



Nitoflor SL Conductive Plus

Epoxy resin based static conductive floor topping Surface resistance and resistance to ground <math> < 5 \times 10^4 </math> Ohms

Uses

Nitoflor SL ConductivePlus system has been designed for use in areas where a highly static conductive floor is required as a measure to control static electricity. 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 effective charge dissipation
- **Hygienic** - provides a dense, impervious seamless floor surface which is easily cleaned
- **Durable** - good abrasion resistance
- **Aesthetic** - available in a wide range of colours to enhance the working environment
- **Chemical resistance** - good resistance to a wide range of chemicals

Description

Nitoflor SL Conductive Plus system consists of blended epoxy resins, curing agents, graded inert aggregates. It is a flow applied floor topping for use at a thickness of 2mm.

When laid Nitoflor SL Conductive Plus system provides a seamless, smooth, light reflective surface.

Flooring system

The system comprises of :

- 1 coat of Nitoprime 25
- 1 layer of Nitoflor SL Conductive Plus Undercoat
- 1 layer of Nitoflor SL Conductive Plus 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) Ohms	<math> < 5 \times 10^4 </math>
Compressive strength (BS 6319) 7 days	60 N/mm ²
Tensile strength (BS 6319) 7 days	16 N/mm ²
Flexural strength (BS 6319) 7 days	40 N/mm ²
Temperature resistance	Upto 80°C
Pot life at 30°C	approx. 30 minutes
Curing time at 30°C	Foot traffic after 24 hrs Full traffic after 5days

Chemical resistance

The cured Nitoflor SL conductive floor topping is resistant to petrol, oils and fats, detergents, some aliphatic hydrocarbons and diluted alkalis.

For further information on chemical resistance please contact Fosroc.

Specification clauses

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

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 less than $5 \times 10^4 </math> 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 5 </math>KV peak charge to 0%. The surface resistance of the Conductive undercoat shall be in the range of $1 \times 10^3 </math> - $2 \times 10^3 </math> Ohms.$$$$

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Application instructions

Surface preparation

All floors to receive Nitoflor SL Conductive Plus 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.

New concrete or cementitious substrates should have been placed at least 28 days earlier and have a moisture content of less than 5% before topping with Nitoflor SL Conductive Plus system. This can be checked by using a Thermo Hygrometer.

The long term durability of the applied Nitoflor SL Conductive Plus 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 scrubbing, grinding or grit blasting. Light laitance may be removed by etching with Reebaklens followed by thorough washing with clean water, vacuum cleaning and then allowing the surface to dry.

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, epoxy based repair mortar.

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 Plus is only 1.5 - 2 mm topping 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

Plus, should be primed with Nitoprime 25. Nitoprime 25 epoxy primer, should be mixed in the proportions supplied by adding the entire contents of hardener can to the base can. Once mixed the Nitoprime 25 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 primer should be allowed to become tack free prior to application of Nitoflor SL Conductive Plus Undercoat.

Earthing Connections

Earthing connections are very essential and should be placed at appropriate locations in consultation with Fosroc.

Mixing undercoat

Proper mixing of the undercoat components is essential. Mix the base and hardener in a mixing vessel. Do not add solvents!! 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.

Application undercoat

Apply the mixed undercoat with a roller or brush on the primer at a material consumption rate of 5.6-6.0m²/litre. Care should be taken to avoid over application or puddles. The undercoat provides a 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 between 1 x10³ Ohms and 2 x 10³ Ohms.

Mixing Topcoat

Proper mixing of the components is essential. Mix the base and hardener in a mixing vessel. Add the colourpot and mix till an even colour is obtained. Add the filler and mix for another 3 - 5 minutes till a homogeneous mixture is obtained. Do not add solvents. 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.

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Applying Topcoat

When mixed, Nitoflor SL Conductive Plus 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°C.

Limitations

Nitoflor SL Conductive Plus should not be applied to asphalt, un modified sand/cement screeds, PVC tiles or vinyl. For information on other substrates, consult Fosroc.

Nitoflor SL Conductive Plus should not be applied at temperatures below 15°C.

Estimating

Packaging

Nitoflor SL Conductive Plus Topcoat (Base, Hardener, Aggregate, and Colour pot)	15 litre pack
Nitoflor SL Conductive Plus Undercoat (Base and Hardener)	2.4 litre pack
Nitoprime 25	1 & 4 litre pack

Coverage

Nitoflor SL Conductive Plus Undercoat	: 5.6-6.0 m ² /litre
Nitoflor SL Conductive Plus Topcoat	: 7.5 m ² /15 litre pack @ 2mm
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 ensure 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 Plus Topcoat and Undercoat have a shelf life of 12 months if kept in a dry, cool store in the original unopened packs.

Health & Safety instructions

Precautions

Avoid contact with skin and eyes. Use only in well ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe vapour. Wear suitable protective clothing, gloves and eye/face protection. If swallowed, seek medical advice immediately and show the container or label - do not induce vomiting. After contact with skin, wash immediately with plenty of water and soap. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Keep away from sources of ignition - Do not smoke during application.

Flash points

Nitoprime 25	25°C
Undercoat base	greater than 100°C
Undercoat hardener	N.A
Topcoat base	greater than 100°C
Topcoat hardener	57°C
Nitoflor Sol	33°C

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Additional information

The Fosroc range of associated products includes admixtures, curing compounds, flooring systems, precision grout, repair mortars, protective coating, joint sealants and waterproofing systems.

Separate datasheets are available on these range of products.



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