

## SYSTEM DATA SHEET

# Sikafloor® MultiDur ES-44 ESD

SMOOTH, UNICOLOUR EPOXY FLOOR COVERING WITH POLYURETHANE ESD ROLLER COATING

### DESCRIPTION

The Sikafloor® MultiDur ES-44 ESD system is a seamless, smooth, low VOC, ESD epoxy floor covering. It consists of the two part, self-smoothing, epoxy coating Sikafloor®-263 SL and the two part, water dispersed, coloured ESD polyurethane roller coating Sikafloor®-305 W ESD.

Suitable for use in hot and tropical climatic conditions.

### USES

Sikafloor® MultiDur ES-44 ESD may only be used by experienced professionals.

It is used as:

- Dissipative coloured indoor system for electrostatic protected areas (EPA).
- Particularly suitable for areas with requirements for the lowest electrostatic charge (low BVG - Body Voltage Generation) and dissipative surface
- Typical applications include clean rooms in the electronics industry, microbiology/microchemistry sectors, production plants in the automobile industry etc.

### CHARACTERISTICS / ADVANTAGES

- Very low VOC emissions
- Easy to apply
- Easy to refurbish, can be overcoated directly with itself
- Low odour
- Good UV resistance
- Easy to clean
- Matt surface

### APPROVALS / CERTIFICATES

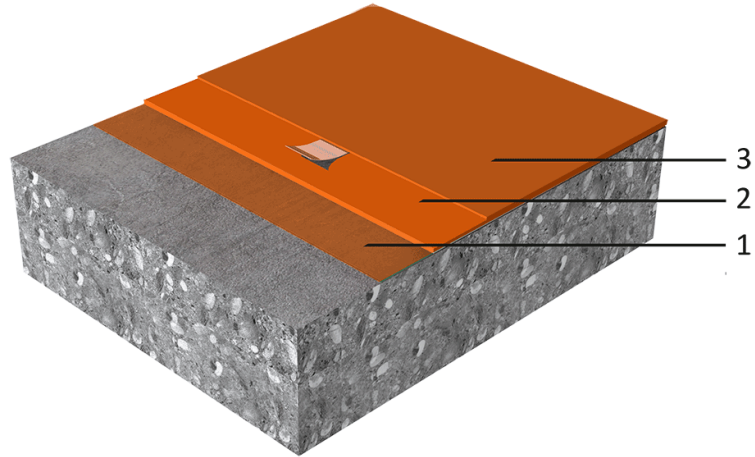
- Suitable as floor covering acc. DIN VDE 0100-410 / T610 as top coat of non-conductive Sikafloor products
- Conforms to the requirements of ANSI/ESD S20.20 and IEC 61340-5-1
- Sikafloor® MultiDur ES-44 ESD follows the main requirements of EN 13813:2002 synthetic resin screed material
- Sikafloor® MultiDur ES-44 ESD follows the main requirements of EN 1504-2:2004 coating for surface protection of concrete
- Test of the Insulation Resistance acc. DIN VDE 0100-410/T610. Test Report P 9915-E, Kiwa-Polymer Institut

## PRODUCT INFORMATION

Packaging	Please refer to individual Product Data Sheet.
Shelf life	Please refer to individual Product Data Sheet.
Storage conditions	Please refer to individual Product Data Sheet.

## SYSTEMS

**System Structure** **Sikafloor® MultiDur ES-44 ESD:**



Primer	Sikafloor®-161
Base coat + Earthing connection	Sikafloor®-263 SL + Sika® Earthing Kit
Final conductive coating	Sikafloor®-305 W ESD

The system configurations as described must be fully complied with and may not be changed.

<b>Composition</b>	Base coat: Epoxy Top coat: PUR
<b>Appearance</b>	Smooth - matt surface
<b>Colour</b>	Available in a limited number of colour, please refer to Sika color chart. Be aware that the colour of the layer below has to be approx. adjusted to the colour of the Sikafloor®-305 W ESD.
<b>Nominal Thickness</b>	~2.0–2.5 mm

## TECHNICAL INFORMATION

<b>Tensile Adhesion Strength</b>	> 1.5 N/mm <sup>2</sup> (ISO 4624)	
<b>Electrostatic Behaviour</b>	Resistance to ground <sup>1</sup>	$R_g < 10^9 \Omega$ (IEC 61340-4-1)
	Typical average resistance to ground <sup>2</sup>	$R_g < 10^5 - 10^6 \Omega$ (DIN EN 1081)
	Body voltage generation <sup>2</sup>	< 100 V (IEC 61340-4-5)
	System Resistance (Person/Floor/Shoe) <sup>3</sup>	< 35 M $\Omega$ (IEC 61340-4-5)

<sup>1</sup> In accordance with IEC 61340-5-1 and ANSI/ESD S20.20.

<sup>2</sup> Readings may vary, depending on ambient conditions (i.e. temperature, humidity) and measurement equipment.

<sup>3</sup> Or < 10<sup>9</sup>  $\Omega$  + body voltage generation of < 100 V, in case of readings > 35 M  $\Omega$ .

## APPLICATION INFORMATION

### Consumption

Sikafloor® MultiDur ES-44 ESD System		
Coating	Product	Consumption
Primer	Sikafloor®-161	1–2 × ~ 0.3–0.5 kg/m <sup>2</sup>
Levelling (if required)	Sikafloor®-161 levelling mortar	Refer to PDS of Sikafloor®-161
Base coating	1 pbw Sikafloor®-263 SL filled with 1.25 pbw quartz sand Sikadur-504 (0.1 – 0.3mm)	~2.7–3.4 kg/m <sup>2</sup> Binder + quartz sand (1:1.25 pbw - depending on ambient temperature, the filling grade varies)
Earthing connection	Sika® Earthing Kit	1 earthing point per approx. 200–300 m <sup>2</sup> , min. 2 per room.
Final ESD coating	Sikafloor®-305 W ESD	1–2 × 0.18–0.2 kg/m <sup>2</sup> /layer

### Waiting Time / Overcoating

Before applying Sikafloor®-263 SL on Sikafloor®-161 allow:

Substrate temperature	Minimum	Maximum
+10 °C	24 hours	4 days
+20 °C	12 hours	2 days
+30 °C	8 hours	1 days

Before applying Sikafloor®-305 W ESD TopCoat on Sikafloor®-263 SL allow:

Title 1 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

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

## 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.

## FURTHER INFORMATION

Please refer to:

- Sika® Method Statement Mixing and Application of Flooring Systems
- Sika® Method Statement Surface Evaluation & Preparation

## IMPORTANT CONSIDERATIONS

- 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-44 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.
- Sika does not accept any liability for changes of the floor characteristics caused by changes in the composition of the recommended cleaning- and maintenance agents
- 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-44 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-44 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-44 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.

## BASIS OF PRODUCT DATA

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

## 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.

## ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

## 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 NORTHERN GULF**  
Bahrain / Qatar / Kuwait  
Tel: +973 177 38188  
sika.gulf@bh.sika.com  
gcc.sika.com

**SIKA SOUTHERN GULF**  
UAE / Oman / SIC  
Tel: +971 4 439 8200  
info@ae.sika.com  
gcc.sika.com

**SIKA SAUDI ARABIA**  
Riyadh / Jeddah / Damman  
Tel: +966 11 217 6532  
info@sa.sika.com  
gcc.sika.com



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All products are supplied under a management system certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and OHSAS 18001.

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