ChemMasters

Installation Guidelines
Durapatch MMA is a three component, fast setting methyl methacrylate repair mortar. It is comprised of MMA resin, the catalyst and precisely blended and measured aggregate.

1.0 General

1.1 Scope
This specification covers the performance characteristics and application procedures for providing a fast setting methyl methacrylate repair mortar for interior or exterior horizontal concrete surfaces in industrial, commercial and warehousing operations.

1.2 Material Description
The repair mortar shall be a three-component, fast setting methyl methacrylate repair mortar providing superior compressive, tensile and flexural strengths that can withstand high levels of abrasion and impact loading, providing optimum flexibility to withstand vigorous thermal cycling and provide excellent resistance to acids and alkalies.

1.3 Typical Applications
A. Interior or exterior, horizontal concrete surfaces
B. Industrial, commercial and warehousing applications
C. Repairs from featheredge to 1 inch/2.5 cm
D. Vehicular manufacturing and assembly plants, loading docks and ramps, high traffic aisleways
E. Chemical and food processing plants, canneries, breweries, wineries, laboratories, containment dikes
F. Airline hangars, repair bays, taxi and runways, bridge decks and ramps, highways
G. Tipping floors and driveways subjected to heavy, pneumatic tire and steel-wheeled equipment

1.4 Limitations
A. Durapatch MMA is not designed for application in direct sunlight. The topping may blister or pinhole due to out gassing of air in the concrete and high substrate temperatures.
B. Durapatch MMA is exothermic generating a large amount of heat when initially mixed. A large mass of material can ignite. Immediately after mixing pour all of the material onto the floor to dissipate the heat.

C. It is important to use all of the resin and measured aggregate provided in each unit to obtain proper mix ratio and consistency
D. Durapatch MMA is extremely fast setting. Substrate must be completely prepared and ready before material is mixed.
E. Good ventilation of the repair area is strongly recommended to aid in the thorough cure of Durapatch MMA.

1.5 Quality Assurance
The repair contractor shall have experience and proficiency specific to the repair type and shall be approved by the engineer and the material supplier. The material supplier shall provide job service as required to assure proper handling and installation of materials. The field representative shall instruct as needed to assure that handling, mixing, placing and finishing of materials are in accordance with specifications.

1.6 Delivery, Storage and Handling
The product shall be delivered in the original, unopened containers. It shall be labeled with the manufacturer's name, product name and lot number. Materials should be stored at the job site under dry conditions and at a temperature of 40°F (4°C) to 90°F (32°C).

1.7 Environmental Requirements
All materials used for the repair work shall be VOC compliant. The manufacturer shall supply the appropriate material safety data sheets upon request.

1.8 Site Conditions
Job conditions shall be maintained at standards that allow underlayment placement within temperature and cleanliness requirements. Unusual conditions as uncovered during the course of work shall be brought to the engineer's attention for analysis and disposition. These conditions include but are not limited to poor quality base concrete, random cracks and deep oil penetration.

2.0 Materials

2.1 Approved Materials and Manufacturers

2.1.1 Product Standard
DuraPatch MMA, as manufactured by ChemMasters, 300 Edwards Street, Madison, Ohio, 44057-3112, 1-800-486-7866, is considered to conform to the requirements of this specification shall be the repair mortar. DuraPatch MMA is a three-component, fast setting methyl methacrylate repair mortar. The product is recommended for interior and exterior industrial, commercial and manufacturing facility floors.

2.1.2 Suggested System Components
A. Optional Primer: Duraguard 400,methyl methacrylate primer with catalyst
B. Repair Mortar: Durapatch MMA, methyl methacrylate mortar with catalyst

2.1.3 Substitutions
No submittals for substitutions will be accepted after the bid date. All submittals must be made in writing to the engineer with supporting technical data sheets and test data showing complete equivalent performance.

2.2 Packaging/Coverage/Estimating

2.2.1 Packaging
A. Each unit of Durapatch MMA contains 1.25 U.S.gallons/4.7 Liters of MMA resin packed in a 5 gal./18.9 L pail for mixing
B. A 50 pound/22.7 Kg bag of aggregate and a 1 gallon/3.8 liter can of catalyst. Units are shipped 18 per pallet shrink- wrapped.

2.2.2 Coverage/Estimating
A. OPTIONAL PRIMER: Duraguard 400 @8 mils, 200 Ft.2 /gal 5 M 2 /L
B. Topping: Durapatch MMA @1/4"/0.32 cm, 20 Ft.2 /unit 1.8 M 2 /unit
C. Duraguard 400 Series Catalyst per unit based on substrate temperature
1. 40 °F 16 oz 4 °C 47 ml
2. 50 °F 12 oz 10 °C 35 ml
3. 70 °F7 o z21 °C 20 ml
4. 90 °F4 o z33 °C 12 ml
D. OPTIONAL TOPCOAT: Duraguard 420 @15 mils, 100 Ft.2 /gal 2.5 M 2 /L
Note: For applications below 40 ° F/4 °C, contact ChemMasters for proper accelerator blending before shipping. See primer data sheet for specific amount of catalyst required.

2.2.3 Storage:
A. Store factory sealed containers of unmixed material at 50°-75° F/10°-24° C temperatures away from direct sunlight and sources of heat. Temperatures in excess of 75° F/24 °C cause premature aging of the material. Shelf life of properly stored material is one year from date of manufacture.

2.3 Engineering Properties
The following engineering properties shall be typical of material performance when tested under laboratory conditions at 72°F (22.2°C).

2.3.1 Plastic Properties

2.3.1.1 Working Time: Gel Time @70 ° F/21 °C 1 hour

2.3.1.2 Tensile Strength (ASTM C 307): 7 days 1500 psi 10 MPa

2.3.2 Hardened Properties:

2.3.2.1 Compressive Strength (ASTM C 109): 7 days 5000 psi 34 MPa

2.3.2.2 Flexural Strength (ASTM C 348): 7 days 2200 psi 15 MPa

2.3.2.3 Modulus of Elasticity (ASTM C 580): 7 days 1.3 x10 5

2.4 Accessory Materials as manufactured by ChemMasters, 300 Edwards Street, Madison, Ohio, 44057-3112, 1-800-486-7866, is considered to conform to the requirements of this specification.

3.0 Execution

3.1 References
USDA approved for incidental contact in federally inspected meat, fish and poultry plants. Refer to ChemMasters MSDS and Technical Data Sheets.

3.2 SURFACE PREPARATION:
This is the most critical step in any coating application. All concrete must be a minimum of 28 days old and mechanically or chemically profiled. For complete surface assessment and preparation guidelines, contact ChemMasters technical service staff.

3.3 Optional Priming:
A. Prime prepared substrates with Duraguard 400 prior to placing repair mortar.
B. Follow mixing and application directions on Duraguard 400 data sheet. Allow primed substrate to dry before beginning mixing of Durapatch MMA

3.4 Mixing:
A. Based on surface temperature, add the appropriate amount of catalyst for each gallon/liter of resin and mix for 1 minute using a heavy duty, 1/2"or larger, mechanical drill equipped with a jiffler type mixing prop.
B. Take care not to incorporate excess air into the mix. Blend until the catalyst begins to dissolve.
C. Add all of the pre-measured aggregate slowly while continuing to mix the mortar.
D. Blend until all aggregate is coated and thoroughly wet out, another 1-2 minutes. Mixed material will be a trowelable consistency.

3.5 Application:

A. Use a mason's trowel or steel finishing trowel to place and compact mortar into voids to be filled.
B. Larger areas can be topped by spreading with a short pronged rake.
C. Caution must be taken due to the rapid setting time of material. After placing material, roll surface with a 3/8" nap, solvent resistant roller to smooth trowel marks.
D. For repairs exceeding 1"thickness; contact ChemMasters for technical guidelines to extend with approved aggregate.

3.6. CLEAN-UP
Clean tools and equipment before material dries and sets with xylene, xylol or acetone.