BUILDING TRUST

PRODUCT DATA SHEET

Sikafloor®-83 EpoCem®

Epoxy-cement hybrid mortar flooring screed (7–100 mm)

DESCRIPTION

Sikafloor®-83 EpoCem® is a three part, epoxy modified cementitious mortar for floor screeds in layers of 7 to 100 mm. It allows the application of epoxy, polyurethane and PMMA resin floors over high moisture content substrates or green concrete.

USES

Sikafloor®-83 EpoCem® may only be used by experienced professionals.

Sikafloor®-83 EpoCem® is used as a:
- Temporary Moisture Barrier (TMB)
- Trowel applied wearing screed
- Levelling layer under Sikafloor® resins on bridge decks
- Patching screed for horizontal concrete repairs

Please note:
- The Product may only be used by experienced professionals.

CHARACTERISTICS / ADVANTAGES

- 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 chemicals
- Thermal expansion properties similar to concrete
- Good adhesion to green or hardened damp concrete
- Very good initial and ultimate mechanical strength
- Rapid release to traffic due to fast curing time
- High resistance to water and oils
- Will not corrode reinforcement steel

APPROVALS / STANDARDS

- CE marking and declaration of performance based on EN 13813:2002 Screed material and floor screeds — Screed material — Properties and requirements — Cementitious screed material
- 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

PRODUCT INFORMATION

Chemical Base

Epoxy-cement hybrid

Packaging

Container Part A	1.14 kg
Container Part B	2.86 kg
Part C	52 kg plastic bags
Packaging combined	Pre-batched 56 kg units.

Refer to the current price list for available packaging variations.

Appearance / Colour

Part A	white liquid
Part B	transparent yellow liquid
Part C	natural grey aggregate powder
Cured appearance	Lightly textured, matt finish
Cured colour	light grey

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.
For colour matching: Apply colour sample and confirm selected colour under real lighting conditions.

Shelf Life

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.

Storage Conditions

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.
Refer to the current Safety Data Sheet for information on safe handling and storage.

Density

Mixed Product	2.25 kg/l	(EN ISO 2811-1)
Part A	1.05 kg/l	
Part B	1.03 kg/l	

TECHNICAL INFORMATION

Compressive Strength

Cured 28 days at +23 °C	64 N/mm²	(EN 13892-2)
Cured 7 days at +23 °C	48.7 N/mm²	

Tensile Strength in Flexure

Cured 28 days at +23 °C	11 N/mm²	(EN 13892-2)
Cured 7 days at +23 °C	8.3 N/mm²	

Coefficient of Thermal Expansion

15.2×10^{-6} 1/K (EN 1770)

Freeze Thaw De-Icing Salt Resistance

Resistance factor WFT-L 105% (High) (VSS-40464)

Diffusion Resistance to Carbon Dioxide	Equivalent air layer thickness, Method A	20 m (30 mm thickness)	(EN 1062-6)

APPLICATION INFORMATION

Mixing Ratio

At temperatures between +12 °C to +25 °C:

Part A : Part B : Part C (by weight)	1 : 2.5 : 45.6 (by weight)
Part A + Part B : Part C	4 kg : 52 kg

At temperatures between +8 °C to +12 °C and +25 °C to +30 °C:
The amount of part C can be reduced to 46 kg in order to improve workability. Never reduce the part C to less than:

Part A : Part B : Part C (by weight)	1 : 2.5 : 40.3 (by weight)
Part A + Part B : Part C	4 kg : 46 kg

Consumption

Primer	SikaTop® Armatec®-110 EpoCem®	1.8 kg/m²
Screed	Sikafloor®-83 EpoCem®	2.3 kg/m² per mm of thickness 18.4 kg/m² for a 8 mm thick application (minimum for T.M.B.)

Note: 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.

Layer Thickness

7 mm to 100 mm

Product Temperature

Maximum	+30 °C
Minimum	+8 °C

Ambient Air Temperature

Maximum	+30 °C
Minimum	+8 °C

Relative Air Humidity

Maximum	80 % r.h.
Minimum	20 % r.h.

Substrate Temperature

Maximum	+30 °C
Minimum	+8 °C

Substrate Moisture Content

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.

Pot Life

+10 °C	80 minutes
+20 °C	40 minutes
+30 °C	20 minutes

Curing Time

Once Sikafloor®-83 EpoCem® is tack free it is possible to apply vapour permeable seal coats.
For the application of vapour tight coatings on Sikafloor®-83 EpoCem®, allow the surface moisture to fall below 4%, not earlier than:

Substrate temperature	Waiting time
+10 °C	~ 3 days
+20 °C	~ 1 day
+30 °C	~ 1 day

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.

FURTHER DOCUMENTS

Refer to the following method statements:
- Sika Method Statement — Evaluation and preparation of surfaces for flooring systems
- Sika Method Statement — Sikafloor® mixing and application

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 Material Safety Data Sheet (MSDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

EQUIPMENT

Select the most appropriate equipment required for the project:
SUBSTRATE PREPARATION
- Abrasive blasting cleaning equipment
- Planing machine
- Scarifying machine
- High pressure water blasting equipment
- Mechanical hand held tools for breaking out concrete

For other types of preparation equipment, contact Sika Technical Services
MIXING
- Electric single or double paddle mixer (300–400 rpm) with basket paddle
- Forced action, rotating pan type mixer (300–400 rpm)
- Scraper
- Clean mixing containers

For other types of mixing equipment, contact Sika Technical Services
APPLICATION: TEMPORARY MOISTURE BARRIER & SCREED
- Mixed material carriers or carts (wheel barrows)
- Spreading equipment (rake)
- Steel, plastic or concrete screed rails (8–10 mm surface width)
- Screed tamping bar
- Levelling beam

APPLICATION: CONCRETE PATCH REPAIRS
- Plasterers hawk
- Trowel

FINISHING: TEMPORARY MOISTURE BARRIER & SCREED
- Synthetic disc power float

FINISHING: CONCRETE PATCH REPAIRS
- Trowel (PVC or wooden)
- Sponge

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®-83 EpoCem®.
2. For dynamic cracks, ensure the movement is within the movement capacity of Sikafloor®-83 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.
CONCRETE PATCH REPAIRS
1. Remove weak cementitious substrates.
2. Breakout cementitious substrates around the perimeter of the defect using mechanical hand held tools.
   Note: Breakout areas must be 7 mm minimum depth and square or rectangular in shape.

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.
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 quickly during the curing period will result in surface cracking.
1. Protect the freshly applied Product from high ambient temperatures, direct sunlight and draughts.

SCREED AND TEMPORARY MOISTURE BARRIER
Preconditions
The applied primer is still tacky.
Note: If the primer has dried it must be mechanically removed and another layer applied.
1. Place the mixed Product 'wet on wet' onto the still tacky primer
2. Spread evenly to the required thickness with the spreading equipment and compact by tamping using a screed tamping bar.
3. IMPORTANT For applications in layer thickness more than 30 mm, always use a welded steel wire mesh (6–8 mm diameter and square grid centres of ~100 mm × 100 mm), placed at the centre of the screed depth. Level the screed surface using a levelling beam spanning onto the screed rails.
4. As soon as the screed has started to harden finish the surface to the required texture mechanically using a synthetic disc power float.

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 5 days have passed since application.
CONCRETE PATCH REPAIR
1. Apply the mixed primer onto the prepared substrate by brush.
2. Place the mixed repair mortar onto the bonding primer 'wet on wet' by gloved hand or using a trowel.
3. Compact the mortar into the patch repair.
   Note: All voids must be completely filled.
4. As soon as the screed has started to harden finish the surface to the required texture using a trowel and / or sponge.
   IMPORTANT For applications more than 30 mm deep, apply the repair mortar in at least two equal layers and compact each of them separately.

CLEANING OF TOOLS

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

MAINTENANCE

Due to the texture of its surface the Product is not suitable as a wearing layer where staining can occur. In this instance apply a seal coat from the Sikafloor® range with the appropriate level of resistance to the source of the staining. For further information see the individual Product Datasheets or contact Sika Technical Services for advice.
Where the Product is left exposed remove dirt using a combination of brush and vacuum. Once fully cured wet cleaning methods such as mopping can also be used. Do not use abrasive methods or cleaners.

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.

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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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