

ESD Floorings

Cipy ESD system is defined as a **resinous static control** flooring system that can dissipate charges by grounding the personnel, equipment or other objects contacting the floor surface.

Formulated with conductive grade antistats to both reduce tribo electric charging and create a static dissipative surface, Cipy ESD system safeguards sensitive electronic components during manufacture or service. In industries where static electricity can result in significant damage, injury and financial loss, Cipy ESD flooring is recommended.

Description:

The Cipy ESD flooring system is a multi layer self levelling system that hardens to an attractive durable finish. The system includes a primer, conductive middle coat and a self leveling top coat with antistats.

Key features:

- Higher mechanical properties than concrete.
- Durable.
- Constant level of conductivity.
- Low maintenance.
- Superior chemical resistance.
- Seamless.
- Available in attractive shades.
- Available in conductive and static-dissipative forms.
- Meets EOS/ESD standard 7.1 or NFPA 99 A guidelines.

Systems : Conductive and static dissipative:

- **ESD 104** is a conductive flooring system where the surface resistivity is within the range of 25000 (2.5×10^4) and 10,00,000 (10^6) ohms.
- **ESD 108** is a static dissipative flooring system where the surface resistivity is within the range of 1×10^6 and 1×10^9 ohms

Various systems offered :

- EPU : Cipothane ESD 104 & 108
- PU : Duracrete ESD 104 & 108
- Epoxy : Cipoxy ESD 104 & 108

Application areas:

- Ammunition plants : conductive flooring.
- Storage silos : conductive flooring.
- Electronics manufacturing : static dissipative flooring.
- Electronic maintenance/ repair shops : conductive/ static dissipative flooring.
- Data processing/ computer facilities : static dissipative flooring.
- Clean rooms : static dissipative flooring.
- Aircraft hangers : static dissipative flooring.

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Application Guidelines:

- Floors, which are subjected to take Floorkote ESD system, should be minimum 28 days old or moisture content should be less than 5% before application of Floorkote ESD system. The concrete must be clean, dry and sound. For surface preparation of concrete, refer to SSPC-SP13/ NACE 6 "SURFACE PREPARATION OF CONCRETE" for detailed guidelines.
- The entire surface should be roughened by abrasive blasting to remove all the laitance and obtain a surface profile of about 150-200 microns.
- Cipy ESD System application: 4 steps**

1st Step : The application of primer which forms an excellent bond with concrete, seals the substrate from moisture. It insulates against latent electrical properties in the existing floor, ensuring a neutral field on which the system is built up.

The prepared surface shall be applied with two component epoxy primer Cipoxy 14 with brush / roller, applied in thin continuous film with a spreading rate of 5 sqm per litre to achieve 200 microns and allow it to dry for minimum of 8 hours.

2nd step : Fixation of Copper tape:

This is to ensure that Cipy ESD system is connected to a permanent earth ground to achieve an electrical equipotential plane (EP). The ground couple is established over the primed layer with a conductive copper tape. (Ref: "Standard for protection of electrostatic discharge susceptible terms- grounding- recommended practice- EOS/ESD S6")

The self adhesive copper tape is stuck at the peripheries of the floor and joined to the ground. All concrete pads are electrically connected across expansion & control joints by fixing copper tape.

3rd Step : Application of conductive middle coat:

This layer forms the electrical plane through which static charges are dissipated.

Two component, Floorkote ESD is applied by brush /roller at a spreading rate of 5 sq m per litre to achieve 100 microns. Allow the film to cure for a minimum 12 hours.

4th Step : Pigmented Self Levelling Topcoat:

ESD SL104 (Conductive) or ESD SL108 (Static dissipative) contains resin, hardener, colorant, aggregates and special grade of antistats.

ESD SL 104 & 108 are supplied in pre weighed packs.

- Empty completely the contents of resin, hardener, colorant, aggregates and antistats .Mix the mixture with the aid of a slow speed drill motor for 3-5 minutes .
- Pour the mix immediately on the floor and spread to a uniform thickness with a notched trowel.
- The surface is then deaerated with the aid of spike roller to dislodge air pockets. The film is allowed to cure for 24 hours.

Typical physical properties:

Properties	Value	Test method
Tensile strength	16 N/mm ²	ASTM D 412
Compressive strength	55 N/mm ²	ASTM D 695
Flexural strength	34 N/mm ²	ASTM D 790
Conductivity range :		
ESD SL104	2.5x 10 ⁴ - 1x 10 ⁶	ASTM F-150
ESD SL108	1 x 10 ⁶ - 1x 10 ⁹	
Abrasion resistance	51 mg	ASTM D 4060
Hardness, shore D	50 - 80	ASTM D 2240
Water absorption	< 0.3%	----
Bonding strength	Concrete failure	ASTM E 229