Construction

Sikadur®45 EpoCem®

Epoxy-cement repair and profiling mortar

Product Description

Sikadur® 45 EpoCem® is a three-component high performance repair mortar based on Sika's unique epoxy-cement technology.
The balanced formulation of the system ensures that the properties of the hydrated cement are complemented and enhanced by the integral epoxy structure.

Uses

- Repair and restoration of concrete, masonry and mortar, particularly when it is to be overcoated with Sika® Epoxy or EpoCem® toppings/coatings
- Ideal for repairs in continually wet conditions such as sewage treatment plants, bunds, effluent tanks, basements etc

Characteristics / Advantages

- Can be applied to damp and green concrete
- Superior chemical resistance to concrete and conventional cement mortars
- Excellent mechanical properties
- Expansion coefficient similar to concrete
- High freeze/thaw resistance
- Waterproof yet vapour permeable
- Can be overcoated with Sika® epoxies after 1 day

Product Data

Form

Appearance / Colours

Part A - resin:	liquid
Part B - hardener:	liquid
Part C - filler:	aggregate powder
Colour:	grey
Finish:	matt

Packaging

32.5kg kit (components. A+B+C)

Storage

Storage Conditions / Shelf-Life

Part A, Part B:	12 months
Part C:	9 months

From date of production if stored in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5°C and +30°C.

Part A, Part B: Protect from frost
Part C: Protect from humidity

Technical Data

Chemical Base	Epoxy, crystalline free silica aggregate
Density	Mixed 2,15 kg/litre
Layer Thickness	Min. 5mm - max. 40mm

Mechanical Properties

Mechanical Strengths

	3 days	28 days
Compressive Strength	40-45 N/mm^2	60-70 N/mm^2
Flexural Strength	6-8 N/mm^2	8-10 N/mm^2
Adhesion*	-	2-3 N/mm^2 (concrete failure)
(*On sand blasted concrete with SikaTop® Armatec 110 EpoCem®)		

System Information

System Structure	**Primer**: SikaTop® Armatec 110 EpoCem® **Repair Mortar:** Sikadur® 45 EpoCem® at 10mm – 40mm

Application Details

Consumption / Dosage	Approx. 2,2kg per m^2 per mm thickness.
Substrate Quality	The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm^2) with a minimum pull off strength of 1.5 N/mm^2. The substrate must be damp but free of standing water and free of all contaminants such as oil, grease, coatings and surface treatments, etc.
Substrate Preparation	Concrete substrates must be prepared mechanically using abrasive blast cleaning or high pressure water jetting equipment to remove cement laitance, especially oil or wax containing layers and achieve a profiled open textured surface. 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 appropriate products from the Sikafloor®, SikaDur® and Sikagard® range of materials. All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum.
Priming/Bonding	Coat the exposed reinforcing steel with SikaTop® Armatec 110 EpoCem® and leave to dry. When “thumb-nail” hard apply a second coat to the steel and a first coat to the concrete repair surface. Reprime if the bonding slurry is allowed to dry out.

Application Conditions / Limitations

Substrate Temperature	Min. 5°C – max. 30°C.
Ambient Temperature	Min. 5°C – max. 35°C.
Substrate Humidity	Can be applied on green or damp concrete, without any standing water.
Relative Air Humidity	20% min. / 80% max.

Application Instructions

Mixing	Part A : Part B : Part C - packaging size: 32.5 kg
Mixing (Ratio/Dosage)	Mix complete kits only. Briefly stir Component A (white liquid), pour into Component B and stir or shake well for at least 30 seconds. Pour binder mix (Components A+B) into a suitable container and add Component C slowly, stirring constantly. Machine mix for 3 minutes. 25kg min of Component C should be added to the binder (Components A+B). By adding the powder component (Component C) in portions, the right working consistency can be obtained.
Application Method / Limitations	Pre-wet the substrate to capillary saturation. First work the SikaTop® Armatec 110 EpoCem® bond coat into the slightly damp substrate. Apply the repair mortar "wet on wet" with a trowel, making sure there are no voids. As soon as the repair mortar has stiffened, the mortar surface can be treated with a finishing float. For profile restoration coats over 40mm thick, the Sikadur® 45 EpoCem® must be applied in more than one operation. Keep the mortar moist immediately after application, especially in sunlight or wind. Standard mortar curing is generally recommended. If a fine finish is required, Sikadur® 45 EpoCem® can be over coated with Sikagard® 720 EpoCem®.
Cleaning of Tools	Clean all tools with water immediately after use. Set material can only be removed mechanically.
Pot Life	30 - 40 minutes at 20°C
Waiting Time / Overcoatability	Approx. 6 hours at 20°C
Notes on Application / Limitations	Freshly applied Sikadur®45 EpoCem® should be protected from damp, condensation and water for at least 12 hours. Concrete should be a minimum of 28 days old. On no account should water or solvent be added to the mix. Sikadur® 45 EpoCem® is over coatable with solvent free and solvent containing products only when the moisture content is 4% or below – usually about 24 hours. Monitor / check before proceeding. Surface must be free of standing water (puddles)

Curing Details

Applied Product ready for use

Temperature	Foot Traffic (hrs)	Light Traffic (days)	Full Cure (days)
10°C	2 days	3 days	14 days
20°C	3 days	2 days	14 days
30°C	12 hrs	1 day	7 days

Initial cure approx. 6 hours at 20 °C

Local Restrictions	Please note that as a result of specific local regulations the performances of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

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Health and Safety Information

Protective Measures	During application and curing in closed rooms, pits and shafts etc., adequate fresh air ventilation must be provided. Keep away from open flames including welding. Use of basic principles of industrial hygiene and protective clothing, such as gloves and goggles will enable this product to be used safely. Change soiled work clothes and wash hands before eating and after finishing work. Local regulations as well as health and safety advice on packaging labels must be observed.
Ecology	
Transportation Class	
Important Notes	All technical data stated in this Product Data Sheet are based on laboratory tests. Actual data may vary due to changing conditions beyond our control. Residues of material must be removed according to local regulations. Fully cured material can be disposed of as household waste under agreement with the responsible local authorities. Detailed health and safety information as well as detailed precautionary measures e.g. physical, toxicological and ecological data can be obtained from the Material Safety Data Sheet.
Toxicity	

Legal Notes

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