

GUIDE SPECIFICATION FOR MEADOW-PATCH® 20: FAST-SETTING, GENERAL PURPOSE CEMENTITIOUS REPAIR MORTAR

SECTION 03 01 30

MAINTENANCE OF CAST-IN-PLACE CONCRETE

Specifier Notes: This guide specification is written according to the Construction Specifications Institute (CSI) format. The section must be carefully reviewed and edited by the architect or engineer to meet the requirements of the project. Coordinate this section with other specification sections and the drawings.

Specifier Notes: W. R. MEADOWS® MEADOW-PATCH 20 is a one component, cementitious, fast setting restoration/repair mortar. This product has a light gray color and is designed for vertical, overhead and horizontal applications. This fast setting, low slump repair mortar may be troweled, shaped, molded and shaved before taking a final set. MEADOW-PATCH 20 is an excellent patching solution for difficult vertical and overhead applications without using expensive forming techniques.

MEADOW-PATCH 20 is easy to mix and apply. This fast-setting, low slump mortar is designed to minimize downtime. Because of its versatility, MEADOW-PATCH 20 can be used vertically, horizontally or overhead. Whether the installation is interior or exterior, MEADOW-PATCH 20 is an excellent choice for fast repairs above, below, or on grade. Typical applications include repairs to curb and gutters, precast concrete elements, tie-rod holes, concrete pipe, columns, beams or any other general purpose repair.

Specifier Notes: This Guide Specification does not purport to address any safety concerns or regulatory issues associated with its use. It is the responsibility of the user of this specification to understand and comply with all federal, local and state laws and standard operating procedures governing, but not limited to, safety, health and regulatory issues. It is the responsibility of the user of this specification to determine the applicable regulatory limitations and procedures prior to use.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Application of one-component, fast setting repair mortar to vertical, overhead, and horizontal surfaces by trowel application.

1.02 RELATED SECTIONS

Specifier Notes: Edit the list of related sections as required for the project. List other sections dealing with work directly related to this section.

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 03 40 00 - Precast Concrete.

1.03 REFERENCES

- A. International Concrete Restoration Institute (ICRI)
 - 1. ICRI Technical Guideline No. 310.1R-2008: Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion.
 - 2. ICRI Technical Guidelines No. 310.2-1997: Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.
- B. American Society for Testing and Materials (ASTM)

1. ASTM C109/C109M-02 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2" or [50-mm] Cube Specimens).
 2. ASTM C191-01a - Standard Test Method for Time of Setting of Hydraulic Cement by Vicat Needle.
 3. ASTM C881 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
- C. American Concrete Institute (ACI)
1. ACI 305-R89 - Standard on Hot Weather Concreting.
 2. ACI 306-R88 - Standard on Cold Weather Concreting.
 3. ACI 308 - Standard Specification for Curing Concrete.
 4. ACI 347-88 - Guide to Formwork for Concrete.
- 1.04 SUBMITTALS
- A. Comply with Section 01 33 00 - Submittal Procedures.
 - B. Submit manufacturer's product data and application instructions.
- 1.05 DELIVERY, STORAGE, AND HANDLING
- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
 - B. Store materials in a clean, dry area in accordance with manufacturer's instructions.
 - C. Protect materials during handling and application to prevent damage or contamination.
- 1.06 ENVIRONMENTAL REQUIREMENTS
- A. Do not apply below 35° F (1.7° C) or above 90° F (32° C) or when rain is imminent.
 - B. Protect from conditions that may cause early water loss: high winds, low humidity, high temperature and direct sunlight.
 - C. Protect from freezing for a minimum of 24 hours.
- 1.07 USAGE REQUIREMENTS
- A. Not designed for use a topping for concrete.
 - B. Not designed for re-sloping concrete.
 - C. Not designed for use an underlayment.
- 1.08 DESIGN REQUIREMENTS
- A. Extend existing control or constructions joints through the patching mortar.
 - B. Do not bridge moving cracks.
 - C. Follow manufacturer's recommendations with mixing requirements ensuring no addition of any type of admixtures or concrete modifiers.
 - D. Featheredging the repair will result in reduced durability and performance.
 - E. Ensure the length-to-width ratio of the patch does not exceed 2:1.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. W. R. MEADOWS, INC., PO Box 338, Hampshire, Illinois 60140-0338. (800) 342-5976. (847) 683-4500. Fax (847) 683-4544. Web Site: www.wrmeadows.com.

2.02 MATERIALS

- A. Performance-Based Specification:
1. Cementitious Repair Mortar: shall be a one-component, cementitious, fast-setting restoration/repair mortar and shall have the following properties as determined by laboratory testing:
 - a. Compressive Strength, ASTM C109 3,000 psi (20.7 MPa) @ 1 day
6,500 psi (44.8 MPa) @ 28 days
 - b. Set Time, ASTM C191 Initial: 8-12 minutes
Final: 15-20 minutes
- B. Proprietary-Based Specification:
1. MEADOW-PATCH 20 repair mortar by W. R. MEADOWS.

2.03 ACCESSORIES

- A. Concrete Curing Compound: 1100-CLEAR CURING COMPOUND or 1220-WHITE PIGMENTED CURING COMPOUND by W. R. MEADOWS.
- B. Acrylic Latex Bonding Agent: ACRY-LOK™ by W. R. MEADOWS.
- C. Evaporation Retarder: EVAPRE™ by W. R. MEADOWS.
- D. Epoxy Bonding Agent: REZI-WELD™ 1000 by W.R. MEADOWS.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to receive repair mortar. Notify engineer if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

3.02 SURFACE PREPARATION

- A. Reinforcing Steel:
1. Perform reinforcing steel preparation in accordance with the ICRI Technical Guideline No. 310.1R-2008.
 2. Completely expose all reinforcing steel, ensuring a minimum clearance of ¾" (19 mm) behind reinforcing steel.
 3. Remove loose scale and corrosion deposits and clean steel to white metal by abrasive blasting.
- B. Concrete Substrate:
1. Perform surface preparation in accordance with ICRI Technical Guideline No. 310.2-1997.
 2. Mechanically roughen or high pressure water-jet existing concrete substrate to a minimum concrete surface profile (CSP) of CSP-4.
 3. Ensure substrate is structurally sound and free of any contaminants, dirt, coatings, topical or penetrating sealers, paints, residue release agents, curing compounds or any surface or penetrating material that will adversely affect the bond of the mortar.
 4. Remove all unsound concrete and provide a profiled, pourous surface for bonding.

5. Sanding, grinding or wire-abrading or similar type of methods are not recommended surface preparation methods.
6. Pre-soak repair zone prior to application of the mortar to a saturated, surface dry (SSD) condition, free of standing water.
7. If water has puddled in low areas, vacuum or use oil-free compressed air to blow-off excessive water. Do not allow puddles in low areas to dry naturally, this will most likely allow the remaining patch area to become too dry to achieve proper bonding.
8. Prime substrate with a slurry coat of two parts repair mortar to one part acrylic bonding agent while the substrate is properly pre-dampened.
9. Allow slurry coat to become tacky but not tack-free (dry).
10. If the slurry coat becomes dry, pre-dampen following step 5 and reapply slurry coat following step 6.
11. For substrates that are difficult to bond to, or performing surface preparation produces as outlined in steps 1 through 7 is not possible, then the application of structural epoxy bonding agent conforming to ASTM C 881, Type IV, Grade 2, Class B & C may be substitute.
12. Follow manufacturer's instructions for application of the structural epoxy bonding agent.
13. The use of the structural epoxy bonding agent may be substituted for steps 1 through 7 for any time.

3.03 APPLICATION

A. Mixing

1. Mix complete bags using a mortar-type mixer.
2. Alternatively, for small repairs, mix in a clean vessel, using a variable-speed drill with a mixing paddle designed for mixing mortars (not liquids) at 400-600 rpm.
3. Pour 3/4 of the liquid component into the mixer.
4. Slowly add dry component while mixing.
5. Mix for 3-5 minutes or until homogeneous and lump-free.
6. Adjust mix consistency using the remaining 1/4 of container of liquid component.

B. Placement

1. Compact mortar well into properly prepared substrate prior to bulk placement.
2. Finish surface with a wood or steel trowel, or a sponge float.
3. Do not re-temper or over-work.
4. Ensure maximum thickness does not exceed 2" (5 cm).
5. Follow ACI 305-R89 "Standard on Hot Weathering", or ACI 306-R88 "Standard on Cold Weather Concreting", when applicable.

D. Curing

1. Cure mortar immediately following application in accordance with ACI 308.
2. Apply a water-based curing compound at the specified rate based on manufacturer's recommendation.

END OF SECTION