

## SYSTEM DATA SHEET

# Sikafloor® MultiFlex PS-27 ESD

Seamless, smooth, low VOC, tough elastic ESD polyurethane floor covering

### PRODUCT DESCRIPTION

The Sikafloor® MultiFlex PS-27 ESD system is a seamless, smooth, low VOC, polyurethane, coloured, matt ESD floor covering. It consists of two components; self-smoothing, polyurethane coating Sikafloor®-327, and the two-part, water dispersed, coloured ESD polyurethane roller coating Sikafloor®-305 W ESD.

### USES

Sikafloor® MultiFlex PS-27 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
- Water based
- Easy to apply
- Easy to refurbish, can be overcoated directly with itself
- Low odour
- Good UV resistance, non-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

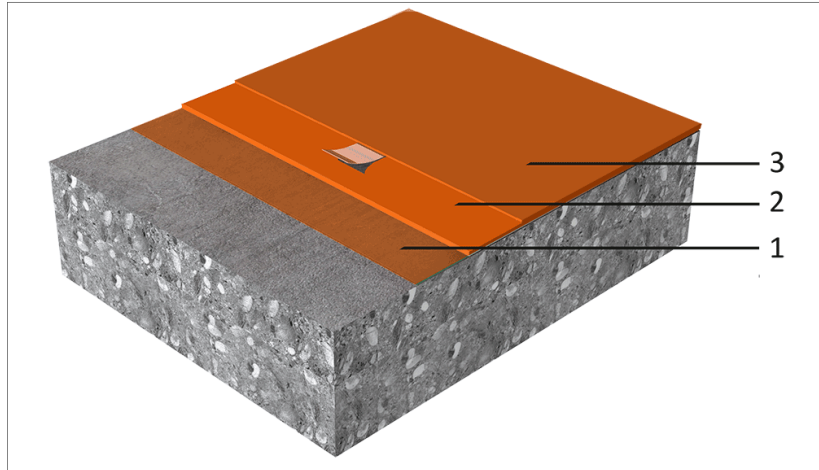
### APPROVALS / STANDARDS

- Synthetic resin screed material according to EN 13813:2002, Declaration of Performance and provided with the CE mark.
- Coating for surface protection of concrete according to EN 1504-2:2004, Declaration of Performance and provided with the CE mark.
- Test of floors regarding ESD-protective properties, SP-Technical Research Institute of Sweden, Report No. 5F005664:A and No. 5F005664:B.
- Approval for ESD products according to IEC 61340, SP-Technical Research Institute of Sweden, No. 230-15-0020, rev 1.
- Varnishability test acc. to VW-standard PV 3.10.7, Report No. 14-04-14201871-19.
- Slip resistance test acc. DIN 51130, Report No. 020143-15-10, Test Institute Roxeler.
- Fire classification acc. to DIN EN 13501-1, Test reports KB-Hoch-150461-2, Test Institute Hoch, DE-Fladungen.
- Fire classification acc. to DIN EN ISO 9239-1, Test reports KB-Hoch-150460-2, Test Institute Hoch, DE-Fladungen.
- Fire classification acc. to DIN EN 11925-2, Test reports KB-Hoch-150459-2, Test Institute Hoch DE-Fladungen.
- Test of the Insulation Resistance acc. DIN VDE 0100-410/T610. Test Report P 9915-E, Kiwa-Polymer Institut.
- Outgassing emission certificate Sikafloor-305 W ESD: CSM Statement of Qualification - ISO 14644-8, class - 9.6 - Report No. SI 1506-767, Fraunhofer IPA.
- Biological Resistance in accordance with ISO 846, CSM Report No. SI 1506-767, Fraunhofer IPA.

# SYSTEM INFORMATION

## System Structure

## Sikafloor® MultiFlex PS-27 ESD:



1. Primer	Sikafloor®-150/-151
2- Base coat + Earthing connection	Sikafloor®-327 + Sika® Earthing Kit
3. Final conductive coating	Sikafloor®-305 W ESD

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

<b>Composition</b>	PUR
<b>Appearance</b>	Matt
<b>Colour</b>	Available in a limited number of colours, such as RAL shades 1000, 1001, 1002, 1011, 3012, 5024, 6021, 6024, 7032, 7035, 7038, 7040, 7042, 7044, 7047 and 9018. Be aware that the colour of the layer below has to be approximately adjusted to the colour of the Sikafloor®-305 W ESD.
<b>Nominal thickness</b>	~ 1.5 - 2.0 mm
<b>Volatile organic compound (VOC) content</b>	Very low content of volatile organic compounds. Sikafloor®-305 W ESD, the finishing layer of the Sikafloor® MultiFlex PS-27 ESD System, has been awarded the Fraunhofer IPA CSM Certificate of Qualification with the report number SI 1506-767. The outgassing test was performed in accordance with CSM procedures. TVOC: ISO-AMC Class -9.6 (see ISO 14644-8).

## TECHNICAL INFORMATION

<b>Tensile adhesion strength</b>	> 1.5 N/mm <sup>2</sup>	(ISO 4624)
<b>Reaction to Fire</b>	B <sub>fl</sub> - s1	(EN 13501-1)
<b>Chemical Resistance</b>	Resistant to many chemicals. Contact Sika® Technical Services for specific information.	
<b>Thermal Resistance</b>	<b>Exposure*</b>	<b>Dry heat</b>
	Permanent	+50 °C
	Short-term (maximum 7 days)	+80 °C
Short-term moist/wet heat* up to +80 °C where exposure is only occasional (i.e. during steam cleaning, etc.) *No simultaneous chemical and mechanical exposure.		
<b>USGBC LEED Rating</b>	Sikafloor®-305 W ESD conforms to the requirements of LEED EQ Credit 4.2: Low-Emitting Materials: Paints & Coatings. Reference Test Method 304: VOC Content < 100 g/l	
<b>Skid / Slip Resistance</b>	R 11	(DIN 51130)

## Electrostatic Behaviour

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>	$< 100 \text{ V}$	(IEC 61340-4-5)
System Resistance (Person/Floor/Shoe) <sup>3</sup>	$< 35 \text{ M } \Omega$	(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  $< 10^9 \Omega$  + body voltage generation of  $< 100 \text{ V}$ , in case of readings  $> 35 \text{ M } \Omega$ .

## APPLICATION INFORMATION

Consumption	Coating	Product	Consumption
	Primer	Sikafloor®-156/-160/-161	1-2 x ~ 0.3 - 0.5 kg/m <sup>2</sup>
	Levelling (if required)	Sikafloor®-156/-160/-161 levelling mortar	Refer to PDS of Sikafloor®-156/-160/-161
	Base coat	Sikafloor®-327	~ 2.1 kg/m <sup>2</sup> (1.5 mm)
	Earthing connection	Sika® Earthing Kit	1 earthing point per approximately 200 -300 m <sup>2</sup> , minimum 2 per room.
	Final conductive coating	Sikafloor®-305 W ESD	1-2 x 0.18 – 0.2 kg/m <sup>2</sup> /layer

These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level and wastage, etc. When used in high wear conditions, e.g. castor chairs, a second layer with Sikafloor®-305 W ESD improves the mechanical properties of the floor covering. Lower consumption can cause roller marks, gloss differences and irregular surface structure, higher consumption results in water retention and can cause pigment floating as well as unsatisfactory conductivity.

<b>Ambient Air Temperature</b>	+10 °C minimum / +30 °C maximum																								
<b>Relative Air Humidity</b>	During curing, the humidity should not exceed 75 %. Adequate fresh air ventilation or a dehumidifier must be provided to remove the excess moisture from the curing product.																								
<b>Dew Point</b>	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.																								
<b>Substrate Temperature</b>	+10 °C minimum / +30 °C maximum																								
<b>Substrate Moisture Content</b>	<4 % pbw (percentage by weight) moisture content. Test method: Sika® Tramex Meter, CM-measurement or Oven-Dry-Method. No rising moisture according to ASTM (Polyethylene-sheet).																								
<b>Waiting Time / Overcoating</b>	Before applying Sikafloor®-327 on Sikafloor®-156/160/161 allow: <table><thead><tr><th>Substrate Temperature</th><th>Minimum</th><th>Maximum</th></tr></thead><tbody><tr><td>+10°C</td><td>24 hours</td><td>4 days</td></tr><tr><td>+20°C</td><td>12 hours</td><td>2 days</td></tr><tr><td>+30°C</td><td>8 hours</td><td>1 days</td></tr></tbody></table> Before applying Sikafloor®-305 W ESD on Sikafloor®-327 allow: <table><thead><tr><th>Substrate Temperature</th><th>Minimum</th><th>Maximum</th></tr></thead><tbody><tr><td>+10°C</td><td>24 hours</td><td>72 hours</td></tr><tr><td>+20°C</td><td>12 hours</td><td>48 hours</td></tr><tr><td>+30°C</td><td>6 hours</td><td>36 hours</td></tr></tbody></table>	Substrate Temperature	Minimum	Maximum	+10°C	24 hours	4 days	+20°C	12 hours	2 days	+30°C	8 hours	1 days	Substrate Temperature	Minimum	Maximum	+10°C	24 hours	72 hours	+20°C	12 hours	48 hours	+30°C	6 hours	36 hours
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Before applying Sikafloor®-305 W ESD on Sikafloor®-305 W ESD allow:

<b>Substrate Temperature</b>	<b>Minimum</b>	<b>Maximum</b>
+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.

<b>Applied Product Ready for Use</b>	<b>Temperature</b>	<b>Foot Traffic</b>	<b>Light Traffic</b>	<b>Full Cure</b>
	+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.

## VALUE BASE

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 DOCUMENTS

Please refer to:

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

## 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® MultiFlex PS-27 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 assume any liability for possible changes in the composition of the recommended cleaning and maintenance agents and their effects on the floor characteristics.
- 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® MultiFlex PS-27 ESD system must be refreshed. This must be coordinated with the authorised 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 elec-

tric powered warm air blower systems.

- For exact colour matching, ensure the final conductive coating of the Sikafloor® MultiFlex PS-27 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).
- Tyres might generate dark marks on Sikafloor®-305 W ESD because of plasticiser migration.
- In case of increased demands on the cleanability, Sikafloor®-305 W ESD can be overcoated 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® MultiFlex PS-27 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)
Test Person Weight:	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:

<b>Ready Applied Area</b>	<b>Number of Measurements</b>
< 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 have to be carried out, approximately 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: At least 2 earthing points per room. The optimum number of earth connections depends on the local conditions and should be specified using available drawings.

## 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.

## 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 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® MultiFlex PS-27 ESD  
April 2023, Version 02.01  
02081290000000018

SikafloorMultiFlexPS-27ESD-en-GB-(04-2023)-2-1.pdf