

EM-110

High-Strength Epoxy Mortar

Description

Advanced FRP Systems' **EM-110** is a epoxy mortar is a zero VOC, 100% solids aggregate reinforced, high strength epoxy mortar. This material was engineered to provide strong, chemically resistant patches in badly corroded concrete and other applications requiring a high strength polymer cement. **EM-110** provides outstanding abrasion and impact resistance and the filler loading can be adjusted by the applicator to customize the viscosity and flow characteristics to suit the application. **EM-110** can hang up to ½ inch thick on vertical and overhead applications and it can be poured up to 6 ft thick in a single pour to fill holes and voids in concrete or around buried pipe.

Product Advantages

- Zero VOC Coating system
- Outstanding adhesion to concrete, steel, masonry, wood and composites
- Ships DOT Non-Corrosive
- Aggregate loading can be varied to achieve desired consistency
- Moisture Tolerant epoxy
- Cures at temperatures as low as 45 °F

Suggested Application

Long-term, corrosion-resistant coating system suitable for marine applications, power generation, refineries, chemical plants, wastewater treatment and other industrial facilities. An excellent topcoat for composite repairs suitable for any atmospheric corrosion conditions. Ask Advanced FRP for specific chemical resistances.

Performance Data

	Test Method	Results
Adhesion to Concrete	ASTM D4541	>750 psi
Adhesion to Steel	ASTM D4541	>3000 psi
Heat Distortion Temperature	ASTM D648	225 °F
Tensile Strength	ASTM D638	7,900 psi
Tensile Modulus	ASTM D638	543 ksi
Flexural Strength	ASTM D790	10,100 psi
Flexural Modulus	ASTM D790	432 ksi
Compressive Strength	ASTM D695	19,400 psi

Product Characteristics

Finish: High Gloss

Color: Red

Volume Solids: 100%

Mix Ratio (by wt.): 1.2:1

Mix Ratio (Sand:Actives): 1.5 - 2:1

Density: 1.28 – 2.08 g/mL

Approx. Coverage: 40 sqft/gallon at 80 mils

Maximum Film Build: Unlimited

Working Time: 60 minutes at 75 °F

Application Temperatures: 45 - 105 °F

EM-110 is sold in 1/2, 1, 2, and 4 gallon units. Other unit sizes may be available.

Sold FOB Weymouth, MA

Cure Schedule

Cures for Application	50 °F (10 °C)	75 °F (24 °C)	100 °F (38 °C)
Dry to Touch	14 hours	8 hours	4 hours
Dry Hard	36 hours	24 hours	12 hours
Overcoat Window	14 - 168 hours	8 - 120 hours	4 - 72 hours
Cures for Service	50 °F (10 °C)	75 °F (24 °C)	100 °F (38 °C)
Atmospheric	36 hours	24 hours	12 hours
Water Immersion	48 hours	36 hours	24 hours
Full Chemical Resistance	168 hours	120 hours	72 hours

Contact Advanced FRP Systems for elevated temperature post-cure information. Elevated temperature cures will increase chemical resistance and reduce return to service time.

Application Information

All Advanced FRP Systems products should be installed by a certified applicator or with direct oversight by Advanced FRP Systems, Inc. This data sheet provides general application guidelines for EM-110.

Contact Advanced FRP Systems for more information if your project has detailed coating specifications.

Ensure air and substrate temperatures are between 45-105 °F and relative humidity is below 95%. Follow surface preparation guidelines below prior to coating.

Pour all of Part A – Hardener into Part B – Base and mix with low speed power agitator for 2-3 minutes. Using a paint stick or spatula, thoroughly scrape sides and bottom of unit. Mix with power mixer for an additional 2 minutes.

Add Part C (sand/aggregate) to the mixed actives and mix for an additional 2 minutes or until material is a uniform consistency. A self-leveling mortar can be achieved by adding approximately 1.5 parts sand/aggregate per 1 part actives by weight. To achieve a heavy paste for vertical and overhead applications, add approximately 2 parts sand/aggregate per 1 part actives by weight. The ratio of aggregate to actives can be adjusted by applicator to reach desired consistency.

EM-110 has the consistency of a concrete mortar and should be applied via hock and trowel. For flooring applications it can be spread with a heavy squeegee and allowed to self-level.

EM-110 can be applied as needed to rebuild damaged concrete/steel and protect the substrate. It will hang up to ½ inch on vertical or overhead applications and can be poured up to 6ft in depth with a single pour for concrete rebuild applications.

After the coating is cured, careful visual inspection should be performed to ensure the entire substrate was adequately coated. **EM-110** can be repaired or overcoated with any Advanced FRP products with no surface preparation as long as it is within the published overcoat windows.

Surface Preparation

Steel (Immersion Service): Remove all oil and grease from surface with an SSPC-SP 1 Solvent Wipe prior to blasting. Abrasive Blast to an SSPC-SP 10 Near white metal blast with a sharp angular profile of 2 – 3 mils (50 – 75 microns).

Steel (Atmospheric Corrosion): Remove all oil and grease from surface with an SSPC-SP 1 Solvent Wipe. Minimum surface preparation of SSPC-SP 2 Hand Tool Cleaning must be performed. For enhanced performance, an SSPC-SP 6 Commercial Blast Cleaning with an angular surface profile of 1.5+ mils should be used.

Concrete (Immersion/Secondary Containment): Refer to SSPC-SP 13/NACE No. 6, Section 4.3.1 or ICRI No. 310.2, CSP 1-3 for concrete preparation guidelines. Surface should be thoroughly cleaned and dry. Concrete and mortar must be cured at least 28



days @ 75 °F. Surface must be free of laitance, concrete dust, dirt, form release, curing aids and other foreign material. **Advanced FRP Sealer 200** should be applied prior to coating at 3-5 mils to increase adhesion and reduce outgassing.

Concrete (Atmospheric Corrosion): Refer to SSPC-SP 13/NACE No. 6, Section 4.3.1 or ICRI No. 310.2, CSP 1-3 for concrete preparation guidelines. **Advanced FRP Sealer 200** is not required but recommended for improved adhesion and aesthetics.

Previously Coated Surfaces: Consult with Advanced FRP to ensure previous coating is compatible. If compatible and previous coating is in good condition, remove all loose coating and foreign materials. Brush blast or grind all glossy areas to a uniform dull finish. Remove dust, oil and debris with SSPC-SP 1 Solvent Wipe prior to coating.

Storage and Shelf Life

EM-110 must be stored between 45 – 110 °F, out of direct sunlight. If stored in these conditions, the product will have a 24-month shelf life.

Safety Precautions

Please consult up-to-date Safety Data Sheets (SDS's) prior to use. An SDS should be available on site whenever Advanced FRP products are being used.

Warranty Information

Advanced FRP Systems, Inc. warrants that our products are free of manufacturing defects in accordance with applicable Advanced FRP quality control parameters. Liability for products proven defective, if any, is limited to replacement of defective product or refund of purchase price as determined by Advanced FRP Systems. Additional warranties and protection are available. Contact Advanced FRP for more information.

Disclaimer

The information and recommendations set forth upon this data sheet are based on years of laboratory and field analysis. This information is intended to be used as guidance only as many factors affect the performance of polymeric systems. Actual exposure conditions are the best test of suitability and Advanced FRP Systems will generally provide complimentary samples for field testing.

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