Nitoflor® SL2050

FOSROC constructive solutions

Indian Green Building Council

Flow applied, water miscible, damp-tolerant, 2-5mm thick epoxy resin based floor topping

Uses

To provide a smooth, dense, matt finish, easily cleanable surface which is resistant to most oils and liquids. It is suitable for use in:

- Pharmaceutical industries and medical laboratories.
- Light industrial and food processing areas.
- Food & Beverage Industries.
- Clean rooms in electronics industry.

Advantages

- Durable - good resistance to abrasion and impact.
- Economical - easy to apply, minimises cleaning costs.
- Fast - Can be applied on green concrete.
- Damp tolerant - no application delays.
- Water miscible - safe in use, no odour.
- Longevity - Good abrasion and corrosion resistance.
- Attractive - available in a range of colours.
- Environment friendly - No V.O.C compliance to IGBC guidelines.
- Water vapour permeable.
- Good resistance to a wide range of chemicals.
- Non tainting.

Description

Nitoflor SL2050 is a four-component, self-levelling, water miscible epoxy resin floor topping, based on new generation epoxy resin technology, supplied in pre-weighed packs ready for on-site mixing and use.

The cured film forms a hard, matt and water vapour permeable seal to concrete. This permeability allows it to be applied on damp substrates and green concrete.

The product is available in a wide range of colours.

Design criteria

Nitoflor SL2050 is designed for application on horizontal substrates in the thickness range of 2mm-5mm.

Nitoflor SL2050 is designed for fast curing (24 hours) and can be applied on green concrete (7day old).

Specification

Epoxy self levelling floor topping

The self levelling flooring shall be Nitoflor SL2050, a four-component water miscible epoxy resin. The designated floor areas shall be surfaced with Nitoflor SL2050 at 2mm - 5mm thick flow applied, water miscible epoxy floor topping.

Properties

The value given below are average figures achieved in laboratory tests. Actual values obtained on site may show minor variations from those quoted.

Physical properties

		@ 23°C	@ 35°C
Pot life*	:	1 hour	30 min
Pedestrian traffic time	:	24 hours	15 hours
Full cure	:	21 days	10 days
Application thickness	:	2mm - 5mm	
Mechanical Properties - 21days cure @ 23°C			
Shore D Hardness (ASTM D2240)	:	73	
Specific gravity	:	1.70 g/cc	
Compressive strength (ASTM C579)	:	35N/mm² @ 23°C 40N/mm² @ 35°C	
Flexural strength (BS 6319)	:	12N/mm²	
Tensile strength (BS 6319)	:	8N/mm²	
Bond strength (ASTM D4541)	:	> 2.0 Mpa	
Abrasion resistance (ASTM D4060)	:	250mg wt loss (CS17/1kg/1000cycles)	
Impact resistance (ISO 6272)	:	No failure	
Service Temperature	:	Up to +70°C @ 2mm	
Water vapour transmission** (ASTM E96)	:	1.04g/h/m²	
Permeance** (ASTM E96)	:	1.12×10^{-7} g/Pa.s.m²	
Resistance to bacterial growth (BS6920, Pt. 2.4)	:	Resistant	
Resistant to Funal growth (ASTM D3273)	:	Resistant	

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Chemical Resistance

Nitoflor SL2050 is fully resistant to a wide range of chemicals. Specific data is available on request. Few general categories are listed below.

- Water, Sea water
- Alkali Solutions
- Aqueous solutions of salts
- Soft drinks
- Fruit juices
- Carbonated beverages
- Motor oils and lubricants
- Cosmetics and toiletries.
- Pharmaceutical products
- Dairy products
- Edible oils
- Medicated oils etc.

Note : Good housekeeping is essential in areas where chemical spillage is likely to occur. It is especially important that such spillage should not be allowed to dry since very much higher concentrations of chemicals will then result.

Instructions for use

Surface preparation

It is essential that Nitoflor SL2050 is applied to sound, clean substrates in order to achieve maximum adhesion between the floor coating and substrate.

The substrate must be fairly smooth, as any surface irregularities may show through Nitoflor SL2050 changing the perceived colour of the coating and causing excessive wear on high spots.

New concrete floors

The floor should be typically at least 28 hours old @ 23°C.

Old concrete floors

A sound, clean substrate is essential to achieve maximum adhesion. Light grit blasting should be carried out as for new concrete floors. Oil and grease penetration should be removed by hot compressed air treatment followed by cleaning with a proprietary degreaser.

Priming

The substrate should be primed using Nitoprime WB.

Nitoprime WB should be mixed in the proportions supplied. Add the entire contents of the hardener can to the base can. When thoroughly mixed, preferably using a slow speed drill and paddle, the primer should be applied in a thin continuous film, using rollers or stiff brushes. Work the primer well into the surface of the concrete taking care to avoid ponding or over application.

The primer should be left to achieve a tack-free condition before applying the top coat. A second coat of primer may be required if the substrate is excessively porous. Make sure that the primer is applied within it's open time:

4 hours @ 23°C
2 hours @ 35°C
1 hour @ 45°C

Mixing

The individual components of Nitoflor SL2050 should be thoroughly stirred before the two are mixed together. The entire contents of the colour pack and base should be poured into a suitably sized mixing vessel and mixed with a slow speed heavy duty drill for 1 to 2 minutes. Add the hardener and mix for another 2minutes, until a homogeneous dispersion is achieved. The homogenity is assessed when there are no colour streaks visible in the mix. Add the filler and mix well for five minutes.

Application

The mixed Nitoflor SL2050 be spread on the prepared and primed surface between 2mm to 5mm thickness.

Use a spiked roller immediately after application to achieve a uniform finish. Continue rolling untill all air is released and uniform colour is obtained. Applicator should wear spiked shoes when rolling Nitoflor SL2050.

Good drying conditions are required to allow complete evaporation of the water as the resin cures. Adequate ventilation and air movement is necessary.

Cleaning

Nitoflor SL2050 should be removed from tools and equipment with clean water immediately after use. Hardened material can only be removed mechanically.

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Maintenance

The service life of a floor can be considerably extended by good housekeeping practices. Regular cleaning of Nitoflor SL2050 may be carried out using a rotary scrubbing machine with a water miscible, alkaline, cleaning agent or by hot water washing at temperatures up to 50°C.

Limitations

- Nitoflor SL2050 should not be applied at temperatures below 5°C or where ambient relative humidity exceeds 95%.
- Nitoflor SL2050 should not be subjected to flowing/running water during it's application and curing period.
- Not resistant to higher concentrations of mineral acids, organic acids and strong oxidising agents.
- If movement or cracking of the substrate takes place after application, then reflective cracking of the topping may occur. All known expansion joints should be maintained in the topping.
- Not recommended for immersed conditions.

Low Temperature Curing

Nitoflor SL2050 is suitable at temperatures of minimum 5°C. However, prolonged curing periods are required at temperatures ranging between 5°-10°C with pedestrian traffic time for a minimum 10days and light-traffic time of 30 days.

High Temperature Working

It is suggested that, for temperatures above 35°C, the following guidelines are adopted as good working practice:

(i) Store unmixed materials in a cool preferably airconditioned environment, avoiding exposure to direct sunlight.

(ii) Keep equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.

(iii) Try to avoid application during the hottest times of the day. If necessary provide a shade over the area where application will take place.

(iv) Make sufficient material, plant and labour available to ensure that application is a continuous process.

Technical support

Fosroc offers a comprehensive range of high performance, high quality flooring, jointing and repair products for both new and existing floor surfaces. In addition, the company offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Estimating

Supply

Nitoflor SL2050	:	12 litre packs
Nitoprime WB	:	1 litre packs

Coverage

Nitoflor SL2050	:	6.0 m²/pack @ 2mm thick
Nitoprime WB	:	6-7m²/litre

The coverage figures given are theoretical - due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Storage

Shelf life

All products have a shelf life of 12 months if kept in a dry store in the original, unopened packs. In tropical climates it is essential to store in air-conditioned warehouse.

Storage conditions

Store in dry conditions between 10°C and 30°C, away from sources of heat and naked flames in the original, unopened packs. If stored at high temperatures the shelf life may be reduced.

Precautions

Health and safety

Nitoflor SL2050 should not come in contact with the skin and eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapours. Some people are sensitive to resins, hardeners and solvents. Wear suitable protective clothing, gloves and eye protection. If working in confined areas, suitable respiratory protective equipment must be used. The use of barrier creams provide additional skin protection. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical attention immediately - if swallowed seek medical attention immediately - do not induce vomiting.

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Fire

Nitoflor SL2050 is non-flammable.

Disposal

Spillages of component products should be absorbed on to earth, sand or other inert material and transferred to a suitable vessel. Disposal of such spillages or empty packaging should be in accordance with local waste disposal regulation.

For further information, refer to the Product Material Safety Data Sheet.

Additional Information

Fosroc manufactures a wide range of products specifically designed for the specialist flooring industry. These include:

- liquid-applied
- chemically-resistant coatings
- self-levelling epoxy toppings and
- trowel-applied, highly abrasion-resistant screeds.

Among them are products suitable for use in:

- the food and drinks industry
- the pharmaceutical industry and
- in areas subjected to heavy industrial use.

Where the control of static electricity is an important consideration, Fosroc have developed conductive and dissipative seamless floor systems. In addition, a wide range of complementary products is available. This includes joint sealants, waterstops, waterproofing membranes and specialised products for the repair and refurbishment of damaged reinforced concrete.

For further information about products or publications, contact the local Fosroc office.

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Important note :
Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products whether or not in accordance with any advice, specification, recommendation or information given by it.

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