



## Section 03 01 00 Concrete

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**SIKA SPECIFICATION NOTE:** *This guide specification includes test methods, materials and installation procedures for Sika® Armatec®-110 EpoCem, bonding agent. 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 3 - Concrete.*

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### 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 bonding bridge between new portland-cement mortar or concrete and hardened portland-cement mortar or concrete.

#### 1.03 Related sections

03 01 50 Rehabilitation of Cast Decks and Underlayment  
03 30 00 - Cast-In-Place Concrete  
03 50 00 Cast Decks and Underlayment

#### 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® Armattec® 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® Armattec® 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 <sup>2</sup> /gal (3.7 m <sup>2</sup> /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. Slant Shear Strength (ASTM C-882)	Wet on wet - 2,800 psi (19.3 MPa)
14 d. moist cure, plastic to hardened concrete	24 hr. open time - 2,600 psi (17.9 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.

## Part 3 – Execution

### 3.01 Mixing and Application

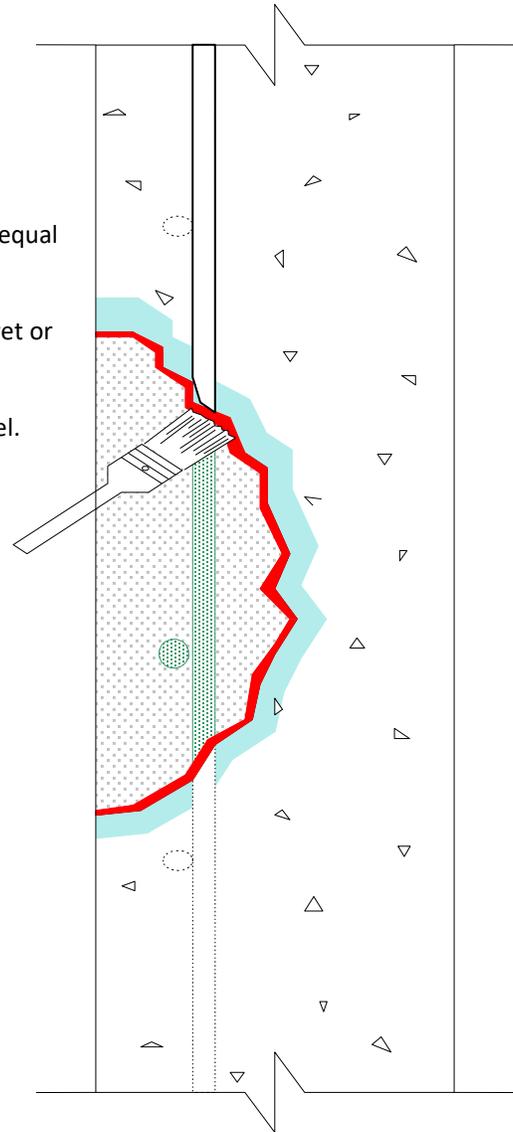
- A. Mixing the epoxy resin: Shake contents of Components “A” and Component “B”. Completely empty both components into a clean, dry mixing pail. Mix thoroughly for 30 seconds using a jiffy paddle with a low-speed (400-600 rpm) drill. Slowly add the entire contents of Component “C” while continuing to 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 surface with a stiff-bristle brush, broom or “hopper type” spray equipment.
  - a. Hand-applied mortars - Place fresh, plastic concrete/mortar while the bonding bridge adhesive is “wet” or within open times.
  - b. Machine-applied mortars - Apply while the bonding bridge adhesive is “wet” or within the open times.
- 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 Bonding Bridge

1. Pre-wet surface to Saturated Surface Dry (SSD).
2. Apply by stiff bristle brush or spray apply with “hopper type” or equal equipment.
3. Place repair material while Sika® Armatec® 110 EpoCem is still wet or within indicated open times.
4. Indicates Sika® Armatec® 110 EpoCem applied to reinforcing steel.



**Concrete Restoration Systems by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071**

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