Construction

Sikafloor®-381 N

2-Part Self Smoothening Epoxy Coating, Highly Chemically and Mechanically Resistant

Product Description	**Sikafloor®-381 N** is a two part, self-smoothening, coloured epoxy resin with high chemical and mechanical resistance. Suitable for use in hot and tropical climates.
Uses	■ Chemically and mechanically highly resistant coating for concrete and screed surfaces in bund areas for protection against water contaminating liquids (according to the products chemical resistance table)
Characteristics / Advantages	■ High chemical resistance ■ High mechanical resistance ■ Liquid proof ■ Abrasion resistant ■ Slip resistant surface possible

Product Data

Form	Liquid		
Appearance / Colours	Resin - part A: Hardener - part B: 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.	coloured transparent	
Packaging	Part A: Part B: Part A+B:	21.25 kg containers 3.75 kg containers 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 (at +23°C)	Part A: Part B: Mixed resin:	~ 1.77 kg/lt ~ 1.04 kg/lt ~ 1.6 kg/lt	(DIN EN ISO 2811-1)
Solid Content	~ 100% (by volume) / ~ 100% (by weight)		

Mechanical / Physical Properties

Compressive Strength	> 80 N/mm²	(14 days / +23°C)	(EN 196-1)
Flexural Tensile Strength	> 55 N/mm²	(14 days / +23°C)	(EN 196-1)
Bond Strength	> 1.5 N/mm²	(failure in concrete)	(ISO 4624)
Abrasion Resistance	40 mg (CS 10/1000/1000) (8 days / +23°C)		(DIN 53 109) (Taber Abrader Test))
Shore D Hardness	82	(7 days / +23°C)	(DIN 53 505)

Resistance

Chemical Resistance

Resistant against 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.)
*With no simultaneous chemical and mechanical exposure

System Information

System Structure

Wearing layer (horizontal areas)
Primer: 1 x Sikafloor®-156
Screed: 1 x **Sikafloor®-381 N** filled with quartz sand

Wearing layer (vertical areas)
Primer: 1 x Sikafloor®-156
Screed: 2 x **Sikafloor®-381 N** + Extender T

Wearing layer with slip resistance
Primer: 1 x Sikafloor®-156
Screed: 1 x **Sikafloor®-381** N broadcast to excess with silicon carbide or quartz sand
Sealer: 1 x **Sikafloor®-381 N** + 5% pbw Thinner C

Application Details

Consumption / Dosage

Coating System	Product	Consumption
Priming	Sikafloor®-156	0.3 - 0.5 kg/m²
Levelling (optional)	Sikafloor®-156 mortar	Refer to PDS of Sikafloor®-156
Wearing layer horizontal areas (1.8 - 2.8 mm)	**Sikafloor®-381 N** 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 layer vertical areas (Film thickness ~ 1.5 mm)	**Sikafloor®-381 AS N** + 2.5 - 4% pbw Extender T	2 x 1.25 kg/m²
Wearing layer with slip resistance (Film thickness ~ 2.5 mm)	**Sikafloor®-381 N**, 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)
Sealer coat (on broadcast areas only)	**Sikafloor®-381 N** + 5% pbw Thinner C	0.75 - 0.85 kg/m²

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

Substrate Quality	The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm^2) with a minimum pull off strength of 1.5 N/mm^2. 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 a profiled open textured surface. Weak concrete must be removed and surface defects such as blowholes and voids must be fully exposed. Repairs to substrate, filling of blowholes/voids and surface levelling can 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 up in order to achieve an even surface. Unevenness influences the film thickness and thus the conductivity of the following layer. 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 Humidity	≤ 4% pbw moisture content. Test method: Sika-Tramex meter or CM-measurement. 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, continuously mix for 2 minutes until a uniform mix has been achieved. When parts A and B have been mixed, the quartz sand 0.1 - 0.3 mm must be mixed with part A and B 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 minimize air entrainment.
Mixing Tools	**Sikafloor®-381 N** must be mechanically mixed using an electric power 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 layer (horizontal areas)
Sikafloor®-381 N is poured, spread evenly by means of a serrated trowel. Roll immediately in two directions with a spiked roller to ensure even thickness.

Wearing layer (vertical areas) The first layer of **Sikafloor®-381 N**, mixed with 2.5 - 4% Extender T, has to be applied by trowel. After curing, apply the second layer of **Sikafloor®-381 N**, mixed with 2.5 - 4% Extender T, by trowel.

Wearing layer with slip resistance **Sikafloor®-381 N** 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 top sealer (**Sikafloor®-381 N** + 5% pbw 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/cured material can only be mechanically removed.

Potlife (max. open time)

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

Waiting Time / Overcoatability

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

Substrate temperature	Minimum	Maximum
+10°C	24 hours	48 hours
+20°C	18 hours	24 hours
+30°C	12 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 N** on substrates in which significant vapour pressure may occur.

Do not blind the primer coat.

Freshly applied **Sikafloor® -381 N** must be protected from damp, condensation and water for at least 24 hours.
Avoid puddles on the surface with the primer.

Tools
Recommended supplier of tools:
PPW-Polyplan-Werkzeuge GmbH, Phone: +49 40/5597260,www.polyplan.com
Serrated trowel for smooth wearing layer:
e.g. Large-Surface Scrapper No. 565, Toothed blades No. 25

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

For exact colour matching, ensure **Sikafloor®-381 N** in each area is applied from the same control batch numbers.

Curing Details

Applied Product ready for use

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 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 N** 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

Notes

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 should refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

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 N** is < 500 g/l VOC for the ready to use product.

Construction

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 should 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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