BUILDING TRUST

SYSTEM DATA SHEET

Sikafloor® MultiDur ES-44 ESD

Seamless resin floor covering with electrostatic dissipative (ESD) properties

DESCRIPTION

The Sikafloor® MultiDur ES-44 ESD system is a seamless, smooth, low VOC, ESD epoxy floor covering. It consist out 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.

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, Data Processing facilities, Production plants in the Automobile industry etc.

CHARACTERISTICS / ADVANTAGES

- Very low VOC emissions
- Water based
- Easy to apply
- Easy to refurbish, can be overcoated directly with itself
- Low odour
- Good UV resistance, good resistance to yellowing
- Easy to clean
- Conforms to the requirements of ANSI/ESD S20.20 and IEC 61340-5-1
- Matt surface
- Suitable as floor covering acc. DIN VDE 0100-410 / T610 as top coat of non-conductive Sikafloor products

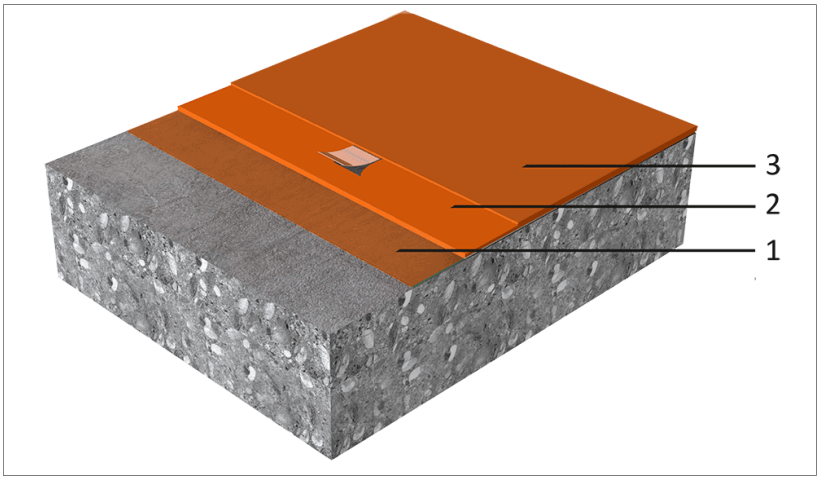
APPROVALS / CERTIFICATES

- Synthetic resin screed material according to EN 13813:2002, Declaration of Performance 02 08 01 02 037 0 000001 2017, certified by notified factory production control certification body 0921, certificate of conformity of the factory production control 2017, and provided with the CE marking.
- Coating for surface protection of concrete according to EN 1504-2:2004, Declaration of Performance 02 08 01 02 037 0 000001 2017, certified by notified factory production control certification body 0921, certificate of conformity of the factory production control 2017, and provided with the CE marking.
- Test of the Insulation Resistance acc. DIN VDE 0100-410/T610. Test Report P 9915-E, Kiwa-Polymer Institut

SYSTEM INFORMATION

System structure

Sikafloor® MultiDur ES-44 ESD:



Primer	Sikafloor®-160/-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.

Composition

Base coat: Epoxy
Top coat: PUR

Appearance

Smooth - matt surface

Colour

Available in a limited number of colour shades such as RAL 1000, 1001, 1002, 1011, 3012, 5024, 6021, 6024, 7011, 7032, 7035, 7038, 7040, 7042, 7044, 7047, 9018.
Be aware that the colour of the layer below has to be approx. adjusted to the colour of the Sikafloor®-305 W ESD.

Nominal thickness

~1.5–2.0 mm

TECHNICAL INFORMATION

Tensile adhesion strength

> 1.5 N/mm² (ISO 4624)

Electrostatic behaviour

Resistance to ground[1]	$R_g < 10^9$ Ω	(IEC 61340-4-1)
Typical average resistance to ground[2]	$R_g < 10^5 - 10^6$ Ω	(DIN EN 1081)
Body voltage generation[2]	< 100 V	(IEC 61340-4-5)
System Resistance (Person/Floor/Shoe)[3]	< 35 M Ω	(IEC 61340-4-5)

[1] In accordance with IEC 61340-5-1 and ANSI/ESD S20.20.
[2] Readings may vary, depending on ambient conditions (i.e. temperature, humidity) and measurement equipment.
[3] Or < 10^9 Ω + body voltage generation of < 100 V, in case of readings > 35 M Ω.

Consumption

Sikafloor® MultiDur ES-44 ESD System

Coating	Product	Consumption
Primer	Sikafloor®-160/-161	1–2 × ~ 0.3–0.5 kg/m²
Levelling (if required)	Sikafloor®-160/-161 levelling mortar	Refer to PDS of Sikafloor®-160/-161
Base coating	Sikafloor®-263 SL filled with quartz sand F34*	~1.9–2.7 kg/m² Binder + quartz sand F 34: 1:0.6 – 1:1 pbw (Depending on the air temperature the filling grade varies)
Earthing connection	Sika® Earthing Kit	1 earthing point per approx. 200–300 m², min. 2 per room.
Final ESD coating	Sikafloor®-305 W ESD	1–2 × 0.18–0.2 kg/m²/layer

Ambient air temperature

+10 °C min. / +30 °C max.

Relative air humidity

During curing the humidity should not exceed 75 % max. Adequate fresh air ventilation or a dehumidifier must be provided to remove the excess moisture from the curing product.

Dew point

Beware of condensation! The substrate and uncured floor must be at least 3 °C above dew point to reduce the risk of condensation or blooming on the floor finish.

Substrate temperature

+10 °C min. / +30 °C max.

Substrate moisture content

<4 % pbw moisture content.
Test method: Sika Tramex Meter, CM-measurement or Oven-Dry-Method.
No rising moisture according to ASTM (Polyethylene-sheet).

Waiting time to overcoating

Before applying Sikafloor®-263 SL on Sikafloor-160/-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 1Substrate 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

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

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_2 and H_2O 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 m²	6 measurements
< 100 m²	10-20 measurements
< 1000 m²	50 measurements
< 5000 m²	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

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.

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

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

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