

NEW & IMPROVED FLOWCOAT ESD

Flowcrete Americas is pleased to launch a solvent-free, pigmented and chemical resistant epoxy floor coating, Flowcoat ESD, designed to safely dissipate the build-up of electrostatic charge in sensitive environments...

Making the correct choice of floor system, when establishing an electrostatic protected area (EPA), is essential to ensure that sensitive electronic components and assemblies are adequately protected from the harmful effects of electrostatic discharge (ESD).

Electrostatic Discharge (ESD) refers to the rapid, spontaneous transfer of electrostatic charge induced by a high electrostatic field. Charge can build-up while simply walking across the floor of a processing environment. Without flooring materials equipped with adequate protection, this charge can cause irreversible damage to sensitive components.

When used in conjunction with suitable footwear, Flowcoat ESD will safely dissipate charge to ground faster than it accumulates, in accordance with ESD Association guidelines. Flowcoat ESD demonstrates consistent ground readings throughout the life of the floor coating system and exhibits very low body voltage generation.

Benefits:

-  Electrostatic Dissipative
-  Conforms to ANSI S20.20 2014
-  Low Odor Installation
-  100% Solids
-  Fire Safe
-  Very Low Body Voltage Values
-  Low Maintenance
-  Low VOC

Flowcoat ESD Application Suitability:



Avionic Facilities



Electronic Facilities



Pharmaceutical Facilities



Circuit Board Assembly Areas



ICT & Data Centers



Assembly & Packing Lines



Warehousing Facilities



Sensitive Environments

Flowcoat ESD (20-25 mils)

A 100% solids, chemical resistant seamless epoxy floor coating system designed to dissipate electrostatic charge.

Flowcoat ESD provides a hardwearing, easily cleaned surface in sensitive electronic manufacturing environments.



Electrostatic Dissipative:*

Electrical resistance to ground less than 1×10^9 ohms.



ANSI S20.20-2014 Compliant:

Meets parameters derived from standard test methods for flooring outlined in S20.20.



Low Body Voltage Values:

Minimizes the charge created by movement of people and equipment.



Fire Safe:

Minimizes fire risk from charge in areas where flammable materials are handled.



Seamless & Easily Cleaned:

Seamless installation ensures dirt and dust are swiftly and easily cleaned away.

Standard Colors:



Sky Blue



Light Gray



Medium Gray



Beige

COMPRESSIVE STRENGTH:

ASTM C 579	>11,600 psi
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FLEXURAL STRENGTH:

ASTM C 580	8,700 psi
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RESISTANCE TO GROUND:

ANSI ESD STM 97.1	< 1.0×10^9 ohms
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TYPICAL RESISTANCE TO GROUND:

ANSI ESD STM 97.1	< 3.5×10^7 ohms
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ABRASION RESISTANCE:

ASTM D 4060 CS 17 Wheel, 1000 cycles	0.06g loss
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SLIP RESISTANCE:

BS 7976-2	Dry : 80 Wet : Dependent on specification
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TEMPERATURE RESISTANCE:

Continuous Exposure:	160°F
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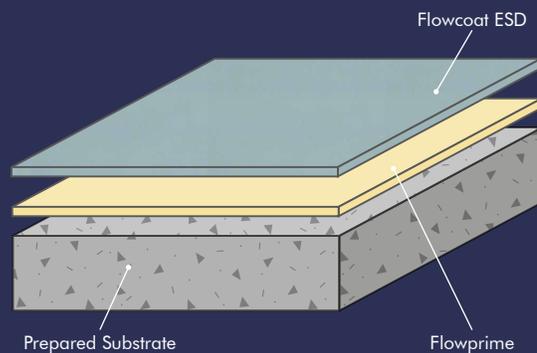
VOC:	20 g/l
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SPEED OF CURE:	50°F	70°F	90°F
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Light Traffic	24-36 hrs	12-16 hrs	6-10 hrs
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Full Traffic	3-5 days	36-48 hrs	18-24 hrs
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Full Chemical Cure	10-14 days	5-7 days	3-5 days
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*To be used in conjunction with suitable ESD footwear.

ESD Floor Comparison Chart

	ESD CARPET TILE	ESD CARPET	ESD VINYL TILE	ESD VINYL SHEET	ESD EPOXY	ESD RUBBER
ESD PERFORMANCE	Excellent	Good	Excellent	Excellent	Excellent	Good
INSTALL COST	Moderate	Lowest	Low	Low	Moderate	Highest
DURABILITY	Not suitable for heavy loads	Not suitable for heavy loads	Excellent	Excellent	Superior	Good
HABITUAL CLEANING	Vaccum only	Vaccum only	Sweeping and damp mopping	Sweeping and damp mopping	Sweeping and damp mopping	Sweeping and damp mopping
MAINTENANCE	Hot water extraction as required	Hot water extraction as required	Buffing and waxing optional	Buffing and waxing optional	Buffing and waxing optional	Sealing optional
INSTALLATION	Average	Easiest	Average	Average	Most Difficult	Average
SLIP RESISTANCE	Excellent	Excellent	Good	Good	Excellent	Superior
CHEMICAL RESISTANCE	Poor (not recommended)	Poor (not recommended)	Good	Good	Superior	Excellent
ACID, ALKALI & SOLVENT RESISTANCE	Poor (not recommended)	Poor (not recommended)	Good	Good	Superior	Excellent
PSI RATING	N/A	N/A	1,500 - 2,000 psi	750 - 1,200 psi	>1,500 psi	400 - 700 psi
ESD WEAR LAYER	N/A	N/A	No	No	Yes	No
COLOR THROUGHOUT	N/A	N/A	Yes (manufacture specific)	Yes	Yes	Yes (manufacture specific)
COLOR CONSISTENCY FOR LARGE PROJECTS	Yes	Yes	Yes	Yes	Yes	Yes

ANSI/ESD S20.20 Compliance Requirements

There are several things to consider when selecting an ESD control floor. The first and foremost is whether to opt for a conductive or static dissipative system. Which control technique to use largely depends on the application.

For instance in a general office environment, a coating with antistatic characteristics to reduce triboelectric charging on contact surfaces will normally be sufficient.

However in an area where any significant charge accumulation may damage sensitive components or create a spark risk, the emphasis is on dissipating electrostatic charge before it has chance to build up to dangerous levels.

In practice, this is usually achieved by a combination of static dissipative personnel footwear and flooring, where there is an adequately low resistance path from the person, via footwear and flooring to ground (zero/earth potential). In many cases dissipative floor is the most cost-effective option.

ANSI/ESD S20.20 (S20.20) requires a system resistance of a person through the floor and to ground of less than 3.5×10^7 ohms (35 megohms) when the floor is to be used as the primary ground. Many dissipative floors have resistance ranges above 35 megohms before considering operator resistance.

ANSI/ESD S20.20 revised in 2014, comprises the latest parameters for ESD workplace compliance. There are 3

standards within the specification; all 3 standards are required for compliance.

ANSI/ESD STM 7.1 Floor Materials | Resistive Characterization of Materials

Any flooring material must measure below $1.0 \times 10E^9$ ohms to ground.

ANSI/ESD STM 97.1 Floor Materials and Footwear | Resistance in Combination with a Person

The recommended maximum system resistance is $3.5 \times 10E^7$

ANSI/ESD STM 97.2 Floor Materials and Footwear | Voltage Measurement in Combination with a Person

The recommended maximum voltage allowed is 100 volts.

The selection of an effective ESD floor covering system should always begin with a thorough evaluation of the intended use and possible future use. Intended use should include the evaluation of the devices or processes in the environment that are most sensitive to ESD events, chemical resistance and aesthetic requirements.

Understanding the need for and importance of ESD compliant footwear is also critical in the performance of the ESD flooring chosen. Personnel grounding requires effective ESD footwear that is appropriate to the application, properly worn and in good repair.

Personal Safety Zone

The amount of ohms resistance in a static-control floor determines the amount of electrical current that can pass through the floor. As ohms decrease, electrical current increases.

ATIS 0600321-2010 recommends static-dissipative flooring measuring over 1 million ohms (1.0×10^6). Always test the ohms resistance of static control floors after installation.

