



Building with conscience.

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STO GUIDE SPECIFICATION
SPECIFICATION 80702– Sto Overhead Mortar CI --
Polymer-Modified, Integral corrosion inhibitor, Cement-Based, Vertical/Overhead, Structural Patch
and Repair

REPAIR MORTARS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide repair mortar for vertical or overhead patch and repair of existing substrate.
- B. Related Sections: Other specification sections which relate directly to the work of this section include the following:
 - 1. Section 03 30 00, Cast-In-Place Concrete
 - 2. Section 09 24 00, Portland Cement Plastering (Stucco)
 - 3. Section 04 22 00, Concrete Unit Masonry

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 C348, Flexural Strength
- 3. ASTM C469, Modulus of Elasticity
- 4. ASTM C1583, Direct Tensile Bond Strength
- 5. ASTM C882, Slant Shear Bond
- 6. ASTM C496, Splitting Tensile Strength
- 7. ASTM C157, Drying Shrinkage
- 8. ASTM C666, Freeze/Thaw Resistance
- 9. ASTM C672, Salt Scaling Resistance
- 10. ICRI Technical Guideline No. 03732 Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays
- 11. ACI 305R, Guide to Hot Weather Concreting
- 12. ACI 306R, Guide to 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 strength 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.

C. Handle products in accordance with manufacturer's printed recommendations.

PART 2 - PRODUCTS

2.02 MATERIALS

A. Overhead repair mortar: Single-component, polymer-modified, cement-based repair mortar with integral corrosion inhibitor, containing portland cement, graded specialty aggregates, dry acrylic polymer and admixtures. Comply with the following:

1. Product: 80702 Sto Overhead Mortar CI as manufactured by Sto Corp., 3800 Camp Creek Parkway, Building 1400, Suite 120 Atlanta, GA, 30331; Telephone 404-346-7055
2. Performance and Physical Properties: Meet or exceed the following values for material cured at 73 degrees F (23 degrees C) and 50 percent relative humidity:
 - a. Application:
 - b. Working Time: 15 – 30 minutes.
 - c. Compressive Strength minimum per ASTM C109: 3,500 psi (24.2 MPa) at 1 day, 7,000 psi (48.3 MPa) at 7 days, 8,000 psi (55.2 MPa) at 28 days
 - d. Direct Tensile Bond Strength minimum per ASTM C1583: 400 psi (2.8 MPa) at 28 days
 - e. Slant Shear Bond Strength minimum per ASTM C882: 800 psi (5.5 MPa) at 1 day, 1,200 psi (8.3 MPa) at 7 days, 1,400 psi (9.7 MPa) at 28 days
 - f. Flexural Strength minimum per ASTM C348: 600 psi (4.1 MPa) at 1 day, 900 psi (6.2 MPa) at 7 days, 1,000 psi (6.9 MPa) at 28 days
 - g. Freeze/Thaw Resistance per ASTM C666: >98% at 300 cycles
 - h. Salt Scaling Resistance per ASTM C672: 0 rating and 0 scaled material at 50 cycles
 - i. Modulus of Elasticity in Compression per ASTM C469: 3.10×10^6 psi (31.0x10³ MPa) at 28 days
 - j. Splitting Tensile Strength minimum per ASTM C496: 250 psi (1.7 MPa) at 1 day, 350 psi (2.4 MPa) at 7 days, 550 psi (3.8 MPa) at 28 days
 - k. Shrinkage per ASTM C-157 mod.: less than 0.18% at 28 days per ASTM C157, air cured
 - l. Low -slump, non-sagging
 - m. Color: Concrete gray.
 - n. Combustibility: Non-combustible, both before and after use.

PART 3 – EXECUTION

3.01 INSTALLATION OF OVERHEAD 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.
- a. Remove loose and deteriorated materials from surfaces to be patched using mechanical chipping or hydrodemolition to obtain an ICRI concrete surface profile CSP 5 or greater
 - b. .
2. Provide right-angle cuts at perimeter of repair by saw-cutting or chipping; do not feather edge.
3. Clean surfaces of bond-inhibiting materials including oil, dust and dirt, laitance and standing water.
- D. Mixing: Comply with manufacturer's printed instructions and the following.
1. Precondition components to temperature of 70 plus or minus 5 degrees F (21 plus or minus 2.5 degrees C) prior to mixing.
 2. Add 6 to 6.5 pints (2.8 to 3.1 L) of clean, potable water per 43-pound (20kg) 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 (7.2 degrees C) and rising.
 2. Do not apply in freezing conditions or during precipitation.
 3. Comply with applicable sections of ACI 305R and ACI 306R and applicable published product limitations guides for hot and cold weather application.
 4. Dampen substrate to fill concrete pores with water. Remove ponding, glistening, or surface water (saturated surface dry).
 5. Apply scrub coat of repair mortar into substrate to ensure intimate contact and establish bond.
 6. Apply mortar while scrub coat is wet. Consolidate and trowel to the desired finish, with a minimum thickness of 1/8 inch.
 - a. Alternatively, prepared concrete and reinforcing steel may be primed using Sto Bonding and Anti-Corrosion Agent.
 7. For application depths greater than the maximum, apply in successive lifts, per manufacturer's instructions.
 - a. Apply first lift and scratch surface to promote mechanical bond to subsequent lifts.
 - b. Apply second lift as soon as initial lift has hardened sufficiently to receive additional material. A scrub coat is not required between successive lifts.
 - c. If more than three lifts of material are required, allow at least 24 hours of curing between each third lift and the next application.
- 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.
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 which will not damage substrate.

END OF SECTION

ATTENTION

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