



Section 09 97 00 Finishes

SIKA SPECIFICATION NOTE: *This guide specification includes test methods, materials and installation procedures for Sika® Armatec®-110 EpoCem, reinforcement corrosion protection. 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. It is prepared in CSI Master Format and should be included as a separate section under Division 9 - Finishes.*

Part 1 - General

1.01 Summary

This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less the complete Work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their Work and coordinate overlapping Work.

1.02 System description

This specification describes the use of a 3-component, epoxy-modified, cementitious, anti-corrosion coating for reinforcing steel in concrete restoration.

1.03 Related sections

09 97 13 Steel Coatings

1.04 Quality Assurance

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
- B. Contractor qualifications: Contractor shall be qualified in the field of grouting with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- C. Store and apply materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.05 Delivery, Storage, and Handling

- A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
- B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- C. Condition the specified product as recommended by the manufacturer.

1.06 Job Conditions

- A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 40°F (4°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.07 Submittals

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets (PDS), and appropriate Safety Data Sheets (SDS).
- B. Submit copy of Certificate of Approved Contractor status by manufacturer.

1.08 Warranty

Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

Sika® Armatec® 110 EpoCem, as manufactured by Sika® Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

Epoxy resin/portland cement adhesive shall be Sika® Armatec® 110 EpoCem:

- A. Component "A" shall be an epoxy resin/water emulsion containing suitable viscosity control agents. It shall not contain butyl glycidyl ether.
- B. Component "B" shall be primarily a water solution of a polyamine.
- C. Component "C" shall be a blend of selected portland cements and sands.
- D. The material shall not contain asbestos.

2.03 Performance Criteria

Typical Properties of the mixed polymer-modified, portland cement mortar:

1. Yield	40 ft ² /gal (3.7 m ² /l)
2. Color	Component A - White liquid Component B - Colourless liquid Component C - Gray powder
3. Mixing Ratio	A+B+C
4. Application Thickness	20 mils
5. Application Temp	40–95 °F (5–35 °C)
6. Contact Time	95°F (35°C) 6 hours 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
7. Pot life	~ 90 minutes
8. Tensile Adhesion Strength (ASTM C-1583)	Sika® Armatec® 110 EpoCem coated - 625 psi (4.3 MPa) Epoxy coated - 508 psi (3.5 MPa) Plain reinforcement - 573 psi (4.0 MPa)
9. Compressive Strength (ASTM C-109)	28 days - 8,500 psi (58.6 MPa)
10. Flexural Strength (ASTM C-348)	28 days - 1,250 psi (8.6 MPa)
11. Splitting Tensile Strength (ASTM C-496)	28 days - 600 psi (4.1 MPa)

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45 - 55% relative humidity.

The epoxy resin/portland cement adhesive shall not produce a vapor barrier.

Material must be proven to prevent corrosion of reinforcing steel when tested under the procedures as set forth by the Federal Highway Administration Program Report No. FHWA/RD86/193. Proof shall be in the form of an independent testing laboratory corrosion report showing prevention of corrosion of the reinforcing steel.

Part 3 – Execution

3.01 Mixing and Application

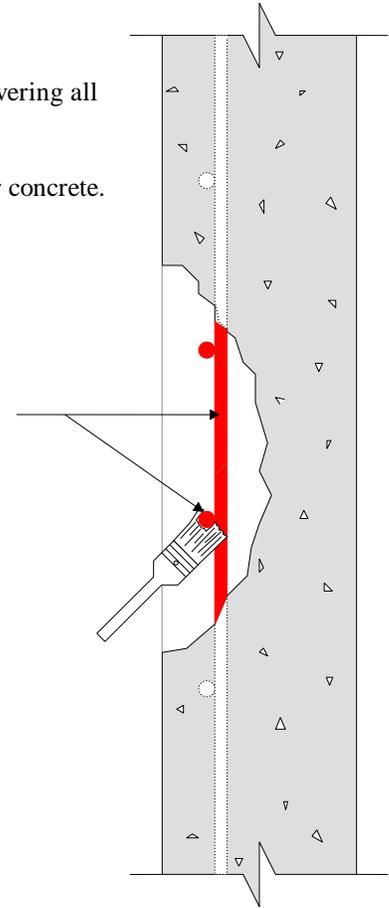
- A. Mixing the epoxy resin: Shake contents of Components “A” and Component “B”. Completely empty both components into a clean, dry mixing pail. Mix thoroughly for 30 seconds using a jiffy paddle with a low-speed (400-600 rpm) drill. Slowly add the entire contents of Component “C” while continuing to mix for 3 minutes until uniform with no lumps. Mix only that quantity that can be applied within its pot life.
- B. Placement procedure: Apply to prepared steel surface with a stiff-bristle brush, or “hopper type” spray equipment at 20 mils minimum thickness. Properly coat the underside of the totally exposed steel. Allow to dry (approx. 2 - 3 hours) then apply a second coat at 20 mils minimum thickness. Allow drying again before placing repair mortar.
- A. Adhere to all procedures, limitations and cautions printed in the manufacturer’s current Product Data Sheet (PDS) and literature.

3.02 Cleaning

- A. The uncured epoxy resin/portland cement adhesive can be cleaned from tools with water. The cured epoxy resin/portland cement adhesive can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spill overs onto adjacent areas.

Sika® Armatec® 110 EpoCem Anti-corrosion

1. Apply Sika Armatec 110 EpoCem with stiff bristle brush or spray 20 mils thick, covering all exposed steel. Cure to tack-free 2-3 hours.
2. Apply a second coat at 20 mils. Allow to dry again before applying repair mortar or concrete.



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