

# KingRep<sup>®</sup> 70FL

**Shrinkage compensated free flowing micro concrete.**

## DESCRIPTION

KingRep 70FL is a single component polymer modified repair system. KingRep 70FL is composed of a blend of dry powders and selected aggregates which when mixed with water produce a shrinkage compensated, self compacting and free flowing micro-concrete suitable for large volume concrete repairs.

## APPLICATIONS

Repair of all types of structural concrete elements such as walls, columns, beams and floors.

## ADVANTAGES

- ☐ High initial and ultimate strength development.
- ☐ Very high flow, suitable for repair of steel congested areas.
- ☐ Shrinkage controlled polymer modified cementitious repair eliminates cracking.
- ☐ Easy to apply, single component, requires only addition of water.
- ☐ Extremely low permeability, providing excellent protection to steel reinforcements and host concrete.
- ☐ Self compacting and self priming, with high bond strength.
- ☐ Suitable for internal and external applications.
- ☐ No independent primer is required.

## METHOD OF USE

### Substrate Preparation

All damaged and weak concrete shall be cut back to reach sound concrete or to a minimum depth of application.

Corroded steel reinforcement should be grit blasted to remove all rust traces. Steel loss up to 25% of original section shall be compensated, where loss of section exceeds 25%, steel reinforcement shall be replaced.

Remove all concrete form around exposed steel reinforcements by 20 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. A water tight formwork should be used to avoid material loss.

## TECHNICAL PROPERTIES

Colour:	Grey and white
Compressive strength: ASTM C109/109M-02	>35 MPa @ 1 day >55 MPa @ 3 days >65 MPa @ 7 days >75 MPa @ 28 days
Flexural strength: ASTM C348	≥ 11 MPa @ 28 days
Length change: ASTM C157	up to 0.01% @ 56 days
Working time:	20 - 25 min @ 25°C 12 - 17 min @ 35°C
Setting time: EN 196-3	
Initial	6 - 7 hr @ 25°C
Final	9 - 10 hr @ 25°C
Water penetration: DIN 1048	≤ 10 mm
Mixing ratio:	3 litre of water for 25 kg set
Minimum application temperature:	5°C

*Notes: KingRep 70FL is available in 3 ranges. Compressive strength and flexural strength @ 1 day are under restraint. Compressive strength and flexural strength @ 7 & 28 days are under wet cure.*

Areas to be repaired with KingRep 70FL should be soaked with clean water for several hours before applying the KingRep system. All excess water should be removed.

## 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.

Provided that the substrate has been thoroughly soaked with clean water, and is damp on application of product a primer is not normally required.

For concrete highly contaminated with soluble salts, it is recommended to use KingBond 50E, an epoxy bonding agent, which prevents migration of salts such as chloride ions and sulphate to the repair patch, as well as providing bond for KingRep 70FL to host concrete.

## MIXING

To ensure proper mixing, a mechanically powered

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mixer or drill fitted with suitable paddle should be used. 3 litre of clean water should be added to clean container. The powder part is then added slowly to the water while mixing continuously, then the aggregate part shall be added while mixing continuously with low speed mixer/ drill (400 – 600 rpm). Mixing should be continued for 3 minutes until a uniform consistency is obtained.

## PLACING AND FINISHING

KingRep 70FL should be poured in a single continuous operation, within 25 minutes of mixing. The mixed materials should be poured slowly to prevent air entrapment.

## CURING

As KingRep 70FL is a cementitious based material, it should be cured in a similar method to concrete. Curing can be conducted by using a good concrete curing compound such as KingKure 100A.

## CLEANING

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

## PACKAGING

KingRep 70FL is available in 25 kg set of 6.75 kg aggregate bag + 18.25 powder bag.

## THICKNESSES AND SIZE LIMITATIONS

KingRep 70FL can be applied in a single application for large repair voids at thicknesses up to 200 mm. For large areas, KINGKRETE Technical Office should be consulted.

## YIELD

Approximately 12 litre per 25 kg set. (83 sets/m<sup>3</sup>).

## 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 manufacturing facilities are manufactured under a management system independently certified to conform to the requirements of the quality standard ISO 9001.

\* 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.