

SYSTEMDATENBLATT

Sikafloor® MultiDur ES-31 ECF

2-part, smooth, chemically highly resistant and electrostatic conductive epoxy floor covering

BESCHREIBUNG

Sikafloor® MultiDur ES-31 ECF is a two part, electrostatic conductive self-smoothing, coloured epoxy flooring system with high chemical resistance. "Total solid epoxy composition acc. to the test method Deutsche Bauchemie e.V. (German Association for construction chemicals)".

ANWENDUNG

Sikafloor® MultiDur ES-31 ECF ist nur für die Anwendung durch gewerbliche Verarbeiter bestimmt.

It is used as:

- Chemically highly resistant coating for concrete and screed surfaces in bund areas for the protection against water contaminating liquids (contact Sika technical service for specific information)
- Electrostatic conductive wearing layer for areas subject to chemical and mechanical exposure in production and storage facilities

PRODUKTMERKMALE/ VORTEILE

- Very high chemical resistance
- High mechanical resistance
- Impervious to liquids
- Abrasion resistant
- Electrostatically conductive

PRÜFZEUGNISSE

- Synthetic resin screed material according to EN 13813:2002, Declaration of Performance 02 08 01 02 019 0 000010 201, 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 02 019 0 000010 201, certified by notified factory production control certification body 0921, certificate of conformity of the factory production control 2017, and provided with the CE marking.
- Reaction to fire classification according to DIN EN 13301-1. Test report No.: 2013-B-1413/01.
- Particle emission certificate Sikafloor®-381 ECF CSM Statement of Qualification - ISO 14644-1, class 4 - Report No. SI 1312-681
- Spark resistance in accordance with UFGS-09 97 23 of coating systems, Test report P 8625-E, Kiwa Polymer Institut

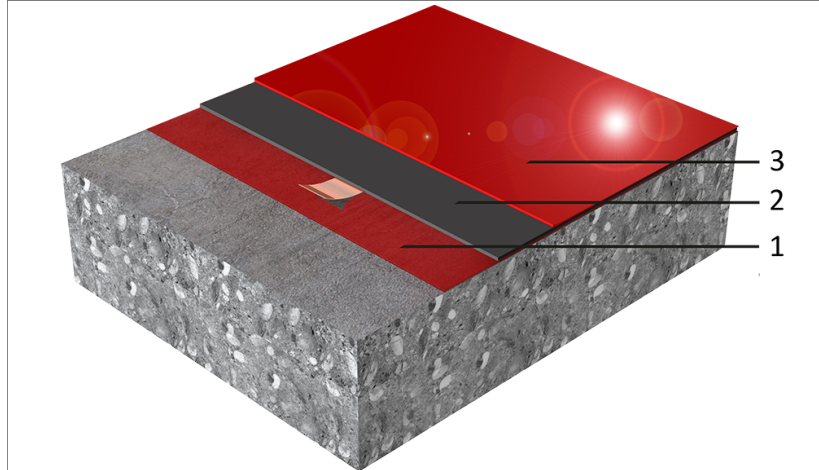
PRODUKTINFORMATIONEN

Lieferform	Please refer to individual Product Data Sheet.
Lagerfähigkeit	Please refer to individual Product Data Sheet.
Lagerbedingungen	Please refer to individual Product Data Sheet.

SYSTEMINFORMATIONEN

Systemaufbau

Sikafloor® MultiDur ES-31 ECF:



1. Primer + Earthing connection	Sikafloor®-156/-160/-161 + Sika® Earthing Kit
2. Conductive primer	Sikafloor®-220 W Conductive
3. Final conductive coating	Sikafloor®-381 ECF filled with quartz sand F34

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

Chemische Basis System	Epoxy
Aussehen System	Self-smoothing system – gloss finish
Farbsystem	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 sun light there may be some variations and colour variation, this has no influence on the function and performance of the coating.
Nenn Dicke System	~ 1.5 mm

TECHNISCHE INFORMATIONEN

Shore-Härte (D)	~ 82 (resin filled)	(7 days / +23 °C)	(DIN 53 505)
Abriebfestigkeit	~ 40 mg (resin filled)	(CS 10/1000/1000) (8 days / +23 °C)	(DIN 53109 Taber Abraser Test)
Druckfestigkeit	~ 80 N/mm ² (resin filled)	(14 days / +23 °C)	(EN 196-1)
Reißfestigkeit	~ 55 N/mm ² (resin filled)	(14 days / +23 °C)	(EN 196-1)
Brandverhalten	Bfl s1		(EN 13501-1)
Chemische Beständigkeit	Resistant to many chemicals. Contact Sika technical service for specific information.		

Thermische Beständigkeit**Exposure*****Dry heat**

Permanent

+50 °C

Short-term max. 7 d

+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.

USGBC LEED Bewertung

Conforms to the requirements of LEED EQ Credit 4.2: Low-Emitting Materials: Paints & Coatings SCAQMD Method 304-91 VOC Content <100 g/l.

Elektrostatisches VerhaltenResistance to ground¹ $R_g < 10^9 \Omega$ (IEC 61340-4-1)Typical average resistance to ground² $R_g < 10^6 \Omega$ (DIN EN 1081)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.**ANWENDUNGSINFORMATIONEN****Materialverbrauch****Coating****Product****Consumption**

Primer

Sikafloor®-156/-160/-161

1-2 x ~ 0.3 - 0.5 kg/m²

Levelling (if required)

Sikafloor®-156/-160/-161 levelling mortar

Refer to PDS of Sikafloor®-156/-160/-161

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 conductive coating

Sikafloor®-381 ECF filled with quartz sand F34*

2.5 kg/m² Binder + quartz sand
10-15°C: without filling
15-20°C: 1 : 0.1 pbw;
20-30°C: 1 : 0.2 pbw

These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.
*All values have been determined using quartz sand F 34 (0.1-0.3 mm) from Quarzwerke GmbH Frechen. Other quartz sand type will have an effect on the product, such as filling grade, levelling properties and aesthetics. Generally, the lower the temperature the less the filling grade.

Lufttemperatur

+10 °C min. / +30 °C max.

Relative Luftfeuchtigkeit

80 % r.h. max.

Taupunkt

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.

Untergrundtemperatur

+10 °C min. / +30 °C max.

Untergrundfeuchtigkeit

<4 % pbw moisture content.

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

Wartezeit zwischen den Arbeitsgängen

Before applying Sikafloor®-220 W Conductive on Sikafloor®-156/160/161 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®-381 ECF on Sikafloor®-220 W Conductive allow:

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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.

Wartezeit bis zur Nutzung	Temperature	Foot traffic	Light traffic	Full cure
	+10 °C	~ 24 hours	~ 3 days	~ 10 days
	+20 °C	~ 18 hours	~ 2 days	~ 7 days
	+30 °C	~ 12 hours	~ 1 days	~ 5 days

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

UNTERHALT

To maintain the appearance of the floor after application, Sikafloor®-381 ECF 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.

WEITERE DOKUMENTE

Please refer to:

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

WEITERE HINWEISE

- 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 apply the Sikafloor® MultiDur ES-31 ECF System on substrates in which significant vapour pressure may occur.
- Do not blind the primer.
- The freshly applied final conductive coating of the Sikafloor® MultiDur ES-31 ECF 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.
- Maximum layer thickness of final conductive coating:

~ 1.5 mm. Excessive thickness (more than 2.5 kg/m²) causes reduced conductivity.

- 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 CO₂ and H₂O water vapour, which may adversely affect the finish. For heating 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 final conductive coating of the Sikafloor® MultiDur ES-31 ECF 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.

All measurement values for the Sikafloor® MultiDur ES-31 ECF system stated in the system data sheet (apart from the ones referring to proof statements) were measured under the following conditions:

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 / Tripod electrode acc. DIN EN 1081
Rubber pad hardness:	Shore A 60 (± 10)

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

Ready applied area	Number of measurements
< 10 m ²	6 measurements
< 100 m ²	10-20 measurements
< 1000 m ²	50 measurements
< 5000 m ²	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".

Number 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.

MESSWERTE

Alle technischen Daten, Maße und Angaben in diesem Datenblatt beruhen auf Labortests. Tatsächlich gemessene Daten können in der Praxis aufgrund von Umständen außerhalb unseres Einflussbereiches abweichen.

LÄNDERSPEZIFISCHE DATEN

Die Angaben in diesem Produktdatenblatt sind gültig für das von der Sika Deutschland GmbH ausgelieferte Produkt. Bitte beachten Sie, dass Angaben in anderen Ländern davon abweichen können. Beachten Sie das im Ausland gültige Produktdatenblatt.

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Vor der Verarbeitung der Produkte muss der Anwender die dazugehörigen, aktuellen Sicherheitsdatenblätter (SDB) lesen. Das SDB gibt Informationen und Hinweise zur sicheren Handhabung, Lagerung und Entsorgung von chemischen Produkten und enthält physikalische, ökologische, toxikologische sowie weitere sicherheitsrelevante Daten.

RECHTLICHE HINWEISE

Die vorstehenden Angaben, insbesondere die Vorschläge für Verarbeitung und Verwendung unserer Produkte, beruhen auf unseren Kenntnissen und Erfahrungen im Normalfall, vorausgesetzt die Produkte wurden sachgerecht gelagert und entsprechend der Vorgaben unserer jeweiligen Produktdatenblätter angewandt. Wegen der unterschiedlichen Materialien,

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