

## SYSTEM DATA SHEET

# Sikafloor® Multidur ES-43 ESD

Smooth, unicolour, conductive, epoxy floor covering with a polyurethane ESD coating

### PRODUCT DESCRIPTION

Sikafloor® MultiDur ES-43 ESD is a seamless, smooth, low VOC emission, ESD epoxy floor covering. It consists out of the two part, self-smoothing, conductive epoxy base layer and a water-based, coloured ESD polyurethane top coat.

### USES

Sikafloor® MultiDur ES-43 ESD installation works to be carried out only by Sika Approved Contractors. Please observe information given by Product Data Sheets.

Sikafloor® MultiDur ES-43 ESD is used in industrial buildings such as:

- Electronic facilities and data centres
- Automotive facilities

Please note:

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

### CHARACTERISTICS / ADVANTAGES

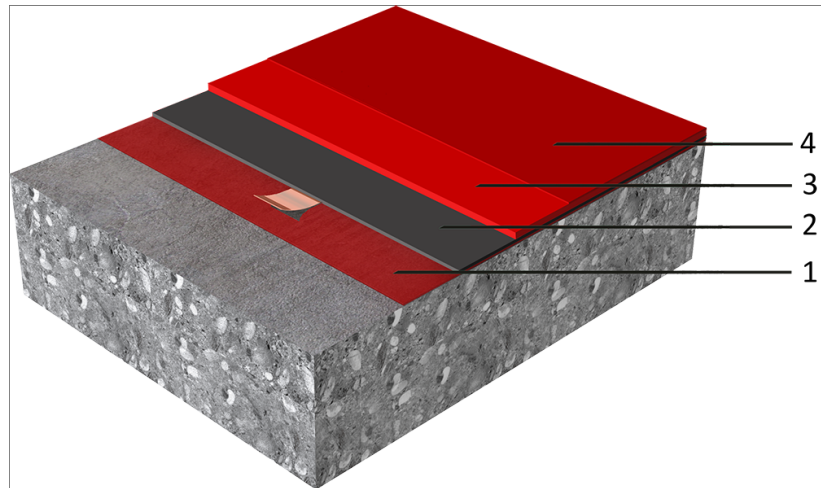
- Electrostatically conductive
- Low VOC emissions
- Good resistance to UV exposure
- Low odour
- Good yellowing resistance

### APPROVALS / STANDARDS

- Fire Classification Report EN 13501-1, GHENT, No. CR 22-0992-01

# SYSTEM INFORMATION

## System Structure



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. Conductive wearing layer	Sikafloor®-262 AS N
4. Top coat	Sikafloor®-305 W ESD

### IMPORTANT

#### System structure

The system structure as described in the table must not be changed.

<b>Composition</b>	Epoxy (base layer) and Polyurethane (top coat)
<b>Appearance</b>	Smooth, matt finish
<b>Colour</b>	Available in the approximate RAL colours 1000, 1001, 1002, 1011, 3012, 5024, 6021, 6034, 7011, 7032, 7035, 7038, 7040, 7042, 7044, 7047, 9018.
<b>Nominal thickness</b>	1.5–2.0 mm

# TECHNICAL INFORMATION

<b>Tensile adhesion strength</b>	≥ 1.5 MPa	(EN 1542)
<b>Electrostatic Behaviour</b>	Resistance to ground	$R_G < 10^9 \Omega$ (IEC 61340-4-1)
	Typical average resistance to ground	$R_G < 10^5 - 10^6 \Omega$
	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:

<b>Condition or Equipment</b>	<b>Specification</b>
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](http://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 <sup>2</sup>
	Conductive primer	Sikafloor® Conductive Set Sikafloor®-220 W Conductive	1 earthing point per 200–300 m <sup>2</sup> , minimum 2 per room. 0.08–0.10 kg/m <sup>2</sup>
	Conductive wearing layer	Sikafloor®-262 AS N Filled with Sikafloor® Filler-1 Sikafloor®-262 AS N Filled with quartz sand F34	Min. 2.25 kg Binder + 0.25 kg Sikafloor® Filler-1. Max. 2.0 kg Binder + 0.5 kg Sikafloor® Filler-1 Min. 2.25 kg Binder + 0.25 kg quartz sand F34 Max. 1.75 kg Binder + 0.75 kg quartz sand F34
	Top coat	Sikafloor®-305 W ESD	1–2 × 0.18–0.2 kg/m <sup>2</sup> per layer

When used in high wear conditions, such as castor chairs, a second layer of Sikafloor®-305 W ESD improves the mechanical properties of the final coating.

Note: Consumption data is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level, wastage or any other variations. Apply the Product to a test area to calculate the exact consumption for the specific substrate conditions and proposed application equipment.

<b>Ambient Air Temperature</b>	Maximum	+30 °C
	Minimum	+10 °C
<b>Relative Air Humidity</b>	Maximum	75 % r.h.
<b>Dew Point</b>	Refer to the individual Product Data Sheet.	
<b>Substrate Temperature</b>	Maximum	+30 °C
	Minimum	+10 °C
<b>Substrate Moisture Content</b>	Refer to the individual Product Data Sheet.	

## Waiting Time / Overcoating

Before applying Sikafloor®-220 W Conductive on the primer allow:

Substrate temperature	Minimum	Maximum
+10 °C	17 hours	4 days
+20 °C	9 hours	2 days
+30 °C	7 hours	1 days

Before applying Sikafloor®-262 AS N on Sikafloor®-220 W Conductive allow:

Substrate temperature	Minimum	Maximum
+10°C	26 hours	7 days
+20°C	17 hours	5 days
+30°C	12 hours	4 days

Before applying Sikafloor®-305 W ESD on Sikafloor®-262 AS N allow:

Substrate temperature	Minimum	Maximum
+10 °C	36 hours	7 days
+20 °C	24 hours	5 days
+30 °C	16 hours	3 days

Before applying Sikafloor®-305 W ESD on Sikafloor®-305 W ESD allow:

Substrate temperature	Minimum	Maximum
+10 °C	48 hours	10 days
+20 °C	24 hours	8 days
+30 °C	16 hours	7 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	5 days	10 days
+20 °C	24 hours	3 days	8 days
+30 °C	16 hours	2 days	7 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

## LIMITATIONS

- This system may only be used by experienced professionals.
- Epoxy surfaces must be sanded e.g. with a 3M™ Brown Stripper Pad in combination with low speed automatic scrubbers or rotary floor machines (175 – 600 rpm) in order to ensure a proper adhesion of Sikafloor®-305 W ESD.
- The freshly applied final conductive coating of the Sikafloor® MultiDur ES-43 ESD system must be protected from damp, condensation and water for at least 24 hours.

- Ensure adequate ventilation during application and drying (especially at temperatures < 13°C). Otherwise the reaction and drying processes may be impaired.
- For possible changes in the composition of the recommended cleaning- and maintenance agents and their effects on the floor characteristics, Sika does not take over liability.
- If the floor is exposed to mechanical and / or chemical loads, the conductivity must be controlled regularly. In case of wear and tear, the final conductive coating of the Sikafloor® MultiDur ES-43 ESD system must be refreshed. This must be coordinated with the authorized ESD-representative or comparable.
- Under certain conditions, underfloor heating combined with high point loading, may lead to imprints in the resin.
- If heating is required do not use gas, oil, paraffin or other fossil fuel heaters, these produce large quantities of both CO<sub>2</sub> and H<sub>2</sub>O water vapour, which may adversely affect the finish. For heating use only electric powered warm air blower systems.
- For exact colour matching, ensure the final conductive coating of the Sikafloor® MultiDur ES-43 ESD system in each area is applied from the same control batch numbers.

- ESD clothing, ambient conditions, measurement equipment, cleanliness of the floor and the test person have a substantial influence on the measurement results.
- ESD-footwear must fulfil the requirements of DIN EN 61340-4-3 (Climate 2, resistance < 5 M Ohm).
- Tires might generate dark marks on Sikafloor®-305 W ESD because of plasticizer migration.
- In case of increased demands on the cleanability, Sikafloor®-305 W ESD can be over coated with the static dissipative floor polish "Jontec ESD" or "Jontec Destat" from Diversey Care. Please refer to the cleaning regime of Sikafloor®-305 W ESD.

All measurement values for the Sikafloor® MultiDur ES-43 ESD system stated in the system data sheet (apart from the ones referring to proof statements) were measured under the following conditions:

Size of ESD-footwear:	42 (EU) (UK: 8; US: 8,5)
Weight test person:	90 kg
Ambient conditions:	+23 °C/50%
Measurement device for the Resistance to Ground:	Metriso 2000 (Warmbier) or comparable
Surface resistance probe:	Carbon Rubber electrode. Weight: 2.50 kg
Rubber pad hardness:	Shore A 60 (± 10)
Measurement device for the System Resistance:	Metriso 2000 (Warmbier) or comparable
Measurement device for the Walking Test:	Walking Test Kit WT 5000 (Warmbier) or comparable

The number of conductivity measurements is strongly recommended to be as shown in the table below:

Ready applied area	Number of measurements
< 10 m <sup>2</sup>	6 measurements
< 100 m <sup>2</sup>	10-20 measurements
< 1000 m <sup>2</sup>	50 measurements
< 5000 m <sup>2</sup>	100 measurements

In case of values lower/higher as required, additional measurements has to be carried out, approx. 30 cm around the point with insufficient readings. If the newly measured values are in accordance with the requirements, the total area is acceptable.

Installation of earthing points: Please refer to the Method Statement: "MIXING & APPLICATION OF FLOORING SYSTEMS".

Numbers of earth connections: Per room at least 2 earthing points. The optimum number of earth connections depends on the local conditions and should be specified using available drawings.

## 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 <sup>2</sup>	6
≥ 10 m <sup>2</sup> and < 100 m <sup>2</sup>	10 to 20
≥ 100 m <sup>2</sup> and < 1000 m <sup>2</sup>	50
≥ 1000 m <sup>2</sup> and < 5000 m <sup>2</sup>	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.

## MAINTENANCE

To maintain the appearance of the floor after application, Sikafloor®-305 W ESD must have all spillages removed immediately and must be regularly cleaned using rotary brush, mechanical scrubbers, scrubber dryer, high pressure washer, wash and vacuum techniques etc. using suitable detergents.

### CLEANING

Please refer to the Sikafloor® Cleaning Regime.

## 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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