

Sikafloor[®] -81 EpoCem[®]

Self smoothing epoxy-cement floor topping & temporary moisture barrier

Construction

Description	Sikafloor-81 EpoCem is a 3-component epoxy modified cementitious self smoothing floor topping and temporary moisture barrier.
Uses	<p>As a temporary moisture barrier (2 mm thick) for epoxy and polyurethane floors.</p> <p>As self-levelling topping of 1.5 - 3mm thickness for:</p> <ul style="list-style-type: none">■ Levelling or patching concrete surfaces, both unfinished and after grinding or scabbling.■ Coloured EpoCem floors on non ventilated damp substrates with low aesthetic considerations (ask for technical assistance)■ Floor toppings beneath epoxy protective coatings.■ Self levelling toppings that are to be covered with polymer floor coatings, carpets or wooden parquet.■ Repair and maintenance of vacuum concrete floors.
Advantages	<ul style="list-style-type: none">■ Can be top coated with resin based floors after 24 hours (+20°C, 75% r.h.)■ Prevents osmotic blistering of resin based coatings over damp substrates■ Excellent bond to green or hardened concrete whether damp or dry■ Waterproof yet permeable to water vapour, allows the substrate to "breathe".■ Temporary moisture barrier (7-10 days).■ Self smoothing – good flowability.■ Easy to apply to sound prepared surfaces.■ Solvent free and virtually odourless.■ Ideal surface preparation with the minimum of delay for the subsequent application of other appropriate Sika epoxy products.■ High abrasion resistance.■ Free of chloride.■ Similar modulus of elasticity and coefficient of thermal expansion to concrete.■ Good adhesion after long-term water immersion.■ Excellent mechanical strength.■ Excellent resistance to water and oils.■ Will not corrode reinforcing steel.
Storage and Shelf Life	Stored in the original sealed containers within the temperature range of +5°C and +35°C this product will keep for a minimum of 12 (twelve) months.
Packaging	A 21kg kit in a plastic pail containing: Part A: 1.07kg plastic bottle Part B: 2.93 kg plastic bottle Part C: 17kg plastic bag of powder



Instructions for Use

Surface Preparation

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.

Substrates heavily impregnated with oil must be cleaned by torching or other methods. To check that all traces of oil have been completely removed, sprinkle a few drops of water over the surface. If all the water is quickly absorbed, the surface is sufficiently oil and grease free. If water forms into globules that remain on the surface, further thorough treatment of the substrate is necessary.

Weak concrete must be removed and surface defects such as blow holes and voids must be fully exposed.

Repairs to the substrate, filling of blow holes/voids and surface levelling must be carried out using appropriate products from the Sikafloor[®], Sikadur[®] and Sikagard[®] range of materials.

High spots can be removed by grinding.

All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush or vacuum.

Mixing

Shake Component A (white liquid) briefly and pour into Component B (plastic container) and shake vigorously for 30 seconds. Pour the mixture (A+B) into a 25-30 litre pail and add Component C. Mix thoroughly for at least 3 minutes using a low speed electrically driven paddle/stirrer until a smooth homogenous consistency is achieved.

Workability may be adjusted by slightly varying the C-component content (see mixing ratio).

Mixing Tools

Mix using a slow speed electric mixer (300 - 400 rpm) with helical paddle or other suitable equipment.

Recommended are single or counter rotating double mortar (basket type) and forced action (pan type) mixers. Free fall mixers must not be used.

Priming

Prime substrate with the neat binder (Component A+B) using a brush or roller. Avoid puddling. Highly porous substrates should be sealed with a coat of Sikagard-720 EpoCem and left to dry for 24 hours before topping mix is applied.

Application

Apply the mixed Sikafloor-81 EpoCem within 3 hours of priming (i.e. while the priming coat is still tacky), using a notched flooring trowel or spreader (steel or rubber) to obtain even coverage. Work immediately with a spiked roller to ensure uniform thickness and remove entrapped air.

A light sprinkling of Sikadur-508 quartz sand (graded 0.1-0.3mm) will prevent the screed from drying out too rapidly. Do not apply excess sand in this instance.

A non-slip surface finish can be obtained by broadcasting the freshly laid mortar to excess with Sikadur-505 quartz sand (graded 0.1-0.5mm). Excess sand is removed following curing of the Sikafloor-81 EpoCem and the surface can be left as is or overcoated with a roll-on epoxy resin.

Cleaning

Clean all tools with water immediately after use. Once cured Sikafloor-81 EpoCem can only be removed mechanically.

Technical Data

Form	Part A:	White liquid
	Part B:	Grey liquid
	Part C:	Grey powder
	Mixed:	Thixotropic flowable mortar

Colour	Concrete grey when mixed			
Density	2.0 kg/litre approx. (mixed)			
Mix ratio (by mass)	Component A: 1 Component B: 2.74 Component C: 15-16 (<i>depending on desired consistency</i>)			
System structure	<p>The system configuration as described must be fully complied with and may not be changed.</p> <p>Primer indicated below is suitable for each of these substrates:</p> <p style="padding-left: 40px;">Green concrete (as soon as mechanical preparation is possible)</p> <p style="padding-left: 40px;">Damp concrete (>14 days old)</p> <p style="padding-left: 40px;">Damp aged concrete (rising moisture)</p> <p><i>Patching and repair:</i></p> <p>Layer thickness: 3 - 9 mm</p> <p>Primer: SikaTop-110 EpoCem</p> <p>Mortar: Sikadur-31/41</p> <p><i>Levelling screed for medium substrate roughness:</i></p> <p>Layer thickness: 1.5 - 3 mm</p> <p>Primer: EpoCem Module (Parts A and B)</p> <p>Topping: Sikafloor-81 EpoCem</p>			
Rate of reaction (75% relative humidity)		10°C	20°C	30°C
	Pot Life (21 kg mix)		approx. 20 mins	
	Maximum open time for working down with a spiked roller	20 mins	10 mins	5 mins
	Curing times			
	Walkable on after:	24 hours	15 hours	12 hours
	Light mechanical loading after:	3 days	2 days	1 day
	Overcoat with epoxy resin after:	3 days	1 day	1 day
	Fully cured after:	14 days	7 days	5 days
Consumption	Priming coat (A+B):	200-300 g/m ² depending on condition of substrate		
	Sikafloor-81 EpoCem:	4.5 kg/m ² for a thickness of approx. 2 mm		
Mechanical Strengths	Compressive Strength			
		10°C/75% r.h.	23°C/50% r.h.	30°C/40% r.h.
	1 day	1.5 MPa	10 MPa	33 MPa
	7 days	36	50	58
	28 days	50	60	66
	Adhesive Strength			
	1 day	Not measurable		
	7 days	100% concrete failure		
	28 days	100% concrete failure		
Modulus of elasticity	15 GPa (30 days @ +20°C and -20°C)			
Co-efficient of thermal expansion	9.6 x 10 ⁻⁵ per °C (from -10°C to +40°C)			

**Notes on Application /
Limitations**

Layer thickness: min. 1.5 mm
max. 3.0 mm

(holes of 30-50 mm diameter; thickness max. 10mm)

Minimum substrate temperature: +8°C

Maximum substrate temperature, with mixing ratio of:

A+B+C = 4:17 +25°C

A+B+C = 4:16 +30°C

Always ensure good ventilation when using Sikafloor-81 EpoCem in a confined space to remove excess moisture.

Freshly applied Sikafloor-81 EpoCem must be protected from damp, condensation and water for at least 24 hours.

Prevent premature drying by protecting from strong wind and do not expose to direct sunlight while fresh.

Apply primer and Sikafloor-81 EpoCem on a falling temperature. If applied during rising temperatures "pin holing" can occur.

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.

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

Colour variations can occur on unsealed Sikafloor-81 EpoCem through exposure to direct sunlight. This however, will not adversely influence the mechanical properties.

When overlaying with PMMA screeds, the surface of Sikafloor-81 EpoCem must be fully broadcast with Sikadur-501.

The T.M.B. effect in Sikafloor-EpoCem is limited to time, without additional preparation.

Always verify the surface moisture content if more than 5 - 7 days have passed since application.

Important Notes

- ON NO ACCOUNT SHOULD WATER BE ADDED TO THE MIX.
 - Sikafloor-81 EpoCem should not be used to bridge "live" cracks, joints etc.
 - The amount of Sikafloor-81 EpoCem Part C added to the liquid component of Part A and Part B can be adjusted if necessary to improve the final surface finish of the system.
 - Sikafloor-81 EpoCem is overcoatable with solvent free and low solvent containing products after the curing times given. A more extended curing period is necessary with high solvent products. Consult our Technical Department for further information.
 - Do not apply Sikafloor-81 EpoCem to substrates with rising temperature, or substrates that will rise in temperature within six (6) hours
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Handling Precautions

Sika products are generally harmless provided that certain precautions normally taken when handling chemicals are observed. The materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should also be taken to prevent the uncured materials coming in contact with the skin, since people with particularly sensitive skin may be affected. The use of protective clothing, goggles and rubber gloves is required. The skin should be thoroughly cleaned at the end of each working period by washing with soap and warm water. A full Material Safety Data Sheet is available from Sika on request.

Important Notification

The information, and, in particular, the recommendations relating to the application and end-use of Sika's 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 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 proprietary rights of third parties must be observed. All orders are accepted subject of our terms and conditions of sale. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request.
PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.

