KingRep® Primer CM3

Three-component, solvent-free, moisture-tolerant, epoxy-modified cementitious bonding agent and anti-corrosion coating.

DESCRIPTION

KingRep Primer CM3 is a three-component, solvent-free, moisture-tolerant, epoxy-modified cementitious product formulated as a bonding agent and an anti-corrosion coating.

It protects steel reinforcement with a highly alkaline passivating layer and with migrating corrosion inhibitor technology, which limits further corrosion of the surrounding reinforcement.

APPLICATIONS

- Corrosion protection of steel reinforcement in concrete repair systems.
- Bonding slurry between KingKrete cementitious repair systems and the concrete substrate.

ADVANTAGES

- Excellent adhesion to concrete and steel.
- Effective barrier against water and chlorides (not a vapour barrier).
- Long open time.
- Bonding agent and corrosion protection in one product.
- Can be used on exterior surfaces.
- Contains corrosion inhibitors.
- Excellent bonding bridge for cement-based or epoxy-based repair mortars.
- High strength.
- Unaffected by moisture once cured.
- Applied by spray, brush or roller.
- Non-flammable and solvent-free.

STANDARDS

KingRep Primer CM3 conforms to the requirements of EN 1504-7 for active and barrier coatings that protect existing uncoated steel reinforcement and embedded steel in concrete structures under repair.

TECHNICAL PROPERTIES

Colour:	Concrete grey
Mixed density:	1.9 ± 0.05 g/cm³
Pot life:	60 min @ 25°C
Application temperature:	5 - 45°C
Compressive strength (ASTM C109):	≥ 55 MPa @ 7 days ≥ 65 MPa @ 28 days
Flexural strength (ASTM C348):	≥ 5 MPa @ 7 days ≥ 8 MPa @ 28 days
Splitting tensile strength (ASTM C496):	> 4.5 MPa @ 28 days
Bond of steel to concrete, pull-out:	Bar coated with KingRep Primer CM3: 4.3 MPa Epoxy-coated bar: 3.5 MPa Plain bar: 3.96 MPa
Water permeability (DIN 1048, 5 bar):	0%
Water permeability coefficient at 10 bar:	2.72×10^{-15} m/s Control: 2.23×10^{-10} m/s
Carbon dioxide diffusion resistance coefficient, μCO_2:	14,000

METHOD OF USE

Substrate preparation

Clean and prepare cementitious substrates by blast cleaning or equivalent mechanical means to an open-textured surface free from laitance and contaminants. The substrate must be saturated surface dry (SSD), with no standing water.

Clean steel thoroughly to white metal by blast cleaning (SSPC-SP 5 / NACE No. 1).

Mixing

Shake Components A and B, then empty the entire contents of both into a clean, dry mixing pail. Mix for 30 seconds with a paddle on a low-speed drill (400 - 600 rpm). Slowly add the entire contents of Component C while mixing continuously for 3 minutes, until the blend is uniform and free of lumps. Mix only as much as can be applied within 60 minutes.

As a bonding agent

Apply with a stiff bristle brush or broom, or spray with a hopper gun or similar equipment. Work the slurry well into the substrate so that every surface irregularity is covered. Apply the freshly mixed repair mortar or concrete wet on wet, or within the maximum open time. The minimum thickness as a bonding agent is 0.5 mm.

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As corrosion protection for reinforcing steel

Apply with a stiff bristle brush, about 0.5 mm per coat, taking particular care to coat the underside of fully exposed bars. Allow the first coat to dry for 2 - 3 hours at 23°C, then apply a second coat at the same rate. Allow the second coat to dry before the repair mortar or concrete is placed. The minimum total thickness to protect reinforcement is 1 mm (two coats of 0.5 mm).

CLEANING

Clean all tools with fresh water immediately after use. Hardened material can only be removed mechanically.

COVERAGE

Bonding agent on a smooth surface: 2.0 m² per litre at 0.5 mm dry film thickness.

Reinforcement protection on an irregular surface: 1.0 m² per litre per coat at 0.5 mm dry film thickness. Apply two coats for a total of 1.0 mm.

PACKAGING

KingRep Primer CM3 is available in 20 kg kits: Part A 2.9 kg, Part B 1.1 kg and Part C 16 kg.

STORAGE

Shelf life is 1 year when stored under cover, out of direct sunlight and protected from extremes of temperature.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult KingKrete's Technical Services Department.

HEALTH AND SAFETY

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Reseal containers after use. Use in well ventilated areas and avoid inhalation.

NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local KingKrete representative. KingKrete Inc. reserves the right to have the true cause of any difficulty determined by accepted test methods.

QUALITY AND CARE

All products originating from KingKrete's Middle East facility are manufactured under a management system independently certified to conform to the requirements of the quality standards ISO 9001, ISO 14001 and ISO 45001.

* Properties listed are based on laboratory-controlled tests.
® = Registered trademark of the KingKrete-Group in many countries.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this KingKrete Inc. publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by KingKrete Inc. either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not KingKrete Inc. are responsible for carrying out procedures appropriate to a specific application.

KingKrete Middle East
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