KingRep® 50FL

One component high build high strength cementitious repair mortar.

DESCRIPTION

KingRep 50FL is a one component polymer modified and fibre reinforced repair mortar. KingRep 50FL is a blend of dry powders, acrylic polymer, selected aggregates and fibres which when mixed with water produces a thixotropic mortar suitable for vertical and overhead application.

APPLICATIONS

- Repair of all types of structural concrete where high strength and extremely low shrinkage properties are required.
- For the repair of vertical and overhead elements.
- As a repair mortar for all structural elements in buildings, water retaining structures, industrial plants, bridges, etc.

ADVANTAGES

- Shrinkage controlled polymer modified cementitious repair mortar.
- Easy to apply, single component, requires only addition of water.
- Extremely low permeability to water, providing excellent protection to steel reinforcements and host concrete.
- Thixotropic properties allowing extra high build for vertical and overhead applications.
- Suitable for internal and external application.
- Water vapour permeable.
- Cost effective, hand applied no formwork is required.

STANDARDS

KingRep 50FL complies with ASTM C109/109M-02, DIN 1048, Part 5, ASTM C157-93 and BS 1881, Part 121.

METHOD OF USE

Substrate Preparation

All damaged and weak concrete should be cut back to reach sound concrete and/or to a minimum depth of at least 10 mm.

Corroded steel reinforcement should be grit blasted to remove all rust traces. In case of significant loss in the steel reinforcement cross section, the steel should be replaced.

Remove all concrete form around exposed steel reinforcements by 10 mm thickness.

The perimeters of the repair area should be saw cut to a minimum depth of 10 mm. The prepared area should be cleaned thoroughly by brush and/or compressed air.

TECHNICAL PROPERTIES

Compressive strength: ASTM C109/109M-02	> 60 MPa @ 7 days > 75 MPa @ 28 days
Water penetration: DIN 1048, Part 5	< 5 mm
Colour	Grey
Drying shrinkage: ASTM C157 - 93	<300 microstrain @ 7 days <550 microstrain @ 28 days
Rapid chloride perme- ability: AASHTO 277-93	< 500 Coulombs
Tensile strength: ASTM C190	> 6 MPa @ 28 days
Flexural strength: ASTM C348	> 13 MPa @ 28 days
Mixing ratio:	3.25 litre of water for 25 kg bag of KingRep 50FL
Fresh wet density:	2.1 ± 0.1 g/cm³
Minimum application temperature:	5°C
Water absorption: BS 1881, Part 122	< 2%

PRIMING

All grit blasted steel reinforcements should be primed within 2 - 4 hours with one or two coats of zinc rich epoxy coating KingRep ZR.

Areas to be repaired with KingRep 50FL should be soaked with clean water before applying the repair mortar. All excess water should be removed prior to applying KingRep 50FL.

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MIXING

To ensure proper mixing, a mechanically powered mixer or drill fitted with suitable paddle should be used. 3.25 litre of clean water should be added to clean container.

The powder is then added slowly to the water while mixing continuously with low speed mixer/drill (400 - 600 rpm). Mixing time should be continued for 3 minutes until uniform consistency is obtained.

Please note that adding more water will result in lower physical properties.

PLACING AND FINISHING

KingRep 50FL can be applied by trowel or hand. The mixed mortar should be applied using firm pressure to fully compact the mortar to ensure good adhesion with the steel reinforcements and the substrate. Finishing and leveling should be carried out initially by wooden or plastic float. Final finishing should be carried out using steel float.

CURING

As KingRep 50FL is a cementitious based material, it should be cured in a similar method to concrete. Curing can be conducted by using KingKure 100A or by wet hessian sheets covered with polyethylene sheets.

CLEANING

All tools shall be cleaned immediately after application using fresh water. Hardened materials must be cleaned mechanically.

PACKAGING

KingRep 50FL is available in 25 kg bags.

THICKNESSES AND SIZE LIMITATIONS

KingRep 50FL can be applied in a single application for sections up to 50 mm thick in overhead applications and 75 mm thick in vertical applications. Thickness should not be less than 10 mm deep in all applications.

KingRep 50FL repair area should not exceed 2.5 m^2 in single application. For horizontal and small pocket applications, thickness can be up to 100 mm.

YIELD

Approximately 13.5 - 14 litre per 25 kg bag. (76 bags/m^3).

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.

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