BUILDING TRUST

PRODUCT DATA SHEET

Sikagard®-720 EpoCem®

3-PART CEMENT AND EPOXY COMBINATION PORE FILLER AND LEVELLING MORTAR

DESCRIPTION

Sikagard®-720 EpoCem® is a 3-part, epoxy modified, cementitious, fine textured mortar for levelling and finishing concrete, mortar or stone surfaces.

USES

Sikagard®-720 EpoCem® may only be used by experienced professionals.

- Thin layer render
- Concrete pore filler/ levelling mortar
- Repairing minor defects (pores and honeycombed concrete)
- Protecting concrete in aggressive and chemical environments
- As a Temporary Moisture Barrier (TMB) for Sikafloor® or Sikagard resin products
- Suitable for moisture control (Principle 2, method 2.3 of EN 1504-9)
- Suitable for restoration work (Principle 3, method 3.1 and 3.3 of EN 1504-9).
- Suitable for physical resistance (Principle 5, method 5.1 of EN 1504-9)
- Suitable for preserving or restoring passivity (Principle 7, method 7.1 and 7.2 of EN 1504-9)
- Suitable for increasing resistivity (Principle 8, method 8.3 of EN 1504-9)
- For interior and exterior use
- Low concrete cover solution

FEATURES

- Improved chemical resistance compared to PCC mortars
- Good protection of concrete in aggressive environments
- Waterproof
- Vapour permeable
- Application range 0.5–3 mm on vertical and horizontal surfaces
- Good adhesion to damp or dry concrete
- Fast overcoating of Sika® resin-based finish products
- Good surface finishing
- Does not require overcoating
- Manual and machine application (wet spray technique)

CERTIFICATES AND TEST REPORTS

- Potable Water approved to AS/NZS 4020:2018 - Testing of products for use in contact with drinking water
- Carbon Dioxide diffusion resistance- SGS Certificate No.16302
- CE Marking and Declaration of Performance to EN 1504-2 - Surface protection product for concrete - Coating
- CE Marking and Declaration of Performance to EN 1504-3 - Concrete repair product for structural repair
- Suitability tests SIA 162/5, Sikagard®-720 EpoCem®, LPM, Test report No. A-29'212-1E

PRODUCT INFORMATION

Product declaration	Complies with the general requirements of EN 1504-3: Class R4. EN 1504-2: Surface protection product for concrete - Coating.
Composition	Epoxy modified cementitious mortar
Packaging	Pre-dosed 20.75 kg kit.

	Part A	1.07 kg plastic container - 89702
	Part B	2.68 kg plastic container - 511060
	Part C	17 kg ready to mix units - 511061
Shelf life	Part A and Part B	12 months from date of production
	Part C	Confirmed by producing company
Storage conditions	The product must be stored in original, unopened and undamaged packaging in dry conditions at temperatures between +5 °C and +30 °C. Always refer to packaging.	
Appearance and colour	Part A - resin	white liquid
	Part B - hardener	transparent yellow liquid
	Part C - filler	aggregate powder
	Finished colour	matt grey

Density	Part A	~ 1.05 kg/l	(EN 1015–6)
	Part B	~ 1.03 kg/l	
	Resin mixed	~ 1.30 kg/l	
	Parts A+B+C mixed	~ 2.00 kg/l	

All density values at +20 °C

TECHNICAL INFORMATION

Compressive strength	> 45 N/mm² (28 days / +20 °C / 50 % r.h) (EN 1504–3: Class R4)	(EN196–1)
Flexural-strength	> 5 N/mm² (28 days / +20 °C / 50 % r.h)	(EN196–1)
Coefficient of thermal expansion	~ 13 × 10^{-6} 1/K	
Service temperature	-30 °C min. / +80 °C max. for continuous exposure.	

Permeability to carbon dioxide	Dry Film Thickness	5.5 mm	(AS 4548.5)
	CO_2 Diffusion Coefficient	8.3 x 10^{-06} cm²/sec	
	Diffusion Resistance Coefficient **(μ)**	19840	
	Equivalent Air Layer Thickness **(R)**	110 m	
	Equivalent Thickness of Concrete **(S_c)** *	270 mm	

** A μc value of 400 has been found to be typical of an 'average quality' concrete for calculation of S_c.*

Sulfate resistance	High Sulphate Resistance	(ASTM C 1012)
Freeze thaw de-icing salt resistance	Resistance Factor WFT–99 % (High)	(EN196–1)
Reaction to fire	Class A2(fl) S1	(EN 13501–1)

SYSTEM INFORMATION

System structure

Important: The system structures as described must not be changed.

Substrate types

- Green concrete (as soon as mechanical preparation is possible)
- Damp concrete (> 14 days old)
- Damp aged concrete (rising moisture)

Temporary moisture barrier (TMB)

- Sikagard®-720 EpoCem® Thickness: 2.0 mm minimum

Pore filling, repair and levelling

- Sikagard®-720 EpoCem®

Coating finishes

- Suitable product from the Sikafloor® and Sikagard® range

APPLICATION INFORMATION

Consumption

~ 2.0 kg/m²/mm
This figure is theoretical and does not allow for any additional material required due to surface porosity, surface profile, variations in level or wastage, etc.

Layer thickness

Temporary moisture barrier (TMB): 2.0 mm minimum
Pore filling, repair and levelling: 0.5 mm min. / 3.0 mm max.
Pore filling and repairing small areas: (< 0.01 m²) 5.0 mm max

Ambient air temperature

+8 °C min. / +30 °C max.

Mixing ratio

Packaging size
Part A : Part B : Part C = 1.07 kg : 2.68 kg: 17 kg
Mixing ratio
1 : 2.5 : 14 - 15 (by weight)

Substrate temperature

+8°C min. / +30°C max.

Pot Life

Temperature	Time
+10 °C	~ 80 minutes
+20 °C	~ 40 minutes
+30 °C	~ 20 minutes

Curing time

Temperature	Full cure
+10 °C	~ 14 days
+20 °C	~ 7 days
+30 °C	~ 4 days

Note: All cure times are approximate and will be affected by changing substrate and ambient conditions.

Waiting time to overcoating

Once Sikagard®-720 EpoCem® is tack free it is possible to apply vapour permeable resin finishes.
For the application of vapour tight resin finishes on Sikagard®-720 EpoCem®, allow the surface moisture to fall below 4 % and not earlier than:

Temperature	Time
+10 °C	~ 60 hours
+20 °C	~ 15 hours
+30 °C	~ 8 hours

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

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.

IMPORTANT CONSIDERATIONS

- The incorrect assessment and treatment of cracks in the substrate can lead to a reduced service life and reflective cracking.
- Pre-treat cracks as follows before application of Sikagard®-720 EpoCem®: Static Cracks: Prefill and level with Sikadur® or Sikafloor® epoxy resin. Dynamic Cracks (> 0.4 mm): To be assessed on site and if necessary, apply a stripe coat of elastomeric material or design as a movement joint.
- Prevent premature drying by protecting from strong winds and do not expose to direct sun light while in an unhardened condition.
- When 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 mechanical properties.
- For external applications, apply product on a falling temperature. If applied during rising temperatures “pin holing” can occur.
- Curing is not required, however applications under extreme conditions (high temperature and low humidity) which can cause fast drying of the product must be avoided.
- When overlaying with PMMA screeds, the wet surface of Sikagard®-720 EpoCem® during application must be fully broadcast with kiln dried quartz sand 0.4–0.7 mm granulometry.
- The TMB effect in Sikafloor® -EpoCem® is limited in time, without additional preparation. Contact Sika Technical Services for additional information.
- Always verify the surface moisture content if more than 5-7 days have passed since 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 Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

EQUIPMENT

Select the most appropriate equipment required for the project:

Substrate preparation equipment

- Abrasive blast 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 equipment

IMPORTANT: Do not use free fall mixers.

- 21 kgs: Electric single paddle mixer (300–400 rpm) with helical paddle
- Up to 63 kg: Electric double paddle mixer (300–400 rpm) with helical paddle or forced action / rotating pan / double paddle or trough type mixer (300–400 rpm).
- Scraper
- Clean mixing containers (capacity ~30 L)

For other types of mixing equipment, contact Sika Technical Services

Application equipment: TMB

Mixed material carrier

- Pin leveller
- Trowels
- Spiked roller

Manual application equipment: Pore filling, repair and levelling

- Mixed material carrier
- Plasterers hawk
- Trowel

Sprayed application equipment: Repair and levelling

- Aliva Hopper gun
- Putzmeister S-5
- Graco T-Max 405

For other types of spraying equipment, contact Sika Technical Services

Finishing equipment

- Trowel (PVC or wooden)
- Sponge

SUBSTRATE QUALITY / PRE-TREATMENT

- The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm²) with a minimum tensile adhesion strength of 1.5 N/mm².
- The substrate can be damp but must be free of standing water (no puddles) and be free of all contaminants such as dirt, oil, grease, coatings and surface treatments etc.
- Concrete substrates must be prepared mechanically using abrasive blast cleaning, scarifying or grinding equipment to remove cement laitance and achieve an open textured surface to suit the requirements of the next layer(s).
- 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 products from the Sikafloor®, Sikadur® and Sikagard® range of materials. Products must be cured before applying Sikagard®-720 EpoCem®.
- 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 industrial vacuum equipment.

MIXING

Manual application or Wet spray application

IMPORTANT: Mix full units only

IMPORTANT: Do not add water

Requirement: Electric single or double paddle mixer (300–400 rpm) with helical paddle or forced action / rotating pan / double paddle or trough type mixer (300–400 rpm).

1. Before mixing, shake Part A (white liquid) briefly until uniformly mixed.
2. Pour mixed Part A into Part B container and shake vigorously for at least 30 seconds.
3. Pour the mixed liquid (Parts A+B) into the mixing container.
4. Stir Parts A+B slowly in the container with the mixing equipment and gradually add Part C.
5. Mix for a further 3,0 minutes until a uniform lump free mix has been achieved.

APPLICATION

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: Freshly applied Sikagard®-720 EpoCem® must be protected from damp, condensation and water for at least 24 hours.

IMPORTANT: When Sikagard®-720 EpoCem® is tack free, it is possible to apply vapour permeable coatings. When applying vapour impermeable coatings, always verify the surface moisture content is ≤4 %.

IMPORTANT: Freshly applied Sikagard®-720 EpoCem® must be protected from rain for at least 24 hours.

Note: Sikagard®-720 EpoCem® can be applied on green or damp concrete, without any standing water.

Note: Although the product can be applied onto green concrete (> 24 hours), it is advised to allow at least 3 days for early concrete shrinkage in order to prevent concrete shrinkage cracks from appearing on the mortar surface.

Manual application

1. Thoroughly pre-wet the prepared substrate before application.
2. Before application remove excess water, e.g. with a clean sponge. The surface must have a dark matt ap-

pearance and surface pores and cavities must not contain water.
3. When used as a pore filler or levelling mortar, firmly scrape the mortar over the substrate to fill any pores or cavities.
4. Apply the levelling or repair mortar on to the substrate between the minimum and maximum layer thicknesses without the formation of voids. A seamless finish can be achieved if a “wet” edge is maintained during application.

Sprayed application - Wet Spray

1. Thoroughly pre-wet the prepared substrate before application.
2. Before application remove excess water, e.g. with a clean sponge. The surface must have a dark matt appearance and surface pores and cavities must not contain water.
3. Place the wet mortar into the spraying equipment and apply on to the substrate between the minimum and maximum layer thicknesses without the formation of voids. A seamless finish can be achieved if a “wet” edge is maintained during application.

Surface finishing

IMPORTANT: Do not add water during the surface finishing as this can cause discolouration and cracking.

1. Allow mortar to surface harden.
2. Surface finish to the required surface texture using trowel and / or sponge.

CLEANING OF EQUIPMENT

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

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product 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.

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