

SYSTEM DATA SHEET

Sikafloor® MultiDur ES-56 ESD

Epoxy smooth ESD flooring system

DESCRIPTION

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

USES

The system can be used in industrial buildings such as:

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

The system may only be used for interior applications.

CHARACTERISTICS / ADVANTAGES

- Provides reliable and long lasting ESD protection
- Seamless surface requires minimal cleaning and maintenance
- Functional finish with outstanding appearance
- Low VOC / AMC emissions
- High chemical resistance
- High mechanical resistance
- Smooth gloss finish

APPROVALS / STANDARDS

- Conforms to the requirements of ANSI/ESD S20.20 and IEC 61340-5-1
- Fire classification report, EN 13238, Ghent University, Report No. 20-1069-02
- Approval for ESD protective products acc. IEC 61340, RISE Institute, No. ESD-20-0024, rev 1
- Test of floor, IEC 61340-4-1, RISE Institute, Report No. O120372 B

SYSTEM INFORMATION

System Structure	Sikafloor® MultiDur ES-56 ESD (~1.5–2.0 mm) Self-smoothing / Resin Screed	
	Layer	Product
	Primer or scratch coat	Sikafloor®-161 HC
	Conductive Primer + Earthing connection	Sikafloor®-220 W Conductive + Sika® Earthing Kit
	Wearing layer / Wearing screed	Sikafloor®-2350 ESD filled with 20 % quartz sand 0.1–0.3 mm
Composition	Epoxy	
Colour	Cured product colour	Available in the approximate colours RAL 1014, RAL 3012, RAL 5024, RAL 6010, RAL 6020, RAL 6021, RAL 6027, RAL 6033, RAL 6034, RAL 7005, RAL 7015, RAL 7016, RAL 7030, RAL 7032, RAL 7035, RAL 7040, RAL 7047
	<p>Please contact Sika customer service for information on availability. Note: When the system is exposed to direct sunlight, there may be some discolouration and colour variation. This has no influence on the function and performance of the floor finish. For colour matching: Apply colour sample and confirm selected colour under real lighting conditions.</p>	
Nominal Thickness	~1.5 mm to 2.0 mm	

TECHNICAL INFORMATION

Chemical Resistance	Refer to the chemical resistance of Sikafloor®-2350 ESD.		
Temperature Resistance	Short-term, maximum 7 days	+60 °C	
	<p>IMPORTANT No simultaneous mechanical and chemical strain While the product is exposed to temperatures up to +60 °C, do not also subject it to chemical and/or mechanical strain, as it may cause damage to the product.</p>		
Electrostatic Behaviour	Resistance to ground	$R_G < 10^9 \Omega$ This product fulfils the requirements of ATEX 137	(IEC 61340-4-1)
	Typical average resistance to ground	$R_G \leq 10^5 \Omega$ to $10^6 \Omega$	(EN 1081)
	Body voltage generation	< 100 V	(IEC 61340-4-5)
	System Resistance (Person/Floor/footwear)	< 109 Ω	
	<p>Note: Measurement results can be affected by ESD clothing, ambient conditions, measurement equipment, cleanliness of the floor and the test personnel.</p>		

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 / +23 °C). In order to achieve charges of < 30 volts of human body charge during the walking test (at 12 % relative humidity / +23 °C), we recommend using the following ESD shoes: Weeger ESD clog, art. 48512-30, www.schuh-weeger.de.

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/50 %
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

APPLICATION INFORMATION

Consumption

Self smoothing / resin screed

Layer	Product	Consumption
Primer or scratch coat	1–2 × Sikafloor®-161 HC	~0.3 kg/m ² to 0.5 kg/m ²
Levelling (if required)	Sikafloor®-161 HC	Refer to the individual Product Data Sheet
Conductive Primer + Earthing connection	Sikafloor®-220 W Conductive + Sika® Earthing Kit	1 × 0.08–0.10 kg/m ² 1 earthing point per ~200–300 m ² . 2 per room minimum.
Wearing layer / Wearing screed	Sikafloor®-2350 ESD filled with 20% quartz sand 0.1-0.3 mm	Maximum 2.5 kg/m ²

Ambient Air Temperature

Minimum	+15 °C
Maximum	+30 °C

Relative Air Humidity

80 % r.h. max.

Dew Point

Beware of condensation. The substrate and uncured applied product must be at least +3 °C above dew point to reduce the risk of condensation or blooming on the surface of the applied product. Low temperatures and high humidity conditions increase the probability of blooming.

Substrate Temperature

Minimum	+15 °C
Maximum	+30 °C

Substrate Moisture Content

< 4 % parts by weight (Sika® Tramex moisture meter)
No rising moisture (ASTM D4263, polyethylene sheet)
The substrate must be visibly dry with no standing water.

Waiting Time / Overcoating

Before applying Sikafloor®-220 W Conductive on Sikafloor®-161 HC allow:

Substrate temperature	Minimum	Maximum
+15 °C	~24 hours	~4 days
+20 °C	~12 hours	~48 hours
+30 °C	~8 hours	~24 hours

Before applying Sikafloor®-2350 ESD on Sikafloor®-220 W Conductive allow:

<u>Substrate temperature</u>	<u>Minimum</u>	<u>Maximum</u>
+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.

<u>Applied Product Ready for Use</u>	<u>Temperature</u>	<u>Foot traffic</u>	<u>Light traffic</u>	<u>Full cure</u>
	+15 °C	~48 hours	~3 days	~7 days
	+20 °C	~24 hours	~48 hours	~4 days
	+30 °C	~16 hours	~36 hours	~3 days

PRODUCT INFORMATION

Packaging	Refer to the individual Product Data Sheets
Shelf Life	Refer to the individual Product Data Sheets
Storage Conditions	Refer to the individual Product Data Sheets

BASIS OF PRODUCT DATA

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

FURTHER INFORMATION

- Sika® Method Statement: Evaluation and preparation of surfaces for flooring systems
- Sika® Method Statement: Mixing and application of flooring systems

IMPORTANT CONSIDERATIONS

IMPORTANT

Temporary heating

If temporary heating is required, do not use gas, oil, paraffin or other fossil fuel heaters. These produce large quantities of both carbon dioxide and water vapour, which may adversely affect the finish.

For heating, use only electric powered warm air blower systems.

IMPORTANT

Protecting the material after application

After application, protect the System from damp, condensation and direct water contact for at least 24 hours.

IMPORTANT

No application on rising moisture

Do not apply on substrates with rising moisture.

IMPORTANT

No application on sloped substrates

Do not apply on substrates with a slope > 1 %.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling,

storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

APPLICATION

Installation of earthing points

Refer to Sika Method Statement: Mixing & Application of Flooring Systems.

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.

ESD conductivity measurements

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

<u>Ready applied area</u>	<u>Number of measurements</u>
< 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, you may repeat the measurement described above, until the fulfilment of the requirements have been verified. If the requirements cannot be verified, contact Sika technical services.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

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
Sikafloor® MultiDur ES-56 ESD
June 2021, Version 02.01
020811900000000145

SikafloorMultiDurES-56ESD-en-MY-(06-2021)-2-1.pdf

