

# Sika Armatec® 110 EpoCem®

## Bonding Agent and Reinforcement Protection

<b>Description</b>	Sika Armatec 110 EpoCem is a 3-component, solvent-free, moisture-tolerant, epoxy-modified, cementitious product specifically formulated as a bonding agent and an anti-corrosion coating.
<b>Where to Use</b>	<ul style="list-style-type: none"> <li>■ As an anti-corrosion coating for reinforcing steel in concrete restoration.</li> <li>■ As added protection to reinforcing steel in areas of thin concrete cover.</li> <li>■ As a bonding agent for repairs to concrete and steel.</li> <li>■ As a bonding agent for placing fresh, plastic concrete to existing hardened concrete.</li> </ul>
<b>Advantages</b>	<ul style="list-style-type: none"> <li>■ Excellent adhesion to concrete and steel.</li> <li>■ Acts as an effective barrier against penetration of water and chlorides.</li> <li>■ Long open time - up to 16 hours.</li> <li>■ Not a vapor barrier.</li> <li>■ Can be used exterior on-grade.</li> <li>■ Contains corrosion inhibitors.</li> <li>■ Excellent bonding bridge for cement or epoxy based repair mortars.</li> <li>■ High strength, unaffected by moisture when cured.</li> <li>■ Spray, brush or roller application.</li> <li>■ Non-flammable, solvent free.</li> </ul>
<b>Coverage</b>	<p><b>Bonding agent:</b> minimum (theoretical) on smooth, even substrate 80 sq. ft./gal. (=20 mils thickness). Coverage will vary depending on substrate profile and porosity.</p> <p><b>Reinforcement Protection:</b> 40 sq. ft./gal. (=20 mils thickness) (2 coat application).</p>
<b>Packaging</b>	<p>3.5 gal. unit. (47.6 fl. oz. Comp. A + 122.1 fl. oz. Comp. B + 46.82 lb. Comp. C) Comp. A + B in carton, Comp. C in multi-wall bag.</p> <p>1.65 gal. unit. (22.7 fl. oz. A + 57.6 fl. oz. B + 4 bags @ 5.5 lb.) Factory-proportioned units in a pail.</p>

### Typical Data (Material and curing conditions @73°F and 50% R.H.)

<b>Shelf Life</b>	1 year in original, unopened packaging.		
<b>Storage</b>	Store dry at 40°-95°F (4°-35°C). <b>Condition material to 65°-75°F (18°-24°C) before using.</b> If components A and B are frozen, discard. Protect Component C from humidity.		
<b>Color</b>	Concrete gray		
<b>Density (Mixed)</b>	125 lb./cu. ft. (2.0 kg.)		
<b>Pot Life</b>	Approximately 90 minutes		
<b>Compressive Strength (ASTM C-109)</b>	3 days	4500 psi	(31.0 MPa)
	7 days	6500 psi	(44.8 MPa)
	28 days	8500 psi	(58.6 MPa)
<b>Flexural Strength (ASTM C-348)</b>	28 days	1250 psi	(8.6 MPa)
<b>Splitting Tensile Strength (ASTM C-496)</b>	28 days	600 psi	(4.1 MPa)
<b>Important Data for Sika Armatec 110 as a Corrosion Protective Coating</b>			
<b>Water</b>	Water Permeability at 10 bar (145 psi)	8.92 x 10 <sup>-15</sup> ft./sec.	
	Control	7.32 x 10 <sup>-10</sup> ft./sec.	
	Water vapor diffusion coefficient μ H <sub>2</sub> O	110	
<b>Carbon Dioxide</b>	Carbon dioxide diffusion coefficient μ CO <sub>2</sub>	14000	

### TEST DATA: Time-to-Corrosion Study

- Sika Armatec 110 more than tripled the time to corrosion
- Reduced corrosion rate by over 40%

### Important Data for Sika Armatec 110 as a Bonding Agent

<b>Bond Strength (ASTM C882)</b>	<b>14 days moist cure, plastic concrete to hardened concrete:</b>		
	Wet on Wet	2800 psi	(19.3 MPa)
	24 hr. Open Time	2600 psi	(17.9 MPa)

### Bond of Steel Reinforcement to Concrete (Pullout Test):

Sika Armatec 110 Coated	625 psi	(4.3 MPa)
Epoxy Coated	508 psi	(3.5 MPa)
Plain Reinforcement	573 psi	(3.95 MPa)



## How to Use

### Surface Preparation

**Cementitious substrates:** Should be cleaned and prepared to achieve a laitance and contaminant-free surface prepared in accordance with the requirements specified by the overlay or repair material by blast cleaning or equivalent mechanical means. Substrate must be saturated surface dry (SSD) with no standing water.

**Steel:** Should be cleaned and prepared thoroughly by blast cleaning.

### Mixing

Shake contents of both Component 'A' and Component 'B'. Empty entire contents of both Component 'A' and Component 'B' into a clean, dry mixing pail. Mix thoroughly for 30 seconds with a Sika paddle on a low speed (400-600 rpm) drill. Slowly add the entire contents of Component 'C' while continuing to mix for 3 minutes until blend is uniform and free of lumps. Mix only that quantity that can be applied within its pot life.

### Application

**As a bonding agent** - Apply by stiff-bristle brush or broom. Spray apply with Goldblatt Pattern Pistol or equal equipment. For best results, work the bonding slurry well into the substrate to ensure complete coverage of all surface irregularities. Apply the freshly mixed patching mortar or concrete wet on wet, or up to the maximum recommended open time, onto the bonding slurry.

Maximum recommended open time between application of Armatec 110 and patching mortar or concrete:

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

**For corrosion protection only** - Apply by stiff-bristle brush or spray at 80 sq. ft./gal. (20 mils). Take special care to properly coat the underside of the totally exposed steel. Allow coating to dry 2-3 hours @ 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.

### Limitations

- Substrate and ambient temperature: Minimum 40°F (5°C)
- Maximum 95°F (35°C)
- Minimum thickness: As a bonding agent 20 mils.
- For reinforcement protection 40 mils
- (2 coats, 20 mils each).
- Not recommended for use with expansive grouts.
- 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 build 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.

### Caution

**Part A & B: IRRITANT; SENSITIZER** - Can cause skin sensitization after prolonged or repeated contact. Skin and eye irritant. High concentrations of vapor may cause respiratory irritation. Avoid skin contact. Use only with adequate ventilation. Use of safety goggles and chemical resistant gloves is recommended.

**Part C: IRRITANT; SUSPECT CARCINOGEN** - Contains crystalline silica, quartz (sand); cement. Skin and eye irritant. Dust may cause respiratory tract irritation. Avoid breathing dust. Use only with adequate ventilation. May cause delayed lung injury (silicosis). IARC list crystalline silica as having sufficient evidence of carcinogenicity to laboratory animals and limited evidence of carcinogenicity in humans. NTP also lists crystalline silica as a suspect carcinogen. Use of safety gloves is recommended. In case of high dust concentrations or exceedance of PELs, use an appropriate NIOSH approved respirator.

### First Aid

In case of eye contact, wash immediately with soap and water for 15 minutes; immediately consult a physician. In case of skin contact, wash with soap and water; consult a physician for irritation. For respiratory problems, remove person to fresh air and institute artificial respiration if necessary; consult a physician. In case of ingestion, immediately consult a physician. Wash clothing before reuse.

### Clean-Up

In case of spills or leaks, wear suitable protective equipment, contain spill, collect with absorbent material, and transfer to a suitable container. Ventilate area. Avoid contact. Dispose of in accordance with current, applicable local, state, and federal regulations.

KEEP CONTAINER TIGHTLY CLOSED

NOT FOR INTERNAL CONSUMPTION

CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION

KEEP OUT OF REACH OF CHILDREN

FOR INDUSTRIAL USE ONLY

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current technical data sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor.

NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES.

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