Construction

Sikafloor®-169

2-part epoxy binder for mortars, screeds and seal coats

Product Description	Sikafloor®-169 is a two part, very low yellowing, low viscous, transparent epoxy resin. "Total solid epoxy composition acc. to the test method Deutsche Bauchemie e.V. (German Association for construction chemicals)"
Uses	■ Transparent binder for coloured quartz mortars and screeds like Sika-CompactFloor and Sika-DecoFloor ■ Transparent sealer coat for broadcast colour quartz mortar screeds and smooth coatings fully broadcast to excess with coloured chips ■ Suitable for normal up to medium heavy and heavy mechanical loading ■ Particularly used in the food and pharmaceutical industries, for show rooms, workshops and production areas etc.
Characteristics / Advantages	■ Transparent ■ Low VOC-content ■ Low yellowing ■ Good mechanical and abrasion resistance ■ Low viscous ■ Easy application ■ Multi-purpose binder
Test	
Approval / Standards	C S M IPA Cleanroom® Suitable Materials Sika AG Report No. SI 1008-533 Sikafloor-169 Biol. Resistance: good Flooring & Coating Biological resistance certificate Sikafloor®-169 CSM Statement of Qualification – ISO 846, very good - Report No. SI 1008-533. Food compliance according to EC Nr. 1935/2004 and the German Food and Feed Act, Hygiene Institut des Ruhrgebiet; test report H-193755-10 August 2010 Eurofins Emission testing of Sikafloor®-169 according to the AgBB-scheme and guidelines of the DiBt (AgBB – Committee for Health-related Evaluation of Building Products, DiBt – German Institute for Building Technology). Sampling, testing and evaluation were performed according to ISO-16000, Report No. 766563C.

Product Data

Form

Appearance / Colours	Resin - part A: turbid, liquid Hardener - part B: yellowish, liquid Under UV-exposure some discolouration (yellowing) will occur, however this has no influence on the function and performance of the coating.
Packaging	Part A: 7,5 kg containers Part B: 2,5 kg containers Part A+B: 10 kg unipacks Bulk packaging: Part A: 190 kg drums Part B: 190 kg drums

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℃ and +30℃. Protect from direct sunlight.

Technical Data

Chemical Base	Epoxy
Density	Part A: ~ 1.1 kg/l (DIN EN ISO 2811-1) Part B: ~ 1.0 kg/l Mixed resin: ~ 1.1 kg/l All Density values at +23℃.

Mechanical / Physical Properties

Shore Hardness	80 (7days / +23℃) (DIN 53505)
Abrasion Resistance	47 mg (CS 10/1000/1000) (8 days / +23℃) (DIN 53 10 9 (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℃
Short-term max. 7 d	+80℃
Short-term max. 12 h	+100℃

Short-term moist/wet heat* up to +80℃ where exposur e is only occasional (i.e. during steam cleaning etc.)

*No simultaneous chemical and mechanical exposure.

USGBC LEED Rating	Sikafloor®-169 conforms to the requirements of LEED EQ Credit 4.2: Low-Emitting Materials: Paints & Coatings EPA Reference Test Method 24 VOC Content < 100 g/l

System Information

Systems Structure

Systems:

For more details about the Sika@-DecoQuartz, Sika@-DecoFlake, Sika@-DecoFloor and Sika@-CompactFloor Systems please refer to the System Data Sheet and Method statement for each of these systems.

Sika@-DecoQuartz broadcasted System (~2-3 mm)

Primer: 1-2 x Sikafloor®-156, 161 or 169
Wearing course: Sikafloor®-263 SL or 264 pigmented to compliment the following quartz sand
Broadcast : broadcast in excess with PU coated coloured quartz sand (0,3-0,8 or 0,7-1,2 mm)
Seal coat: 1-2 x Sikafloor®-169

Sika@-DecoFlake System (~2-3 mm)

Primer: 1-2 x Sikafloor®-156, 161 or 169
Wearing course: Sikafloor®-263 SL or 264 pigmented to compliment the following Sika PVA ColourFlakes. Filled 1:1 with quartz sand (0.1 - 0.3 mm)
Broadcast : broadcast in excess with Sika-PVA ColourFlakes 3mm
First top coat: 1 x Sikafloor®-169
Grinding: Soft grinding
Second top coat: 1 x Sikafloor®-169

Sika@-DecoFloor (~ 2 mm)

Primer: 1-2 x Sikafloor®-264
Wearing course:: 1 x Sikafloor®-169 + 1,5 x Sikafloor®-DecoFiller
Seal coat: Matt finish. 1 x Sikafloor®-304 W

Sika@-CompactFloor (~ 3 mm)

Primer: 1-2 x Sikafloor®-156, 161 or 169 slightly broadcast with Sika-PU Quartz CF 0,3-1,2 mm
Wearing course:
Slurry 1 x Sikafloor®-169 + 1 x Sikafloor®-Compact Filler
Broadcast: broadcast to saturation with Sika-PU Quartz CF 0,3-1,2mm
Power floating
Top coat: 1 x Sikafloor®-169 after removing the upstanding not fully embedded Sika-PU Quartz CF 0,3-1,2mm with a steel trowel and vacuuming of the surface
Seal coat (optional) Glossy finish. 1 x Sikafloor®-169
Matt finish. 1 x Sikafloor®-304 W

Noncompliance of the mixing ratio from Sikafloor®-169 or higher layer thickness (higher consumption) might cause discolouration.

Application Details

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.

On critical substrates, e.g a strong absorbent cementitious surface, the application of a trial area is highly recommended, in order to ensure a pore free surface, after priming.

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℃ min. / +30℃ max.
Ambient Temperature	+10℃ min. / +30℃ max.
Substrate Moisture Content	≤ 4% 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 = 75 : 25 (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. 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. When using an additional C component like the Sikafloor®-CompactFiller or the Sikafloor®-DecoFiller, please add the C component after Parts A and B have been mixed, in the correct mixing ratio (Slurry Sika-CompactFloor; 1 part resin: 1 part Sikafloor®-CompactFiller; Wearing course Sika-DecoFloor; 1 part resin: 1,5 part Sikafloor®-DecoFiller) and mix for a further 2 minutes until a uniform mix has been achieved. For mortars add the premixed Sikafloor®-169 to the aggregates and mix until a uniform mix has been achieved.
Mixing Tools	Sikafloor®-169 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 must not be used.
Application Method / Tools	Prior to application, confirm substrate moisture content, r.h. and dew point. If > 4% pbw moisture content, Sikafloor® EpoCem® may be applied as a T.M.B. (temporary moisture barrier) system. ***Primer:*** Make sure that a continuous, pore free coat covers the substrate. If necessary, apply two priming coats. Apply Sikafloor®-156, -161 or -169 by brush, roller or squeegee.Preferred application is by using a squeegee and then back rolling crosswise. ***Seal coat (optional):*** Apply Sikafloor®-169 by brush, roller or squeegee. Preferred application is by using a squeegee and then back rolling crosswise.
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℃	~60 minutes
+20℃	~30 minutes
+30℃	~ 20 minutes

Waiting Time / Over coating

Before applying Sikafloor®-169 on Sikafloor®-169, Sikafloor®-156 or Sikafloor®-264 allow:

Substrate temperature	Minimum	Maximum
+10℃	36 hours	4 days
+20℃	12 hours	2 days
+30℃	8 hours	1 day

Before applying Sikafloor®-304 W on Sikafloor®-169 allow:

Substrate temperature	Minimum	Maximum
+10℃	45 hours	4 days
+20℃	36 hours	3 days
+30℃	24 hours	2 days

Before applying Sikafloor®-304 W on a epoxy floor, e.g Sikafloor®-169 the surface has to be prepared by grinding with a black scotch bride grinding pad.

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

Notes on Application / Limitations

Do not apply Sikafloor®-169 on substrates with rising moisture.

Freshly applied Sikafloor®-169 should be protected from damp, condensation and water for at least 24 hours.

Trials should be carried out on mortar mixes to confirm and evaluate suitable aggregate colour blends and size distribution (granulometry).

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

Under certain conditions, under floor 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

Sikafloor®-169

Temperatures	Foot traffic	Light traffic	Full cure
+10℃	36 hours	~ 5 days	~ 10 days
+20℃	12 hours	~ 3 days	~ 7 days
+30℃	8 hours	~ 2 days	~ 5 days

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

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.

Construction

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 [3)]
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.

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 conformity – 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 II
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 / Sikafloor®-169.

[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 500 g/l (Limits 2010) for the ready to use product.

The maximum content of Sikafloor®-169 is < 500 g/l VOC for the ready to use product.

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