KingRep® EP20

Solvent-free high strength adhesive for structural reinforcement.

DESCRIPTION

KingRep EP20 is a two-component, solvent-free epoxy adhesive for bonding structural reinforcement.

Formulated to give an easily applied paste and suitable for bonding KINGKRETE KingFiber CP carbon fiber reinforced plates to reinforced concrete, masonry, stonework, aluminum and timber. KingRep EP20 is thixotropic in nature and is suitable for vertical and overhead bonding and structural repair.

APPLICATIONS

To provide continuous bond between KingFiber CP plates and several types of substrates such as:

- Reinforced concrete.
- Masonry.
- Stonework.
- Aluminum.
- Timber.

ADVANTAGES

- High bond strength to concrete, masonry, stonework, aluminum, timber and KINGKRETE KingFiber CP Plates.
- High early and ultimate strength.
- High resistance to abrasion and shock.
- Easily applied on vertical and overhead surfaces.
- Thixotropic, non-sag.
- No primer required.
- Negligible shrinkage.
- Non-sag on applications.
- For gap filling and pin holes and other surface irregularities prior to bonding structural reinforcement.

METHOD OF USE

Substrate Preparation

All substrates shall be free from oil, grease or any contaminants. It is recommended to blast clean substrates and clean all debris or dust. The substrate should be even and checked with a flat metal edge, the tolerance accepted shall not exceed 10 mm in a 2 m length.

MIXING

To ensure proper mixing, a mechanically powered mixer or drill fitted with a suitable paddle should be used. Stir the base and the hardener individually to disperse any settlement. Entire contents of the base and hardener should be poured into a suitable size container and mixed mechanically for 3 minutes.

TECHNICAL PROPERTIES

Appearance:	Thick grey paste
Compressive strength: ASTM D695	≥ 70 MPa @ 7 days
E-Modulus (compression): ASTM D695	≥ 12000 MPa @ 7 days
Tensile strength: ASTM D638	≥ 27 MPa @ 7 days
Adhesive strength: ASTM D4541	≥ 3.5 MPa (concrete failure)
Pot life (F.I.P.):	25 min @25°C
Mixing ratio:	1 : 3.6
Slant shear bond strength: (old/ new concrete) AASHTO T-237-73	≥ 25 MPa
Heat deflection: ASTM D648	≥ 50°C

Application of KingFiber Carbon Plates

All pinholes, honeycombs, or surface irregularities on the concrete surface shall be treated and evened out using KingRep EP20 epoxy putty and leveling compound.

Use KingRep EP20 to bond the carbon plates by placing it on the KingFiber carbon plate after cleaning from the grinded side. Use a spatula for the placement and make sure that sufficient material is placed on the carbon plate.

Apply a thin layer of KingRep EP20 on the prepared substrate. Then apply the fibre plate with the KingRep EP20 onto the substrate.

Typical thickness of application of KingRep EP20 is between 0.5 - 3.0 mm.

Use a small roller to roll the plate till the excessive adhesive is pushed out from the sides of the plate and remove the excess with a spatula.

When KingFiber CP Plates are intersecting, the bottom plate should be allowed to cure, and then the surface in crossing zone should be thoroughly cleaned prior to the application of the top layer. Allow the adhesive to cure for 7 days prior to installing further renders or coating.

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COVERAGE

Typical coverage of KingRep EP20 is 1.4 - 1.5 kg/m² per mm. The table below shows the expected consumption of KingRep EP20 per meter length for different plate widths at 2.0 mm thickness.

Width of Plate (mm)	KingRep EP20 (kg/m) @ 2 mm thickness
50	0.15
60	0.17
80	0.23
90	0.26
100	0.29
120	0.35
150	0.44

CLEANING

KingRep EP20 and equipment can be cleaned with an industrial grade solvent.

PACKAGING

KingRep EP20 is packaged in twin component packs of 15 kg.

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.
® = 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.

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