PRODUCT DATA SHEET

Sikafloor®-381

2-part self smoothing epoxy coating, highly chemically and mechanically resistant

PRODUCT DESCRIPTION

Sikafloor®-381 is a two-part, self-smoothing, coloured epoxy resin with high chemical and mechanical resistance.

USES

Chemically and mechanically highly resistant coating for concrete and screed surfaces in bund areas for protection against water contaminating liquids (according to the product chemical resistance table)

CHARACTERISTICS / ADVANTAGES

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

PRODUCT DATA

FORM

APPEARANCE / COLOURS

Resin - Part A : coloured, liquid
Hardener - Part B : transparent, liquid

Almost unlimited choice of colour shades.

Under direct sun radiation there may be some discolouration and colour deviation, this has no influence on the function and performance of the coating.

PACKAGING

Part A : 21.25 kg containers
Part B : 3.75 kg containers
Part A+B : 25 kg ready to mix units
**STORAGE CONDITIONS / SHELF-LIFE**

24 months from date of production if stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5°C and +30°C.

**TECHNICAL DATA**

**CHEMICAL BASE**

Epoxy

**DENSY**

<table>
<thead>
<tr>
<th>Part A:</th>
<th>~ 1.77 kg/l (DIN EN ISO 2811-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part B:</td>
<td>~ 1.04 kg/l</td>
</tr>
<tr>
<td>Mixed resin:</td>
<td>~ 1.6 kg/l</td>
</tr>
<tr>
<td>All density values at +23°C</td>
<td></td>
</tr>
</tbody>
</table>

**SOLID CONTENT**

~ 100% (by volume) / ~ 100% (by weight)

**VOC DATA**

VOC content (ready to use) not exceeding 100 gm/litre [Type of regulated paint under the Air Pollution Control (volatile organic compounds) Regulation of Hong Kong: (floor coatings)].

**MECHANICAL / PHYSICAL PROPERTIES**

**COMPRESSIVE STRENGTH**

> 80 N/mm² (14 days / 23°C)

**FLEXURAL STRENGTH**

> 55 N/mm² (14 days / 23°C)

**BOND STRENGTH**

> 1.5 N/mm² (failure in concrete)

**SHORE D HARDNESS**

82 (7 days / +23°C)(DIN 53 505)

**ABRASION RESISTANCE**

40 mg (CS 10/1000/1000) (8 days / +23°C)(DIN 53 109)

(Taber Abrader Test)

**CHEMICAL RESISTANCE**

Resistant to many chemicals. Please ask for a detailed chemical resistance table.
THERMAL RESISTANCE

<table>
<thead>
<tr>
<th>Exposure*</th>
<th>Dry heat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent</td>
<td>+50°C</td>
</tr>
<tr>
<td>Short-term max. 7 d</td>
<td>+80°C</td>
</tr>
<tr>
<td>Short-term max. 12 h</td>
<td>+100°C</td>
</tr>
</tbody>
</table>

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.

SYSTEM INFORMATION

APPLICATION DETAILS

SYSTEM STRUCTURE

Self-smoothing system (horizontal areas):
Primer: 1 x Sikafloor®-156
Wearing course: 1 x Sikafloor®-381 filled with quartz sand

Smooth wearing course (vertical areas):
Smooth wearing course: 1 x Sikafloor®-156
Wearing course: 2 x Sikafloor®-381 + Extender T

Broadcast system with slip resistance:
Primer: 1 x Sikafloor®-156
Wearing course: 1 x Sikafloor®-381 broadcast to excess with silicon carbide or quartz sand
Seal coat: 1 x Sikafloor®-381 + 5 wt.-% Thinner C

SURFACE PREPARATION

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 blowholes 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.

The concrete or screed substrate has to be primed or levelled in order to achieve an even surface.

High spots must be removed by e.g. grinding.

All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum.
SUBSTRATE QUALITY

The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm²) with a minimum pull off strength of 1.5 N/mm².

The substrate must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.

If in doubt apply a test area first.

CONSUMPTION / DOSAGE

<table>
<thead>
<tr>
<th>Coating System</th>
<th>Product</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primer</td>
<td>Sikafloor®-156</td>
<td>0.3 - 0.5 kg/m²</td>
</tr>
<tr>
<td>Levelling (optional)</td>
<td>Sikafloor®-156 mortar</td>
<td>Refer to PDS of Sikafloor®-156</td>
</tr>
<tr>
<td>Wearing course horizontal areas (1.8 - 2.8 mm)</td>
<td>Sikafloor®-381 filled with quartz sand 0.1 - 0.3</td>
<td>1.8 kg/m²/mm Binder + quartz sand 10 - 15 °C: without filling 15 - 20 °C: 1 : 0.1 pbw (1.65 + 0.15 kg/m³) 20 - 30 °C: 1 : 0.2 pbw (1.5 + 0.3 kg/m³)</td>
</tr>
<tr>
<td>Wearing course vertical areas (Film thickness ~ 1.5 mm)</td>
<td>Sikafloor®-381 + 2.5 - 4 wt.-% Extender T</td>
<td>2 x 1.25 kg/m²</td>
</tr>
<tr>
<td>Wearing course with slip resistance (Film thickness ~ 2.5 mm)</td>
<td>Sikafloor®-381, broadcast to excess with silicon carbide 0.5 - 1.0 mm or quartz sand 0.4 - 0.7 mm</td>
<td>1.6 kg/m² Binder without filling Silicon Carbide 0.5 - 1.0 mm or quartz sand 0.4 - 0.7 mm (5 - 6 kg/m³)</td>
</tr>
<tr>
<td>Seal coat (on broadcast areas only)</td>
<td>Sikafloor®-381 + 5 wt.-% Thinner C</td>
<td>0.75 - 0.85 kg/m²</td>
</tr>
</tbody>
</table>

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

APPLICATION CONDITIONS / LIMITATIONS

SUBSTRATE TEMPERATURE
+10°C min. / +30°C max.

AMBIENT TEMPERATURE
+10°C min. / +30°C max.
SUBSTRATE MOISTURE CONTENT
≤ 4% pbw moisture content.
No rising moisture according to ASTM (Polyethylene-sheet).

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.

APPLICATION INSTRUCTIONS

MIXING
Part A : Part B = 85 : 15 (by weight)

MIXING TIME
Prior to mixing, stir part A mechanically. When all of part B has been added to part A, mix continuously for 2 minutes until a uniform mix has been achieved.
When parts A and B have been mixed, add the quartz sand 0.1 - 0.3 mm 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.

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

POT LIFE

<table>
<thead>
<tr>
<th>Temperatures</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>+10°C</td>
<td>~ 60 minutes</td>
</tr>
<tr>
<td>+20°C</td>
<td>~ 30 minutes</td>
</tr>
<tr>
<td>+30°C</td>
<td>~ 15 minutes</td>
</tr>
</tbody>
</table>

WAITING TIME / OVERCOATING

Before applying Sikafloor®-381 on Sikafloor®-156 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>6 hours</td>
<td>1 day</td>
</tr>
</tbody>
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Before applying Sikafloor®-381 on Sikafloor®-381 allow:

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<th>Minimum</th>
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<tbody>
<tr>
<td>+10°C</td>
<td>24 hours</td>
<td>48 hours</td>
</tr>
<tr>
<td>+20°C</td>
<td>18 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td>+30°C</td>
<td>12 hours</td>
<td>12 hours</td>
</tr>
</tbody>
</table>

Times are approximate and will be affected by changing ambient conditions, particularly temperature and relative humidity.

CURING DETAILS

Applied Product ready for use

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Foot traffic</th>
<th>Light traffic</th>
<th>Full cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>+10°C</td>
<td>~ 24 hours</td>
<td>~ 3 days</td>
<td>~ 10 days</td>
</tr>
<tr>
<td>+20°C</td>
<td>~ 18 hours</td>
<td>~ 2 days</td>
<td>~ 7 days</td>
</tr>
<tr>
<td>+30°C</td>
<td>~ 12 hours</td>
<td>~ 1 day</td>
<td>~ 5 days</td>
</tr>
</tbody>
</table>

Note: Times are approximate and will be affected by changing ambient conditions.
### NOTES ON APPLICATION / LIMITATIONS

Do not apply Sikafloor®-381 on substrates with rising moisture.

Do not blind the primer.

Freshly applied Sikafloor®-381 must be protected from damp, condensation and water for at least 24 hours.

Avoid puddles on the surface with the primer.

The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking.

For exact colour matching, ensure 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 CO₂ and H₂O water vapour, which may adversely affect the finish. For heating use only electric powered warm air blower systems.
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.

HEALTH AND SAFETY INFORMATION
For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet 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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

FOR MORE PRODUCT NAME® INFORMATION:

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