Nitoflor SL Conductive
Nitoflor SL Dissipative

constructive solutions

Epoxy resin based static Conductive/Dissipative system **self smoothing floor toppings**

- Nitoflor SL Conductive system $5x10^4$ -1 x 10^6 Ohms
- Nitoflor SL Dissipative system $1x10^6$ -1 x 10^9 Ohms

Uses

Nitoflor SL Conductive/ Nitoflor SL Dissipative system have been designed for use in areas where a static Conductive or a static Dissipative floor is required as a measure to control static electricity. Moreover, they provide a dense, impervious, coloured and chemical resistant floor surface which is hygienic and easy to clean. Typical areas of use include electronics manufacture and assembly, clean rooms, computer rooms, hazardous dust and chemical environments and hospital operating theatres.

Advantages

- Static control : provides an effective passage of static electricity to earth
- Hygienic: provides a dense, impervious seamless floor surface which is easily cleaned
- Durable: good abrasion resistance
- Aesthetical appearance: available in a wide range of colours to enhance the working environment
- Chemical resistant: good resistance to a wide range of chemicals

Description

Nitoflor SL Conductive/Nitoflor SL Dissipative system consists of blended epoxy resins, curing agents, graded inert aggregates. They are flow applied floor toppings for use at a thickness of 2mm.

When laid Nitoflor SL Conductive/Nitoflor SL Dissipative system provide a seamless, smooth, light reflective surface.

Flooring system

1 coat of Nitoprime 25

1 layer of Nitoflor SL Conductive /Nitoflor SL Dissipative undercoat

1 layer of Nitoflor SL Conductive / Nitoflor SL Dissipative topcoat

Technical Support

Fosroc offers a technical support service to specifiers, end users and contractors, as well as on-site technical assistance in locations all over the country.

Properties

Specific gravity(mixed)	Approx. 1.7
Volume solids	100%
Surface resistance(BS 2050) Nitoflor SL Conductive Nitoflor SL Dissipative	 5×10^4 - 1 x 10^6 Ohms 1 x 10^6 - 1 x 10^9 Ohms
Compressive strength (BS 6319)	50N/mm^2
Tensile strength (BS 6319)	16N/mm^2
Flexural strength (BS 6319)	34N/mm^2
Temperature resistance	Upto 80^{0}C
Pot life at 30^{0}C	approx. 30 min.
Curing time at 30^{0}C	Foot traffic after 24 hrs Full traffic after 5days

Chemical resistance

The cured Nitoflor SL Conductive/ Nitoflor SL Dissipative floor toppings are resistant to petrol, oils and fats, detergents, some aliphatic hydrocarbons and diluted alkalis.

For further information on chemical resistance, Fosroc shall be contacted.

Specification clause

The areas indicated shall be applied with an epoxy resin based static Conductive Nitoflor SL Conductive/Nitoflor SL Dissipative floor topping, certified by Central Power Research Institute (CPRI), which shall provide an effective charge dissipation to the earth when applied over concrete or steel substrates.

For static Conductive areas (Resistance $5x10^4$ to 1 $x10^6$ Ohms)

When measured for surface resistance in accordance with BS 2050 : 1978 (A-1984) and DIN EN 1081, the static Conductive topping including Under coat shall be in the range of 5 x 10^4 - 1 x 10^6 Ohms. When tested for static decay as per Federal Test method 101B, Method 4046, the static conductive topping shall take not more than a time of 0.01 seconds to decay with $\pm$ 5KV peak charge to 0%. The surface resistance of the Conductive undercoat shall be in the range of 3 x 10^3 - 9 x 10^3 Ohms.

For static Dissipative areas (Resistance 10^6 to 10^9 Ohms)

The surface resistance of the Dissipative undercoat shall be in the range of 3 x 10^4 - 8 x 10^4 Ohms. When measured for surface resistance in accordance with BS 2050: 1978 (A-1984) and DIN/ EN 1081, the static Dissipative topping including undercoat shall be in the range of 1 x 10^6 - 1 x 10^9 Ohms.

Application instructions

Surface preparation

All floors to receive Nitoflor SL Conductive / Nitoflor SL Dissipative topping should be protected by means of a damp-proof membrane. The absence of such membranes could lead to the problem of osmosis/rising dampness where soluble salts have concentrated.

New concrete or cementitious substrates should have been placed atleast 28 days earlier and have a moisture content of less than 5% before topping with Nitoflor SL Conductive / Nitoflor SL Dissipative system. This can be checked by using a Thermo Hygrometer. With non-self supporting concrete floors transfer of moisture from the soil might occur, resulting in adhesion failures of the flooring system.

The long term durability of the applied Nitoflor SL Conductive / Nitoflor SL Dissipative topping 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.

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 scrabbling, 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.

Old concrete floors with deep seated contamination and substrate damage must be prepared by any of the mechanical methods as previously described. Major discrepancies in the substrate should be repaired with Nitomortar S*.

Where these methods are considered impracticable, alternative methods may be considered, but it is essential that a sound, clean substrate be provided. For further advice, Fosroc may be consulted.

As Nitoflor SL Conductive / Nitoflor SL Dissipative systems are only 2mm toppings, the substrate must be relatively even textured, as any major surface discrepancies may affect aesthetics.

Priming

Prepared substrates to be treated with Nitoflor SL Conductive / Nitoflor SL Dissipative system, should be primed with Nitoprime 25*. Nitoprime 25 should be mixed in the proportions supplied by adding the entire contents of hardener can to the base can. Once mixed the Nitoprime 25 primer, should be immediately applied in a thin, continuous film using stiff brushes or rollers. Over application and puddles should be avoided.

Porous floors may require two coats of Nitoprime 25.

Nitoprime 25 should be allowed to become tack free prior to application of Nitoflor SL Conductive / Nitoflor SL Dissipative Undercoat.

Earthing Connections

Earthing connections (where needed) should be placed at appropriate locations in consultation with Fosroc.

Mixing undercoat

Proper mixing of the undercoat components is essential. Both the base and hardener shall be mixed in a mixing vessel. Solvents should not be added. It is important that all components are intermixed thoroughly with a forced - action mixer or with a heavy duty slow speed drilling machine attached with a mixing paddle so that no traces of the components remain unmixed.

Applying undercoat

The mixed undercoat shall be applied with a roller or brush on the primer at a material consumption rate of 6.3 - 7.3 m^2/ litre for Nitoflor SL Conductive undercoat and 6.7 - 7.8 m^2/litre for Nitoflor SL Dissipative. Care should be taken to avoid over application or puddles. The undercoat provides a Conductive / Dissipative system passage to earth and correct application and strict adherence to coverage rates are critical to the final electrical properties of the completed floor.

For undercoat curing to be complete, adequate ventilation and air movement are necessary. Thorough covering of earthing connections is essential. The conductivity of the undercoat needs to be measured before applying the Top coat. The surface resistance should be :

Nitoflor SL Conductive : approx. $3x10^3$ - $9 x10^3$ Ohm

Nitoflor SL Dissipative : approx. $3x10^4$ - $8 x10^4$Ohm

Mixing Topcoat

Proper mixing of the components is essential. Both the base and hardener shall be mixed in a mixing vessel. The colour-pot shall be added and mixed till an even colour is obtained. The filler shall be added and mixed for another 3 - 5 minutes till a homogeneous mixture is obtained. Solvents should not be added. It is important that all components are intermixed thoroughly with a forced action mixer or a slow speed heavy duty drill machine fitted with a mixing paddle, so that no traces of the components remain unmixed.

Applying Topcoat

When mixed, Nitoflor SL Conductive/Nitoflor SL Dissipative Topcoat should be poured immediately on to the surface and spread at 2mm with a steel trowel or a float. Immediately after application the surface should be firmly rolled in perpendicular directions with a nylon spiked roller to help release any entrapped air in the material and help level any slight trowel marks.

Maintenance

The service life of a floor can be considerably extended by good housekeeping. Regular cleaning may be carried out using a rotary scrubbing machine with a water miscible cleaning agent at temperatures up to 50^0C.

Limitations

Nitoflor SL Conductive / Nitoflor SL Dissipative system should not be applied to asphalt, unmodified sand/cement screeds, PVC tiles or vinyl. For information on other substrates, Fosroc shall be contacted.

Nitoflor SL Conductive / Nitoflor SL Dissipative system should not be applied at temperatures below 15^0C.

Estimating

Packaging

Nitoflor SL Conductive/ Nitoflor SL Dissipative Topcoat (Base, hardener, aggregate, and colour pot)	15 litre pack
Nitoflor SL Conductive / Nitoflor SL Dissipative Undercoat (Base and hardener)	2.4 litre pack
Nitoprime 25	1 and 4 litre pack

Coverage

Undercoat:		
Nitoflor SL Conductive	:	6.3 - 7.3 m^2/litre
Nitoflor SL Dissipative	:	6.7 - 7.8 m^2/litre
Topcoat:		
Nitoflor SL Conductive	:	7.5 m^2/15 litre pack @ 2mm thickness
Nitoflor SL Dissipative	:	7.5m^2/15 litre pack @ 2mm thickness
Nitoprime 25	:	5.5 - 6.5 m^2 / litre

Joints

All existing expansion or movement joints should be bridged with earthing connections in order to secure the conductivity of the floor.

Cleaning

Tools and equipment should be cleaned with Nitoflor Sol immediately after use. Spillages should be absorbed with sand or saw dust and disposed in accordance with local regulations.

Storage

Shelf life

Nitoflor SL Conductive / Nitoflor SL Dissipative system Topcoat and Undercoat have a shelf life of 12 months if kept in a dry, cool store in the original unopened packs.

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Precautions

Health & Safety instructions

Contact with skin and eyes shall be avoided. Use only in well ventilated areas is suggested. In case of insufficient ventilation, suitable respiratory equipment shall be worn. Breathing of vapour is not suggested. Suitable protective clothing, gloves and eye/face protection shall be worn. If swallowed, medical advice shall be sought immediately and show the container or label - Vomiting should not be induced. After contact with skin, it shall be washed immediately with plenty of water and soap. In case of contact with eyes, it shall be rinsed immediately with plenty of water and medical advice shall be sought immediately. It shall be kept away from sources of ignition - Smoking is prohibited during application/ handling of the product.

Flash points

Nitoprime 25	25^{0}C
Undercoat base	greater than 100^{0}C
Undercoat hardener	N.A.
Topcoat base	greater than 100^{0}C
Topcoat hardener	57^{0}C
Nitoflor Sol	33^{0}C

Additional information

The Fosroc range of associated products includes high strength cementitious grouts, epoxy grout, polyester resin based mortar for presetting of steel shims to level or for direct bedding of small base plates, resin anchoring systems for same day anchoring of bolts in drilled holes in concrete or rock. Also available are a range of products for construction viz. admixtures, curing compounds, release agents, flooring systems and repair mortars.

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