



THE EUCLID CHEMICAL COMPANY

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EUCO-SPEED MP

MAGNESIUM PHOSPHATE PATCHING MORTAR

EUCO-SPEED MP is a rapid setting, very rapid hardening magnesium phosphate material for patching and repair of concrete and masonry surfaces. EUCO-SPEED MP requires only the addition of water and can be installed with standard tools, equipment and procedures. It bonds tenaciously to properly prepared concrete and provides a durable patch which is resistant to freeze/thaw cycling and deicing salts. For temperatures above 85°F (29°C), EUCO-SPEED MP Hot Weather should be used. For large placements use EUCO-SPEED MP HOT WEATHER extended with pea gravel.

PRIMARY APPLICATIONS

- Bridge decks
- Ramps
- Parking garages
- Floors
- Walls (formed)
- Pavements
- Marine structures
- Joint repairs

FEATURES/BENEFITS

- Rapid setting for quick repairs in less than one hour
- Extremely high early strength for quick turnaround time
- Easy to use one part system
- Durable under freeze/thaw cycling and salt exposure
- Suitable for both interior and exterior applications
- Versatility in thickness from 1/2" (13 mm) to 8" (203 mm) when extended with aggregate
- May be placed and cured at 0°F (-17°C)

SPECIFICATIONS/COMPLIANCES

- ASTM C-928, Standard Specifications for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repair.

PACKAGING/YIELD

One 50 lb (22.7 kg) bag or pail of EUCO-SPEED MP mixed with 0.45 gal (1.7 liter) of water will yield approximately 0.42 ft³ (0.012 m³) of mortar. **EUCO-SPEED MP must be extended with up to 30 lb (13.6 kg) of 3/8" (9.5 mm) pea gravel* per bag for areas deeper than 1" (25.4 mm).** Yield will increase to approximately 0.57 ft³ (0.016 m³) per bag.

* Use only dust free, properly graded hard aggregate. **Never extend EUCO-SPEED MP with limestone or aggregate containing limestone.**

TECHNICAL INFORMATION

Typical Engineering Data *

The following results were developed under laboratory conditions.

Compressive Strength

ASTM C-109, 2" (50 mm) cubes @ 72°F (22°C)		
2 hours	3,500 psi	(24 MPa)
3 hours	5,000 psi	(35 MPa)
6 hours	5,500 psi	(38 MPa)
1 day	6,000 psi	(41 MPa)
3 days	6,500 psi	(45 MPa)
7 days	7,000 psi	(48 MPa)
28 days	7,500 psi	(52 MPa)

Bond Strength, ASTM C-882 modified

3 hours	1,000 psi	(7 MPa)
1 day	1,300 psi	(9 MPa)
3 days	1,500 psi	(10 MPa)
7 days	1,600 psi	(11 MPa)
28 days	1,700 psi	(12 MPa)

Flexural Strength, ASTM C-78

4 hours	400 psi	(2.8 MPa)
3 days	500 psi	(3.4 MPa)

Will accept wheeled traffic in 1-2 hours @ 70°F (21°C)

Setting Time (Gillmore Needles):

Initial:	8-12 minutes
Final:	12-20 minutes

Freeze/Thaw Resistance ASTM C-666 "A" Relative Dynamic Modulus at 300 cycles: 93%

* All testing was conducted on neat material under controlled laboratory conditions. Do not expect similar compressive strength results using cylinder type molds. Also, strengths will be affected by the amount and type of aggregate added to extend EUCO-SPEED MP.

COVERAGE

One unit of EUCO-SPEED MP will cover approximately 10 ft² (0.93 m²) when placed at an average depth of 1/2" (13 mm). When one unit of material is extended with 30 lb (13.6 kg) of 3/8" (9.5 mm) pea gravel, the mixed material will cover 13.7 ft² (1.3 m²) when placed at an average depth of 1/2" (13 mm).

Shelf Life: 1 year in original, unopened package.

Appearance-EUCO-SPEED MP is a free flowing powder as packaged. After mixing and placing, the color may initially appear slightly darker than the surrounding concrete. While this color will lighten up substantially as the concrete cures and dries out, the repair may always appear somewhat darker than the surrounding concrete.

This product is designed to be finished with a rough float or broom appearance. A steel trowel finish may be applied, but timing of the final trowel is critical and the contractor may have difficulty achieving a smooth finish over a large area.

DIRECTIONS FOR USE

Surface Preparation-The concrete must be clean and rough. All oil, dirt, debris, paint and unsound concrete must be removed. The surface must be prepared mechanically using a scabber, bushhammer, shotblast or scarifier which will give a surface profile of a minimum 1/8" (3 mm) and expose the coarse aggregate of the concrete. EUCO-SPEED MP requires a minimum depth of 1/2" (13 mm).

The final step in cleaning should be the complete removal of all residue with a vacuum cleaner or pressure washing. NOTE: EUCO-SPEED MP should not be placed over carbonated concrete. All carbonation must be removed to ensure a good bond.

Joints and Edges-Edges should be sawcut to 1/4" (6 mm) deeper than the patch thickness and should be notched at the edge of the repair to provide a locked in, reinforced edge. Moving joints as in the case of expansion joints should be brought up through the repair by sawcutting or with the use of a divider strip.

Exposed Reinforcement Steel-Exposed rebar may be treated with an anti-corrosion coating such as CORR-BOND or EUCO #452LV epoxy. Remove all loose rust and scaling, preferably by sandblasting to white metal prior to coating the rebar.

Bonding-EUCO-SPEED MP requires no bond coat.

Mixing-Small quantities may be mixed with a drill and "jiffy" mixer. Use a paddle type mortar

mixer for large jobs. Add the appropriate amount of water for the batch size and then add the EUCO-SPEED MP. **The amount of water to be mixed with EUCO-SPEED MP is critical. Add between 0.4-0.5 gal (1.5-1.9 liter) of water per 50 lb (22.7 kg) bag.** Mix material for about 2 minutes. The mixed material should be quickly transported to the repair area and placed immediately. For patches greater than 1" (25 mm) in depth, pea gravel must be used. Add the pea gravel [up to 30 lb (13.6 kg)] after the neat material has mixed, then mix for an additional 1 minute. In hot weather, 85°F+ (29°C+) the use of EUCO-SPEED MP HOT WEATHER is recommended. For large placements regardless of the temperature, EUCO-SPEED MP HOT WEATHER is recommended along with the use of cold water to extend setting time.

Placement-Discharge material from the mixer and place. Spread with a trowel, screed, come-a-long or square tipped shovel to a thickness that matches the surrounding concrete.

EUCO-SPEED MP sets quickly, the time available for placement and finishing will be very limited.

Finishing-Finish EUCO-SPEED MP to the desired float or broom finish texture. Do not add additional water to the surface during the finishing operation.

Curing and Sealing-EUCO-SPEED MP is self-curing. Never wet cure this product.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS / LIMITATIONS

- The curing of EUCO-SPEED MP is a chemical reaction that gives off heat. Mixed and placed material must be maintained at or below 140°F (60°C) if satisfactory results are to be expected.
- Do not add sand or cement.
- Do not place EUCO-SPEED MP on an ice covered substrate.
- When mixing in an enclosed area, provide adequate ventilation.
- Do not featheredge.
- For patches deeper than 1" (25 mm), pea gravel must be used to extend the product.
- No heavy traffic until the product has reached a minimum of 2000 psi (13.8 MPa).
- Do not wet cure.
- Field testing of EUCO-SPEED MP should only be performed after consulting The Euclid Chemical technical department.



Euco-Speed MP-8.05

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