Product Data Sheet
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Identification no:
01 08 01 02 019 0 000010
Sikafloor®-381

CE **EN 13813** **04**
EN 1504-2 **08** **0921 - CPD - 2017**

Construction

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

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	
Density	Part A: ~ 1.77 kg/l Part B: ~ 1.04 kg/l Mixed resin: ~ 1.6 kg/l All Density values at +23°C	(DIN EN ISO 2811-1)
Solid Content	~ 100% (by volume) / ~ 100% (by weight) "Total solid epoxy composition acc. to the test method of Deutsche Bauchemie"	

Mechanical / Physical Properties

Compressive Strength	> 80 N/mm² (14 days / +23°C)	(EN 196-1)
Flexural Strength	> 55 N/mm² (14 days / +23°C)	(EN 196-1)
Bond Strength	> 1.5 N/mm² (failure in concrete)	(ISO 4624)
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))

Resistance

Chemical Resistance

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

Thermal Resistance

Exposure*	Dry heat
Permanent	+50°C
Short-term max. 7 d	+80°C
Short-term max. 12 h	+100°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.

System Information

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

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Primer	Sikafloor®-156	0.3 - 0.5 kg/m²
Levelling (optional)	Sikafloor®-156 mortar	Refer to PDS of Sikafloor®-156
Wearing course horizontal areas (1.8 - 2.8 mm)	Sikafloor®-381 filled with quartz sand 0.1 - 0.3	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/m²) 20 - 30°C: 1 : 0.2 pbw (1.5 + 0.3 kg/m²)
Wearing course vertical areas (Film thickness ~ 1.5 mm)	Sikafloor®-381 + 2.5 - 4 wt.-% Extender T	2 x 1.25 kg/m²
Wearing course with slip resistance (Film thickness ~ 2.5 mm)	Sikafloor®-381, broadcast to excess with silicon carbide 0.5 - 1.0 mm or quartz sand 0.4 - 0.7 mm	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/m²)
Seal coat (on broadcast areas only)	Sikafloor®-381 + 5 wt.-% Thinner C	0.75 - 0.85 kg/m²

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

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.

Substrate 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.

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.

Test method: Sika®-Tramex meter, CM - measurement or Oven-dry-method.

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.

Potlife

Temperatures	Time
+10 °C	~ 60 minutes
+20 °C	~ 30 minutes
+30 °C	~ 15 minutes

Waiting Time / Overcoating

Before applying Sikafloor®-381 on Sikafloor®-156 allow:

Substrate temperature	Minimum	Maximum
+10 °C	24 hours	4 days
+20 °C	12 hours	2 days
+30 °C	6 hours	1 day

Before applying Sikafloor®-381 on Sikafloor®-381 allow:

Substrate temperature	Minimum	Maximum
+10 °C	24 hours	48 hours
+20 °C	18 hours	24 hours
+30 °C	6 hours	12 hours

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

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 CO_2 and H_2O water vapour, which may adversely affect the finish. For heating use only electric powered warm air blower systems.

Curing Details

Applied Product ready for use

Temperature	Foot traffic	Light traffic	Full cure
+10℃	~ 24 hours	~ 3 days	~ 10 days
+20℃	~ 18 hours	~ 2 days	~ 7 days
+30℃	~ 12 hours	~ 1 day	~ 5 days

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

Cleaning / Maintenance

Methods

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

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

CE Labelling

The harmonized European Standard EN 13 813 „Screed material and floor screeds - Screed materials - Properties and requirements“ specifies requirements for screed materials for use in floor construction internally.

Structural screeds or coatings, i.e. those that contribute to the load bearing capacity of the structure, are excluded from this standard.

Resin floor systems as well as cementitious screeds fall under this specification. They have to be CE-labelled as per Annex ZA. 3, Table ZA.1.5 and 3.3 and fulfil the requirements of the given mandate of the Construction Products Directive (89/106):

CE

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04 [1)]

EN 13813 SR-B1,5-AR1-IR 4

Resin screed/coating for indoors in buildings
(systems as per Product Data Sheet)

Reaction to fire:	E_{fl} [2)]
Release of corrosive substances (**S**ynthetic **R**esin Screed):	SR
Water permeability:	NPD [2)]
Abrasion **R**esistance:	AR1 [4)]
Bond strength:	B 1,5
Impact **R**esistance:	IR 4
Sound insulation:	NPD
Sound absorption:	NPD
Thermal resistance:	NPD
Chemical resistance:	NPD

[1)] Last two digits of the year in which the marking was affixed.

[2)] In Germany, DIN 4102 still applies. Passed class B2.

[3)] No performance determined.

[4)] Not broadcast with sand.

Construction

CE Labelling

The harmonized European Standard EN 1504-2 „Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of comformity – Part 2 : Surface protection systems for concrete" gives specifications for products and systems used as methods for the various principles presented under EN 1504-9.

Products which fall under this specification have to be CE-labelled as per Annex ZA. 1, Tables ZA.1a to ZA 1g according to the scope and relevant clauses there indicated, and fulfil the requirements of the given mandate of the Construction Products Directive (89/106):

Here below indicated are the minimum performance requirements set by the standard. For the specific performance results of the product to the particular tests, please see the actual values above in the PDS.

CE	
0921	
Sika Deutschland GmbH Kornwestheimerstraße 103-107 D - 70439 Stuttgart	
08 [1)]	
0921–CPD–2017	
EN 1504-2	
Surface Protection Product Coating [2)]	
Abrasion resistance (Taber test):	< 3000 mg
Permeability to CO_2:	S_D > 50 m
Permeability to water vapour:	Class III
Capillary absorption and permeability to water:	$w < 0.1$ kg/m^2 x h^{0,5}
Resistance to severe chemical attack: [3)]	Class I
Impact resistance:	Class I
Adhesion strength by pull-off test:	≥ 2.0 N/mm²
Fire Classification: [4)]	E_{fl}

[1)] Last two digits of the year in which the marking was affixed.

[2)] Tested as a part of a system build-up with Sikafloor®-161.

[3)] Please refer to the Sikafloor® Chemical Resistance Chart.

[4)] Min. classification, please refer to the individual test certificate.

EU Regulation 2004/42

VOC - Decopaint Directive

According to the EU-Directive 2004/42, the maximum allowed content of VOC (Product category IIA / **j** type **sb**) is 550 / 500 g/l (Limits 2007 / 2010) for the ready to use product.

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

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ISO 14001 ISO 9001