

## PRODUCT DATA SHEET

# Sikafloor®-81 EpoCem®

Epoxy-cement hybrid for self-smoothing floor screeds (1.5–3 mm)

### DESCRIPTION

Sikafloor®-81 EpoCem® is a three-part, epoxy modified cementitious, fine textured mortar for self-smoothing floor screeds in layers of 1.5 to 3 mm. It allows the application of epoxy, polyurethane and PMMA resin floors over high moisture content substrates or green concrete.

### USES

Sikafloor®-81 EpoCem® may only be used by experienced professionals.

Sikafloor®-81 EpoCem® is used as a:

- Temporary Moisture Barrier (TMB)
- Self-smoothing wearing screed without aesthetic requirements
- Levelling screed under Sikafloor® resins and floor coverings
- Patching screed for horizontal concrete repairs

Please note:

- The Product may only be used for interior applications.
- The Product may only be used by experienced professionals.

### FEATURES

- Can be over coated with resin based floors after 24 hours (at +20 °C, 75 % r.h.)
- Prevents osmotic blistering of resin based coatings over damp substrates
- Easy to apply
- Impermeable to liquids
- Good water vapour permeability
- Class R4 of EN 1504-3
- Good freeze-thaw de-icing salt resistance

- Good resistance to specific chemicals
- Thermal expansion properties similar to concrete
- Good adhesion to green or hardened damp concrete
- Very good initial and ultimate mechanical strength
- High resistance to water and oils
- Will not corrode reinforcement steel

### SUSTAINABILITY

- Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by Institut für Bauen und Umwelt e.V. (IBU)
- Contributes towards satisfying Materials and Resources (MR) Credit: Building product disclosure and optimization — Environmental Product Declarations under LEED® v4
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Material Ingredients under LEED® v4

### CERTIFICATES AND TEST REPORTS

- CE marking and declaration of performance based on EN 1504-2:2004 Products and systems for the protection and repair of concrete structures — Surface protection systems for concrete — Coating
- CE marking and declaration of performance based on EN 1504-3:2005 Products and systems for the protection and repair of concrete structures — Structural and non-structural repair
- CE marking and declaration of performance based on EN 13813:2002 Screed material and floor screeds — Screed material — Properties and requirements — Synthetic resin screed material
- Migration test EN 23270, Sikafloor®-81 EpoCem, kiwa, Report No. P 8740a
- Water permeability test DIN 1048-5, Sikafloor®-81 EpoCem, Polymer Institut, Repo

## PRODUCT INFORMATION

<b>Composition</b>	Epoxy-cement hybrid		
<b>Packaging</b>	Container Part A	1.14 kg	
	Container Part B	2.86 kg	
	Part C	19 kg	
	Packaging combined	Pre-batched 23 kg units.	
	Refer to the current price list for available packaging variations.		
<b>Appearance and colour</b>	Part A	white liquid	
	Part B	transparent yellow liquid	
	Part C	natural grey aggregate powder	
	Cured appearance	Smooth, matt finish	
	Cured colour	light grey	
<p>Note: When the Product is exposed to direct sunlight, there may be some discolouration and colour variation. This has no influence on the function and performance of the Product.</p> <p>For colour matching: apply colour sample and confirm selected colour under real lighting conditions.</p>			
<b>Shelf life</b>	Part A	12 months from date of production	
	Part B	12 months from date of production	
Always refer to the best-before date of the individual packaging.			
<b>Storage conditions</b>	<p>The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +30 °C. Always refer to the packaging.</p> <p>Refer to the current Safety Data Sheet for information on safe handling and storage.</p>		
<b>Density</b>	Mixed Product	~2.10 kg/l	(EN ISO 2811-1)

## TECHNICAL INFORMATION

<b>Compressive strength</b>	1 day	~15 N/mm <sup>2</sup>	(EN 13892-2)
	7 days	~38 N/mm <sup>2</sup>	
	28 days	~44 N/mm <sup>2</sup>	
<b>Flexural-strength</b>	28 days	~10 N/mm <sup>2</sup>	(EN 13892-2)
<b>Tensile adhesion strength</b>	≥ 1.5 N/mm <sup>2</sup> (concrete failure, on prepared concrete surface)		

## APPLICATION INFORMATION

<b>Mixing ratio</b>	TEMPORARY MOISTURE BARRIER AND SELF SMOOTHING SCREED		
	At temperatures between +12 °C to +25 °C:		
	Part A : Part B : Part C (by weight)	1 : 2.5 : 17	
	(Part A + Part B) : Part C	4 kg : 19 kg	
	At temperatures between +8 °C to +12 °C and +25 °C to +30 °C:		
The amount of part C can be reduced to 18 kg in order to improve workability. Never reduce the part C to less than the following:			
Part A : Part B : Part C (by weight)	1 : 2.5 : 15.8		
(Part A + Part B) : Part C	4 kg : 18 kg		
<b>Consumption</b>	Primer	Sikafloor® Repair Epo-Cem Module	0.20–0.30 kg/m <sup>2</sup>
	Self smoothing screed	Sikafloor®-81 EpoCem®	2.25 kg/m <sup>2</sup> /mm
Important note:			

- ~4.5 kg/m<sup>2</sup> for a 2 mm thick application (minimum for temporary moisture barrier)
- Consumption data is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level, wastage or any other variations.
- Apply the Product to a test area to calculate the exact consumption for the specific substrate conditions and proposed application equipment.

<b>Layer thickness</b>	1.5 mm min. / 3.0 mm max. If Sikafloor®-81 EpoCem® is used as a Temporary Moisture Barrier (TMB), a minimum of 2 mm must be applied.	
<b>Material temperature</b>	Maximum	+30 °C
	Minimum	+8 °C
<b>Ambient air temperature</b>	Maximum	+30 °C
	Minimum	+8 °C
<b>Relative air humidity</b>	Maximum	80 % r.h.
	Minimum	20 % r.h.
<b>Substrate temperature</b>	Maximum	+30 °C
	Minimum	+8 °C
<b>Substrate moisture content</b>	Can be applied on green or damp concrete, without any standing water. Although the Product can be applied onto green concrete surfaces (> 24 hours), allow at least 3 days for early shrinkage of concrete to occur in order to prevent concrete shrinkage cracks from appearing on the screed surface.	
<b>Pot Life</b>	+10 °C	~40 minutes
	+20 °C	~20 minutes
	+30 °C	~10 minutes
<b>Curing time</b>	Once Sikafloor®-81 EpoCem® is tack free it is possible to apply vapour permeable seal coats. For the application of vapour tight coatings on Sikafloor®-81 EpoCem®, allow the surface moisture to fall below 4%, not earlier than:	
	<b>Substrate temperature</b>	<b>Waiting time</b>
	+10 °C	~ 2 days
	+20 °C	~ 1 day
	+30 °C	~ 1 day

## SYSTEM INFORMATION

<b>Systems</b>	<b>Self Levelling Mortar</b>		
	Primer	Sikafloor® Repair Epo-Cem Module	0.20–0.30 kg/m <sup>2</sup>
	Levelling mortar	Sikafloor®-81 EpoCem®	2.25 kg/m <sup>2</sup> /mm
Important note: The system configuration as described must be fully complied with and may not be changed.			

## BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

- Sika Method Statement — Evaluation and preparation of surfaces for flooring systems
- Sika Method Statement — Sikafloor® mixing and application

## FURTHER DOCUMENTATION

Refer to the following method statements:

## ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS

provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

## APPLICATION INSTRUCTIONS

### EQUIPMENT

#### MIXING EQUIPMENT

- Electric double-paddle mixer (> 700 W, 300 rpm to 400 rpm)
- Forced action mixer

#### APPLICATION EQUIPMENT

- Smoothing trowel
- Spiked roller

### SUBSTRATE QUALITY

#### IMPORTANT

##### **Reduced service life due to incorrect treatment of cracks**

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

1. For static cracks, ensure the width is suitable for overcoating with Sikafloor®-81 EpoCem®.
2. For dynamic cracks, ensure the movement is within the movement capacity of Sikafloor®-81 EpoCem®.

#### TREATMENT OF JOINTS AND CRACKS

Construction joints and existing static surface cracks in substrate require pre-treating before full layer application. Use Sikadur® or Sikafloor® resins.

### SUBSTRATE PREPARATION

#### MECHANICAL SUBSTRATE PREPARATION

#### IMPORTANT

##### **Surface defects due to voids in the substrate**

Voids and blow holes in the substrate will weaken the surface and damage the covering Product if not repaired during the preparation process.

1. Fully expose blow holes and voids during surface preparation to identify the required repairs.
  1. Remove weak cementitious substrates.
  2. Prepare cementitious substrates mechanically using abrasive blast cleaning, abrasive planing or scarifying equipment to remove cement laitance.
  3. Before applying thin layer resins, remove high spots by grinding.
  4. Before applying the Product, remove all dust, loose and friable material from the application surface with an industrial vacuuming equipment.
  5. Level the surface or fill cracks, blow holes and voids with products from the Sikafloor®, Sikadur® and Sikagard® range of materials.

For additional information on products for leveling and repairing defects, contact Sika® Technical Services.

#### SUBSTRATE PREPARATION OF NON-CEMENTITIOUS SUBSTRATES

For information on substrate preparation of non-cementitious substrates, contact Sika® Technical Services.

### MIXING

#### IMPORTANT

##### **Addition of water**

Do not add water to the mix or for finishing as this will affect the performance, surface finish and cause discolouration.

#### IMPORTANT

##### **Unsuitable mixing equipment**

Unsuitable mixing equipment will not combine the mix thoroughly or entrain too much air into the mix.

1. Do not use free fall mixers.

#### IMPORTANT

Avoid over-mixing to minimise air entrainment.

#### TEMPORARY MOISTURE BARRIER AND SELF SMOOTHING SCREED

1. Mix Part A (resin) for ~10 seconds with an electric double paddle mixer (300–400 rpm, > 700 W).
2. Add Part B (hardener) to Part A.
3. **IMPORTANT** Do not mix excessively. Mix for a further 2 minutes until a uniform mix is achieved.
4. Pour the mixed binder mixture (Parts A+B) into a suitable mixing container (capacity ~60 litres). Mix using the electric mixing equipment and gradually add Part C.
5. Mix continuously for 3 minutes, until a uniform mix is achieved.
6. To ensure thorough mixing, pour materials into another container and mix again to achieve a smooth and uniform mix.
7. During the final mixing stage, scrape down the sides and bottom of the mixing container with a flat or straight edge trowel at least once to ensure complete mixing.

### APPLICATION

#### IMPORTANT

##### **Strictly follow installation procedures**

Strictly follow installation procedures as defined in Method Statements, application manuals and working instructions which must always be adjusted to the actual site conditions.

#### IMPORTANT

##### **Protect from moisture**

After application, protect the Product from damp, condensation and direct water contact for at least 24 hours.

#### IMPORTANT

##### **Ventilation in confined spaces**

Always ensure good ventilation when applying the Product in a confined space.

#### IMPORTANT

##### **Pin holes caused by application during rising temperature**

If the Product is applied on porous substrates during rising temperature, pin holes may form from rising air.

1. Apply the Product during falling temperatures.

#### IMPORTANT

##### **Do not use curing compounds**

Applications under extreme conditions (high temperature and low humidity) which can cause fast drying of the product must be avoided as the product does not allow the use of curing compounds.

#### IMPORTANT

##### **Risk of cracking during curing**

Allowing the Product surface to dry excessively and

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quickly during the curing period will result in surface cracking.

1. Protect the freshly applied Product from high ambient temperatures, direct sunlight and draughts.

#### **Overcoating with PMMA**

Note: When overlaying with PMMA screeds, the Product surface must be fully broadcast with clean and dry quartz sand.

#### **Moisture barrier**

Note: The TMB effect is limited in time without additional preparation. Always verify the surface moisture content if more than 8 days have passed since application.

#### **TEMPORARY MOISTURE BARRIER OR SELF SMOOTHING SCREED**

1. Pour the mixed Product onto the substrate. For the consumption, refer to Application Information.
2. Apply the Product evenly over the surface with a trowel.
3. Back-roll the surface in two directions at right angles with a spike roller.

Note: Maintain a "wet edge" during application to achieve a seamless finish.

#### **CLEANING OF EQUIPMENT**

Clean all tools and application equipment with water immediately after use. Hardened material can only be removed mechanically.

### **LOCAL RESTRICTIONS**

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

### **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.

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