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AQUAFIN

Technical Datasheet

MORTAR-CA

Corrosion Resistant Repairing & Lining Mortar

CSI Div. 03
03 01 30 Maintenance of Cast-in-Place 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-CA is a factory blended, cementitious, one-component, surface lining and waterproof repair and resurfacing mortar. It consists of calcium aluminate cement, well-graded, acid resistant, siliceous aggregates and special chemicals of an inorganic, hydrophobic (water repellent) nature which resist strong hydrostatic pressure (positive and negative side pressure).

MORTAR-CA is a special formulation providing structural integrity and protecting concrete, masonry and brick substrates against biogenic corrosion in strong hydrogen sulfide gas (H_2S) environments.
The absence of fibers in MORTAR-CA guarantees it will prevent water infiltration or exfiltration in sewer manholes or tank structures at minimum thickness of 3/8" (10 mm).

Typical Applications:
- Horizonal and vertical applications to concrete, masonry and brick by troweling or low pressure spraying (wet guniting).

Especially suited for the rehabilitation of:
- Sewer Manholes
- Sewage treatment tanks
- Sewer lift stations
- Large diameter trunk lines

Advantages:
- Highly corrosion resistant
- Resists strong hydrostatic pressure - prevents infiltraton and/or exfiltration - no need for vacuum testing in manholes
- Resists abrasion and mechanical wear.
- Forms a protective membrane barrier with no pinholes
- Easy to use - needs only to be mixed with water
- Applied to the positive or negative water pressure side of a structure
- Applied to damp substrate
- Non flammable
- No odor - No Fumes - Environmentally friendly

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, Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion
- 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-weather application guidelines to ensure a successful installation.

Technical Properties:	
Aggregate State: Powder	Color: Concrete Gray
Bulk Density:	~130 lb/ft³ (~2.1 kg/dm³)
Compressive Strength: ASTM C-109	28 Days: >6000 psi (>41 MPa)
Flexural Strength: ASTM C-383	28 Days: >1000 psi (>7 MPa)
Bond Strength: ASTM C-321	28 Days: >220 psi (>1.5 MPa)
Shrinkage: ASTM C-596	28 Days: 0.01%
Water Permeablity: At 1/2" (12mm) thickness DIN 1046	No measurable leakage up to 230 ft (70m) head pressure (positive side)
Application Time	Approximately 30 minutes
All data are averages of several tests under laboratory conditions. In practice, climatic variations such as temperature and humidity may affect these values.	
Packaging & Approx. Yield: 50 lb (22.7 kg) bags. • 0.42 ft³ (0.012 m³) or • 9 ft² (0.9 m²) at 1/2" (12.7 mm) thickness..	
Storage and Shelf Life: 12 months when stored dry in the original, unopened packaging.	

Priming:
- All exposed steel must be mechanically cleaned to a white metal finish and primed with 2 coats (20 mils per coat) of Aquafin REBAR/PRIMER BOND-CI.
- Concrete should be primed with a spray or brush coat of Aquafin Rebar/Primer Bond CI. Alternately, an SSD concrete substrate can be primed with a scrub coat of Mortar-CA. Do not allow scrub coat to dry before completing repair.

Mixing:
Mixing Ratio: 0.7 - 0.9 gallon water per 50-lb. bag.
(2.7 - 3.2 L water to 22.7 kg powder).
Precondition MORTAR-CA to ~70°F (21°C) prior to mixing.

MORTAR-CA

- For best results, mechanically mix at slow speed with a 3/4" (20 mm) drill and "Jiffy" mixing paddle. Use a paddle type mortar mixer for large jobs.
- Add the appropriate amount of potable water into a clean mixing bucket. Gradually add powder 1/3 at a time while mixing continuously.
- Mix at slow speeds to prevent entraining air for a minimum of 3 minutes or until a lump-free consistency is achieved.
- Adjust water using small quantities until proper consistency is achieved. NOTE: Due to the MORTAR-CA hydrophobic characteristics, it takes up to 30 (thirty) seconds for mixing water to combine with the dry powder mix.

DO NOT OVERWATER! If too much water is added, the mixture tends to segregate resulting in uneven surface strengths. Surfaces with reduced strength must be removed mechanically.

Application:

NOTE: Do not lubricate spray hoses and equipment with regular cement slurry. MORTAR-CA may instantly set and harden as a result.

Do not apply MORTAR-CA at temperatures below 40°F (5°C). At high temperatures faster setting is possible. This product is not recommended for use in expansion or contraction joints. Read all instructions thoroughly prior to installation.

Cracks/Reglets (seal strips)/Tie holes/Faulty construction joints/ Brick mortar joints:

- Fill prepared cavity flush to surface with MORTAR- CA.

Spalled and honeycombed areas:

- Apply in thick mortar consistency to required profile.
- Apply in lifts from min. 1/4" to max. 1/2" (6 - 12 mm) as required.
- Leave surface rough for subsequent layers or surface treatments to bond.

Lining/ Surface Applications:

- Horizontal: Pour MORTAR-CA in one working cycle at 1/4" to max. 1/2" (6 - 12 mm) over horizontal surfaces, then compact and strike off.
- Vertical and/or overhead: Apply MORTAR- CA to desired surfaces in a parge (stucco) coat by trowel or suitable mortar spray (gunite) equipment in single lift of 1/4" to max. 1/2" (6 - 12 mm) depending on substrate condition. Apply a scratch coat first when troweling.
- Multiple lifts: Can be carried out as soon as the underlying lift has set (~5–6 hrs). Underlying surface should be screeded and left open textured for mechanical bond and maximum intercoat adhesion of next layer or top coating.
- Surface finish: Final layer may be troweled smooth/flat, broomed to increase non-skid quality, or sprayed with orange peel texture.
- Top coating: Where specified or desired AQUAFIN coating can be applied as soon as MORTAR-CA has set (~1–2 hours). Subsequent coatings such as paint or epoxies can be applied after the curing period.

Curing

Curing is required as per ACI recommendations for portland cement concrete. Moist cure using wet burlap, polyethylene, a fine mist of water or with approved water based curing compound. NOTE: Curing compounds may adversely affect following lifts of mortar or protective coatings.

Limitations:

- Do not use below 40°F (4°C) or over 90°F (32°C)
- Do not extend with additional aggregate.
- Do not add accelerators, retarders, or any additional admixture.
- Do not use solvent based curing compounds.
- Store material at temperatures between 55°F – 90°F (10°C - 32°C)
- Protect from freezing for 24 hours after application.
- Always re-establish expansion and control joints when using this product.
- Do not use as a structural repair mortar. Contact Aquafin Technical Department for proper recommendations.

Clean-up

Promptly wash hands and tools with water before material hardens. Cured material must be removed mechanically.

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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