KingFloor® EP100

Solvent free high build epoxy floor coating for thickness up to 200 microns in one coat

DESCRIPTION

KingFloor EP100 is a high build, hard wearing, solvent free epoxy resin coating, designed to provide a hard, gloss coating to concrete floors. It is supplied as two pack material in addition to a colour pack in pre weighted quantities ready for onsite mixing and use.

KingFloor EP100 permits the application of floor coatings in excess of 200 microns per coat and can be coloured to suit site requirements.

With the addition of Antislip Aggregate (Slip resistant aggregate No. 2 or 3) between coats, slip resistant floor system can be achieved with a buildup thickness between
1.25 to 2 mm.

APPLICATIONS

KingFloor EP100 is used as protective, decorative, high chemical resistance and hard wearing floor coating system for a wide range of applications including:

- Aircraft hangars.
- Car parks.
- Soft drink and beverage production areas.
- Dairies production areas.
- Show rooms.
- Hospitals.
- Production, maintenance and assembly areas.
- Warehouses.
- General food processing and manufacturing plants.

ADVANTAGES

- Produces a seamless, glossy, glass-like surface that is both easy to clean and does not induce bacterial and fungal growth.
- High chemical and mechanical resistance.
- Available in a wide range of attractive colours.
- Cost effective.
- Easy application.
- High build.

STANDARDS

KingFloor EP100 complies with the requirements of EN 1504-2, Surface Protection Systems principle 5.1.

TECHNICAL PROPERTIES @ 25°:

Colour:	Available in different colours
Mixed density:	1.40 ± 0.05 g/cm³
Solid contents:	100%
Pot life:	50 - 70 min @ 25°C 20 - 40 min @ 35°C
Minimum time between coats:	12 hr @ 25°C 6 hr @ 35°C
Maximum time between coats:	36 hr @ 25°C 18 hr @ 35°C
Full curing time:	7 days @ 25°C 5 days @ 35°C
Compressive strength: BS 6319-2	≥ 80 MPa @ 7 days
Flexural strength: EN 13892-2	≥ 30 MPa @ 7 days
Tensile strength: ASTM D638	≥ 20 MPa @ 7 days
Bond strength on C25/30 concrete: ASTM D4541 EN 1542	≥ 2 MPa @ 7 days (concrete failure)
Shore D hardness @ 14 days: ASTM D2240	85
Water absorption: ASTM D570	≤ 0.15%
Taber abrasion resistance: (1000 g, 1000 cycle) ASTM D4060, weight loss CS17 wheel	≤ 65 milligram
VOC: ASTM D2369	≤ 10 g/ltr (complies with LEED)

METHOD OF USE

KingFloor® EP100

Substrate Preparation
The substrate must be clean, dry, even, dense and free from oil, grease, dust and other contaminants.

A clean surface will ensure maximum adhesion between the substrate and the coating. Concrete floors must have a minimum compressive strength of 25 N/mm² and a maximum concrete relative humidity of 80% (max. moisture content of 4%), relative humidity can be measured using a hygrometer.

Concrete relative humidity should be less than 80% for concrete 28 days old or more.

Surface Preparation
Unsound layers and contaminated concrete surfaces must be prepared using mechanical surface removing equipment. Acid etching can be used only in well ventilated areas. Areas deeply contaminated by oil or grease, such areas should be treated by hot compressed air.

Priming
KingFloor EP100 is designed to be used without a primer. However, for highly porous substrates, KingFloor Primer or KingFloor Primer S is recommended.

Mixing
To avoid inconsistent workability and pot life, make sure that the materials to be used are stored in shaded area and protected from extremes of temperatures, for at least 24 hours prior to application.

Prior to mixing, stir individual components of Resin, Hardener and colour pack. Add the entire content of the colour pack into the base container and mix with heavy duty drill for 2 minutes till a uniform colour is achieved. Add the entire contents of the hardener container to the mixed colour pack and base and mix thoroughly for at least 3 minutes.

Occassional Spillage. Chemical Resistance after full cure (7 days @ 25°C), ASTM D1308 (spot test @ 1 hr)	
Organic acids	
Oleic Acid sat.	R
Citric Acid 25%	R
Acetic Acid 5%	R
Acetic Acid 10%	SS
Yogurt	R
Lactic Acid 10%	RS + SS
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	
Brake fluid	R
Engine oil	R
Diesel	R
Kerosene	R
Detergents & Soaps	R
Inorganic Acids	
Sulphuric Acid 25%	R
Sulphuric Acid 40%	R
Phosphoric Acid 20%	RS
Hydrochloric Acid 10%	R
Hydrochloric Acid 32%	RS
Nitric Acid 10%	R

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

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COATING

Use brush or lambs wool roller, or airless spray machine to apply the mixed KingFloor EP100 onto the prepared surfaces.

To get a film thickness of 400 microns, apply 2 coats of KingFloor EP100 at 3.5 m²/kg per coat, second coat should be applied at a right angle to the first coat. The second coat may be applied as soon as the first coat has initially dried.

When KingFloor Primer is used at a rate of 5 m2/kg, it will give a dry film thickness between 120 - 150 microns with a clear yellow glossy finish.

Antislip Application

The base coat should be applied at a minimum film thickness of 200 - 250 microns depending on Anti-slip Aggregate used and then fully blinded with the chosen Anti-slip Aggregate. Once the base coat has reached initial cure, all excess aggregates should be removed before a further application of KingFloor EP100 top coat.

The top coat should be applied at a minimum film thickness of 290 - 320 microns depending on Anti-slip Aggregate size used.

REMARKS

- KingFloor EP100 should not be applied at temperatures below 10°C or where ambient relative humidity exceeds 85%.
- KingFloor EP100 should not be applied onto surfaces known to suffer from rising damp.
- In case of spray applications, airless spray machines should be used.
- A minimum thickness of 150 microns per coat should be applied to obtain a smooth finish.

CLEANING

Tools and equipment can be cleaned with KINGKRETE Solvent when it is wet. Dried KingFloor EP100 may be removed mechanically.

PACKAGING

KingFloor EP100 is available in 6 kg packs (4.25 litre), 18 kg packs (12.75 litre) and 30 kg packs (21.3 litre).

CHEMICAL RESISTANCE	
Based on test method ASTM D1308, immersion in the below chemicals. After 7 days	
Hydrochloric Acid 32%	RS
Sulphuric Acid 25%	R
Sodium Hydroxide 50%	R
Petrol	R
Kerosene	R
Skydrol	R
Engine oil	R
Brake fluid	R
Saturated Sugar Solution	R

R: Resistant
RS: Resistant with slight discoloration

Performance characteristics	EN 1504-2 requirement	Measured value
Abrasion resistance: (1000 g, 1000 cycles) EN ISO 5471-1 H22 wheel	≤ 3000 mg	≤ 1500 mg
Impact resistance: EN ISO 6272-1	≥ 10 N.m	≥ 10 N.m (Class II)
Capillary water absorption: EN 1062-3	< 0.1 kg/m^2.h$^{0.5}$	≤ 0.005 kg/ m^2.h$^{0.5}$
Adhesion strength: EN 1542	≥ 1 MPa without trafficking ≥ 2 MPa with trafficking	≥ 3.0 MPa (Rigid system with trafficking)

COVERAGE

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Standard coverage:
KingFloor Primer S: 5 m²/kg.
KingFloor EP100(base coat): 0.28 - 0.29 kg/m².
KingFloor EP100 (top coat): 0.28 - 0.29 kg/m².
Approximate system thickness: 500 - 600 microns.

Antislip coverage when used with Anti-slip Aggregate #2 to achieve medium texture:
KingFloor Primer S: 5 m²/kg.
KingFloor EP100 (base coat): 0.35 kg/m².
Antislip aggregate #2: 2.0 – 4.0 kg/m².
KingFloor EP100 (top coat): 0.45 kg/m².
Approximate system thickness: 2.0 mm.

Antislip coverage when used with Anti-slip Aggregate #3 to achieve fine texture:
KingFloor Primer S: 5 m²/kg.
KingFloor EP100 (base coat): 0.30 kg/m².
Antislip aggregate #3: 2.0 – 4.0 kg/m².
KingFloor EP100 (top coat): 0.40 kg/m².
Approximate system thickness: 1.25 mm.

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 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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