BUILDING TRUST

PRODUCT DATA SHEET

SikaTop® Armatec®-110 EpoCem®

Three-part epoxy-cement-based reinforcement corrosion protection and bonding primer

DESCRIPTION

SikaTop® Armatec®-110 EpoCem® is a three-part, cementitious, epoxy resin coating material. It contains a corrosion inhibitor and is used as a reinforcement corrosion protection and as a bonding primer. Based on EpoCem® technology, it offers superior bonding properties. SikaTop® Armatec®-110 EpoCem® meets the requirement of EN 1504-7.

USES

As part of a concrete repair system, SikaTop® Armatec®-110 EpoCem® is used as:
- Bonding primer on concrete surfaces
- Reinforcement corrosion protection
- Control of anodic areas (Principle 11, method 11.1 of EN 1504-9), creating conditions in which potentially anodic cathodic areas of reinforcement are unable to take part

Please note:
- The Product is not suitable as a bonding primer for fast-setting concrete or fast-setting repair mortars

CHARACTERISTICS / ADVANTAGES

- Very good bonding properties
- Compatible with most Sika MonoTop® and SikaEmaco® repair mortars
- Very good adhesion to concrete and steel
- Contains corrosion inhibitors
- Very good resistance to water and chloride penetration
- High shear strength
- Long pot life
- Easy to mix and apply
- Can be applied by brush or spray gun

ENVIRONMENTAL INFORMATION

- LEED v2009 IEQc 4.2 SikaTop® Armatec®-110 EpoCem®
- LEED v4.1 MR: Material ingredients (option 2) and LEED v4.1 EQ: Low-emitting materials SikaTop® Armatec®-110 EpoCem® en
- Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by Institut für Bauen und Umwelt e.V. (IBU)

CERTIFICATES AND TEST REPORTS

- CE marking and declaration of performance based on EN 1504-7:2006 Products and systems for the protection and repair of concrete structures — Reinforcement corrosion protection
- Prüfungszeugnis Korrosionsschutzwirkung SikaTop Armatec-110 EpoCem, BAM
- Test report Corrosion Protection EN 15183, iSK, No. UB300/07/08
- Test report stress strain behaviour, EN 1766, Polymer Institut, No. P 2965
- Carbon dioxide permeability of coating materials and systems EN 1062-6, SikaTop Armatec-110 EpoCem, LPM AG, Test Report No. A-40'046-1E
- Chlorid Diffusion test report, Polymer Institut. No. P 3074

PRODUCT INFORMATION

Composition	Cement, epoxy resin, selected aggregates and additives	
Packaging	20 kg kit consisting of:	
	Part A	1.14 kg container
	Part B	2.86 kg container
	Part C	16 kg bag
Colour	Part A	White
	Part B	Colourless
	Part C	Dark grey
	Mixed components: dark grey	
Shelf Life	12 months from date of production	
Storage Conditions	Store properly in undamaged original, sealed packaging; in dry cool conditions between +5 °C and +25 °C.	
Density	Mixed density	2.0 kg/L
Colour	Part A	Liquid
	Part B	Liquid
	Part C	Powder

TECHNICAL INFORMATION

Tensile Adhesion Strength	after 28 days	≥ 1.5 MPa	(EN 1542)
Coefficient of Thermal Expansion	$18 \cdot 10^{-6}$ 1/K		(EN 1770)
Corrosion Test	Pass		(EN 15183)
Shear Adhesion	Comparison of coated steel to concrete to uncoated steel to concrete (pull-out test)	Passed (≥ 80 %)	(EN 15184)
Diffusion resistance to carbon dioxide	for 1.9 mm of Product	S_d = 42 m	(EN 1062-6)

APPLICATION INFORMATION

Mixing Ratio	The Product comes in pre-packed units with the correct mixing ratio.	
Consumption	AS REINFORCEMENT CORROSION PROTECTION For a total layer thickness of 2 mm, in two layers of 1 mm thickness each:	
	Rebar diameter	**Amount of Product per metre**
	8 mm	120 g/m (60 g/m per layer)
	16 mm	240 g/m (120 g/m per layer)
	AS BONDING PRIMER ON MINERAL SURFACES 1.5–2.0 kg powder per m² and mm layer thickness, depending on substrate conditions 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.	
Product Temperature	Maximum	+30 °C
	Minimum	+5 °C

Ambient Air Temperature	Maximum	+30 °C
	Minimum	+5 °C
Substrate Temperature	Maximum	+30 °C
	Minimum	+5 °C
Pot Life	At +20 °C	3 hours

Pot life depends on temperature
Note: Pot life will be shorter at higher temperatures. Pot life will be longer at lower temperatures.

Application Time

If applying the Product as bonding primer, respect the maximum waiting time before wet on wet application of Sika repair mortars and normal-setting concrete:

Temperature	Maximum waiting time
+5 °C	6 hours
+10 °C	4 hours
+20 °C	2 hours
+30 °C	1 hour

Waiting Time / Overcoating

As reinforcement protection primer between first and second coat:

Temperature	Minimum waiting time
+5 °C	8–12 hours
+10 °C	4–6 hours
+20 °C	2–3 hours
+30 °C	1–2 hours

As reinforcement protection primer between second coat and subsequent repair mortar application:

Temperature	Minimum waiting time
+5 °C	30 hours
+10 °C	24 hours
+20 °C	18 hours
+30 °C	12 hours

SYSTEM INFORMATION

System Structure

SikaTop® Armatec®-110 EpoCem® is a reinforcement corrosion protection primer in accordance with EN 1504-7 as part of the Sika® repair system. It is the first component of the system, followed by the application of Sika MonoTop® or SikaEmaco® concrete repair mortars.

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 INFORMATION

- Concrete repair site handbook
- Sika Method Statement 850 32 01 Concrete Repair

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

SUBSTRATE PREPARATION

CONCRETE

1. Clean the substrate thoroughly so it is free from dust, loose material, surface contamination and material which reduces adhesion, prevents suction or wetting by the repair materials.
2. Remove delaminated, weak, damaged and deteriorated concrete and where necessary, sound concrete. Remove using mechanical hand-held tools, high or ultra-high-pressure water blasting equipment.
3. Remove sufficient concrete from around corroded reinforcement to allow cleaning, application of a corrosion protection coating (where required) and compaction of the concrete repair mortar.

4. Prepare repair surface areas in simple square or rectangular layouts to avoid shrinkage stress concentrations and cracking while the repair material cures. This can also avoid structural stress concentrations from thermal movement and loading during the service life.

STEEL REINFORCEMENT

1. Remove rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion.
2. Prepare surfaces to bright steel, Sa 2 (ISO 8501-1), using abrasive blast cleaning or high-pressure water blasting equipment.

PRE-WETTING

Sufficient saturation of the concrete substrate prior to application enables the mortar to gain its full mechanical properties.

1. Thoroughly pre-wet the prepared concrete substrate for a minimum of 2 hours before application.
2. Keep the surface wet and do not allow to dry.
3. The final pre-wetted surface must achieve a dark matt appearance (saturated surface dry).

MIXING

1. Shake parts A and B before opening.
2. Pour the liquid parts A and B into a clean mixing vessel.
3. Mix for 30 seconds with a low speed (< 250 rpm) electric drill mixer.
4. While mixing parts A and B, slowly add powder part C. Avoid entraining air.
5. IMPORTANT Do not add any water to the mix. Mix thoroughly for at least for 3 minutes until a uniform consistency is achieved.
6. Leave to stand for 5–10 minutes until the mixed coating material exhibits a brushable, weakly dripping consistency.

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

Risk of cracking due to application in direct sun or strong winds

1. Do not apply the Product in direct sun, strong winds or both.

REINFORCEMENT CORROSION PROTECTION

Preconditions

If using spray equipment, the substrate has been protected from overspray.

1. Use a clean brush or spraying equipment to apply a first coat 1 mm thick to cover the reinforcement bars.
2. When the first coat is fingernail-hard, apply a second coat 1 mm thick.
3. Wait until completely dry before applying repair mortar.

BONDING PRIMER

1. Remove excess water from within the surface pores and cavities with a clean sponge.
2. Use a medium-hard brush or spray gun to apply the Product over the complete substrate surface. Press the Product well into the substrate to form a thin layer, filling surface pores or cavities.
3. Apply the subsequent layer of repair mortar wet on wet.

CURING TREATMENT

Protect the fresh mortar from rain while the material has not yet set.

CLEANING OF TOOLS

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

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.

Sika Kimia Sdn. Bhd.
Lot 689, Nilai Industrial Estate,
71800 Nilai, Negeri Sembilan D.K.
Malaysia
Phone: +606-7991762
e-mail: info@my.sika.com
Website: www.sika.com.my