SECTION 03 01 30.61

MasterEmaco® T 1060EX 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 1-component, shrinkage-compensated, very-rapid-setting cement-based pre-extended mortar, designed for repairing horizontal concrete surfaces where high-early strength is required in applications from 1.5” (38mm) to full depth.

Delete sections below not relevant to this project; add others as required.

* + - * 1. Related Sections:

Section 03 30 00 – Cast-in-Place Concrete.

Section 03 41 00 – Precast Structural Concrete.

Section 04 20 00 – Unit Masonry.

* + - 1. SUBMITTALS
         1. Comply with Section [01 33 00] [ \_\_ \_\_ \_\_ ].
         2. Product Data: Submit manufacturer's technical data sheets and LEED product information for each product.
         3. Submit list of project references as documented in this Specification under Quality Assurance Article. Include contact name and phone number of person charged with oversight of each project.
         4. 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 9001:2000 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:

Install at Project site or pre-selected area of building an area for field sample, minimum 4 feet by 4 feet (1.2 m by 1.2 m), using specified repair mortar.

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 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.

Obtain Architect’s 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 40 degrees F (4 degrees C) and rising at application time and remain above 40 degrees F (4 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 will be sole judge of appropriateness of substitutions.
      1. MATERIALS
         1. One component, shrinkage-compensated, very-rapid-setting cement-based pre-extended mortar, designed for repairing horizontal concrete surfaces where high-early strength is required in applications from 1.5” (38mm) to full depth.

Acceptable Product: MasterEmaco T 1060EX by Master Builders Solutions.

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

Compliance: ASTM C928.

Fresh Wet Density, ASTM C138:

148 pounds per cubic foot (2,370 kg/m3).

Set Time, ASTM C191, 72 degrees F (22 degrees C):

Initial: 16 minutes.

Final: 28 minutes.

Working Time: 8 minutes.

Compressive Strength, ASTM C39, 3-inch by 6-inch (76-mm by 152-mm) cylinders:

28 Days: 10,000 psi (69 MPa).

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

1 Hour: 1,200 psi (8 MPa).

1 Day: 6,000 psi (41 MPa).

28 Days: 12,000 psi (82 MPa).

Flexural Strength, ASTM C348:

1 Day: 715 psi (5 MPa).

28 Days: 1,060 psi (7 MPa).

Modulus of Elasticity, ASTM C469:

6.07 x 106 psi

Splitting Tensile Strength, ASTM C496:

1 Day: 485 psi (3 MPa).

28 Days: 555 psi (4 MPa).

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

92.6 percent relative dynamic modulus.

Scaling Resistance, ASTM C672, at 25 cycles:

Zero rating; no scaling.

Slant Shear Bond Strength, ASTM C882, Modified:

1 Day: 2,500 psi (17 MPa).

28 Days: 2,900 psi (20 MPa).

Length Change, ASTM C928:

Drying Shrinkage: Minus 0.04 percent.

Wetting Expansion: Plus 0.02 percent.

Rapid Chloride Permeability, ASTM C1202:

362 Coulombs.

Coefficient of Thermal Expansion, CRD C39:

7.3 x 10-6 in/in/degree F (13.4 x 10-6 cm/cm/degree C).

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 inch (25 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 8100 AP (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. Mix no more material than can be placed in 15 minutes at 70 degrees F (21 degrees C).
      2. application
         1. Place and cure mortar in accordance with manufacturer’s instructions.
         2. Placement:

Dampen surface with clean water to obtain saturated surface-dry (SSD) with no standing water.

Ensure proper consolidation of mortar and compaction around reinforcing steel.

Apply patching compound in minimum lifts of 1.5 inches (38 mm).

Finish completed repair, as required, taking care not to overwork surface.

Allow maximum of 15 minutes to mix, place, and finish mortar at 70 degrees F (21 degrees C).

Trowel to smooth finish after initial set.

select paragraph above for smooth finish or below rough finish.

Trowel to rough finish after initial set.

* + - * 1. Curing:

Cure mortar immediately after finishing.

Use water-based curing compound that complies with ASTM C309.

* + - 1. PROTECTION
         1. Protect repair mortar from damage during construction.

END OF SECTION

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