KingCoat ® EPU100

High performance flexible epoxy polyurethane resin protective coating.

DESCRIPTION

KingCoat EPU100 is high performance floor and wall coating based on hybrid combination of epoxy polyurethane resins. It is supplied as a two pack material in pre-weighed quantities ready for on-site mixing and use.

KingCoat EPU100 is easily sprayed, brushed or rolled to concrete and steel substrates in a two coat application, typically applied at a wet film thickness of 200 - 250 microns per coat without sagging.

KingCoat EPU100 is available in a standard grey colour, other colours are available subject to minimum order quantities.

APPLICATIONS

Provides chemical and abrasion resistance to prevent corrosion of concrete and steel surfaces for applications such as:

- Wall and floor protective coating.
- Protection system for car park decks.
- Manhole and pipe lining.
- Secondary containments.
- Lining for sewage and effluent plants.
- Lining of aeration and sludge tanks.
- Sea water tanks, channels and intakes.
- Foundation waterproofing.
- Reservoirs, water treatment plants

ADVANTAGES

- Flexible coating.
- Environment friendly – totally free of carcinogenic materials like coal tar, pitch and aromatic hydrocarbons.
- Cost saving – primer less system, easy brush, roller or spray application.
- Impermeable waterproof coating.
- Protects sub-structures as well as superstructures against weathering and environmental attacks.
- Excellent chemical resistance, as well as resisting algae and bacterial growth.
- UV resistant. Colour change may occur under direct sunlight without affecting the performance.

STANDARDS

KingCoat EPU100 complies with the requirements of EN1504-2 Surface Protection Systems for Coatings (C) Principles 2.2 and 5.1.

TECHNICAL PROPERTIES @ 25ºC ± 2:

Colour:	Grey
Mixed density: ASTM D1475	1.40 ± 0.05 g/cm³
Solid content: ISO 3251	100%
Pot life: ASTM D2471	100 - 140 min
Bond strength: ASTM D4541	> 2 MPa
Tack free time: ASTM D1640	4 - 5 hr
Overcoating time: ASTM D1640	6 - 8 hr
Full cure: ASTM D1640	7 days
Taber abrasion resistance: (1000 g, 1000 cycle) ASTM D4060, weight loss CS17 wheel	80 milligram
Water absorption: ASTM D570	< 0.3%
VOC: ASTM D2369	< 10 g/ltr (complies with LEED)

METHOD OF USE

Surface Preparation

All surfaces must be clean and free from dust or loose material.

Concrete surfaces

Substrates to be prepared by mechanical means such as grit blasting, or other suitable removal methods. Following the preparation of a concrete surface, care should be taken to ensure that any surface irregularities are filled with a twin pack epoxy putty such as KingRep EP10.

Metal surfaces

Any metal surfaces should be grit blasted to a near white finish, meeting the requirements of Swedish standards SA2½ or equivalent.

Priming

Concrete surfaces

Priming is not required on properly prepared concrete surfaces – see preparation section.

Metal surfaces

All metal surfaces should be coated immediately after preparation.

If this is not possible and to eliminate formation of rust, prime the metal surfaces using a 100% solids epoxy primer.

MIXING

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The contents of the resin pack should be thoroughly stirred to disperse any possible settlement. The entire contents of both the hardener and resin cans should be poured into a suitable sized mixing vessel.
It is recommended that the two components are mixed together mechanically using a slow speed (400 - 600 rpm) electric drill fitted with a mixing paddle. Mixing should be carried out continuously for 3 - 5 minutes, until a uniform consistency is achieved.

Application
A minimum 2 coat application is generally recommended to ensure a full, unbroken coating is achieved.

BRUSH/ROLLER APPLICATION

Once mixed, the material should be immediately applied, ensuring that a continuous coating is obtained. The first coat is applied to achieve a uniform coating with a wet film thickness not less than 200 microns, and should be allowed to dry for at least 2 hours at 35ºC before the application of the second coat.
The second coat should be applied after 4hours (at 35ºC) from the application of the first coat. The second coat should be applied as above again achieving a wet film thickness not less than 200 microns.

SPRAY APPLICATION

Where large areas are to be coated, it is advisable to consider spray application.

REPAIRING AND OVER COATING

Any applications of KingCoat EPU100 which have become damaged can be readily be over coated.
The existing surface should be well abraded, using a stiff wire brush, or similar, to ensure that a good mechanical bond will be achieved between the two layers. Any loose material should be removed.

Over coating works can then proceed as for new work, always ensuring that the prepared substrate is free from any moisture.

25ºC), ASTM D1308 (spot test @ 1 hr)	
Organic acids	
Lactic Acid 10%	R
Oleic Acid sat.	R
Citric Acid 25%	R
Vinegar 10%	R
Inorganic bases	
Sodium Hydroxide 50%	R
Ammonia Solution 10%	R
Potassium Hydroxide 50%	R
Aqueous solutions	
Sodium Chloride sat	R
Tap water	R
Chlorinated water	R
Dead sea water	R
Solvents	
White spirit	R
Xylene	R
Toluene	R
Acetone	R
Oils & Fuels	
Benzyl alcohol	R
Brake fluid	R
Engine oil	R
Diesel	R
Kerosene	R
Detergents & Soaps	R
Inorganic acids	
Sulphuric Acid 25%	R
Phosphoric Acid 20%	R
Hydrochloric Acid 10%	R
Nitric Acid 10%	R

Occassional Spillage.
Chemical Resistance after full cure (7 days @

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LIMITATIONS

- KingCoat EPU100 is formulated for application to clean sound substrates of steel or concrete, and where it can be protected from contact with water for the first 24 hours after application as discoloration could occur.
- For cold weather working (down to 5ºC), it is recommended that materials are stored in a heated building and only removed immediately before use. Accelerated heating methods are not to be utilized under any circumstances. Application to commence while temperature is 5ºC and rising.
- In hot weather working conditions (35ºC) and above, it is recommended to keep material in a cool shaded area to ensure ease of application.

CLEANING

Tools and equipment should be cleaned with solvent immediately after use.

PACKAGING

KingCoat EPU100 is available in 14 kg packs (10 litre).

COVERAGE

The coverage rate is 0.28 kg/m² @ 200 microns.

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.

CHEMICAL RESISTANCE

Based on test method ASTM D1308, immersion in the below chemicals. After 7 days	
Hydrochloric Acid 10%	R
Phosphoric Acid 20%	SS
Sulphuric Acid 25%	R
Nitric Acid 10%	RS
Diesel	R
Ammonia Solution 10%	R
Detergent Solutions	R
Engine	R
Tap water	R
Sea water	R
Chlorinated water	R

R: Resistant
RS: Resistant with slight discoloration
SS: Slight softining

Performance characteristics	EN 1504-2 requirement	Measured value
Capillary absorption: EN 1063-3	< 0.1 kg/m^2.h$^{0.5}$	Pass
Adhesion strength: EN 1542	≥ 1.5 MPa	≥ 2.0 MPa (flexible system with trafficking)
Abrasion resistance: EN ISO 5470-1	< 3000 mg H22, 1 kg, 1000 cycle	Pass < 1000 mg
Impact resistance: EN ISO 6272-1	Class I: ≥ 4 Nm Class II: ≥ 10 Nm Class III: ≥ 20 Nm	Class III
Crack bridging: EN 1062-7	A1: > 0.10 mm A2: > 0.25 mm A3: > 0.50 mm A4: > 1.25 mm A5: > 2.50 mm	Class A3
Artificial weathering: EN 1062-11:2002	After 2000 hr No blistering, cracking, or flaking	Pass

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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