REPCON FRM

HIGH PERFORMANCE CONCRETE MORTAR FOR DECK REPAIRS

DESCRIPTION

REPCON FRM is a polymer modified fiber reinforces, one component, high strength concrete repair material. This cement-based, high performance mortar is primarily suitable for partial and full depth applications on horizontal and ramp surfaces, as well as formed vertical surfaces.

FEATURES & BENEFITS

- One component material-ready to use with only the addition of water
- High compressive, flexural and tensile strengths for long lasting and durable repairs
- Very low chloride salt permeability
- Excellent freeze/thaw resistance
- Sulfate resistant
- Low shrinkage
- High fiber content

BASIC USES

- Parking decks
- Bridge structures
- Pier and dock supports
- Marine environments
- Sewage treatment plants
- Dams
- Retaining walls

TECHNICAL INFORMATION

Typical Engineering Data

Compressive Strength
ASTM C-109 2" (50 mm) cubes

Age	Strength
1 day	2,500 psi (17 MPa)
3 days	4,700 psi (32 MPa)
7 days	6,000 psi (41 MPa)
28 days	9,200 psi (53 MPa)

Flexural Strength , ASTM C-348

1 day	600 psi (4 MPa)
3 days	1,030 psi (7 MPa)
7 days	1,270 psi (9 MPa)
28 days	1,530 psi (11 MPa)

Bond Strength , ASTM C-882 modified

3 days	1,940 psi (13 MPa)
7 days	2,570 psi (18 MPa)
28 days	2,850 psi (20 MPa)

Splitting Tensile Strength , ASTM C-496

7 days	535 psi (4 MPa)
28 days	820 psi (6 MPa)

Absorption @ 28 days ASTM C-642 : 1.8%
Freeze/Thaw Durability ASTM C-666
Procedure A (after 300 cycles)
Relative Durability : 96.3%
Chloride Permeability AASHTO T-277
400 coulombs : very low

Linear Shrinkage
ASTM C-157 : Dry length change
28 days - 0.086%
56 days - 0.089%
90 days - 0.097%

Modulus of Elasticity
28 days : 6.14 x 10^6psi (4.23 x 10^4MPa)
Working Time : Approximately 45 minutes at 73° F (23°C), 20 minutes at 90°F (32°C).

Scaling Resistance : ASTM C 672
4% Calcium Chloride Solution, 150 cycles

REPCON FRM	No Scaling
Concrete	Destroyed

Setting Time (ASTM C 191)
Initial 3 hrs 10 mins.
Final : 6 hrs 00 mins.

Thermal Coefficient of Expansion :
3.6 x10^{-6} in/in/°F (6.5 x 10^{-6} mm/mm/°C)

Appearance - REPCON FRM is a free flowing powder as packaged. After mixing and placing, the color may initially appear darker than the surrounding concrete. This color will lighten up substantially as the REPCON FRM cures.

DIRECTIONS FOR USE

Surface Preparation - New concrete must be a minimum of 28 days old if an epoxy adhesive is used to bond the topping. If a slurry bond coat is used, the concrete must be a minimum of 3 days old.

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 scabbler, bushhammer, shotblast or scarifier which will give a surface profile of a minimum 3 mm and expose the large aggregate of the concrete. The final step in cleaning should be the complete removal of all residue with a vacuum cleaner or pressure washing.

COVERAGE	One unit of REPCON FRM 0.012 m^3 will cover approximately 0.91 m^2 when placed at an average depth of 13 mm. Though REPCON FRM may be placed at depths up to 38.1 mm, a unit of REPCON FRM may be extended with 11 kg of 3/8" (9.5 mm) pea gravelfor deeper placements. This will yield approximately 0.02 m^3 NOTE : This product may require a primer bond coat and a curing compound which must be ordered separately.
PACKAGING	REPCON FRM is packaged in 25 kg bags. When mixed with 4.5 Ltrs. of water the unit yields 0.013 m^3 per bag.
COLOR	Contact CMCI Tech Dept.

Joints and Edges - Edges should be sawcut to 1/4" (6 mm) deeper than the topping thickness and the floor 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 ZINC RICH PRIMER Remove all loose rust and scaling, preferably by sandblasting to white metal prior to coating the rebar.

Bonding - After the surface has been prepared, prime all areas with either a slurry coat of REPCON FRM or an epoxy bonding agent such as EPOMORT 1000 EPOXY.The primer bonding agent must be ordered separately.

Slurry Coat - Mix REPCON FRM as instructed but add an additional one quart 0.95 liter of water per unit to the mix. Broom the slurry coat on to the prepared and pre-dampened concrete. Apply the REPCON FRM topping before the slurry coat has dried.
Epoxy Primer - Use EPOMORT 1000 (LV or MV) epoxy adhesive for repairs. Follow mixing and placement instructions on the product technical data sheet for further details.

Mixing - Small quantities of REPCON FRM 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 deep placements for the batch size and then add the aggregate. Mix for a minimum of five (5) minutes.

Placement - Discharge material from mixer and place onto floor. For patching, spread with a trowel, come-a-long, or square tipped shovel to a thickness that matches the surrounding concrete. On large floor areas, use screed strips with vibratory screeding to level. Compact and finish by hand or machine trowel.
Finishing - Finish the repair material to the desired texture. Do not add additional water to the surface during the finishing operation.

Curing and Sealing - Proper curing procedures are important to ensure the durability and quality of the repair. To prevent surface cracking, cure the floor with a high solids curing compound, such as KUREKOTE 75 VOX or CEMTEC KURE N SEAL. In hot, windy or direct sunlight situations, cover with polyethylene for a minimum of three (3) days.
If a curing compound is not desired, cover with polyethylene for a minimum of three (3) days.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

PRECAUTIONS / LIMITATIONS

- Do not allow repairs to freeze until the material has reached a minimum of 1000 psi (7 MPa) compressive strength [approximately 48 hours @ 40°F (4°C)].
- In adverse temperatures, follow ACI recommendations for hot/cold weather concreting practices.
- Use only potable water for mixing.
- Do not use material at temperatures below 7°C.
- No heavy traffic until the product has cured.

Quality Statement
CMCI manufactures its products at their manufacturing facility in Saudi Arabia as per the Quailty Procedures centified to conform with quality Management System described in ISO 9000 series

CMCI provides a comprehensive technical support system for its full range of high erformance construction products CMCI also offers full technical field support to consultants, Architects, contractors, applicators and End Users.

"High Quality Construction Chemicals"
CONSTRUCTION MATERIAL CHEMICAL INDUSTRIES
P.O. Box 7137, Dammam 31462, Saudi Arabia,
Tel: 00966-13-8471450; Fax: 00966-13-8471575
Email: tech@cmci-sa.com, Web: www.cmci-sa.com

The Technical Specification infromation and recommendations given are based on the current technical knowledge and the user or his representative is recommended to check the suitability of the product CMCI reserves the right to amend the technical characteristic of theproduct as part of ongoing research and development. As the work execution is beyond the direct and continuous control of CMCI no guaranty and or responsibility is assumed on the performance of work completion executed with use of our products.

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