Nitoflor DS5000

(Formerly known as Nitoflor CS5000)

FOSROC constructive solutions

Heavy duty 3-5mm chemical and abrasion resistant epoxy resin decorative screed.

Uses

Nitoflor DS5000 provides an extremely high strength floor topping with exceptional resistance to the surface mechanical wear and attack from chemical spillage. It has a safe non-slip finish for personnel and vehicular traffic.

Ideally suited for Laboratories, automobile showrooms, pharmaceuticals, dairies and breweries.

In areas where high degrees of cleanliness and chemical resistance are required, the surface of Nitoflor DS5000 can be sealed with Nitoflor FC140 clear. followed by Nitoflor FS500 clear.

Advantages

- **Durable** :Exceptional resistance to abrasion and to a wide range of chemicals
- **Non-slip** :Good gripping surface to both vehicular and pedestrian traffic
- **Easily laid**:Designed for easy laying to a fair finish
- **Seamless**:Eliminates potential sources of failure
- **Colour range**:Available in specific colour combinations.

Description

Nitoflor DS5000 is a three part solvent-free combination of epoxy resin modified amine hardeners filled with specially coloured and selected high crushing strength, chemically inert aggregates.

Nitoflor DS5000 is laid by trowel at 3-5mm thickness depending on the requirement. The system includes Nitoprime 25, two part primer. Nitoflor DS5000 is supplied in preweighed units ready for on site mixing and application. The finished cured floor has a slightly granular texture. An epoxy sealer coat like Nitoflor FC140 clear or Nitoflor FS500 clear is recommended.

Technical support

Fosroc provides a technical advisory service supported by a term of specialists in the field.

Properties

Curing characteristics

Chemical resistance

Nitoflor DS5000	20^{0}C	27^{0}C
Pot life	50 min.	30 min.
Initial hardness	18 hrs.	16 hrs.
Full cure	7 days	6 days
Nitoprime 25		
Pot life	30 min @ 27^{0}C	
Maximum overlay time	30 min @ 27^{0}C	

Mechanical characteristics

Property (Average) Concrete	**Test method**	**Nitoflor DS5000**	
Compressive strength (N/mm²)	(BS 6319 Part 2)	60	20
Flexural strength (N/mm²)	(BS 6319 Part 3)	16	7
Tensile strength (N/mm²)	(BS 6319 Part 7)	8	3.5
Abrasion resistance(mg/cycle)	Taber Abrasion Test - Wt.Loss	2.7	4.19
Bond strength to concrete (N/mm²)	(Elcometer pull off test)	>3.0 than typical cohesive strength to concrete	
Specific gravity	2.2 g/cc		

Nitoflor DS5000

Application Instructions

Surface preparation

It is essential that Nitoflor DS5000 is applied to sound, clean and dry surfaces in order that maximum bond strength is achieved between the substrate and the flooring system.

New Concrete floors

Should be at least 28 days old moisture content should be less than 5%. Laitance deposits on new concrete floors are best removed by light grit-blasting, mechanical scrabbling or grinding. On smaller areas through acid etching using Reebaklens may be considered. After etching the floor should be thoroughly washed with clean water and then allowed to dry.

Old Concrete Floors

Again mechanical cleaning methods are strongly recommended on old concrete floors particularly where heavy contaminations by oil and grease has occurred or existing coatings are present. This may well have been absorbed several mm. into the concrete. To ensure adhesion, all contamination should be removed.

All dust and debris should be removed prior to laying Nitoflor DS5000.

Steel Surfaces

Should be degreased and sand blasted immediately prior to application.

Priming

All surfaces to be treated with Nitoflor DS5000 should be primed with Nitoprime 25, a solvent based epoxy resin primer designed for maximum absorption and adhesion to concrete substrates. Add the entire contents of the hardener tin to the base tin and mix thoroughly. Once mixed, immediately apply the primer in a thin continuous film to the clean prepared surfaces. Work the primer into the surface using stiff brushes, avoid over application and puddling. On porous floors the Nitoprime 25 will be absorbed very quickly leaving characteristic light coloured dry patches. It is recommended that a second priming coat be applied.

Allow the solvent in the **Nitoprime 25** to evaporate, at which stage the primer has become tacky. This time is dependent on climatic conditions. See 'Properties' for maximum overlay times.

Mixing

It is important that **Nitoflor DS5000** is mixed correctly.

A suitable forced action mixer such as a paddle fitted into a heavy duty, slow speed, electric hand drill and a similar equipment, is recommended for mixing.

The entire contents of hardener tin should be poured into the base container and mixed thoroughly until homogeneous.

It is recommended that the aggregates in the bag is blended well manually before adding to the mixed resin and hardener. Then add the aggregate slowly to the mixed resin and hardener, continue mechanical mixing for a further 2-3 minutes, until all the components are thoroughly blended. Once mixed, the materials must be used within the specified pot life (see under 'Properties'). After this time, unused materials will have stiffened and should be discarded.

Application

The mixed Nitoflor DS5000 should be spread to uniform thickness on the primed surface using a steel trowel. The material should be tamped with a wooden float to ensure complete compaction and finally finished to a closed even texture using a steel trowel.

Expansion joints

Expansion joints in the existing substrate should be continued through the Nitoflor DS5000 topping.

Coving

Nitoflor DS5000 can be used to form perimeter edge coving upto a height of 225 mm.

Sealing

Areas where high degree of cleanliness is required, Nitoflor DS5000 may be sealed with Nitoflor FC140 clear and Nitofor FS500 clear depending on the desired finish. For this, Nitoflor DS5000 must be atleast 1 day old and high spots such as cold joints and trowel marks rubbed down.

Cleaning

All tools and equipment should be cleaned immediately after use with Nitoflor Sol.

Estimating

Packing and coverage

	Pack size	Approximate coverage rate
Nitoprime 25	1 & 4 L	5.5 - 6.5 m^2/L
Nitoflor DS5000 Pack@ microns.	7.5 L	1.5 m^2 / 5000

The above coverage rates are given for guidance only as actual quantities used will vary with nature of substrate and conditions on site.

Generally two coats of Nitoflor FC140 clear is required as a sealer coat for a properly compacted Nitoflor DS5000 screed. Quantity of Nitoflor FC140 clear required to seal Nitoflor DS5000 in two coat is approximately 800ml for 1m^2 area. Additional coat of Nitoflor FC140 clear shall be recommended, in case of excess absorption. If a glaze coat of high build finish is desired, Nitoflor FS500 shall be applied at a coverage of 8-9 m^2 @ 500 microns thickness for 4.5 ltr pack.

Storage

Nitoprime25 and Nitoflor DS5000 have a shelf life of 12 months when stored in a dry place below 35^{0}C.

Precautions

Health and Safety instructions

Nitoflor DS5000 base and hardener components, Nitoprime 25 and Nitoflor Sol should not come in contact with skin and eyes or be swallowed. Prolonged inhalation of solvent vapours should be avoided.

Since some people are sensitive to epoxy resins, hardeners and solvents, gloves, goggles and barrier creams should be used. Adequate ventilation should be avoided and if work is in enclosed areas, suitable breathing apparatus must be used.

If mixed resin comes in contact with skin, it must be removed before it hardens with a resin removing cream, followed by washing with soap and water. Solvent should not be used. Contamination of skin with any of the above component products should be removed immediately with soap and water.

Should accidental eye contamination occur with any of the above products, it should be washed well with plenty of clean water and medical advice sought. If swallowed, immediate medical attention is advised.

Fire

Nitoprime 25 and Nitoflor Sol are flammable and should not be exposed to naked flames or other sources of ignition. Smoking is prohibited. Containers should be tightly sealed when not in use. Fire should be extinguished with Carbon dioxide or foam. Vomiting should not be induced.

Flash points

Nitoprime 25	25^{0}C
Nitoflor Sol	33^{0}C

Nitoflor DS5000

Additional information

The Nitoflor range of industrial flooring products for most industrial environments such as abrasion, chemical attack and impact. The product range includes coatings, toppings and sealants to meet the requirements of end users such as workshops, food and drink manufacturing industries, warehouses, hospitals, laboratories, steel, sugar and paper industries, aircrafts, hampers, mechanical engineering industries, tanneries, refineries, etc. For specific requirements, contact Fosroc.

Separate datasheets are available on these products.

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