. Proper preparation simplifies application, increases durability, and is essential for proper adhesion of the coating of the substrate. Industrial grade polyurethane, vinyl, or acrylic base sealers are recommended to seal high porosity floors before applying the Statguard® Floor Finish. Enamel can be used for bare wood, and enamel undercoat with rust inhibitor for metal.

New concrete should cure for 60 days before sealing. Not all concrete surfaces are created equal. They vary widely in physical and chemical qualities due to the way the concrete was originally formulated, poured or finished.

Concrete surfaces are very porous and should be properly sealed prior to the application of Statguard® Floor Finish. There are several methods to prepare problem concrete. Each method depends on the condition of the concrete.

Statguard Dissipative Floor Finish contains zinc.

Cleaning methods range from: sweeping, vacuuming, wire brush, air-blasting, water jet, steam cleaning, or stripping. Adhesion properties for the concrete sealer can be increased by profiling or roughing 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 and level surface for the finish. The sealer also provides a barrier to eliminate any water migrating up through 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 Statguard® finish directly onto the concrete.

COVERAGE

Statguard® Floor Finish covers 49 square meters per litre per coat on smooth surfaces. Coverage is less on coarse or textured surfaces. With 18% solids, Statguard® Floor Finish is easier to apply with significantly better productivity than competing brands.

DRY TIME

It is recommended that Statguard® be allowed to dry at room temperature in excess of 21°C for 1 hour or until dry. At high relative humidity levels, a longer drying time may be necessary. Do not use force air drying. Wait 6 hours before any 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.

Optional Base Coat

Statguard® Conductive Latex Paint can be used as a base coat to enhance the electrical properties where conductive applications are needed. Statguard® Static Dissipative Floor Finish will seal out dirt, debris and protect the conductive surface allowing for ease of maintenance and enhanced shine. Statguard® is a polymer base floor finish/sealer that can be used as a top coat on the Conductive Latex Paint. Two coats are recommended, three coats will enhance electrical properties, durability and reduce frequency of maintenance. Ask your Charleswater Representative for Technical Bulletin PPE-5019.E for

more information on Statguard® Conductive Latex Paint.

Floor Preparation - Stripping

Always use in a well ventilated area.

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 two to four times annually, depending on traffic and buildup of contaminated finish. Statguard® Floor Stripper is recommended to strip multiple layers of floor finish.

Equipment needed:

- Push broom
 - Single pad 175 rpm swing floor machine (with a black or brown stripping pad)
 - Mops
 - Buckets
 - Statguard® Floor Stripper
 - Wet vacuum
1. Sweep away all loose dirt and trash.
 2. Mix Statguard® Floor Stripper 3:1 three (3) parts HOT water to one (1) part stripper.
 3. Apply stripper liberally to around 18.5 square meter area in need of stripping. Using a cotton string mop, uniformly distribute the solution. Let the solution stand for 5-15 minutes. Do not let it dry.
 4. Scrub the floor with the floor machine at 175 rpm (using a stripping pad soaked in stripping solution). Work methodically, with at least two passes over each area of the floor.

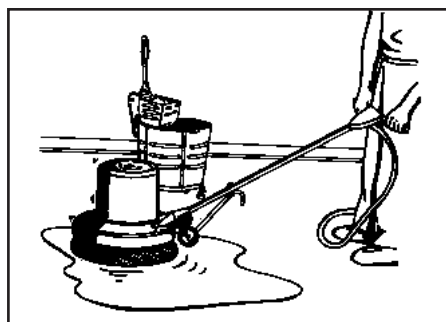


Figure 3. Stripping the floor

5. After scrubbing, pick up the solution with a wet vac or mop.
6. Flood rinse the floor with clean, clear water.
7. Pick up the rinse water with a wet vac or mop.
8. Repeat steps 5 and 6. Entire floor should be rinsed twice.

9. Damp mop the floor at least twice with clean mop and clean water (change rinse water frequently to ensure that all stripper solution residue is removed), and let dry.
10. Inspect floor to be sure all stripper and old polish has been removed.

It is recommended to test the stripped surfaces after the second rinse to ensure that high pH residues are rinsed away. 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 measuring instrument or a piece of pH indicating litmus paper. A safe pH 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.

Statguard® Application

It is recommended that you apply two coats of Statguard® Floor Finish. After stripping the factory finish, new tile will have an initial high porosity and requires three coats only on first application. For known high traffic applications, three coats are recommended for extended life.

- If Statguard® freezes, allow it to thaw completely before application

Equipment needed:

- Clean rayon (or cotton blend) mop, dedicated to Statguard® use only
 - Bucket
1. Pour Statguard® Floor Finish into a clean mop bucket and apply with a clean rayon (or cotton blend) mop using a figure 8 motion.
 2. Let the first coat dry at least 60 minutes, then apply a second coat. Do not use force air drying.
 3. Let second coat dry for at least 60 minutes to yield a bright gloss. Repeat application to attain higher gloss and higher conductivity (two coats will provide acceptable antistatic performance on most floors). Keep traffic from floor for at least one hour after the last coat is applied. See dry time recommendations in this technical bulletin.
 4. One or preferably two additional coats of polish should be applied if the floor is to be maintained by dry burnishing or spray buffing.



Figure 4. Applying floor finish.

5. Maintain the polish following the Dust Mop, Damp Mop, Floor Cleaner, Dry Burnish, or Spray Buff maintenance procedure below.

Statguard® Maintenance

DUST MOP PROGRAM

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

DAMP MOP PROGRAM

1. Keep the floor surface clean. Use an untreated dust mop or push broom nightly or as needed to remove accumulated dirt and insulative contaminant.
2. To damp mop, use a 1 to 3 dilution of Statguard® in water (1 part Statguard® to 3 parts water). Let dry thoroughly.

FLOOR CLEANER PROGRAM

The Statguard® Floor Cleaner will clean surface stains and heel marks. As a cleaner it will reduce the gloss of the floor.

Heavy-Moderate Traffic:

Clean once a week, or as dictated by floor appearance.

Low Traffic Floors:

Clean floors as dictated by floor appearance.

1. Dust mop with untreated mop.
2. Dilute Statguard® Dissipative Floor Cleaner 10 parts clean water to 1 part Floor Cleaner. For example, use 19 liters of clean water to one 1.9 quarts of floor cleaner.
3. Damp mop floor with cleaner solution and let dry thoroughly. The mop should be dedicated to Statguard® use only.

DRY BURNISH PROGRAM

A dry burnish program will increase gloss and remove surface imperfections.

Heavy-Moderate Traffic:

Dry burnish once a week or as dictated by floor appearance.

Low Traffic Floors:

Dry burnish as dictated by floor appearance.

1. Dust mop with an untreated mop.
2. Dry burnish at 1000-2000 rpm.
3. After dry burnish, dry mop the area with an untreated dry mop if necessary.

SPRAY BUFF PROGRAM

A spray buff program will repair scratches, marks, and other imperfections as well as gloss.

Heavy-Moderate Traffic:

Spray buff once a week or as dictated by appearance.

Low Traffic Floors:

Spray buff as dictated by floor appearance.

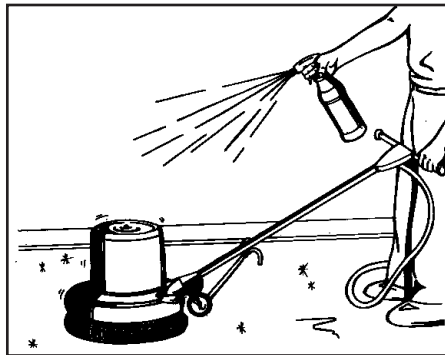


Figure 5. Applying Spray Buff.

Equipment needed:

- Untreated dust mop
 - Spray bottle
 - 175-1500 buffing machine with appropriate pad
1. Dust mop with an untreated mop or push broom.
 2. At 175-300 rpm, use a red pad. At 1000-1500 rpm use a white or beige pad.
 3. Spray a small area with a mixture of one part Statguard® and two parts water. Spray lightly.
 4. Buff the sprayed area until clean and glossy. All black marks and scuffs should be removed.
 5. After high speed spray buffing, dry mop the area, if needed, with an untreated mop.

Physical Properties

Base: Acrylic Polymer
 Description: Aqueous Acrylic Emulsion, Non-hazardous material as defined in (29 CFR 1915.4)
 Abrasion Resistance:
 Exc. Crockmeter at 50% R.H.
 Colour: Off White Opaque
 Density: 63g/cm³
 Freeze/Thaw Stability:
 Exc. 3 cycles at -10°C
 pH: 8.8
 Slip Resistance: UL Approved*
 Solids: 18%
 Solvent: Water
 Thermal Stability: Exc. 50°C/1 month
 Viscosity: 3.3 cps
 Working Humidity: Range 30-60% RH

ELECTRICAL PROPERTIES

Surface Resistance: 10⁷ - 10⁸ Ohms
 Static Decay Rate: 5000v in <0.01 sec
 Triboelectric Charge: <50 volts

CLEAN ROOM CHARACTERISTICS

Contaminant	Dried Film	Liquid (Outgassing)
Sodium	Zero	Zero
Fluoride	Zero	Zero
Chloride	Zero	Zero
Bromide	Zero	Zero
Iodide	Zero	Zero

- Dried film testing was completed to simulate particulating.**
- Liquid analysis completed using GLC (gas-liquid chromatography)**

Testing

It is recommended to test the surface resistance periodically to ensure that insulative contaminants such as dirt and grime are not building up on the surface. The surface should be kept clean. Testing either point to point resistance (Rp) or resistance to ground (Rg) will indicate if the floor finish needs surface maintenance. If the surface is clean, with high resistance readings this indicates that the floor finish is becoming thin and in need of replenishing its solids. These solids are worn away over time due to floor traffic. Hence, the high floor traffic areas will need more frequent maintenance than low traffic areas.

* Underwriters Laboratory (UL) tested for slip resistance only. Authorization and Registration Number SA6524.

**Analysis conducted at Armstrong Corporate Research Center, Lancaster, PA.

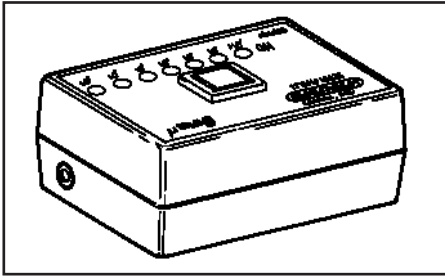


Figure 6. 99035 µMeg Pocket Megohmmeter

Field Test:

For quick and easy verification of surface resistance Charleswater recommends the use of our 99035 µMeg Pocket Ohmmeter. For further detailed information on the µMeg ask for Technical Bulletin PPE-5046.E.

Digital Megohmmeter Test Kit:

Charleswater recommends ESD S4.1 test method using the megohmmeter for both Rp and Rg testing. The Charleswater 99105 Surface Resistance Test Kit will provide all equipment necessary to test in accordance with the EOS/ESD standard. For further detailed information on the Megohmmeter Test Kit ask for Technical Bulletin PPE-5075.E.

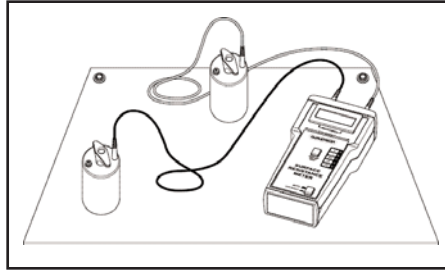


Figure 7. 99105 set up to test resistance point to point

Limited Warranty

Charleswater expressly warrants that for a period of one (1) year from the date of purchase, Statuard® Floor Finish will be free of defects in material. Within the warranty period, the material will be replaced at Charleswater's option, free of charge. Call Customer Service at 00 44 (0) 1892-665313 for a Return Material Authorisation (RMA) and for proper shipping instructions and address. You should include a copy of your original packing slip, invoice, or other proof of purchase date. Any material under warranty should be shipped prepaid to the Charleswater 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 Charleswater 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.

Date: July 1, 2008

STATGUARD[®] AND STATGUARD[®]-LH DISSIPATIVE FLOOR FINISH**1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND COMPANY**

Chemical name: Acrylic Floor Finish

Manufacturer	Desco Industries, Inc.	Charleswater
	90 Hudson Road Canton, MA 02021 U.S.A.	Unit 17, Millbrook Business Park, Sybron Way Crowborough, East Sussex TN 3JZ United Kingdom
Emergency	Phone: (781) 821-8370	Phone: 00 44 (0) 1892-665313
	Fax: (781) 575-0172	Fax: 00 44 (0) 1892-668838

2. INFORMATION ON INGREDIENTS/COMPOSITION

Ingredients	STATGUARD [®] FLOOR FINISH				Ingredients	STATGUARD [®] -LH FLOOR FINISH			
	Weight	CAS-No.	TLV-value	R-Phrases		Weight	CAS-No.	TLV-value	R-Phrases
Glycol Ether*	1-5	034590-94-8	100ppm		Ethylene Glycol*	1-5	107-21-1	100ppm	R22
Glycol Ethyl Ether*	1-5	111-77-3	50ppm	R63	Glycol Ethyl Ether*	1-5	111-90-0	50ppm	R36
Ammonia*	0.01 max	7664-41-7	25ppm	R10-23	Ammonia Hydroxide*	1-5	1336-21-6	25ppm	R36/R37/R38
Modified Acrylic Polymer (NonHaz)	30-60				Mod. Acrylic Polymer (NonHaz)	5-25			
Emulsified Waxes (Non-Haz)	5-25				Emulsified Waxes (NonHaz)	5-25			
					Alkyolamine Methosulfate	1-5			

* These items are listed on the SARA Title III Section 313 Inventory

3. HAZARDS IDENTIFICATION

Eyes	A high concentration of liquid, mist, or vapor may cause irritation of the connective tissue.
Skin	Repeated or continuous contact may cause irritation of the skin.
Ingestion	None known.
Inhalation	Irritation of nose, throat, and lack of breath. Exposure to vapors in high concentration may have same effects as with inhalation.

4. FIRST AID MEASURES

Eye Contact	Flush with water for at least 15 minutes.
Skin Contact	Wash with soap and water.
Ingestion	Drink several glasses of water. DO NOT induce vomiting. Contact a physician.
Inhalation	Move subject to fresh air.

5. EXTINGUISHING MEASURES

Proper Extinguishing Media	Foam, CO ₂ , DC, and water
Protective Clothing	Wearing of appropriate protective equipment.

6. MEASURES TO EXPOSURE OF PRODUCT

Personal Precautions	Wearing protective clothing. Inhalation protection. Extinguish all ignition sources.
Environmental Precautions	Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.
Cleaning Procedures	Absorb with sand or other diminishing material. 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.

7. HANDLING AND STORAGE

Handling	Use in well-ventilated areas; avoid breathing vapors. Keep containers closed when not in use. Avoid freezing.
Storage	Storage Temperature: Max. 49°C/120°F Min. 1°C/34°F. Keep from freezing; product may coagulate.

8. EXPOSURE CONTROL/PERSONAL EXPOSURE

Control Parameters	TLV-value 25 ppm maximum for Ammonia.
Other Regulations	None
Measures For Technical Control	Preferences of technical measure to prevent or control contact with the product. Isolating process and personnel, mechanical ventilation (dilution and local exhaust) and the regulation of process conditions. In case of non-control, proper protective wearing should be used.
Respiratory Protection	Wear MSHA/NIOSH approved respirator where exposure limits are exceeded.
Hand Protection	Impervious/Neoprene Gloves.
Eye Protection	Chemical Splash Goggles (ANSI Z-87.1).
Other Protective Equipment	Eyewash station.
Work/Hygienic Practices	Wash hands before eating, smoking, or using washroom facilities.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Liquid
Colour	Opaque, tan liquid
Smell	Wax or ammoniacal smell
pH	8.0-9.0
Boiling Point at °C	>200°F (100°C)
Melting Point at °C	N/A
Flash Point at °C	Noncombustible
Inflammability Limits (vol.% in air)	N/A
Solubility in water	Complete
Vapor Pressure (mmHg)	N/A
Vapor Density (air = 1)	N/A
Viscosity	1.0 cp (Statguard® Low Humidity)
Density at °C	N/A
Specific Gravity (H ₂ O = 1)	>1.0
Inflammability	Classification according to EC-regulations "non-flammable"
Ignition Temperature	N/A
Evaporation Rate	N/A

10. STABILITY AND REACTIVITY

Stability/Reactivity	Stable product at normal conditions
Conditions to avoid	Temperature above 49°C/120°F and below 1°C/34°F
Materials to avoid	N/A
Hazardous Decomposition	Thermal decomposition may yield acrylic monomers

11. TOXICOLOGICAL INFORMATION

All information refers to the main component Emulsified Acrylic Polymer

	Statguard®	Statguard® Low Humidity
Acute toxicity	LD50/oral/rat = >5000 mg/kg LD50/dermal/rabbit = >5000 mg/kg Skin irritation/rabbit = practically non-irritating Eye irritation/rabbit = inconsequential irritation	None known
Special Effects	None known	None known

12. ECOLOGICAL INFORMATION

No environmental hazards have been reported or known.

Mobility	The product is aqueous and will be separated in aqueous conditions
Degradability	N/A
Bioaccumulation	Not likely
Ecotoxicity	None known
Reference to BimSch V	N/A
Hazard Classification	Non Hazardous

13. DISPOSAL INFORMATION

Product	Coagulate the emulsion by the stepwise of Ferric Chloride and Lime. Incinerate the solids and the contaminated diking material according to local, state, and federal regulations.
Hazardous Waste Number	Nonregulated

14. TRANSPORT INFORMATION

This product is not classified for transport under ADR/IMDG regulations.

15. REGULATORY INFORMATION

Physical/Chemical Indication	Non-flammable
Risk-phrase	(R36/38): irritates eyes and skin
Safety Phrase	(S2): keep away from children, (S7): keep containers well closed, (S24/25): avoid contact with skin and eyes, (S62): if swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.
EU Classification (67/548/EEC-88/379/EEC)	
EINECS Status	All components are included in the EINECS inventories.

16. OTHER INFORMATION

Further Information	Instruction to staff according to Act Dangerous Goods, part 3, paragraph 14 and next.
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Disclaimer

The information given in this publication has been worked up to the best of the knowledge of Charleswater, as well as taking into consideration the applicable laws and regulations. We cannot anticipate all conditions under which this information and our products or the products of the manufacturers in combination with our products may be used. We accept no responsibility for the results obtained by the application information or the safety and suitability of our product or combination with other products. Users are advised to make their own tests to determine the safety and suitability of each such product or product combination for their own purposes. Unless otherwise agreed in writing, we sell the products without warranty, and buyers and end users assume responsibility and liability for loss or damage arising from the handling and use of our products, whether used alone or in combination with other products.