

Statguard FF 108

Carbon fibre free, epoxy based, static dissipative flooring.

Description

Statguard FF 108 system is as an epoxy based resinous flow applied, dissipative flooring. Statguard FF 108 have been designed for the areas to impart a static dissipative flooring system where the surface resistivity is within the range of 1×10^6 - 1×10^9 ohms and Walking Body Voltage test < 100 V, as per ESD STM 97.2 (ANSI / ESD S 20.20). Statguard FF 108 system includes a primer, copper tape, conductive middle coat and a self smoothening top coat. Statguard FF 108 does not employ carbon fibres, but employs a third generation carbon nano tube technology.

We recommend Statguard FF 108 as maintenance coating, at 0.75mm thick, on existing old ESD floor topping.

Uses

- Electronics manufacturing
- Data centres
- Clean rooms
- Aircraft hangars
- Petrochemicals units

Key features

- Seamless, achieve uniform resistance value
- Durable and low maintenance
- Superior chemical resistance

- Available in attractive shades
- Complies to ASTM F 150 for surface resistivity and walking test as per ESD STM 97.2 (ANSI / ESD S 20.20)

Properties

Type	: Epoxy	Mixing ratio	: Pre-weighed packs
Finish	: Glossy	Colour	: Desired shade
Pot life @ 25°C ASTM D 2471	: 40-50 min	Mixed density	: 1.60 gm / cc
Drying time ASTM D 1640		Recommended DFT ASTM D 7091	: 1000 microns
Surface dry	: ≥ 2 hrs	Application	: By notched trowel and spike roller
Tack free dry	: ≥ 8 hrs	Shelf life	: 12 months in the unopened container
Hard dry	: ≥ 24 hrs		
Recommended thinner	: PUT 502 (Clean up)		

Performance parameters

The mandatory performance parameters as per FeFRA and EFNARC guidelines for resin flooring system

Pull of adhesion test ASTM D 7234-2022	: ≥ 1.5 MPa for M20 grade concrete or Concrete failure
Impact resistance IS 101-PT 5 Sec 3	: Pass (1.8 kg - 100 cm)
Abrasion resistance ASTM D 4060-2019 CS 17, 1 kg 1000 cycles	: Max 42 mg loss

Other mechanical properties

Tensile strength ASTM D 638	: 5 - 5.5 MPa
Flexural strength ASTM D 790	: 3 - 3.5 MPa
Elongation ASTM D 638	: 19 - 20%
Hardness, Shore D ASTM D 2240	: 55-60
Surface resistivity ASTM F 150	: 1×10^6 - 1×10^9 ohms
Slip resistance BS 8204	: 58 - 69 (PTV) very low risk of slip

Note : The typical physical properties given above are derived from testing in a controlled laboratory environment. Results derived from testing field-applied samples may vary, dependent on actual site conditions

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Chemical resistance

Excellent resistance is observed against distilled water, detergent solutions, alkalis and acids. Chemical spillages should always be wiped up as quickly as possible and not be allowed to concentrate up by evaporation. The data on the list of the chemicals found resistant to this product during our lab study is available on request.

APPLICATION INSTRUCTION

Surface preparation : The long-term durability of the applied STATGUARD FF 108 flooring is dependent upon the adhesive bond achieved between the flooring material and substrate. It is most important therefore, that substrate surfaces are correctly prepared prior to application. Ensure that the residual moisture level in the concrete is below 5% and concrete strength is between 20-25 MPa. All substrates should be sound and free from contamination such as mortar and paint splashes, curing compound residue, oil, or grease. Excessive laitance should be removed by light mechanical scrubbing, grinding or grit blasting. Oil and grease contamination must be completely removed by grinding down to sound, clean concrete. Alternatively, blasting techniques can be used to provide the required substrate.

Priming : Cipoxy 17 Resin and Cipoxy 17 Hardener is supplied separately in 20 lts packing. Mix Resin and Hardener in equal proportions. Solvent or thinners should not be added. A forced action mixer with a paddle fitted into a heavy duty, slow speed electric hand drill is recommended for mixing. The material is poured onto the prepared substrate and spread to the required thickness with a roller. Allow to cure overnight. Porous floors may require two coats of primer. Overcoating window time should not exceed 24 hours. In case overcoating window exceeds 24 hours, recoating of primer is necessary.

Fixation of Copper Tape : This is to ensure that Statguard FF 108 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 slabs are electrically connected across the expansion and control joints by fixing copper tape.

Conductive middle coat : This layer forms the electrical plane through which static charges are dissipated. Two component, Aquoxy ESD having resistance 1×10^4 ohms, is applied by brush /roller at a spreading rate of 7.5 sq m per litre. Allow the coating to cure for 12 hours.

Self smoothing top coat : STATGUARD FF 108 is supplied in pre-weighed packs. Unpack Resin and add to a clean mixing bowl. Add Statguard FF 108 Concentrate into the bowl. Ensure that the entire quantity of Concentrate is emptied. Stir well for 2-3 minutes so that a homogeneous black colour solution is obtained. Add hardener, EPI and aggregates slowly under stirring and continue mixing for 3-4 minutes. Pour the mix on to the floor and spread to a uniform thickness with a notched trowel. The surface is then de-aerated with the aid of spike roller to dislodge air pockets. Avoid excess spike rolling. Allow to cure for 24 hours.

Maintenance top coating : Prepare the surface by sanding existing ESD Resin floor topping followed by application of one coat of Aquoxy ESD followed by application of Statguard FF 108 at 0.75 mm.

Packaging and theoretical coverage

Primer : Cipoxy 17 / 18 is available in 20 litre packing, having a coverage of 5 sqm / litre @ 200 microns

Middle coat : Aquoxy ESD is available in 20 litre packing, having a coverage of 7.5 sqm / litre.

Self smoothing top coat : STATGUARD FF 108 is available in 14.74 kg clear set having a coverage of 9.5 sqm per pack @ 1mm thick.

Pigment for top coat : available in 400 gms packing to be mixed with Statguard FF 108

For Maintenance coating :

Middle coat : Aquoxy ESD is available in 20 litre packing, having a coverage of 7.5 sqm / litre.

Self smoothing top coat : STATGUARD FF 108 is available in 14.74 kg clear set having a coverage of 13.5 sqm per pack @ 0.75 to 0.8 mm thick.

Pigment for top coat : available in 400 gms packing to be mixed with Statguard FF 108

Limitations

Self-smoothing is a term used in the flooring industry to describe a composition which after being spread to a uniform layer of appropriate thickness, develops a smooth, resin-rich surface. This self-smoothing action is very localized and does not eradicate irregularities of level present in the original substrate. It is most important, therefore, that adequate surface preparation and repair is undertaken prior to application.

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It is not compatible for application over asphalt, unmodified sand-cement screeds or PVC tiles and sheets. STATGUARD FF 108 laid floor will be scratched due to nails or sharp objects protruding from machinery, packings, or trolleys moving on the floor. Presence of sand will also cause abrasion. The product is not advised to be applied below 15 °C as the flow reduces. While applying the product above 35 °C, there can be a problem of low pot life etc., and it will be difficult to apply the material. Cured product is not suitable for exposure to sub-zero temperatures and above 65 °C. When there is not enough material in a given area, roller marks caused due to spiked rolling may not close which will result in an undesirable finish. The product is not suitable for areas exposed to direct sunlight.

Do's

- Clean regularly
- Remove aggressive chemical spillage immediately
- Maintain wheel for proper rolling, should not get dragged. Nylon / teflon wheel trolleys are recommended
- Handle heavy material gently and cautiously
- Immediately clean spillage of any oil or fatty liquid which may cause accident during people's movement

Don't

- Drag any sharp and heavy object. Movement of metal wheel trolley
- Expose to fire or welding spark
- Expose to very high temperature than recommended by Manufacturer
- Drop down any heavy material on the floor
- Expose to highly corrosive chemicals

Storage and handling

The product should be stored in accordance with national regulations. It should be kept in a cool, well ventilated area, away from heat, direct sunlight, sparks and children. Handle with care.

Health and safety precautions

Please refer to MSDS. Observe reasonable care and employ ordinary hygienic principles such as washing the hands with soap and water before eating or smoking. It is recommended to wear gloves, goggles and nose masks while application. In case of splashes on the skin, dampen the cloth with thinner PUT 503 and wipe the hands with the cloth. Wash then with soap and water. Dried film is non toxic. In case of contact with eyes, rinse with plenty of water and seek medical advice. In case of continuous exposure to vapour, the applicator should be immediately moved to get fresh air. The disposal of excess or waste material should be carried out in accordance with the local legislations.

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