

# KingProof<sup>®</sup> CR100

**Cementitious capillary waterproofing render for concrete.**

## DESCRIPTION

KingProof CR100 is a specially formulated single component cementitious crystalline capillary waterproofing system consisting of a blend of cement, fillers, and multiple activating chemicals. When mixed KingProof CR100 produces a brush applied cementitious render. KingProof CR100 prevents the penetration of water by causing a catalytic reaction that produces a non-soluble crystalline formation within the pores and capillary tracts of the concrete. This crystalline growth reduces substrate porosity and can fill hairline cracks.

## APPLICATIONS

Waterproofing and protection of:

- ☐ Potable water tanks.
- ☐ Basements.
- ☐ Bridge decks.
- ☐ Tunnels
- ☐ Swimming pools.
- ☐ Sewage tanks.
- ☐ Retaining walls and foundations.
- ☐ Underground parking.

## ADVANTAGES

- ☐ Works by combining with free calcium in the cement to form insoluble crystals.
- ☐ Non-toxic system.
- ☐ Can be applied to moist and green concrete.
- ☐ Helps the substrate to resist chemical attack over a wide (pH) range, and freeze/thaw cycles.
- ☐ Excellent adhesion to the substrates.
- ☐ Durable system and resistant to alkalis.
- ☐ Becomes an integral part of the structure to which it is applied.
- ☐ Allows the structure to breathe.
- ☐ Gives waterproofing effect for positive and negative hydrostatic water pressure.
- ☐ Ease for application.
- ☐ Labor cost effective.

## STANDARDS

KingProof CR100 complies with BS 6920-2.5:2000 as a suitable product in contact with water intended for human consumption with no effect on the public health of the quality of water.

## TECHNICAL PROPERTIES

Colour:	Cement grey free from lumps.
Mixing ratio:	8 - 9 ltr/25 kg bag
Mixed density:	2 ± 0.05 kg/ltr
Working time:	25 - 35 min @ 25 <sup>o</sup> C 15 - 20 min @ 35 <sup>o</sup> C
Initial setting time:	60 - 80 min @ 25 <sup>o</sup> C 30 - 40 min @ 35 <sup>o</sup> C
Compressive strength: (mortar consistency) ASTM C109/109M-02	≥ 25 MPa @ 7 days ≥ 35 MPa @ 28 days ≥ 43 MPa @ 56 days
<b>Compressive strength effect on treated samples: ASTM C109/109M-02</b>	
Non treated concrete sample	25 MPa @ 7 days 40 MPa @ 28 days 43 MPa @ 56 days
Treated concrete sample (same sample mix)	≥ 27 MPa @ 7 days ≥ 45 MPa @ 28 days ≥ 48 MPa @ 56 days
Chemical resistance:	Compressive strength will not be affected by more than 5% under Acid exposed and salt exposed
Waterproofing: (Positive and negative pressure) DIN 1048	At 8 bars: Impermeable system after reaching the full activation period
Waterproofing permeability: (CRD-C48) @ full activation period	<b>Positive pressure:</b> Impermeable @ 8 bars (80 m water head). After 280 hr, 13.8 bars (138 m water head), water flow measure is 0.065 cc/hr <b>Negative pressure:</b> Impermeability with negligible damping at 13.8 bars (138 m water head and 420 hr)



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## METHOD OF USE

### Surface Preparation

Substrates should be mechanically prepared by bush hammering, grit blasting, etc, to produce a clean finish, free from dust, oil, grease, paint, laitance, etc. in order to provide a 'key' for the KingProof CR100.

KingProof CR100 may be applied to fresh concrete as soon as the shuttering is struck. Ensure that all mold release oil has been removed first.

For leaks and water jets must be stopped using KingRep WS, which is an effective plugging compound.

### Priming

Water damping is needed continuously for at least 24 hours if the substrate is dry. The prepared substrate surface should be thoroughly dampened with clean water to minimize suction.

Ensure that there is not surface water present prior to application of KingProof CR100.

### Mixing

Always add water to KingProof CR100. Between 8 – 9 litre of clean water, depending on the consistency required, should be added to the 25 kg bag.

Care must be taken when using slow speed drills which can introduce too much air into the mix, they must be used for a minimum mixing time commensurate with obtaining a homogenous mix, lump free and creamy brushable mix.

### Application

KingProof CR100 should always be applied to the dampened substrate in minimum two coats. Application is done by a brush, with a coverage rate of 17 m<sup>2</sup> per the mixed bag. More than 1 mm thickness in the first coat is not recommended. The second coat should be applied when the first coat is still "green" within 24 - 48 hours. Before applying the second coat, the first coat should be washed by water so as to take off any salt formation on the surface. Again the second coat is recommended to be applied not more than 1 mm thick to the washed dampened surface.

## CURING

KingProof CR100 should be kept wet and moist for at least the first 3 days from application. Soft water jet is needed for curing after the initial set of the last coat. Keep wetting the applied system for the initial few days is important for the reaction.

KingProof CR100 needs to be protected from damage for the first 7 days. And after this period, the applied area will be ready to handle the needed service.

Based on the waterproofing principle of KingProof CR100, full activation may take 2 - 3 weeks from the application time.

## WORKING TIME

KingProof CR100 has a working time of approximately 25 minutes at 25°C. Mixed material should not be left standing for any length of time prior to application as this will considerably shorten its working life, and may lead to flash setting.

Notes:

- ☞ Always add water to the KingProof CR100 then start mixing.
- ☞ KingProof CR100 should not be placed when the substrate or ambient temperature is 5<sup>o</sup> C and falling.
- ☞ KingProof CR100 system works more efficient with substrates containing at least 15% OPC.
- ☞ Good surface preparation, damping the substrate before application and the recommended curing procedure are important factors for getting the best performance.

## CLEANING

All tools should be cleaned with water immediately after use.

## PACKAGING

KingProof CR100 is available in 25 kg polythene-lined paper sacks.

## COVERAGE

The coverage obtained will vary depending on the porosity and texture of the surface to which the materials is applied. As a guide, the coverage should be around 1 – 1.5 kg dry powder/m<sup>2</sup> per coat. A 25 kg bag should be sufficient to cover 17 – 20 m<sup>2</sup> per coat.



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## 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 Qatar facility 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.

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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.

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