KingRep® CP20

Solvent-free epoxy impregnation and encapsulating resin for KingFiber CW carbon fibre fabric.

DESCRIPTION

KingRep CP20 is a two-component, solvent-free epoxy resin (100% solids) that impregnates and encapsulates KingFiber CW carbon fibre fabric. Together with KingRep CW Primer and the fabric it forms the KingFiber CW System, an externally bonded CFRP system for the structural strengthening of concrete, masonry and timber.

APPLICATIONS

- Impregnating KingFiber CW carbon fibre fabric on site.
- Closing (encapsulating) coat over the impregnated fabric.
- Bonding additional fabric layers, wet on wet.
- Covering coat with quartz sand broadcast, as the key for cementitious renders.

ADVANTAGES

- Thixotropic and solvent-free, for easy use.
- 100% solids.
- Adhesive strength above 3.5 MPa (concrete failure).
- Additional fabric layers can be laid wet on wet.

TECHNICAL PROPERTIES

Colour (mixed):	Yellowish
Mixing ratio:	2:1
Mixed density:	≈ 1.1
Solids:	100%
Pot life:	40 - 90 min @ 25°C 20 - 50 min @ 35°C
Open time:	15 - 30 min
Sag flow:	3 - 5 min @ 35°C
Compressive strength (BS 6319):	> 60 MPa
Flexural strength (BS 6319):	> 30 MPa
Tensile strength (BS 6319):	> 25 MPa
Flexural E-modulus (ASTM D790):	> 2700 MPa
Tensile elongation at break (BS EN ISO 527-3):	3%
Heat deflection temperature (ASTM D648):	> 55°C
Slant shear bond strength, old/new concrete (AASHTO T 237):	> 15 MPa
Adhesive strength:	> 3.5 MPa (concrete failure)

METHOD OF USE

Substrate preparation

Substrates must be free from oil, grease and any contaminants; blast cleaning is recommended, followed by removal of all debris and dust. The substrate must be dry (maximum moisture content 4%) and at least 28 days old. Apply at substrate and ambient temperatures of 10 - 35°C, and take the dew point into account. Round all corners that receive the fabric to a minimum radius of 10 - 20 mm, depending on the fabric type. The bond surface must be even and free from irregularities, pinholes and formwork marks: fill pinholes and smooth irregularities with an epoxy putty and levelling mortar such as KingRep EP10. The adhesion of the impregnation resin must not be lower than 1.5 N/mm².

Prime the prepared surface with KingRep CW Primer by roller at 0.25 - 0.30 kg/m² and allow 24 hours to cure.

Mixing

Use a mechanically powered mixer or a drill fitted with a suitable paddle. Pour the entire contents of the base and

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hardener into a suitable container and mix for 3 minutes. Watch the pot life; in hot weather, the components can be cooled before mixing.

Application

Apply the mixed KingRep CP20 to the primed substrate by brush or roller at 0.275 kg/m², depending on the roughness of the substrate. Within the open time, place the KingFiber CW fabric onto the resin in the required direction and work it in with a plastic laminating roller until the resin is squeezed out through the fabric; roll again to complete the impregnation.

Apply a second coat of KingRep CP20 over the impregnated fabric at 0.275 kg/m², so that the system is tight and dense.

For additional fabric layers, apply KingRep CP20 at 0.25 kg/m² on the first layer, wet on wet. If this is not possible within the open time of the first application, wait 12 hours before applying the second layer. Where fabric must be overlapped, overlap in the fibre direction by at least 100 mm.

Where a cementitious render or coating follows, apply a covering coat of KingRep CP20 at 0.25 kg/m² and broadcast quartz sand into it as the bonding key. Always protect the reinforcement from direct UV exposure.

COVERAGE

0.275 kg/m² per coat, about 0.55 kg/m² per fabric layer for 2 coats, depending on the roughness of the substrate. Additional layers: 0.25 kg/m² on the previous layer. Covering coat for renders: 0.25 kg/m².

CLEANING

KingRep CP20 and equipment can be cleaned with an industrial grade solvent.

PACKAGING

KingRep CP20 is available in 5 kg and 15 kg sets.

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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STATEMENT OF RESPONSIBILITY

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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.

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