



Sikafloor® Solutions for ESD-Protection and Electrostatic Discharge Control

Selection Guide

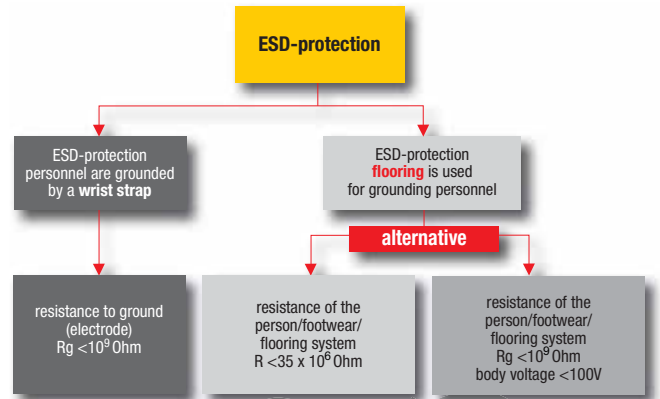


Sikafloor® Solutions for ESD Protection and Electrostatic Discharge Control

Introduction

In industries where electronic components or volatile chemicals are involved, static electricity can result in significant damage, injury and financial loss. All active electronic components and equipment e.g. micro-chips, integrated circuits and machinery are sensitive to electrostatic discharges (also known as ESD events). Even when areas and people are equipped to handle such static-sensitive devices, inadvertent contact and damage can occur. **Sikafloor®** ESD (Electro Static Discharge), DIF (Dissipative Flooring) and ECF (Electrically Conductive Flooring) Systems, can safeguard your entire process. These systems can be designed to produce a floor tailored to meet your specific needs.

Resistance Ranges According to IEC 61340-5-1 or ANSI/ESD S 20.20



| US-Standards: | ANSI/ESD S 20.20 (ANSI/ESD STM97.1) System Test: < 35 M Ω | ANSI/ESD S 20.20 (ANSI/ESD STM97.2) Walking Test (BVG) < 100 Volt | ANSI/ESD S 20.20 (ANSI/ESD S7.1) Resistance to Ground $R_g < 10^9 \Omega$ | ASTM F 150 (ECF) Surface to Ground Test: >2.5x10 ⁴ – <1x10 ⁶ Ω | ASTM F 150 (ECF) Surface to Surface Test: >2.5x10 ⁴ – <1x10 ⁶ Ω | ASTM F 150 (DIF) Surface to Ground Test: >1x10 ⁶ – <1x10 ⁹ Ω | ASTM F 150 (DIF) Surface to Surface Test: >1x10 ⁶ – <1x10 ⁹ Ω |
|---|--|--|--|---|--|---|--|
| Systems: | | | | | | | |
| Smooth ESD roller coating (Epoxy) | | | | | | | |
| Sikafloor®-200 ESD | ▲ | ▲ | ▲ | – | – | ▲ | ▲ |
| Sikafloor®-200C ESD | ▲ | ▲ | ▲ | ▲ | ▲ | – | – |
| Roller coating for high chemical resistance (Epoxy Novolac) | | | | | | | |
| Sikafloor®-700 ESD | ▲ | ▲ | ▲ | – | – | ▲ | ▲ |
| Sikafloor®-700C ESD | ▲ | ▲ | ▲ | ▲ | ▲ | – | – |
| Smooth ESD roller coating (Polyurethane) | | | | | | | |
| Sikafloor®-340 ESD | ▲ | ▲ | ▲ | – | – | ▲ | ▲ |

▲ Meets the Standard – Does not meet the Standard

Specification

None of the specific conductivity or electrical resistance values mentioned in any of the International or National Standards in the table shown above are mandatory. The values can be adapted to meet local requirements by the responsible authorities. Before applying an ESD or dissipative/conductive flooring system, Sika always recommends a detailed assessment of at least the following parameters, then the most appropriate values can be determined and agreed by all of the parties involved:

- Limits for the electrical resistance and body voltage generation
- Methods and Conditions of Measurement
- Equipment to make these measurements
- Any applicable Standards or specifications



What is an ESD Event and What Does it Do?

An ESD event is an Electro Static Discharge. This is basically a spark (a micro lightning-bolt in effect), which passes from one charged conductive surface to another. This incredibly rapid transfer of what had previously been a static (non-moving) charge can cause fires or explosions, create heat, light and even sounds. It is this potentially unseen, unfelt or unheard 'micro lightning' spark that can occur without warning, which must be prevented or controlled.

Definition: Conductive/Dissipative Flooring Material (ECF/DIF)

- Conductivity refers to the ability of a material to conduct a charge to ground. In non-absolute technical terms, its ability to conduct an electrical current.
- Conductive floors and electro static dissipative floors are classified according to their electrical resistance to ground.

Conductive Flooring Material (ECF) (e.g. according to ASTM F150)

- A floor material that has a resistance to between 2.5×10^4 and 1.0×10^6 ohms

Dissipative Flooring Material (DIF) (e.g. according to ASTM F150)

- A floor material that has a resistance between 1.0×10^6 to 1.0×10^9 ohms

| European-Standards: | DIN EN 1081 Resistance to Ground $R_G < 10^9 \Omega$ | IEC 61340-5-1 (IEC 61340-4-5) System Test: $< 35 \text{ M } \Omega$ | IEC 61340-5-1 (IEC 61340-4-5) Walking Test (BVG) $< 100 \text{ Volt}$ | IEC 61340-5-1 (IEC 61340-4-1) Resistance to Ground $R_b < 10^9 \Omega$ | TRBS 2153 German Standard Resistance to Ground $R_b < 10^9 \Omega$ | DIN VDE 0100-410 (IEC 60364-4-41) Isolation Resistance $> 50 \text{ k}\Omega$ |
|---|--|--|--|---|---|--|
| Systems: | | | | | | |
| Smooth and textured, hygienic ECF floors | | | | | | Any insulating self smoothing layers e.g. Sikafloor®-263 SL |
| Sikafloor®-262 AS N | ▲ | – | – | ▲ | ▲ | |
| Sikafloor®-262 AS Thixo | ▲ | – | – | ▲ | ▲ | |
| High chemical resistance | | | | | | |
| Sikafloor®-381 AS | ▲ | – | – | ▲ | ▲ | |
| Sikafloor®-390 AS | ▲ | – | – | ▲ | ▲ | |
| Approved for clean rooms | | | | | | |
| Sikafloor®-266 ECF CR | ▲ | – | – | ▲ | ▲ | |
| Sikafloor®-269 ECF CR | ▲ | – | – | ▲ | ▲ | |
| ESD systems with very low body voltage generation | | | | | | |
| Sikafloor®-235 ESD | ▲ | ▲ | ▲ | ▲ | ▲ | |
| Sikafloor®-262 AS N + Sikafloor®-230 ESD TopCoat | ▲ | ▲ | ▲ | ▲ | ▲ | |

▲ Meets the Standard – Does not meet the Standard

| Standards used in Asia: | SJ/T 11294-2003 (ECF) Resistance to Ground $R_b > 5 \times 10^4 - < 1 \times 10^6 \Omega$ | SJ/T 11294-2003 (DIF) Resistance to Ground $R_b > 1 \times 10^6 - < 1 \times 10^9 \Omega$ | IEC 61340-5-1 (IEC 61340-4-5) System Test: $< 35 \text{ M } \Omega$ | IEC 61340-5-1 (IEC 61340-4-5) Walking Test (BVG) $< 100 \text{ Volt}$ | IEC 61340-5-1 (IEC 61340-4-1) Resistance to Ground $R_b < 10^9 \Omega$ |
|---|--|--|--|--|---|
| Systems: | | | | | |
| Smooth, hygienic floors | | | | | |
| Sikafloor®-262 AS N | ▲ | – | – | – | ▲ |
| Sikafloor®-239 EDF | – | ▲ | – | ▲ | ▲ |
| High chemical resistance | | | | | |
| Sikafloor®-390 AS | ▲ | – | – | – | ▲ |
| Sikafloor®-381 AS | ▲ | – | – | – | ▲ |
| ESD system with very low body voltage generation | | | | | |
| Sikafloor®-235 ESD | – | – | ▲ | ▲ | ▲ |
| Sikafloor®-262 AS N + Sikafloor®-230 ESD TopCoat | – | – | ▲ | ▲ | ▲ |

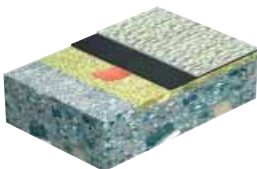
▲ Meets the Standard – Does not meet the Standard

Conductive and Dissipative Resin Flooring Systems



Textured Conductive Coating

Sikafloor®-262 AS N Thixo



System Build-up:

Primer:

Sikafloor®-156/161

Conductive Layer:

Sikafloor®-220 W Conductive

Textured conductive coating:

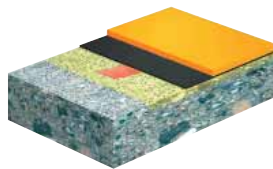
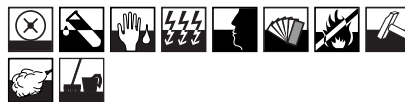
Sikafloor®-262 AS N Thixo

A two part, 100% solids, electrostatic conductive, coloured, epoxy binder for textured coating systems.

Total layer thickness: **0.6 – 0.8 mm**

Smooth Conductive Coating

Sikafloor®-262 AS N



System Build-up:

Primer:

Sikafloor®-156/161

Conductive Layer:

Sikafloor®-220 W Conductive

Wearing course:

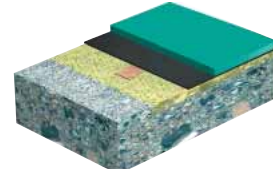
Sikafloor®-262 AS N

A two part, 100% solids, electrostatic conductive, coloured, epoxy binder for textured coating systems.

Total layer thickness: **approx. 2 mm**

Smooth Dissipative ESD Screed

Sikafloor®-239 EDF



System Build-up:

Primer:

Sikafloor®-156/161

Conductive Layer:

Sikafloor®-220 W Conductive

Wearing course:

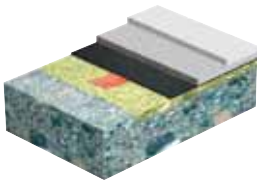
Sikafloor®-239 EDF

A dissipative self-smoothing system for concrete or cement screeds with normal to medium heavy wear. Particularly suitable for areas with requirements for a low electrostatic charge (Body-voltage) and dissipative surface. **Designed for the Asian Market.**

Total layer thickness: **approx. 2 mm**



ESD Flooring system and Refurbishment Solution / Upgrade
Sikafloor®-230 ESD TopCoat



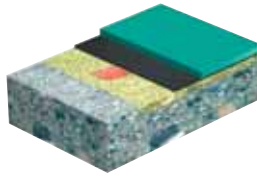
System Build-up:

- Primer:
Sikafloor®-156/161
- Conductive Layer:
Sikafloor®-220 W Conductive
- Wearing course:
Sikafloor®-262 AS N
- TopCoat:
Sikafloor®-230 ESD TopCoat

A two part, water dispersed, electrostatic conductive, coloured, epoxy roller coat. Especially suitable to improve **Sikafloor®-262 AS N** for ESD-requirements.

Total layer thickness: **approx. 2 mm**

Smooth, Chemically Resistant, Conductive Screed
Sikafloor®-381 AS



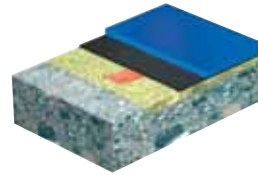
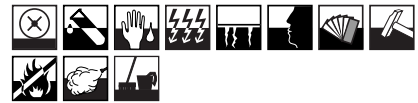
System Build-up:

- Primer:
Sikafloor®-156/161
- Conductive Layer:
Sikafloor®-220 W Conductive
- Wearing course:
Sikafloor®-381 AS

A two part, 100% solids, highly chemical resistant, electrostatic conductive, coloured, epoxy binder for self-smoothing screed systems.

Total layer thickness: **approx. 2 mm**

Smooth, Flexible, Chemically Resistant, Conductive Screed
Sikafloor®-390 AS



System Build-up:

- Primer:
Sikafloor®-156/161
- Conductive Layer:
Sikafloor®-220 W Conductive
- Wearing course:
Sikafloor®-390 AS

A two part, 100% solids, highly chemical resistant, electrostatic conductive, crack-bridging, coloured, epoxy binder for self-smoothing screed systems

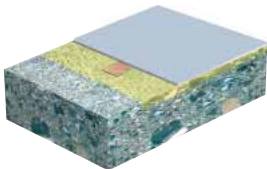
Total layer thickness: **approx. 2 mm**

Conductive and Dissipative Resin Flooring Systems



Smooth ESD Roller Coating

Sikafloor®-200/C ESD



System Build-up:

Primer: **Sikafloor®-107/207**

Conductive layer:

Sikafloor®-100 ESD (optional for
conductive floor applications)

ESD wearing course:

Sikafloor®-200 ESD or Conductive
wearing course: **Sikafloor®-200C ESD**

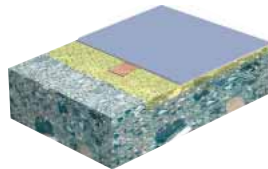
A four-component ESD epoxy coating system designed to impart electrostatic control properties to a variety of substrates, including existing non-conductive substrates and concrete surface.

Designed for the Market in the Americas.

Layer thickness of wearing course:
approx. 15 mils / 0.40 mm

Smooth ESD Roller Coating

Sikafloor®-340 ESD



System Build-up:

Primer: **Sikafloor®-107/207**

Wearing course:

Sikafloor®-340 ESD

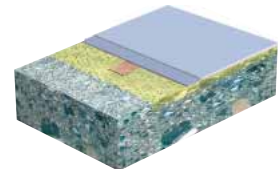
A five component, aliphatic, polyester, ESD control, polyurethane system. It is designed to impart electrostatic control properties to a variety of substrates, including existing non-conductive coatings or, vinyl tiles, static control tiles and concrete.

Designed for the Market in the Americas.

Layer thickness of wearing course:
approx. 8 mils / 0.20 mm

Chemical Resistant ESD Roller Coating

Sikafloor®-700/C ESD



System Build-up:

Primer: **Sikafloor®-107/207**

Conductive layer:

Sikafloor®-100 ESD (optional for
conductive floor applications)

ESD wearing course:

Sikafloor®-700 ESD or Conductive
wearing course: **Sikafloor®-700C ESD**

A three-component ESD epoxy novolac system, designed especially for areas that require both ESD control and chemical resistance to acids and solvents. It is designed to impart electrostatic control and chemical resistance properties.

Designed for the Market in the Americas.

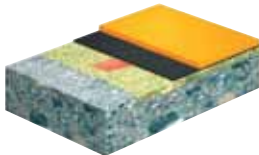
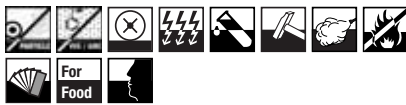
Layer thickness of wearing course:
approx. 15 mils / 0.40 mm

Conductive Flooring Systems Suitable for Cleanrooms



Smooth, Ultra Low VOC, Conductive Screed

Sikafloor®-269 ECF CR



System Build-up:

Primer: **Sikafloor®-144/-161**

Conductive layer:

Sikafloor®-220 W Conductive

Wearing course:

Sikafloor®-269 ECF CR

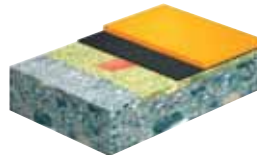
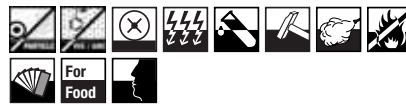
A two part, 100% solids, electrostatic conductive, ultra low emission, coloured, epoxy binder for self-smoothing screed systems.

Total layer thickness: ca. 2 mm



Smooth, Low VOC, Conductive Screed

Sikafloor®-266 ECF CR



System Build-up:

Primer: **Sikafloor®-144/-161**

Conductive layer:

Sikafloor®-220 W Conductive

Wearing course:

Sikafloor®-266 ECF CR

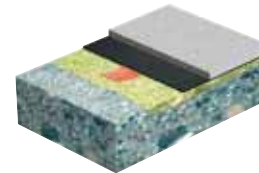
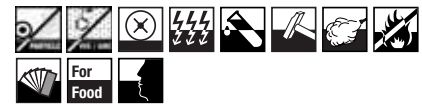
A two part, 100% solids, electrostatic conductive, low emission, coloured, epoxy binder for self-smoothing screed systems.

Total layer thickness: ca. 2 mm



Smooth ESD Screed

Sikafloor®-235 ESD



System Build-up:

Primer: **Sikafloor®-144/-161**

Conductive layer:

Sikafloor®-220 W Conductive

Wearing course:

Sikafloor®-235 ESD

A two part, 100% solids, ESD, low emission, coloured, epoxy binder for self-smoothing screed systems.

Total layer thickness: ca. 2 mm



Sika Full Range Solutions for Construction

Concrete Production



Sika® ViscoCrete®
Sika® Retarder®
Sika® SikaAer®

Waterproofing



Sikaplan®, Sikalastic®
Sika® & Tricosal® Waterstops
Sika® Injection Systems

Flooring



Sikafloor®
SikaBond®

Corrosion and Fire Protection



SikaCor®
Sika® Unitherm®

Concrete Repair and Protection



Sika® MonoTop®
Sikagard®
Sikadur®

Structural Strengthening



Sika® CarboDur®
SikaWrap®
Sikadur®

Joint Sealing



Sikaflex®
Sikasil®

Grouting



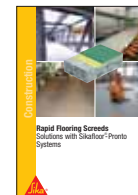
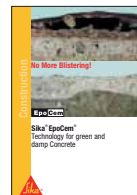
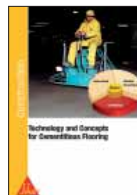
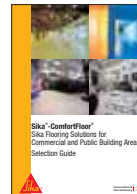
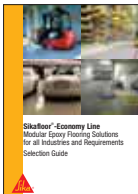
Sikadur®
SikaGrout®

Roofing



Sarnafil®
Sikaplan®
SikaRoof® MTC®

Also Available from Sika



Sika Services AG

Business Unit Contractors

Speckstrasse 22

8330 Pfäffikon / Switzerland

Phone +41 58 436 23 80 / Fax +41 58 436 23 77

www.sika.com



Our most current General Sales
 Conditions shall apply.
 Please consult the Product Data Sheet
 prior to any use and processing.

