

# PRODUCT DATA SHEET

## Sikafloor®-381

### 2-PART SELF SMOOTHING EPOXY COATING WITH HIGH CHEMICAL AND MECHANICAL RESISTANCE

#### DESCRIPTION

Sikafloor®-381 is a two part, low-emission, self-smoothing, textured and roller coating epoxy resin system designed for cleanrooms.  
"Total solid epoxy composition according to the test method Deutsche Bauchemie e.V. (German Association for construction chemicals)".

#### USES

Sikafloor®-381 may only be used by experienced professionals.

#### CHARACTERISTICS / ADVANTAGES

- High chemical resistance
- High mechanical resistance
- Liquid proof
- Abrasion resistant
- Slip resistant surface possible

#### SUSTAINABILITY

Conformity with LEED v2009 IEQc 4.2: Low-Emitting Materials - Paints and Coatings

#### APPROVALS / CERTIFICATES

- Particle emission certificate Sikafloor-381 CSM Statement of Qualification - ISO 14644-1, class 1 - Report No. SI 1008-533 and GMP class A, Report No. SI 1008-533.
- Outgassing emission certificate Sikafloor-381 CSM Statement of Qualification - ISO 14644-8, class -9.6 - Report No. SI 1008-533.
- Good biological Resistance in accordance with ISO 846, CSM Report No. 1008-533
- Synthetic resin screed material according to EN 13813:2002, Declaration of Performance 02 08 11 02 002 0 000051 1008, certified by notified factory production control certification body 0921, certificate of conformity of the factory production control 2017, and provided with the CE marking.
- Fire classification in accordance with EN 13501-1, Report-No. 2013-B-2119/07, MPA Dresden, Germany, July 2013 (tested as part of the Sikafloor® Multidur ES-31).
- Coating for surface protection of concrete according to EN 1504-2:2004, Declaration of Performance 02 08 11 02 002 0 000051 1008, certified by notified factory production control certification body 0921, certificate of conformity of the factory production control 2017, and provided with the CE marking.



## PRODUCT INFORMATION

|                                |  |   |
|--------------------------------|--|---|
| <b>Chemical base</b>           | Epoxy  |   |
| <b>Packaging</b>               | Part A<br>Part B<br>Part A+B   | 21.25 kg containers<br>3.75 kg containers<br>25 kg ready to mix units |
| <b>Appearance / Colour</b>     | Resin - part A<br>Hardener - part B  | coloured, liquid<br>transparent, liquid                               |
|                                | Almost unlimited choice of colour shades.<br>Under direct sun radiation there may be some discolouration and colour deviation, this has no influence on the function and performance of the coating. |   |
| <b>Shelf life</b>              | 24 months from date of production.   |   |
| <b>Storage conditions</b>      | The packaging must be stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5 °C and +30 °C.  |   |
| <b>Density</b>                 | Part A<br>Part B<br>Mixed resin  | ~ 1.77 kg/L<br>~ 1.04 kg/L<br>~ 1.6 kg/L                              |
|                                | All Density values at +23 °C   |   |
| <b>Solid content by weight</b> | ~100 %   |   |
| <b>Solid content by volume</b> | ~100 %   |   |

## TECHNICAL INFORMATION

|                                    |   |  |
|------------------------------------|---|--|
| <b>Shore D Hardness</b>            | ~82 (7 days / +23 °C)   | (DIN 53 505)                                   |
| <b>Abrasion Resistance</b>         | 62 mg (CS 10/1000/1000) (7 days / +23 °C) (EN ISO 5470-1 Taber Abraser Test)  |  |
| <b>Compressive Strength</b>        | > 80 N/mm <sup>2</sup> (14 days / +23 °C)   | (EN 13892-2)                                   |
| <b>Tensile Strength in Flexure</b> | > 55 N/mm <sup>2</sup> (14 days / +23 °C)   | (EN 13892-2)                                   |
| <b>Tensile Adhesion Strength</b>   | > 1.5 N/mm <sup>2</sup> (failure in concrete)   | (ISO 4624)                                     |
| <b>Chemical Resistance</b>         | Resistant to many chemicals. Contact Sika technical service for specific information.   |  |
| <b>Thermal Resistance</b>          | <b>Exposure*</b><br>Permanent<br>Short-term max. 7 d<br>Short-term max. 12 h  | <b>Dry heat</b><br>+50 °C<br>+80 °C<br>+100 °C |
|                                    | Short-term moist/wet heat* up to +80 °C where exposure is only occasional (i.e. during steam cleaning etc.)<br>*No simultaneous chemical and mechanical exposure. |  |

## SYSTEMS

|                |  |   |
|----------------|--|---|
| <b>Systems</b> | Please refer to the system data sheet of : |   |
|                | Sikafloor® MultiDur ES-31                  | Smooth unicolour epoxy floor covering with high chemical resistance   |
|                | Sikafloor® MultiDur ET-31 V                | Textured unicolour epoxy floor covering with high chemical resistance |

## APPLICATION INFORMATION

|                     |                                       |
|---------------------|---------------------------------------|
| <b>Mixing Ratio</b> | Part A : part B = 85 : 15 (by weight) |
|---------------------|---------------------------------------|

| <b>Consumption</b>                | ~ 0.75–0.85 kg/m <sup>2</sup> applied as a roller coating<br>~ 1.5–1.65 kg/m <sup>2</sup> applied as a self smoothing wearing course<br>~ 1.2 kg/m <sup>2</sup> applied as a wearing course on vertical areas<br>These figures are theoretical and do not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc. For detailed info, please refer to the System data sheets Sikafloor® MultiDur ES-31 and Sikafloor® MultiDur ET-31 V.  |                |                              |                |                |        |      |     |        |      |     |        |     |     |
|-----------------------------------|---|----------------|------------------------------|----------------|----------------|--------|------|-----|--------|------|-----|--------|-----|-----|
| <b>Ambient Air Temperature</b>    | +10 °C min. / +30 °C max.   |                |                              |                |                |        |      |     |        |      |     |        |     |     |
| <b>Relative Air Humidity</b>      | 80 % r.h. max.  |                |                              |                |                |        |      |     |        |      |     |        |     |     |
| <b>Dew Point</b>                  | Beware of condensation!<br>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.<br>Note: Low temperatures and high humidity conditions increase the probability of blooming.   |                |                              |                |                |        |      |     |        |      |     |        |     |     |
| <b>Substrate Temperature</b>      | +10 °C min. / +30 °C max.   |                |                              |                |                |        |      |     |        |      |     |        |     |     |
| <b>Substrate Moisture Content</b> | < 4 % pbw moisture content.<br>Test method: Sika®-Tramex meter, CM-measurement or Oven-dry-method. No rising moisture according to ASTM (Polyethylene-sheet).   |                |                              |                |                |        |      |     |        |      |     |        |     |     |
| <b>Pot Life</b>                   | <b>Temperature</b>  | <b>Time</b>    |                              |                |                |        |      |     |        |      |     |        |     |     |
|                                   | +10 °C  | ~60 min        |                              |                |                |        |      |     |        |      |     |        |     |     |
|                                   | +20 °C  | ~30 min        |                              |                |                |        |      |     |        |      |     |        |     |     |
|                                   | +30 °C  | ~15 min        |                              |                |                |        |      |     |        |      |     |        |     |     |
| <b>Curing Time</b>                | Before applying Sikafloor®-381 on Sikafloor®-381 allow: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><b>Substrate temperature</b></th> <th style="text-align: left;"><b>Minimum</b></th> <th style="text-align: left;"><b>Maximum</b></th> </tr> </thead> <tbody> <tr> <td>+10 °C</td> <td>24 h</td> <td>3 d</td> </tr> <tr> <td>+20 °C</td> <td>18 h</td> <td>2 d</td> </tr> <tr> <td>+30 °C</td> <td>6 h</td> <td>1 d</td> </tr> </tbody> </table> Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity. |                | <b>Substrate temperature</b> | <b>Minimum</b> | <b>Maximum</b> | +10 °C | 24 h | 3 d | +20 °C | 18 h | 2 d | +30 °C | 6 h | 1 d |
| <b>Substrate temperature</b>      | <b>Minimum</b>  | <b>Maximum</b> |                              |                |                |        |      |     |        |      |     |        |     |     |
| +10 °C                            | 24 h  | 3 d            |                              |                |                |        |      |     |        |      |     |        |     |     |
| +20 °C                            | 18 h  | 2 d            |                              |                |                |        |      |     |        |      |     |        |     |     |
| +30 °C                            | 6 h   | 1 d            |                              |                |                |        |      |     |        |      |     |        |     |     |

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

- The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm<sup>2</sup>) with a minimum pull off strength of 1.5 N/mm<sup>2</sup>.
- The substrate must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.
- Concrete substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and achieve an open textured surface.
- Weak concrete must be removed and surface defects such as blow holes and voids must be fully exposed.
- Repairs to the substrate, filling of blowholes/voids and surface levelling must be carried out using appropriate products from the Sikafloor®, Sikadur® and Sikagard® range of materials.
- All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush or vacuum.

### MIXING

Prior to mixing, stir part A mechanically. When all of part B has been added to part A, mix continuously for 3 minutes until a uniform mix has been achieved. When parts A and B have been mixed, add the quartz sand and if required the Extender T and mix for a further 2 minutes until a uniform mix has been achieved. To ensure thorough mixing pour materials into another container and mix again to achieve a consistent mix. Over mixing must be avoided to minimise air entrainment.

#### Mixing Tools

Sikafloor®-381 must be thoroughly mixed using a low speed electric stirrer (300 - 400 rpm) or other suitable equipment. For the preparation of mortars use a forced action mixer of rotating pan, paddle or trough type. Free fall mixers should not be used.

### APPLICATION

Prior to application, confirm substrate moisture content, relative humidity and dew point. If > 4 % pbw moisture content, Sikafloor® EpoCem® should be applied as a temporary moisture barrier (T.M.B.) system.

**Wearing course (horizontal areas):**

Sikafloor®-381 is poured, spread evenly by means of a serrated trowel.

Roll immediately in two directions with a spiked roller to ensure even thickness.

**Wearing course (vertical areas):**

The first layer of Sikafloor®-381, mixed with 2.5—4 % Extender T, has to be applied by trowel. After curing, apply the second layer of Sikafloor®-381, mixed with 2.5—4 % Extender T, by trowel.

**Wearing course with slip resistance:**

Sikafloor®-381 is poured, spread evenly by means of a serrated trowel and blind the fresh layer with silicon carbide or quartz sand to excess. After final drying the surplus silicon carbide / quartz sand must be swept off and the surface must be vacuumed. The seal coat (Sikafloor®-381 + 5 % by weight Thinner C) has to be applied evenly by short-piled roller or squeegee.

**CLEANING OF TOOLS**

Clean all tools and application equipment with Thinner C immediately after use. Hardened and/or cured material can only be removed mechanically.

**MAINTENANCE**

To maintain the appearance of the floor after application, Sikafloor®-381 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 and waxes

**LIMITATIONS**

- Do not apply Sikafloor®-381 on substrates with rising moisture.
- Do not blind the primer
- Freshly applied Sikafloor®-381 should be protected from damp, condensation and water for at least 24 hours.
- For areas with limited exposure and normally absorbent concrete substrates priming with Sikafloor®-161 HC is not necessary for roller or textured coating systems.

- For roller / textured coatings: Uneven substrates as well as inclusions of dirt cannot and should not be covered by thin sealer coats. Therefore both substrate and adjacent areas must always be prepared and cleaned thoroughly prior to application.
- The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking.
- For exact colour matching, ensure the Sikafloor®-381 in each area is applied from the same control batch numbers.
- Under certain conditions, underfloor heating or high ambient temperatures 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

**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**

Please note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Please 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.

**DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC**

According to the EU Directive 2004/42/CE, the maximum allowed content of VOC (product category IIA / j type sb) is 500 g/L (Limits 2010) for the ready to use product.

The maximum content of Sikafloor®-381 is < 500 g/L VOC for the ready to use product.

## 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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Product Data Sheet

Sikafloor®-381

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