KingFloor ® Conductive

Flow-applied electrostatic discharge (ESD) epoxy coating.

DESCRIPTION

KingFloor Conductive is a flow applied solvent free, electrostatic conductive epoxy floor coating especially designed to provide electrostatic control properties to a variety of substrates in wide range of applications.

KingFloor Conductive comprises of an epoxy primer, conductive base coat and 2.0 mm flow applied topcoat.

APPLICATIONS

KingFloor Conductive is suitable for use in areas where a static conductive floor is required, such as:

- Electronic manufacturing facilities.
- Hospital operation theatres.
- Hazardous dust and chemical environments.
- Data processing areas.
- Military and aerospace facilities.

ADVANTAGES

- Provide a conductive floor for static electricity to pass through to earth controlling static electricity.
- Provide anti-spark (spark-proof) whenever required for safety to prevent sparks.
- Alternative smooth finish.
- Hard wearing surface that can be subjected to heavy foot traffic and forklift traffic.
- Chemical resistant.

STANDARDS

When applied in accordance with the below stated instruction, KingFloor Conductive is designed to fulfill the requirements of the following standards:

- ASTM F150 for conductive flooring range.
- ANSI/ESD S20.20.
- DoD 4145.26-M “Contractor's Safety Manual for Ammunition and Explosives”.

PRIMING

Priming is required for flooring system only. Concrete substrates should be primed with KingFloor Primer. The primer should be allowed to cure for 24 hours. Use lambs wool roller to apply the primer. More than one coat may be required for highly porous or textured surfaces.

ELECTRICAL PROPERTIES

Typical electrical resistance*: ASTM F150	
Surface to surface	2.5 x 10^4 to 1.0 x 10^6 ohms
Surface to ground	2.5 x 10^4 to 1.0 x 10^6 ohms

** The electrical resistance values are for 2.0 mm thick topcoat when the system is applied in accordance with the mentioned instructions. Failure to follow these instructions may cause diff erences in these values. Consult KINGKRETE' Technical Department for more information.*

PHYSICAL PROPERTIES FOR TOP COAT:	
Colour:	Variable
Shore D hardness: ASTM D2240	85 ± 5 @ 14 days
Compressive strength: BS 6319, Part 2:1983	≥ 75 MPa @ 7 days
Flexural strength: ASTM C580	≥ 40 MPa @ 7 days
Tensile strength: ASTM C307	≥ 20 MPa @ 7 days
Cure time:	
Foot traffic	24 hr @ 25°C
Vehicular traffic	48 hr @ 25°C
Mixed density:	1.6 ± 0.1 g/cm³
Pot life:	40 - 60 min @ 25°C
VOC:	< 50 g/ltr

PHYSICAL PROPERTIES FOR BASE COAT:	
Colour:	Black
Mixed density:	1.05 ± 0.05 g/cm³
Pot life:	1 - 2 hr @ 25°C
Tack free time:	2 - 3 hr @ 25°C

Self-adhesive copper tape should be firmly applied to the cured KingFloor Primer so that no part of the floor is more than 2 meters away from the copper tape.

METHOD OF USE

Substrate Preparation

The substrate must be clean, dry, even, dense and free from oil, grease, dust and other contaminations. A

KingFloor ® Conductive

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 75% (max. moisture content of 4%), relative humidity can be measured by using hygrometers. Concrete relative humidity should be less than 75% for concrete of 28 days old or more.

Surface Preparation
Unsound layers and contaminated concrete surfaces must be prepared using mechanical surface removing equipment. In case of areas deeply contaminated by oil or grease, such areas should be treated with hot compressed air.

Priming
Priming is required for flooring system only. Concrete substrates should be primed with KingFloor Primer. The primer should be allowed to cure for 24 hours. Use lambs wool roller to apply the primer. More than one coat may be required for highly porous or textured surfaces.

Self-adhesive copper tape should be firmly applied to the cured KingFloor Primer so that no part of the floor is more than 2 meters away from the copper tape.

Make sure that the perimeter tape is overlapped and applied at 300 - 500 mm from the edge of the wall. Extend the copper tape to adequate number of earthing points depending on the floor area and condition.

Note: For the best results, always use a minimum of 2 earthing points even in small installation.

Oleic Acid sat.	R
Citric Acid 25%	R
Vinegar 10%	R
Sodium Hydroxide 50%	R
Ammonia Solution 10%	R
Sodium Chloride sat	R
Water	R
Chlorinated water	R
Dead sea water	R
White spirit	R
Xylene	R
Acetone	RS
Benzyl alcohol	RS
Brake fluid	R
Diesel	R
Kerosene	R
Sulphuric Acid 25%	R
Phosphoric Acid 20%	RS + SS
Hydrochloric Acid 36%	RS + SS
Nitric Acid 10%	RS

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

KINGFLOOR CONDUCTIVE BASE COAT

The Basecoat should be mixed with a slow speed drill and suitable helix type paddle. The entire contents of the base should be added to the hardener and mixed for at least 3 minutes.

Frequently scrape the sides and bottom of the container. When mixed, the Basecoat should be applied to the primed concrete using a proper short hair roller at a rate of 4.5 m^2/ kg and allowed to cure for 24 hours at normal conditions before being over coated with the topcoat.

CHEMICAL RESISTANCE	
Occassional spillage after full cure (7 days @ 25°C)	
Lactic Acid 10%	R

KINGFLOOR CONDUCTIVE TOP COAT

KingFloor ® Conductive

Transfer the entire contents of the resin and hardener and colour pack into a separate mixing container and mix them using a jiffy type mixer for 2 minutes until uniform consistency is achieved. Transfer the entire contents of the mixture into a creteangel-type mixer, and start mixing while adding the filler part gradually for two minutes until a uniform lumps-free consistency is active.

Once mixed, the Topcoat should be laid using a V-shape notched trowel or pin leveler at a coverage rate of 3.2 kg/ m2 to achieve 2.0 mm thickness. Good lighting conditions will assist in even application and spoting the poorly covered areas.

After around 10 minutes of laying the topcoat, it should be rolled using a spike roller at right angle to the direction of laying. After further 15 - 20 minutes, a second spike rolling should be done in a perpendicular direction to the
first direction.

For more information about the installation and verification of KingFloor Conductive refer to the product's Method Statement of contact KINGKRETE's Technical department.

PACKAGING

KingFloor Primer: 5 kg packs.
KingFloor Conductive Top Coat: 15 kg packs.
KingFloor Conductive Base Coat: 5 kg packs.

COVERAGE

KingFloor Primer: 5 m^2/kg.
KingFloor Conductive Top Coat: 3.2 kg/m^2. KingFloor Conductive Base Coat: 4.5 m^2/kg.
Actual coverage can vary depending on the substrate conditions.

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.

® = Registered trademark of the KingKrete-Group in many countries.

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