BUILDING TRUST

PRODUCT DATA SHEET

Sikafloor®-159

2-PART FAST CURING EPOXY PRIMER AND BINDER FOR LEVELLING MORTARS

CE

DESCRIPTION

Sikafloor®-159 is a two part, fast curing, low viscosity, epoxy resin binder. "Total solid epoxy composition acc. to the test method Deutsche Bauchemie e.V. (German Association for construction chemicals)"

USES

Sikafloor®-159 may only be used by experienced professionals.

- For priming concrete substrates, cementitious screeds and epoxy mortars
- For normal to strongly absorbent surfaces
- Primer for all Sika epoxy and polyurethane flooring systems
- Binder for levelling mortars
- For internal and external use

CHARACTERISTICS / ADVANTAGES

- Very fast curing
- Application even at low temperatures (minimum +5°C)
- Short waiting times
- Low viscosity
- Good penetration ability
- High bond strength
- Easy application

SUSTAINABILITY

- Conformity with LEED v4 MRc 2 (Option 1): Building Product Disclosure and Optimization – Environmental Product Declarations
- Conformity with LEED v4 MRc 4 (Option 2): Building Product Disclosure and Optimization - Material Ingredients
- Conformity with LEED v2009 IEQc 4.2: Low-Emitting Materials - Paints and Coatings

APPROVALS / CERTIFICATES

Epoxy primer, levelling mortar and mortar screed according to EN 1504-2: 2004 and EN 13813:2002, DoP 02 08 01 02 049 0 000001 1008, certified by Factory Production Control Body No.0921 and provided with the CE-mark.

PRODUCT INFORMATION

Chemical base	Epoxy	
Packaging	Part A	6.4 kg containers
	Part B	3.6 kg containers
	Part A+B	10 kg unipacks
	Part A	16 kg containers
	Part B	9 kg containers
	Part A+B	25 kg ready to mix units

Appearance / Colour	Resin - part A	transparent, liquid
	Hardener - part B	brownish, liquid

Shelf life	24 months from date of production
Storage conditions	The packaging must be stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5°C and +30°C.

Density	Part A	~ 1.10 kg/l	(DIN EN ISO 2811-1)
	Part B	~ 1.02 kg/l	
	Mixed Resin	~ 1.1 kg/l	
	All density values at +23°C		

Solid content by weight	~100%
Solid content by volume	~100%

TECHNICAL INFORMATION

Shore D Hardness	~75 (7 days / +23°C / 50% r.h.)	(DIN 53505)
Compressive Strength	~50 N/mm² (resin, 28 days / +23°C / 50% r.h.)	(EN 196-1)
Tensile Strength in Flexure	~40 N/mm² (resin, 28 days / +23°C / 50% r.h.)	(EN 196-1)
Tensile Adhesion Strength	> 1.5 N/mm² (failure in concrete)	(EN 4624)

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 (steam cleaning etc.).
*No simultaneous chemical and mechanical exposure and only in combination with Sikafloor® systems as a broadcast system with approx. 3 - 4 mm thickness

SYSTEMS

Systems

Primer	
Low/medium porosity concrete	1-2 x Sikafloor®-159
Levelling mortar (surface roughness up to 2 mm	
Primer	1 x Sikafloor®-159
Levelling mortar	1 x Sikafloor®-159 + quartz sand (0.1 - 0.3 mm) + Extender T (mixing ratio depends on layer thickness, see Consumption / Dosage)

APPLICATION INFORMATION

Mixing Ratio	Part A : part B = 64 : 36 (by weight)

Consumption

Coating System	**Product**	**Consumption**
Primer	1 - 2 x Sikafloor®-159	1 - 2 x 0.3 - 0.5 kg/m²
Levelling mortar (surface roughness < 1 mm)	1 pbw Sikafloor®-159 + 0.5 pbw quartz sand (0.1 - 0.3 mm) + 0.015 pbw Extender T	1.4 kg/m²/mm
Levelling mortar (surface roughness up to 2 mm)	1 pbw Sikafloor®-159 + 1 pbw quartz sand (0.1 - 0.3 mm) + 0.015 pbw Extender T	1.6 kg/m²/mm

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

Ambient Air Temperature	+5°C min. / +30°C max.
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. Note: Low temperatures and high humidity conditions increase the probability of blooming.
Substrate Temperature	+5°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).

Pot Life

Temperature	Time
+5°C	~ 25 minutes
+10°C	~ 20 minutes
+20°C	~ 10 minutes
+30°C	~ 5 minutes

Curing Time

Before applying solvent free products on Sikafloor®-159 allow:

Substrate temperature	Minimum	Maximum
+5°C	24 hours	3 days
+10°C	12 hours	2 days
+20°C	5 hours	1 day
+30°C	3 hours	1 day

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

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

- 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 can be damp but must be free of standing water and free of all contaminants such as oil, grease, coatings and surface treatments etc. If in doubt, apply a test area first.
- 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®-159 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 air humidity 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®-159 by brush, roller or squeegee. Preferred application method is by using a squeegee and then backrolling crosswise.
Levelling mortar
Rough surfaces need to be levelled first. Apply the levelling mortar by squeegee/trowel to the required thickness.

CLEANING OF TOOLS

Removal of fresh remnants from tools and application equipment can be carried out using Thinner C immediately after use. Hardened / cured material can only be mechanically removed.

FURTHER DOCUMENTS

Substrate quality & Preparation
Please refer to Sika Method Statement: “EVALUATION AND PREPARATION OF SURFACES FOR FLOORING SYSTEMS”.
Application instructions
Please refer to Sika Method Statement: “MIXING & APPLICATION OF FLOORING SYSTEMS”.
Maintenance
Please refer to “Sikafloor®- CLEANING REGIME”.

LIMITATIONS

- Do not apply Sikafloor®-159 on substrates with rising moisture.
- Freshly applied Sikafloor®-159 should be protected from damp, condensation and water for at least 24 hours.
- For external applications, apply on a falling temperature. If applied during rising temperatures “pin holing” may occur from rising air.
- These pinholes can be closed after a soft grinding by applying a scratch coat of Sikafloor®-161 mixed with approx. 3 % of Extender T.
- The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking.
- 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.

Construction joints require pre-treatment. Treat as follows:
- Static Cracks: prefill and level with Sikadur® or Sikafloor® epoxy resin
- Dynamic cracks: to be assessed and if necessary apply a stripe coat of elastomeric material or design as a movement joint

Tools:
Recommended supplier of tools:
PPW-Polyplan-Werkzeuge GmbH, Phone: +49 40/5597260, www.polyplan.com.

BASIS OF PRODUCT DATA

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.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.

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, the maximum allowed content of VOC (Product category IIA / j type sb) is 500 g/l (Limit 2010) for the ready to use product. The maximum content of Sikafloor®-159 is < 500 g/l VOC for the ready to use product.

LEGAL NOTES

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