BUILDING TRUST

SYSTEM DATA SHEET

Sikafloor® MultiDur ET-25 ESD

TEXTURED, UNICOLOUR HIGH PERFORMANCE ESD EPOXY FLOOR COVERING

PRODUCT DESCRIPTION

Sikafloor® MultiDur ET-25 ESD is a two part, tough-elastic, orange peel textured, unicolour high performance ESD epoxy floor covering. It consist out of the unfilled, unicolour ESD epoxy floor covering Sikafloor® -235 ESD + Extender T + Thinner C in order to achieve the orange peel texture for better slip resistance.

USES

Sikafloor® MultiDur ET-25 ESD may only be used by experienced professionals.

It is used as:
Dissipative coloured indoor system for electrostatic protected areas (EPA) with a higher demand for slip resistance. Typical applications include industries that want to reduce ESD events and assemble, install, test or transport electrostatic sensitive devices such as:
- Semiconductors and clean rooms
- Pharmaceutical industries
- Automotive industries

CHARACTERISTICS / ADVANTAGES

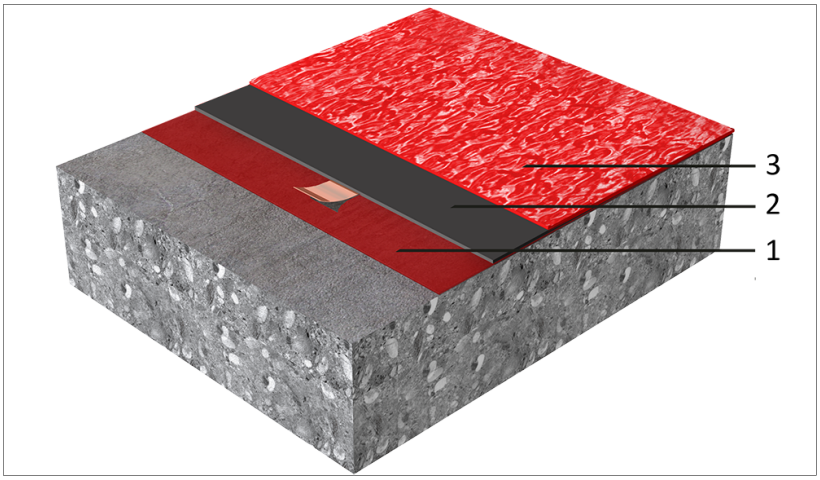
- Body voltage generation < 30 V*
- Good mechanical and chemical resistance
- Easy application
- Tough elastic
- Conforms to the requirements of ANSI/ESD S20.20 and IEC 61340-5-1
- Low VOC and particle emission
- Fulfils ESD-requirements at > 25 % RH/+23 °C**

APPROVALS / STANDARDS

- *Testing of electrostatic properties in accordance to IEC 61340-5-1, Polymer Institute, Test Report P 4956-1-E, November 2007
- **Testing of electrostatic properties in accordance to IEC 61340-5-1, SP Institute, Test Report F900355:B, February 2009
- Testing of Paint Compatibility in acc. to BMW-Standard 09-09-132-5, Polymer Institute, Test Report P 5541, August 2008
- Varnishability test according to Mercedes Benz-standard PBODC380/PBVCE380 (paint wetting impairment substances (PWIS)) like silicones, Test Report VPT-Nr. 07LL165, 04.2008

SYSTEM INFORMATION

System Structure



1. Primer + Earthing connection	Sikafloor®-150/-151+ Sika® Earthing Kit
2. Conductive primer	Sikafloor®-220 W Conductive
3. Final ESD coating	Sikafloor®-235 ESD + Extender T + Thinner C

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

Composition

Epoxy

Appearance

Orange peel textured, semi gloss

Colour

Almost unlimited choice of colour shades. Due to the nature of carbon fibres providing the conductivity, it is not possible to achieve exact colour matching. With very bright colours (such as yellow and orange), this effect is increased. Under direct sunlight there may be some discolouration and colour variation, this has no influence on the function and performance of the coating.

Nominal Thickness

~ 0.6 - max. 0.8 mm

TECHNICAL INFORMATION

Chemical Resistance

Resistant to many chemicals. Contact Sika technical service for specific information.

Thermal Resistance

Exposure*	Dry heat
Permanent	+50 °C
Short-term max. 7 d	+80 °C

*No simultaneous chemical and mechanical exposure.

Electrostatic Behaviour

Resistance to ground[1]	$R_g < 10^9$ Ω	(IEC 61340-4-1)
Typical average resistance to ground[2]	$R_g < 10^6$ 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.

APPLICATION INFORMATION

Consumption

Coating	Product	Consumption
Primer	Sikafloor®-150/-151	1-2 x ~ 0.3 - 0.5 kg/m²
Levelling (if required)	Sikafloor®-150/-151 levelling mortar	Refer to PDS of Sikafloor®-150/-151
Earthing connection	Earthing connection Sika® Earthing Kit	1 earthing point per approx. 200 -300 m², min. 2 per room.
Conductive primer	Sikafloor®-220 W Conductive	1 x 0.08 - 0.10 kg/m²
Final ESD coating	Sikafloor®-235 ESD + Extender T + Thinner C	0.7 - 0.8 kg/m² 1.5 - 2% (by weight) 1.5 - 2% (by weight)

These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.

Ambient Air Temperature

+10 °C min. / +30 °C max.

Relative Air Humidity

80 % r.h. max.

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 / Overcoating

Before applying Sikafloor®-220 W Conductive on Sikafloor®-150/151 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®-235 ESD + Extender T + Thinner C 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

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	~ 4 days	~ 8 days	~ 10 days
+20°C	~ 3 days	~ 6 days	~ 7 days
+30°C	~ 2 days	~ 5 days	~ 6 days

Note: Times are approximate and will be affected by changing ambient conditions

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.

MAINTENANCE

To maintain the appearance of the floor after application, Sikafloor® MultiDur ET-25 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 DOCUMENTS

Please refer to:
- Sika® Information Manaual Mixing and Application of Flooring Systems
- Sika® Information Manual Surface Evaluation & Preparation

LIMITATIONS

- This system may only be used by experienced professionals.
- Due to the nature of carbon fibres providing the conductivity, surface irregularities might be possible. This has no influence on the function and performance of the coating.
- Do not use Sikafloor®-230 ESD TopCoat to overcoat
- Do not apply Sikafloor® MultiDur ET-25 ESD on substrates in which significant vapour pressure may occur.
- Do not blind the primer.
- The freshly applied body coat of the Sikafloor® MultiDur ET-25 ESD system must be protected from damp, condensation and water for at least 24 hours.
- Only start application of Sikafloor® conductive primer after the priming coat has dried tack-free all over. Otherwise there is a risk of wrinkling or impairing of the conductive properties.
- Under certain conditions, underfloor heating combined with high point loading, may lead to imprints in the resin.
- Due to the elasticity of the Sikafloor® MultiDur ET-25 ESD system high point loads may lead to imprints.
- 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 ating use only electric powered warm air blower systems.
- The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking - reducing or breaking conductivity.
- For exact colour matching, ensure the oday coat of the Sikafloor® MultiDur ET-25 ESD system in each area is applied from the same control batch numbers.
- The Sikafloor® MultiDur ET-25 ESD system is not suitable for permanent water load.
- Please note, that measuring results of the Sikafloor® MultiDur ET-25 ESD system may vary due to a difference in surface profile.
- ESD clothing, ambient conditions, measurement equipment, cleanliness of the floor and the test person have a substantial influence on the measurement results.

All measurement values for Sikafloor® MultiDur ET-25 ESD system stated in the system data sheet (apart from the ones referring to proof statements) were measured under the following conditions: ESD-footwear by using cotton socks:
The ESD-footwear must fulfil the requirements of DIN EN 61340-4-3 (Climate 2, resistance < 5 M Ohm).

Size of ESD-footwear	42 (EU) (UK: 8; US: 8,5)
Weight of the test person	90 kg
Ambient conditions	+23 °C/50% rel. air moisture
Measuring tool	Resistance to ground: Insulation Tester: Metriso 2000 from Warmbier or comparable
Surface resistance probe	Carbon Rubber electrode. Weight: 2.50 kg (± 0.25 kg); Diameter: 65 mm ± 5 mm
Rubber pad hardness	Shore A 60 (± 10)
Measuring tool: System test	Insulation Tester: Metriso 2000, from Warmbier or comparable
Measuring tool: Walking test	Walking Test Kit WT 5000 from Warmbier or comparable

Before the application of a conductive flooring system, a reference area has to be applied. This reference area must be assessed and accepted from the contractor/client. The desired result and method of conductivity measurement must be stated in the Specification and Method Statement. 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 re-

quirements, the total area is acceptable.
Installation of earthing points: Please refer to the Information Manual: “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.

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.

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.

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.

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