SECTION 03 01 30

MasterEmaco® S 467RS Structural Repair Mortar

Notes to specifiers:

Please update your Master Specifications to reflect the company and product name changes. The old product names are provided in parentheses following the new names in this Section for reference.

The purpose of this guide specification is to assist the specifier in developing a project specification for the use of master buidlers solutions products. this guide document has been prepared to be part of a complete project manual. it is not intended to be a “stand alone” document, and it is not intended to be copied directly into a project manual.

This guide specification will need to be carefully reviewed for APPROPRIATENESS for the given project and edited accordingly to comply with project-specific requirements.

1. GENERAL
	* + 1. SUMMARY
				1. Section Includes:

Application of one-component, full depth structural repair mortar with extended working time.

* + - 1. SUBMITTALS
				1. Comply with Section [01 33 00] [ \_\_ \_\_ \_\_ ].
				2. Product Data: Submit manufacturer's technical data sheets.
				3. LEED Submittals: Comply with requirements for each product to achieve points indicated in LEED Project Checklist provided by the architect/engineer.
				4. Submit list of project references as documented in this Specification under Quality Assurance Article. Include contact name and phone number of the person charged with oversight of each project.
				5. Quality Control Submittals:

Provide protection plan of surrounding areas and non-cementitious surfaces.

* + - 1. QUALITY ASSURANCE
				1. Comply with Section [01 40 00] [ \_\_ \_\_ \_\_ ].
				2. Qualifications:

Manufacturer Qualifications: Company with minimum 15 years of experience in manufacturing of specified products.

Manufacturer Qualifications: Company shall be ISO 9001:2015 Certified.

Applicator Qualifications: Company with minimum of 5 years’ experience in application of specified products on projects of similar size and scope and is acceptable to product manufacturer.

Successful completion of a minimum of 5 projects of similar size and complexity to specified Work.

* + - * 1. Field Sample:

Apply material in accordance with manufacturer’s written application instructions.

Manufacturer’s representative or designated representative will review technical aspects; surface preparation, repair, and workmanship.

Field sample will be the standard for judging workmanship on remainder of project.

Maintain field sample during construction for workmanship comparison.

Do not alter, move, or destroy field sample until work is completed and approved by architect/engineer.

Obtain architect/engineer written approval of field sample before start of material application, including approval of aesthetics, color, texture and appearance.

* + - 1. DELIVERY, STORAGE, AND HANDLING
				1. Comply with Section [01 60 00] [ \_\_ \_\_ \_\_ ].
				2. Comply with manufacturer’s ordering instructions and lead-time requirements to avoid construction delays.
				3. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
				4. Store tightly sealed materials off ground and away from moisture, direct sunlight, extreme heat, and freezing temperatures.
			2. PROJECT CONDITIONS
				1. Environmental Requirements:

Ensure that substrate surface and ambient air temperature are minimum of 50 degrees F (10 degrees C) and rising at application time and remain above 50 degrees F (10 degrees C) for at least 24 hours after application.

Ensure that frost or frozen surfaces are thawed and dry.

Do not apply material if snow, rain, fog, and mist are anticipated within 12 hours after application.

Allow surfaces to attain temperature and conditions specified before proceeding with mortar application.

1. PRODUCTS
	* + 1. MANUFACTURERs
				1. Subject to compliance with requirements, provide products from the following manufacturer:

Master Builders Solutions

889 Valley Park Drive

Shakopee, MN 55379 USA

Customer Service: 800-433-9517

Technical Service: 800-243-6739

Direct Phone: 952-496-6000

Website: www.master-builders-solutions.com/en-us

* + - * 1. Substitutions: Comply with Section [01 60 00] [ \_\_ \_\_ \_\_ ].
				2. Specifications and drawings are based on manufacturer's proprietary literature from Master Builders Solutions. Other manufacturers shall comply with minimum levels of material and detailing indicated in specifications or on drawings. Architect/engineer will be sole judge of appropriateness of substitutions.
			1. MATERIALS
				1. One-component, shrinkage-compensated, full depth structural repair mortar with extended working time.

Acceptable Product: MasterEmaco S 467RS by Master Builders Solutions.

* + - * 1. Performance Requirements: Provide material complying with the following requirements:

Working Time: 25 minutes.

Compressive Strength, ASTM C109, 2-inch (51-mm) cubes:

3 Hours: 3,000 psi (21 MPa).

1 Day: 5,500 psi (40 MPa).

7 Day: 7,500 psi (52 MPa).

28 Day: 8,500 psi (58 MPa).

Set Time, ASTM C191, 70 degrees F (22 degrees C):

Initial: 50 minutes.

Final: 80 minutes.

Freeze-Thaw Resistance, ASTM C666, Procedure A, at 300 cycles:

96 percent relative dynamic modulus.

Length Change, ASTM C157

28 Days Wet: less than +0.06%

28 Days Dry: less than -0.03%

Slant Shear Bond Strength, ASTM C882, Modified:

1 Day: 2,200 psi (15 MPa).

28 Days: 2,600 psi (18 MPa).

VOC Content:

0 lbs per gal (0 g/L), less water and exempt solvents.

1. EXECUTION
	* + 1. EXAMINATION
				1. Comply with Section [01 70 00] [ \_\_ \_\_ \_\_ ].
				2. Verify concrete substrate is structurally sound and fully cured (28 days).
			2. SURFACE PREPARATION
				1. Protection: Protect adjacent Work areas and finish surfaces from damage during repair mortar application.
				2. Prepare surfaces in accordance with manufacturer’s instructions.
				3. Concrete:

Ensure concrete is structurally sound and fully cured (28 days).

Saw cut perimeter of area being patched into square with minimum depth of 1/2 inch (13 mm).

Remove unsound concrete and roughen surface to minimum 1/4 inch (6 mm) profile amplitude.

Remove laitance, oil, grease, curing compounds, and other contaminants that could prevent adequate bond.

Saturate concrete substrate to saturated surface-dry (SSD), without standing water, before application.

* + - * 1. Reinforcing Steel:

Remove oxidation and scale from exposed reinforcing steel per ICRI Technical Guideline No. 03730 “Guide to Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion.”

To prevent future steel corrosion, coat prepared reinforcing steel with MasterProtect® P 8100AP epoxy primer (formerly Zincrich rebar primer.)

* + - 1. MIXING
				1. Mix materials in accordance with manufacturer’s instructions.
				2. Mix continuously at slow speed to avoid air entrainment.
				3. Mix for minimum of 3 minutes until fully homogeneous.
				4. Add aggregate extension, if required, in accordance with manufacturer’s instructions.
				5. Mix no more material than can be placed in 20 to 30 minutes at 70 degrees F (21 degrees C) and 50 percent relative humidity.
			2. application
				1. Place and cure mortar in accordance with manufacturer’s instructions.
			3. PROTECTION
				1. Protect repair mortar from damage during construction.

END OF SECTION

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