

## PRODUCT DATA SHEET

## Sika® Armatec®-110 EpoCem

## BONDING PRIMER AND REINFORCEMENT CORROSION PROTECTION

## PRODUCT DESCRIPTION

Sika® Armatec®-110 EpoCem is a cementitious epoxy resin compensated 3-component, solvent-free, coating material with corrosion inhibitor, used as bonding primer and reinforcement corrosion protection.

## USES

- Suitable in concrete repair as corrosion protection for reinforcement
- Suitable as a bonding primer on mortar, steel, and on placing fresh, plastic concrete to existing hardened concrete
- Protection to reinforcing steel in areas of thin concrete cover

## CHARACTERISTICS / ADVANTAGES

- Contains EpoCem® technology - improved bonding agent
- Extended open times for repair mortars
- Excellent adhesion to concrete and steel
- Contains corrosion inhibitor
- Good resistance to water and chloride penetration
- High shear strength
- Long pot life
- Can be brushed on or applied using spray gun
- Can be used exterior on-grade
- Excellent bonding bridge for cement or epoxy based repair mortars
- High strength, unaffected by moisture when cured
- Non-flammable, solvent free

## PRODUCT INFORMATION

|                    |   |                     |                     |                             |   |
|--------------------|---|---------------------|---------------------|-----------------------------|---|
| Chemical Base      | Portland cement, epoxy resin, selected aggregates and additives.  |                     |                     |                             |   |
| Packaging          | Unit  | A                   | B                   | C                           | ABC   |
|                    | 3.5 gal<br>(13.2 L)   | 47.6 oz<br>(1.4 L)  | 122.1 oz<br>(3.6 L) | 46.82 lb<br>(21.3 kg)       | A + B in<br>carton, C in<br>bag             |
|                    | 1.65 gal<br>(6.2 L)   | 22.7 oz<br>(0.67 L) | 57.6 oz<br>(1.7 L)  | 5.5 lb (2.5 kg)<br>(4 bags) | Factory-<br>proportioned<br>units in a pail |
| Appearance / Color | Component A   |                     |                     | White liquid                |   |
|                    | Component B   |                     |                     | Colorless liquid            |   |
|                    | Component C   |                     |                     | Gray powder                 |   |
| Shelf Life         | 12 months from date of production if stored properly in original, unopened and undamaged sealed packaging |                     |                     |                             |   |
| Storage Conditions | Store dry at 40–95 °F (4–35 °C)   |                     |                     |                             |   |

Protect Component A and B from freezing. If frozen, discard.  
Protect Component C from moisture. If damp, discard.

## TECHNICAL INFORMATION

|                                     |   |                                 |   |
|-------------------------------------|---|---------------------------------|---|
| Compressive Strength                | 3 days  | 4,500 psi (31.0 MPa)            | (ASTM C-109)<br>73 °F (23 °C)<br>50 % R.H.  |
|                                     | 7 days  | 6,500 psi (44.8 MPa)            |   |
|                                     | 28 days   | 8,500 psi (58.6 MPa)            |   |
| Flexural Strength                   | 28 days   | 1,250 psi (8.6 MPa)             | (ASTM C-348)<br>73 °F (23 °C)<br>50 % R.H.  |
| Splitting Tensile Strength          | 28 days   | 600 psi (4.1 MPa)               | (ASTM C-496)<br>73 °F (23 °C)<br>50 % R.H.  |
| Tensile Adhesion Strength           | <b>Bond of steel reinforcement on concrete</b>  |                                 |   |
|                                     | Sika® Armatec® 110  | 625 psi (4.3 MPa)               | (ASTM C-1583)<br>73 °F (23 °C)<br>50 % R.H. |
|                                     | EpoCem coated   |                                 |   |
|                                     | Epoxy coated  | 508 psi (3.5 MPa)               |   |
|                                     | Plain reinforcement   | 573 psi (4.0 MPa)               |   |
| Slant Shear Strength                | <b>Bonding agent properties</b> (14 d. moist cure, plastic to hardened concrete)  |                                 |   |
|                                     | Wet on wet  | 2,800 psi (19.3 MPa)            | (ASTM C-882)<br>73 °F (23 °C)<br>50 % R.H.  |
|                                     | 24 hr. open time  | 2,600 psi (17.9 MPa)            |   |
| Permeability to Water Vapor         | Control   | 7.32 x 10 <sup>-10</sup> ft/sec |   |
|                                     | 145 psi (10 bar)  | 8.92 x 10 <sup>-15</sup> ft/sec |   |
| Diffusion Resistance to Water Vapor | μ H <sub>2</sub> O ~100   |                                 |   |
| Permeability to CO <sub>2</sub>     | μ CO <sub>2</sub> ~14,000   |                                 |   |
| Corrosion Test                      | <b>Time-to-Corrosion Study</b> <ul style="list-style-type: none"> <li>Sika® Armatec®-110 EpoCem more than tripled the time to corrosion</li> <li>Reduced corrosion rate by over 40 %</li> </ul> |                                 |   |

## APPLICATION INFORMATION

|                         |   |                                 |             |
|-------------------------|---|---------------------------------|-------------|
| Fresh Mortar Density    | A+B+C ~125 lb/ft³ (~2.0 kg/l)   |                                 |             |
| Coverage                | <b>Bonding agent</b>  | 80 ft²/gal (7.4 m²/l)           |             |
|                         | <b>Corrosion Protection</b>   | 40 ft²/gal (3.7 m²/l)           |             |
|                         | (Coverage figures do not include allowance for surface profile and porosity or material waste)                          |                                 |             |
| Layer Thickness         |   | <b>Min. thickness of 1 coat</b> | <b>Coat</b> |
|                         | <b>Bonding agent</b>  | 20 mils                         | 1           |
|                         | <b>Corrosion Protection</b>   | 20 mils                         | 2           |
| Product Temperature     | 65°-75°F (18°-24°C)   |                                 |             |
| Ambient Air Temperature | 40–95 °F (5–35 °C)  |                                 |             |
| Substrate Temperature   | 40–95 °F (5–35 °C)  |                                 |             |
| Pot Life                | ~ 90 minutes  |                                 |             |
| Waiting / Recoat Times  | Sika repair mortars and non-fast setting concrete can be applied on Sika® Armatex®-110 EpoCem within a maximum time of: |                                 |             |

| Temperature             | Maximum Waiting Time |
|-------------------------|----------------------|
| 80°- 95 °F (26°- 35 °C) | 6 hours              |
| 65°-79 °F (18°- 26 °C)  | 12 hours             |
| 50°- 64° F (10°- 17° C) | 16 hours             |
| 40°- 49° F (4°- 9° C)   | wet-on-wet           |

## APPLICATION INSTRUCTIONS

### SURFACE PREPARATION

#### Concrete

- Free from dust, loose material, surface contamination and materials which reduce bond or prevent suction or wetting by repair materials.
- Delaminated, weak, damaged and deteriorated concrete and where necessary sound concrete shall be removed by suitable means.
- Substrate must be Saturated Surface Dry (SSD) with no standing water.

#### Steel reinforcement

- Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed by blast cleaning or other means of mechanical abrasion and reinforcement.
- Should be fully exposed and have all corrosion removed.

### MIXING

- Sika® Armatec®-110 EpoCem can be mixed with a low-speed (< 250 rpm) electric drill mixer.
- Shake components A and B thoroughly before opening.
- Pour liquid components A and B into a suitable mixing vessel and mix for 30 seconds.
- While still mixing components A and B slowly add powder component C.
- Mix the three components together for a minimum 3 minutes until blend is uniform and free of lumps, minimizing addition of air.
- Mix only the quantity that you can be applied within the pot life.
- DO NOT ADD WATER.

### APPLICATION

#### As reinforcement corrosion protection

- Apply by stiff-bristle brush or spray at 80 ft² /gal.
- Take special care to properly coat the underside of the totally exposed steel.
- Allow coating to dry 2-3 hours at 73 °F, then apply a second coat at the same coverage.
- Allow to dry again before the repair mortar or concrete is applied.
- Pour or place repair within 7 days

#### As a bonding primer

- Apply using a stiff-bristle brush or broom. To achieve good bond, Sika® Armatec®-110 EpoCem must be applied well into the substrate, filling all pores and ensure complete coverage of all surface irregularities (minimum layer thickness 1/64" (0.5 mm)).
- Spray apply with Goldblatt Pattern Pistol or equal equipment.
- Apply the freshly mixed patching mortar or concrete wet on wet, or up to the maximum recommended open time, onto the bonding slurry.

### CURING TREATMENT

Sika® Armatec®-110 EpoCem must be protected against contamination and rain until application of the repair mortar.

### CLEANING OF TOOLS

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

## LIMITATIONS

- Avoid application in direct sun and/or strong wind and/or rain.
- Do not add water.
- Not a vapor barrier.
- Apply only to sound, prepared substrates.
- Not recommended for use with expansive grouts and SikaQuicks
- Use of semi-dry mortars onto Sika® Armatec®-110 EpoCem must be applied "wet on wet"
- When used in overhead applications with hand placed patching mortars, use "wet on wet" for maximum mortar built thickness.
- Substrate profile as specified by the overlay or repair material is still required.
- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur® Hi-Mod 32.

## BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

### DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC

A+B+C combined \_\_\_\_\_ 50 g/l

## LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

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