KingRep ® SA150

Spray applied, high build, one component, cementitious repair mortar for dry mix shotcrete application with accelerated setting.

DESCRIPTION

KingRep SA150 is a single component polymer modified and fiber reinforced repair mortar with accelerated setting for dry mix shotcrete application. KingRep SA150 is a blend of dry powders, selected aggregates, reinforcing fibers, microsilica and high quality additives when mixed with water will produce a high build, thixotropic, highly resistant, alkali free repair mortar suitable for dry mix shotcrete machine spraying on vertical and overhead application.

KingRep SA150 is to be applied using dry mix shotcrete spraying machines only.

APPLICATIONS

- Large area repairs for all structural elements in buildings, water retaining structures, industrial plants, bridges, etc.
- Repair of fire damaged structures.
- Lining and repair of tunnels.
- Cathodic Protection (CP) overlays.

ADVANTAGES

- High early mechanical strength.
- Shrinkage controlled polymer modified cementitious repair mortar. Reduces the risk of cracking due to shrinkage and ensures full contact with host concrete and load transfer in structural repair situations.
- 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, spray applied no formwork is required.
- Can be spray applied allowing for rapid application of large areas with minimal rebound.

LIMITATIONS

- Apply only using a dry mix shotcrete machine where the water is mixed with the material at the nozzle.

TECHNICAL PROPERTIES

Appearance:	Free flowing powder
Compressive strength: (wet cure) ASTM C109/109M	> 16 MPa @ 1 day > 40 MPa @ 28 days
Colour:	Grey
Fresh wet density:	2,250 kg/m^3
Maximum aggregate size:	3 mm
Mixing ratio:	A minimum of 3.25 litres of water for 25 kg bag of KingRep SA150
Application temperature range:	+ 5°C to +35°C
Fire rating: EN13505-1	Class A1 Non-combustible
VOC: ASTM D2369	< 10 g/ltr

- Always, mix full bag content. Avoid part bag mixing.
- Do not apply on smooth surfaces.
- Do not add any additives, cement or aggregate.
- Do not apply more than 30 mm without reinforcement wire mesh.
- Do not apply if ambient or substrate temperatures are below 5°C.
- Do not expose freshly repaired surfaces to heavy loads for the first 24 hours.

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.

PRIMING

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All grit blasted steel reinforcements should be primed within 2 to 4 hours with one or two coats of zinc rich epoxy coating Repcoat ZR. Areas to be repaired with KingRep SA150 should be soaked with clean water before applying the repair mortar. All excess water should be removed prior to applying KingRep SA150.

APPLICATION

- Turn on the dry mix shotcrete machine.
- Empty the bags of KingRep SA150 directly into the hopper of the dry mix shotcrete machine.
- The water mixed with the dry KingRep SA150 is controlled by the operator at the nozzle. A minimum water powder ratio of 0.13 should be maintained at all times to minimize rebound and dust. Excess water will lead to sagging.
- Apply up to 150 mm in a single layer by adding reinforcement wire mesh every 30 mm if necessary.
- For total thicknesses above 150 mm apply in several coats, each previous coat applied should be dried and kept rough. Prior to applying the subsequent layer wet the dried coat lightly with water.

CURING

As KingRep SA150 is a cementitious based material, it should be cured in a similar method to concrete. Curing can be conducted by using KingRep SA150 or by wet hessian sheets covered with polyethylene sheets.

HIGH AND LOW TEMPERATURE APPLICATION

- KingRep SA150 can be applied at a temperature range of 5oC to 35°C.
- At high ambient temperatures (above 35°C), make sure that the product is stored in shaded areas prior to use.
- Accelerated heating methods are not to be used under any circumstances.
- Material should not be used at temperatures below
- 5°C.

CLEANING

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

PACKAGING

KingRep SA150 is available in 25 kg bags.

THICKNESSES AND SIZE LIMITATIONS

KingRep SA150 can be applied in a single application for sections up to 150 mm thick in overhead and vertical applications. This can be reached by using reinforcement wire mesh at every 30 mm during the single layer application.

YIELD

Approximately 12.5 liters/25 kg bag. (80 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

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contact your local KingKrete representative.

KingKrete Inc. reserves the right to have the true cause of any difficulty determined by accepted test methods.

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.

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QUALITY AND CARE

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KingKrete South America
www.kingkrete.com