

STO GUIDE SPECIFICATION
SPECIFICATION 82311 – Sto Full-Depth Repair Mortar with CI, Cement-Based, Structural Repair
with Integral Corrosion Inhibitor
REPAIR MORTARS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide repair mortar for horizontal and formed vertical/overhead patch and repair of existing substrates.
- B. Related Sections: Other specification sections which relate directly to the work of this section include the following:
 - 1. Section 03300, Cast-In-Place Concrete.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Safety Data Sheets (SDS).

1.03 REFERENCES

- 1. ASTM C109, Compressive Strength
- 2. ASTM C469, Modulus of Elasticity
- 3. ASTM C293, Flexural Strength
- 4. ASTM C157, Drying Shrinkage
- 5. ASTM C309, Specification for Curing Compounds
- 6. ASTM D4541, Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
- 7. ICRI Technical Guideline No. 03732 Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays
- 8. ACI 305R, Guide for Hot Weather Concreting
- 9. ACI 306R, Guide for Cold Weather Concreting

1.04 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The manufacturer shall be a company with at least five years experience and regularly engaged in the manufacture and marketing of products specified herein. The manufacturer shall have an ISO 9001 certified quality system and ISO 14001 environmental management system.
- B. Installer's Qualifications: The contractor shall be qualified to perform the work specified by reason of experience.
- C. Job Site: Verify bond to properly prepared substrates as specified by design professional.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.
- B. Store products in a dry area with temperature maintained between 50 and 85 degrees F (10 and 29 degrees C). Protect from direct sunlight and extreme heat (90 degrees F [32 degrees C]).
- C. Handle products in accordance with manufacturer's printed recommendations.

PART 2 - PRODUCTS

2.02 MATERIALS

- A. Horizontal repair mortar: Single-component, cement-based repair mortar, containing portland cement, graded specialty aggregates, and admixtures. Comply with the following:

Manufacturer: 82311 Sto Full-Depth Repair Mortar with CI as manufactured by Sto Corp. 3800 Camp Creek Parkway, Building 1400, Suite 120, Atlanta, Georgia 30331

- 1. Performance and Physical Properties: Meet or exceed the following values for material cured at 73 degrees F and 50 percent relative humidity:
 - a. Working Time: 20 – 40 minutes.
 - b. Compressive Strength per ASTM C109: 4,800 psi (33.1 MPa) at 7 days, 6,000 psi (41.4 MPa) at 28 days
 - c. Modulus of Elasticity per ASTM C469: 3.9×10^6 psi (26.9×10^3 MPa) at 28 days
 - d. Flexural Strength per ASTM C293: 700 psi (4.83 MPa) at 7 days, 750 psi (5.17 MPa) at 28 days
 - e. Shrinkage per ASTM C157 mod.: Less than 0.030% at 28 days, air cured.
 - f. Direct Tensile Bond: ASTM D4541: 210 psi (1.45 MPa)
 - g. Color: Concrete gray.

PART 3 – EXECUTION

3.01 INSTALLATION OF FULL DEPTH REPAIR MORTAR:

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until all unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas and landscaping from contact due to mixing and handling of materials.
- C. Surface Preparation: Comply with manufacturer's printed instructions and the following.
 - 1. Remove loose and deteriorated materials from surfaces to be patched using mechanical chipping, bush-hammering, or hydrodemolition to obtain an ICRI Concrete Surface Profile CSP 5 or greater.
 - 2. Saw-cut or chip the edge of the patch to a right angle with concrete surface. Do not feather edge.
 - 3. Clean surfaces of bond-inhibiting materials including oil, dust and dirt, laitance and standing water.
 - a. If hydrodemolition is used, cement and particulate slurry must be removed from the prepared surfaces before the slurry hardens.
- D. Mixing: Comply with manufacturer's printed instructions and the following.
 - 1. Precondition components to temperature of 70 degrees F plus or minus 5 degrees F (21 degrees C plus or minus 2.5 degrees C) prior to mixing.
 - 2. Add 5 to 6 pints (2.37 to 2.84 L) of clean water per 50-pound (22.7-kg) bag.
 - 3. Mix using a mechanical mixer to a uniform, lump-free consistency. Avoid over-mixing.
 - 4. Do not add water beyond manufacturer's instructions. Do not add additional powder.
- E. Application: Comply with manufacturer's printed instructions and the following.

1. Apply when ambient and surface temperatures are 45 degrees F (7.5 degrees C) and rising.
 2. Comply with applicable sections of ACI 305R and ACI 306R and applicable published product limitations for hot and cold weather application.
 3. Dampen substrate to fill concrete pores with water. Remove ponding, glistening, or surface water (saturated surface dry).
 4. Apply scrub coat of repair mortar into substrate to ensure intimate contact and establish bond.
 - a. Alternatively, prepared concrete and reinforcing steel may be primed using Sto Bonding and Anti-Corrosion Agent.
 5. Apply mortar while scrub coat is wet. Consolidate and trowel to the desired finish, with a minimum thickness of 1/2-inch (13mm) and maximum thickness of 4-inches (102mm).
 6. Vibrate closed-form repairs to ensure intimate contact with the substrate, establish bond, and ensure proper consolidation. Avoid over-vibration.
- F. Curing
1. Keep surface damp for 48 hours with continuous light water fogging.
 2. If no coating or sealer is to be applied, a water-based curing compound meeting ASTM standard C309 may be used.
 3. Do not use solvent-based curing compounds. If a coating or sealer will be applied, use water fogging or blanket curing methods.
 4. Comply with applicable sections of ACI 305R and ACI 306R for hot and cold weather curing.
- G. Cleaning: Remove excess material before material cures. If material has cured, remove using mechanical methods that will not damage substrate.

END OF SECTION

ATTENTION

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