

SYSTEM DATA SHEET

Sikafloor® MultiDur ES-56 ESD

Smooth, conductive, epoxy ESD flooring system

PRODUCT DESCRIPTION

Sikafloor® MultiDur ES-56 ESD is a smooth finish, epoxy ESD flooring system. The system is designed to dissipate electrostatic charges (ESD) and protect sensitive equipment in electrostatic protected areas (EPA).

USES

Sikafloor® MultiDur ES-56 ESD is used in industrial buildings such as:

- Pharmaceutical facilities
- Automotive facilities
- Electronic facilities and data centres

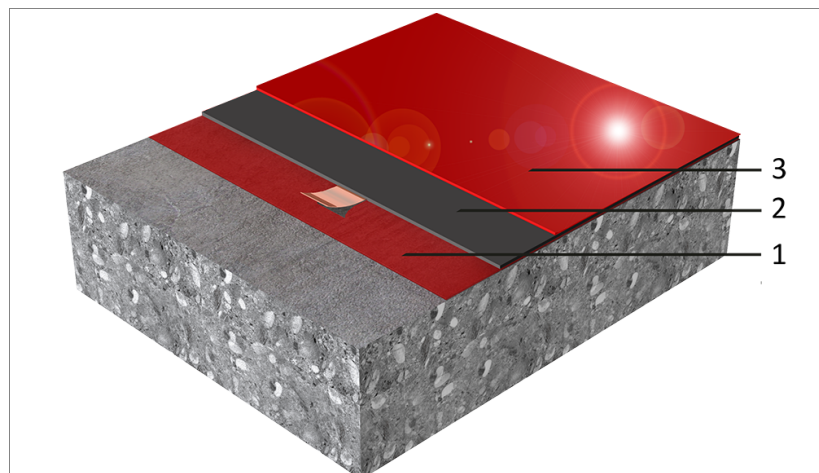
Please note:

- The System may only be used by experienced professionals.
- The System may only be used for interior applications.

SYSTEM INFORMATION

System Structure

Sikafloor® MultiDur ES-56 ESD



CHARACTERISTICS / ADVANTAGES

- Provides reliable and long-lasting ESD protection
- Seamless surface requires minimal cleaning and maintenance
- Functional finish with outstanding appearance
- Low Airborne Molecular Contaminants (AMC) emissions
- Low VOC emissions
- Good resistance to specific chemicals
- Very good mechanical resistance

APPROVALS / STANDARDS

- Fire classification report, EN 13501-1, Ghent University, Report No. 20-1069-03

| Layer | Product |
|----------------------|--|
| 1. Primer | Sikafloor®-150 Sikafloor®-150 Plus Sikafloor®-151 Sikafloor®-156 Sikafloor®-161 Contact Sika Technical Service for information on choosing the right primer for your project. |
| 2. Conductive primer | Sikafloor® Conductive Set Sikafloor®-220 W Conductive |
| 3. Wearing layer | Sikafloor®-2350 ESD filled 20 % with Quartz sand (0.1–0.3 mm) |

| | |
|--------------------------|---|
| Composition | Epoxy |
| Appearance | Smooth, gloss finish |
| Colour | Available in the approximate colours RAL 1014, RAL 5009, RAL 5012, RAL 5024, RAL 6010, RAL 6021, RAL 6027, RAL 7001, RAL 7005, RAL 7011, RAL 7015, RAL 7016, RAL 7024, RAL 7030, RAL 7032, RAL 7034, RAL 7035, RAL 7036, RAL 7037, RAL 7038, RAL 7039, RAL 7040, RAL 7042, RAL 7043, RAL 7045, RAL 7047, RAL 9002, RAL 9005, NCS 3500-N |
| Nominal thickness | 1.5 mm to 2 mm |

TECHNICAL INFORMATION

| | | |
|----------------------------------|---|-------------------------------------|
| Tensile adhesion strength | ≥ 1.5 MPa | (EN 1542) |
| Reaction to Fire | Class B _{fl} -s1 | (EN 13501-1) |
| Chemical Resistance | Laboratory-defined resistance to many individual chemicals. Before proceeding, contact Sika Technical Service for specific information. | |
| Electrostatic Behaviour | Resistance to ground | $R_G < 10^9 \Omega$ (IEC 61340-4-1) |
| | Typical average resistance to ground | $R_G < 10^5\text{--}10^6 \Omega$ |
| | Body voltage generation | < 100 V (IEC 61340-4-5) |
| | System resistance | $R_G < 10^9 \Omega$ |

ESD MEASUREMENT CONDITIONS AND SPECIFICATIONS

All measurement values for the system stated in the System Data Sheet (except those referring to proof statements) were measured using the following equipment and ambient conditions:

| Condition or Equipment | Specification |
|--|---|
| Size of ESD-footwear | 42 (EU) (UK: 8; US: 8.5) |
| Test person weight | 90 kg |
| Ambient conditions | +23 °C and 50 % relative humidity |
| Measuring device for measuring resistance to ground | Metriso 2000 or 3000 (Warmbier) or comparable |
| Surface resistance probe | Carbon Rubber electrode. Weight: 2.50 kg |
| Rubber pad hardness | Shore A (60 ±10) |
| Measuring device for measuring body voltage generation | Walking Test Kit WT 5000 (Warmbier) or comparable |

IMPORTANT**ESD footwear requirements**

The ESD shoes used in the EPA must have a resistance of < 5 MOhm according to IEC 61340-4-3 at climate class 1 (12 % relative humidity and +23 °C). In order to achieve charges of < 30 volts of human body charge during the walking test (at 12 % relative humidity and +23 °C), we recommend using the following ESD shoes: Weeger ESD clog, art. 48512-30, www.schuhweeger.de.

Note: Measurement results can be affected by ESD clothing, ambient conditions, measurement equipment, cleanliness of the floor and the test personnel.

APPLICATION INFORMATION

| Consumption | Layer | Product | Consumption |
|-------------|-------------------|---|--|
| | Primer | Sikafloor®-150 Sikafloor®-150 Plus Sikafloor®-151 Sikafloor®-156 Sikafloor®-161 | 1-2 × 0.3–0.5 kg/m ² |
| | Conductive primer | Sikafloor® Conductive Set Sikafloor®-220 W Conductive | 1 earthing point per 200–300 m ² , minimum 2 per room. 0.08–0.10 kg/m ² |
| | Wearing layer | Sikafloor®-2350 ESD filled with 20% quartz sand 0.1–0.3 mm | Maximum 2.5 kg/m ² |

Note: With thinner layers, the chemical and mechanical resistance and the flow properties can be reduced.

| | | |
|--------------------------------|---------|--------|
| Ambient Air Temperature | Maximum | +30 °C |
| | Minimum | +15 °C |

| | | |
|------------------------------|---------|-----------|
| Relative Air Humidity | Maximum | 80 % r.h. |
|------------------------------|---------|-----------|

| | | |
|------------------|---|--|
| Dew Point | Refer to the individual Product Data Sheet. | |
|------------------|---|--|

| | | |
|------------------------------|---------|--------|
| Substrate Temperature | Maximum | +30 °C |
| | Minimum | +15 °C |

| | | |
|-----------------------------------|---|--|
| Substrate Moisture Content | Refer to the individual Product Data Sheet. | |
|-----------------------------------|---|--|

Waiting Time / Overcoating For the waiting time to overcoating of the primer, refer to the individual Product Data Sheet.
Before applying Sikafloor®-2350 ESD on Sikafloor®-220 W Conductive, allow:

| Temperature | Minimum | Maximum |
|-------------|----------|---------|
| +15 °C | 26 hours | 7 days |
| +20 °C | 17 hours | 5 days |
| +30 °C | 12 hours | 4 days |

Note: Times are approximate and will be affected by changing ambient conditions, particularly temperature and relative humidity.

| Applied Product Ready for Use | Temperature | Foot traffic | Light traffic | Full cure |
|-------------------------------|-------------|--------------|---------------|-----------|
| | +10 °C | 48 hours | 3 days | 7 days |
| | +20 °C | 24 hours | 2 days | 4 days |
| | +30 °C | 16 hours | 36 hours | 3 days |

Note: Times are approximate and will be affected by changing ambient conditions, particularly temperature and relative humidity.

VALUE BASE

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

FURTHER DOCUMENTS

Refer to the following method statements:

- Sika Method Statement — Evaluation and preparation of surfaces for flooring systems
- Sika Method Statement — Sikafloor® mixing and application

ECOLOGY, HEALTH AND SAFETY

Local safety regulations must be observed and it advisable to wear PPI when working with this product with particular attention paid to cutting and handling.

Transportation Class: The product is not classified as hazardous good for transport. Disposal: The material is recyclable. Disposal must be according to local regulations. Please contact your local Sika sales organisation for more information.

APPLICATION INSTRUCTIONS

APPLICATION

ESD CONDUCTIVITY MEASUREMENTS

Recommended number of conductivity measurements is specified in the following table:

| Ready applied area | Number of measurements |
|---|------------------------|
| < 10 m ² | 6 |
| ≥ 10 m ² and < 100 m ² | 10 to 20 |
| ≥ 100 m ² and < 1000 m ² | 50 |
| ≥ 1000 m ² and < 5000 m ² | 100 |

If the measurements yield values that are outside of the agreed specification, follow these steps:

1. Carry out one additional measurement within a radius of approximately 30 cm around the original measuring point.

If the value of the new measurement meets the agreed specification, the original measurement can be disregarded.

If the value of the new measurement does not meet the agreed specification, repeat the measurement described above until the fulfilment of the requirements have been verified.

If the requirements cannot be verified, contact Sika Technical Services.

INSTALLATION OF EARTHING POINTS

Refer to Sika Method Statement: Sika Method Statement — Sikafloor® mixing and application

Number of earthing connections per room: Minimum of 2 earthing connections. The optimum number of earthing connections depends on the local conditions and must be specified on drawings or other contract documentation.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for the exact product data and uses.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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System Data Sheet

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