Sikafloor® Solutions for ESD Protection and Electrostatic Discharge Control

Selection Guide
**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) and Sikafloor® 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.

**Application Range and Requirements**

**What Does an ESD Event Do?**

An ESD event is an Electro Static Discharge, which 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, explosions, create heat, light and even sounds. It is this potentially unseen, unfelt or unheard ‘micro lightning’ or spark without warning that must be prevented or controlled.

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**Resistant Ranges According to IEC 61340-5-1**

- ESD protection – personnel is grounded by a wrist strap
- ESD protection – the flooring is used to ground the personnel
- Resistance to ground (electrodes) \( R_g < 10^8 \) Ohm
- Resistance of the people / footwear / flooring system \( R < 25 \times 10^3 \) Ohm
- Resistance of the people / footwear / flooring system \( R_g < 10^7 \) Ohm
- Body voltage < 100V

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**Sikafloor® ECF and ESD Systems**

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<th>Conductive</th>
<th>Dissipative</th>
<th>Insulating</th>
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<td>Sikafloor</td>
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Requirement for the resistance to ground according IEC 61340-5-1 \( R_g < 10^5 \) Ohm
Example of an EPA: Electrostatic Protected Area

1. Groundable wheels
2. Groundable surface
3. Wrist band and foot wear tester
4. Footwear footplate
5. Wrist band and grounding cord
6. Grounding cord
7. Ground
8. Earth bounding point (EBP)
9. Groundable point of trolley
10. Toe and heel strap (footwear)
11. Ionizer
12. Dissipative surfaces
13. Seating with groundable feet’sand pads
14. Sikafloor® ESD or ECF Conductive Solution
15. Garments
16. Shelving with grounded surfaces
17. Groundable racking
18. EPA sign
19. Machine

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No 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 the local requirements by the responsible authorities.

Before applying an ESD or ECF conductive flooring system, Sika always recommends a detailed assessment of at least the following parameters then for the appropriate values to be agreed and accepted by all of the parties involved:
- Limits for the electrical resistance and body voltage generation
- Methods of Measurement
- Equipment to make these measurements
- Any applicable standards or specifications
Conductive Flooring Systems

**System Build-up:**
- **Primer:** Sikafloor®-156/161
- **Conductive Layer:** Sikafloor®-220 W Conductive
- **Textured conductive coating:** Sikafloor®-262 AS N Thixo

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

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**System Build-up:**
- **Primer:** Sikafloor®-156/161
- **Conductive Layer:** Sikafloor®-220 W Conductive
- **Wearing course:** Sikafloor®-262 AS N

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

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**System Build-up:**
- **Primer:** Sikafloor®-156/161
- **Conductive Layer:** Sikafloor®-220 W Conductive
- **Wearing course:** Sikafloor®-235 ESD

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

**Textured Conductive Coating**
- Sikafloor®-262 AS N Thixo

**Smooth Conductive Coating**
- Sikafloor®-262 AS N

**Smooth ESD Screed**
- Sikafloor®-235 ESD

A two component, total solids, electrostatically conductive, coloured, epoxy binder for textured coating systems.

A two component, total solids, electrostatically conductive, coloured, epoxy binder for self-smoothing screed systems.

A two component, total solids, electrostatically conductive, coloured, epoxy binder for self-smoothing screed systems.
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 component, water dispersed, electrostatically conductive, coloured, epoxy roller coat. Especially suitable to improve Sikafloor®-262 AS N for ESD-requirements.

Total layer thickness: approx. 2 mm

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

A two component, total solids, highly chemical resistant, electrostatically conductive, coloured, epoxy binder for self-smoothing screed systems.

Total layer thickness: approx. 2 mm

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

A two component, total solids, highly chemical resistant, electrostatically conductive, crack-bridging, coloured, epoxy binder for self-smoothing screed systems.

Total layer thickness: approx. 2 mm
Cleanroom Suitable Conductive Flooring Systems

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 component, total solids, electrostatically 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 component, total solids, electrostatically 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 component, total solids, ESD, low emission, coloured, epoxy binder for self-smoothing screed systems.

**Total layer thickness:** ca. 2 mm
**Conductive Wall-Coating**

**Sikafloor®-230 ESD TopCoat**

A two part, water-based, electrostatically conductive, coloured, epoxy roller coat for ESD requirements. For walls and ceilings with medium mechanical load on concrete, renders and gypsum.

**Total layer thickness: approx. 0.4 mm**

**System Build-up:**

- **Primer:** *Sikafloor®-2530 W + 5% H2O*
- **Intermediate Layer:** *Sikafloor®-2530 W*
- **TopCoat:** *Sikafloor®-230 ESD TopCoat*

**Product**

- **Sikafloor®-262 AS Thixo**
  - 2-part, total solids, electrostatically conductive, coloured, epoxy binder.

- **Sikafloor®-262 AS N**
  - 2-part, total solids, electrostatically conductive, coloured, epoxy binder.

- **Sikafloor®-235 ESD**
  - 2-part, ESD, low particle and VOC/AMC emission, coloured, epoxy resin binder.

- **Sikafloor®-230 ESD TopCoat**
  - 2-part, water dispersed, electrostatically conductive, coloured, epoxy roller coat.

- **Sikafloor®-381 AS**
  - 2-part, total solids, highly chemical resistant, electrostatically conductive, coloured, epoxy binder.

- **Sikafloor®-390 AS**
  - 2-part, total solids, highly chemical resistant, crack-bridging, electrostatically conductive, coloured, epoxy binder.

- **Sikafloor®-269 ECF CR**
  - 2-part, low particle and ultra low VOC/AMC emission, electrostatically conductive epoxy resin binder.

- **Sikafloor®-266 ECF CR**
  - 2-part, low particle and VOC/AMC emission, electrostatically conductive epoxy resin binder.

**Packaging**

- **Sikafloor®-262 AS Thixo**: 26 kg units
- **Sikafloor®-262 AS N**: 25 kg units
- **Sikafloor®-235 ESD**: 25 kg units
- **Sikafloor®-230 ESD TopCoat**: 6 kg units
- **Sikafloor®-381 AS**: 25 kg units
- **Sikafloor®-390 AS**: 25 kg units
- **Sikafloor®-269 ECF CR**: 30 kg units
- **Sikafloor®-266 ECF CR**: 25 kg units

**Colour Range**

- *Sikafloor®-262 AS Thixo*
- *Sikafloor®-262 AS N*
- *Sikafloor®-235 ESD*
- *Sikafloor®-230 ESD TopCoat*
- *Sikafloor®-381 AS*
- *Sikafloor®-390 AS*
- *Sikafloor®-266 ECF CR*
- *Sikafloor®-269 ECF CR*

*are available in almost unlimited choice of colour shades.*

*Colour variations may occur due to filling with quartz sand.*

*Under direct sun light there may be some discolouration and colour variations; however this has no influence on the function and performance of the coating.*

*Due to the nature of carbon fibres providing the conductivity, it is not possible to achieve exact colour matching. With very bright colours (such as yellow and orange), this effect is increased.*
Sika – global knowledge with a local presence

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