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Technical Datasheet

MORTAR-40 CI
One-component, polymer-modified, corrosion inhibitor enhanced structural repair mortar

CSI Div. 03

03 00 00 Concrete

LEED Points

MR Credit 5.1, Regional Materials.........................Up to 2 Points
IEQ Credit 4.2, Low-Emitting Materials Paints and Coatings...1 Point
Using this AQUAFIN product can help contribute to LEED certification of projects in the categories shown above.

Product Description:

MORTAR-40 CI is a one-component, polymer modified, shrinkage compensated, high early strength, self consolidating, cementitious repair mortar that can be troweled, sprayed or used in a form and pour application. A unique formulating design allows for application to be completed in depths from 1½″ (40 mm) vertically and up to 4″ (100 mm) horizontally (neat). Additionally, MORTAR-40 CI is enhanced with a migrating corrosion inhibitor which helps protect localized and adjacent reinforcing steel.

Typical Applications:

• Interior and exterior applications
• Hand applied repairs to spalled concrete
• Restoration work to new and existing structures
• Water and waste water treatment plants
• Bridges, highways, ramps, decks, tunnels, industrial floors, etc.

Advantages:

• Easy to use, mixes with water only.
• Extended pot life (application time 30 minutes)
• VOC compliant (solvent free).
• NSF/ANSI Standard 61 approved for potable water
• Enhanced with a migrating corrosion inhibitor to help protect localized and adjacent reinforcing steel.
• Excellent workability.
• Can be formed and pumped/poured on vertical and overhead applications.
• Can be applied by trowel, form and pour/pump or spray.

Substrate Preparation:

• Concrete surfaces must be structurally sound, free of any loose or deteriorated concrete, dirt, dust, grease, oil, sealers, curing compounds and all other bond-inhibiting materials.
• Mechanically prepare surfaces to achieve a surface profile equal to CSP 5-7 as per ICRI Guideline No. 310.2R-13, Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair.
• Properly clean profiled area by water-blasting. All surfaces must be saturated surface dry (SSD) but with no standing water, immediately prior to application.
• Repair areas must have saw cut straight edges with a minimum 3/8″ (10 mm) depth as per ICRI Guideline 310.1R – 2008

Physical and Technical Data	
Aggregate State:	Powder
Color:	Concrete gray
Bulk Density:	~105 lbs/ft³ (~1.7 kg/dm³)
VOC:	0 g/L
Compressive Strength: ASTM C-109	24 hrs.: 3000 psi (20.7MPa) 7 days: 4500 psi (31 MPa) 28 days: 5500 psi (38 MPa)
Adhesion: ASTM C-321	28 days: >220 psi (>1.5 MPa)
Shrinkage: ASTM C-596	28 days: -0.01%
Application time:	~30 minutes
Potable water certified:	NSF/ANSI 61: www.wqa.org

All data are average values obtained under laboratory conditions. In practical use temperature, humidity and absorbance of the substrate may influence the above given values.

Yield:	• Neat: ~0.42 ft³ (0.012 m³) or 10 ft³ (0.9 m²) @ ½″ (12.7 mm) thickness • Extended: With 3/8″ pea gravel, 32lbs. (14.5 kg) max. per 50 lb (22.7 kg) bag - ~0.62 ft³ (0.018 m³)
Coverage:	~24ft² at ¼″ thickness per 50lb bag

Priming:

• All exposed steel reinforcements must be cleaned to a white metal finish and primed with 2 coats (20 mils per coat) of Aquafin's REBAR PRIMER/BOND-CI anti-corrosion coating.
• Concrete should be primed with a spray or brush coat of REBAR PRIMER/BOND-CI. Alternately, a Saturated Surface Dry (SSD) concrete substrate can be primed with scrub coat of MORTAR-40 CI (Do not allow scrub coat to dry).
• For form and pump procedures properly SSD the concrete substrate in lieu of priming.

Mixing:

Measure between 0.9 and 1.2 gallons (3.4 to 4.5 L) of clean potable water into a suitable mixing container. Gradually add 50 lbs. (22.7 kg) of MORTAR-40 CI powder to the water while mixing with a low speed, ½″ (12 mm) drill (500 - 650 RPM) equipped with a low shear mixing paddle. Mix until lump free and uniform consistency. Do not over water.
Note: Do not mix longer than 4 minutes.

Application:

Only proceed with application when the temperatures remain between 40°F and 90°F (4°C and 32°C) and protect from freezing for 24 hours after application. For temperatures above 85°F (29°C), follow ACI hot-

MORTAR-40 CI

weather application guidelines to ensure a successful installation.
- Minimum layer thickness is ¼" (6mm).
- Trowel, spray or form and pump/pour MORTAR-40 CI at maximum layer thickness of 1½" (40 mm) for vertical and up to 4" thick for horizontal surfaces (neat).
- A second layer may be applied as soon as the first layer has sufficiently hardened. Leave surface of first layer rough, to provide good mechanical bond for second layer.
- If stand-alone: Finish final layer with steel trowel or sponge float. MORTAR-40 CI can be screeded or shaped to a reasonably smooth finish.
- If top-coated: (i.e. AQUAFIN-1K, -2K/M, etc.): Leave MORTAR-40 CI surface rough to provide good mechanical bond for subsequent coating.
- Discard material if it has begun to set prior to placing. DO NOT RE-TEMPER.

MORTAR-40 CI Concrete:
MORTAR-40 CI can be placed in applications exceeding 4" without the need for aggregate extension if matting/rebar cage configurations meet ASTM, ACI, and ICRI Guidelines. When steel reinforcement is not present, aggregate is always required. Add washed 3/8" coarse aggregate (pea gravel) at an addition rate of 25 lbs. to a maximum 32 lbs. aggregate per bag of MORTAR-40 CI. Water may be varied to achieve desired consistency. Do not over water.

	Minimum	Maximum in one lift
Neat	¼" (6 mm)	4" (100 mm)
Extended	1" (25 mm)	8" (200 mm)

Note: Physical properties of MORTAR-40 CI may change when extended with coarse aggregate.

Curing:
Begin curing as soon as the patch has set by keeping surface moist as per ACI recommendations for portland cement concrete, using burlap, polethylene or a fine mist of water. If this is not practicable, damp cure for six hours, then coat with an approved water based curing compound. However, curing compound may adversely affect following lifts of mortar, leveling mortar or protective coatings.

Packaging:
50 lb. (22.7 kg) bags

Storage and Shelf Life:
12 months when stored dry in the original, unopened packaging.

Clean up:
Before material hardens, thoroughly clean tools with water after use.

Note:
Installer is responsible for proper product application. Site visits by Aquafin personnel or representatives are solely for the purpose of making technical recommendations, not for providing supervision or quality control.

Safety:
Refer to SDS. This product contains portland cement and sand (crystalline silica) and is highly alkaline (irritant) in contact with water. Avoid breathing dust. May cause delayed lung injury (silicosis). Use rubber gloves and goggles during mixing and application. Protect skin and eyes. After contact with skin, wash with plenty of water. In case of eye contact, rinse immediately with plenty of cool water and seek medical advice. **KEEP OUT OF REACH OF CHILDREN.**

LIMITED WARRANTY: AQUAFIN, INC. warrants this product for a period of one year from the date of installation to be manufactured free of defects and to be consistent with its technical properties as stated in our current Technical Data Sheet. This product must be used as directed and within its stated shelf life. AQUAFIN INC. will replace or at our discretion refund the purchase price of any product, excluding cost of labor, which is proven to be defective. Our product recommendations are based on industry standards and testing procedures. It is the buyer's obligation to test the suitability of the product for an intended use prior to using it. We assume no warranties written, expressed or implied as to any specific methods of application or use of the product. AQUAFIN INC. MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. AQUAFIN, INC. shall not be liable for damages of any sort including remote or consequential damages, down time, or delay. Any claim for a defectiveproduct must be filed within 30 days of discovery of a problem, and must be submitted with written proof of purchase.

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Page 2 of 2
(9/27/22 AC,EK)