

SYSTEM DATA SHEET

Sikafloor® MultiDur ES-56 ESD

Epoxy smooth ESD flooring system

PRODUCT 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

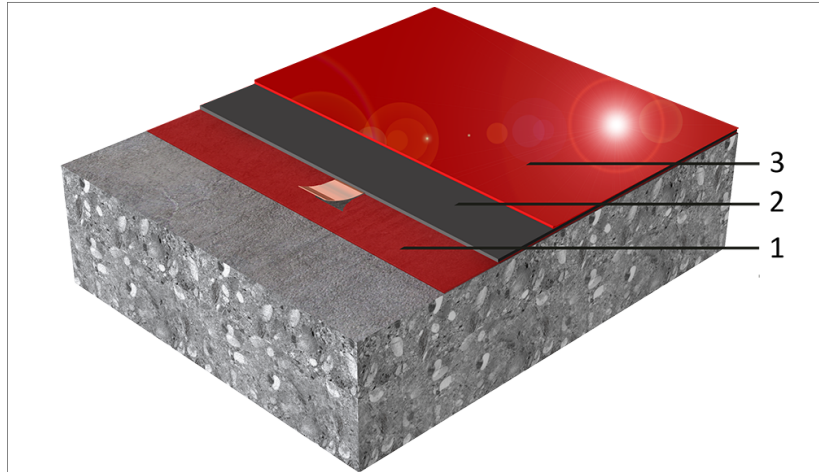
APPROVALS / STANDARDS

- 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 (~0.8–2.0 mm)



Self-smoothing / Resin Screed

Layer	Product
Primer or scratch coat	Sikafloor®-150 Sikafloor®-151 Sikafloor®-156 Sikafloor®-161 Sikafloor®-144 Sikafloor®-701
Conductive Primer + Earthing connection	Sikafloor®-220 W Conductive + Sika® Earthing Kit
Wearing layer / Wearing screed	Sikafloor®-2350 ESD
Wearing layer / Roller coat	Sikafloor®-2350 ESD unfilled

Composition

Epoxy

Colour

Cured colour

Available in the approximate colours RAL 1014, RAL 3012, RAL 5024, RAL 6000, RAL 6010, RAL 6020, RAL 6021, RAL 6027, RAL 6033, RAL 6034, RAL 7005, RAL 7011 RAL 7015, RAL 7016, RAL 7024, RAL 7030, RAL 7032, RAL 7035, RAL 7037, RAL 7038, RAL 7040, RAL 7042, RAL 7047

Please contact Sika customer service for information on availability.
 Note: When the system is exposed to direct sunlight, there may be some discoloration 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.

Nominal thickness

~0,8–2,0 mm

TECHNICAL INFORMATION

Chemical Resistance

Refer to the chemical resistance of Sikafloor®-2350 ESD.

Thermal Resistance

Short-term, maximum 7 days +60 °C

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.

Resistance to ground	RG < 109 Ω This product fulfils the requirements of ATEX 137	(IEC 61340-4-1)
Typical average resistance to ground	RG ≤ 105 Ω to 106 Ω	(EN 1081)
Body voltage generation	< 100 V	(IEC 61340-4-5)
System Resistance (Person/Floor/footwear)	< 109 Ω	

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

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:

Title 1	Condition or Equipment	Title 2	Specification
A	Size of ESD-footwear	B	42 (EU) (UK: 8; US: 8,5)
C	Test person weight	D	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 × Sikafloor®-150 Sikafloor®-151 Sikafloor®-156 Sikafloor®-161 Sikafloor®-144 Sikafloor®-701	~0.3 kg/m ² to 0.5 kg/m ²
Levelling (if required)	Sikafloor®-150 Sikafloor®-151 Sikafloor®-156 Sikafloor®-161	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
Wearing layer / Roller coat	Sikafloor®-2350 ESD unfilled	~0.8 kg/m ²

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

Note: These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level, wastage or any other variations. Apply product to a test area to calculate the exact consumption for the specific substrate conditions and proposed application equipment.

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®-150/Sikafloor®-151/Sikafloor®-156/Sikafloor®-161/Sikafloor®-144/Sikafloor®-701 allow:			
	Substrate temperature	Minimum	Maximum	
	+15 °C	~24 hours	~4 days	
	+20 °C	~12 hours	~48 hours	
	+30 °C	~8 hours	~24 hours	
Waiting Time / Overcoating	Before applying Sikafloor®-2350 ESD on Sikafloor®-220 W Conductive allow:			
	Substrate 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
	+15 °C	~48 hours	~3 days	~7 days
	+20 °C	~24 hours	~48 hours	~4 days
	+30 °C	~16 hours	~36 hours	~3 days
	Note: Times apply when the last layer of the system has been applied. Times are 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

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

LIMITATIONS

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

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

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.

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.

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

IMPORTANT

Protecting the material after application

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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.

SIKA IRELAND LIMITED

Ballymun Industrial Estate
Ballymun
Dublin 11, Ireland
Tel: +353 1 862 0709
Web: www.sika.ie
Twitter: @Sikalreland



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