

Sika® Armatec® 110 EpoCem

Bonding Agent and Reinforcement Protection

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

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

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

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

TEST DATA: Time-to-Corrosion Study

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

Construction

Sika®

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT [HTTP://USA.SIKA.COM/](http://usa.sika.com/) OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.

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

Bond Strength (ASTM C882)	14 days moist cure, plastic concrete to hardened concrete:		
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 fully exposed and have all corrosion removed by blast cleaning or other means of mechanical abrasion

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 ft.²/gal. (20 mils). 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.

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 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.

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