

# Nitoflor FC150

High build, solvent free epoxy resin floor coating

## Uses

Nitoflor FC150 provides a hard wearing, chemical and abrasion resistant floor finish. It is ideally suited for use in wet areas where a high degree of resistance to chemicals, oils and grease is required such as :

- Dairies
- Soft drinks production facilities
- Chemical manufacturing plants
- Car parks and workshops

## Advantages

- Durable, low maintenance costs.
- Proven against a wide range of industrial chemicals.
- Solvent free - no odour during application.
- Slip resistant - different textures available to suit conditions to avoid slipping.
- Liquid applied providing complete protection.
- Available in a wide range of colours to improve the working environment and identify slip hazard areas.

## Description

Nitoflor FC150 is a solvent free system based on epoxy resins and curing agents specially selected for their ability to withstand chemical attack. The system consists of pre-weighed base & hardener components and a Nitoflor colour pack, all of which contain reactive elements that are essential to the installation of the system.

A slip resistant texture can be provided by the use of one of a range of Nitoflor Antislip Grains which have been carefully graded to ensure an even texture.

## Specification

The epoxy resin floor coating shall be Nitoflor FC150 from Fosroc. The total dry film thickness of the coating shall be a minimum of 400 microns and shall have a compressive strength of 70 N/mm<sup>2</sup>, flexural strength of 40 N/mm<sup>2</sup> and a tensile strength of 20 N/mm<sup>2</sup>. The floor shall be prepared and the coating mixed and applied in accordance with the manufacturer's current data sheet.

## Design criteria

Nitoflor FC150 is applied as a floor coating system comprising of two top coats (depending on the substrate conditions a primer might be required), each top coat to be a minimum of 200 microns thick. To provide a slip resistant texture, the first top coat can be dressed with Nitoflor Antislip Grains\*.

## Properties

The following values were obtained when tested at 27°C.

Pot life	: 25 mins
Cure time	: 24 hours
Maximum time between coats	: 36 hours
Light traffic use after	: 24 hours
Full traffic use after	: 48 hours
Resistance to chemical spillage	: 7 days
Compressive strength (BS 6319 part 2)	: 70 N/mm <sup>2</sup>
Flexural strength (BS 6319 part 3)	: 40 N/mm <sup>2</sup>
Tensile strength (BS 6319 part 3)	: 20 N/mm <sup>2</sup>
Water absorption (ASTM C 413:1996)	: 0.07%
Shore D Hardness (ASTM D 2240)	: > 80
Abrasion Resistance (ASTM D 4060)	: 0.1 mg/cycle loss of weight (with CS 17 wheel of 1000g weight)
VOC Content (ASTM D 2369)	: NIL

## Chemical resistance

Fully cured Nitoflor FC150 samples have been tested in a wide range of aggressive chemicals commonly found in industrial environments. Tests were performed in accordance to ASTM D 543 standards over 168 hours (7 days) at 23°C±2

### Acids

Lactic acid 10%	: Resistant
Citric acid 10%	: Resistant
Acetic acid 10%	: Resistant
Hydrochloric acid 50%	: Resistant
Sulphuric acid 50%	: Resistant
Nitric acid 25%	: Resistant

### Alkalis

Sodium hydroxide 50%	: Resistant
Ammonia (0.880) 10%	: Resistant

### Solvents

Petrol	: Resistant
Oil	: Resistant
Kerosene	: Resistant
Butanol	: Resistant

# Nitoflor FC150

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Skydrol	:	Resistant
Industrial Methylated spirits	:	Resistant
Others		
Saturated sugar solution	:	Resistant
Urea (saturated)	:	Resistant
Bleach 5%	:	Resistant

All the above properties have been determined by laboratory controlled tests and are in excess of those expected in practice.

Nevertheless, success in use will be determined by the implementation of good housekeeping practices.

## Instructions for use

### Surface preparation

The long term durability of any resin floor system is determined by the adhesive bond achieved between the flooring material and the substrate. It is most important therefore that substrates are correctly prepared prior to application.

### New concrete floors

These should normally have been placed for at least 28 days and have a moisture content of less than 5%. Floors should be sound and free from contamination such as oil and grease, mortar and paint splashes or curing compound residues. Excessive laitance can be removed by the use of mechanical methods. Dust and other debris should then be removed by vacuum cleaning.

### Old concrete floors

A sound, clean substrate is essential to achieve maximum adhesion. Oil and grease penetration should be removed by the use of a proprietary chemical degreaser or by hot compressed air treatment.

Any damaged areas or surface irregularities should be repaired using Nitomortar 30 or Nitoflor EU5.

### Priming

Priming is not normally required provided the substrate is sound, untreated and good quality nonporous concrete. If any doubts exist of the quality of the concrete, or if it is porous it should be primed with Nitoprime 25. Contact the local Fosroc office for advice.

Nitoprime 25 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.

### Mixing the coating

The base and hardener components of Nitoflor FC150 should be thoroughly stirred before the two are mixed together. The entire contents of the hardener container should be poured into the base container and the two materials mixed thoroughly, then add the colour pot and mix for at least 3 minutes. The use of a heavy-duty slow speed, flameproof or air driven drill fitted with a Mixing Paddle is desirable. Mix these components in the quantities supplied taking care to ensure all containers are scraped clean. Do not add solvent thinners at any time.

### Standard application

The first coat of Nitoflor FC150 should be applied using a good quality medium haired pile roller, suitable for epoxy application, or squeegee to achieve a continuous coating. Ensure that loose hairs on the roller are removed before use. A minimum film thickness of 200 microns should be applied. This can be increased where specifications demand.

When the base coat has reached initial cure (12 hours @ 20°C or 5 hours at 35°C). The top coat can be applied by medium haired roller, at minimum film thickness of 200 microns. Care should be taken to ensure that a continuous film is achieved.

### Antislip application

If a slip resistant texture is required, the base coat shall be applied as per the standard application, but at a minimum film thickness of 250 microns. The base coat should then be dressed with the chosen Nitoflor Antislip Grain. This should be done as soon as possible after laying. The recommended procedure is to completely blind the base coat i.e. apply excess dressing aggregate to completely obliterate the base coating.

Alternatively, the Nitoflor Antislip Grains can be broadcast in a light random dressing to provide a less dense finish.

When the base coat has reached initial cure (12 hours @ 20°C or 5 hours at 35°C), the excess aggregate should be vacuum cleaned from the surface.

The top coat can now be applied by medium haired roller, at a rate of 4.0m<sup>2</sup>/litre. Care should be taken to ensure that a continuous film is achieved and the rough surface, caused by the aggregate, is completely sealed. This top coat must be applied within 36 hours @ 20°C (15 hours @ 35°C) of the application of the first coat.



# Nitoflor FC150

## Expansion joints

Expansion joints in the existing substrate must be retained and continued through the Nitoflor FC150 topping. Fosroc has a range of joint sealants specifically designed for flooring, contact local Fosroc office for advice.

## Cleaning

Tools and equipment should be cleaned with Nitoflor Sol\* immediately after use. Spillages should be absorbed with sand or sawdust and disposed of in accordance with local regulations.

## Limitations

- Nitoflor FC150 should not be applied on to surfaces known to, or likely to suffer from, rising dampness, potential osmosis problems or have a relative humidity greater than 75% as measured in accordance with BS 8203 Appendix A, or Protimeter thermo hygrometer.
- Fosroc does not recommend acid etching as a method of floor preparation. If used, the method should be approved by the project consultant.
- In common with all epoxy materials, some slight shade changes may be experienced over the long term when placed in adverse exposure conditions. Any such change in shade is not regarded as being detrimental to performance.
- In case product is applied in areas of extreme temperature and high humidity, glossiness of product may be affected.

## Technical support

Fosroc 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

Nitoprime 25	: 1 & 4 litre packs
Nitoflor FC150 (Including colour pack)	: 4.5 litre packs
Nitoflor Antislip Grains	: 20 kg bags
Nitoflor Sol	: 5 & 20 litre cans

### Standard coverage

Nitoprime 25	: 5.5 - 6.5 m <sup>2</sup> /litre
Nitoflor FC150 (base coat)	: 5.0m <sup>2</sup> /litre @ 200 microns WFT/DFT
Nitoflor FC150 (top coat)	: 5.0m <sup>2</sup> /litre @ 200 microns WFT/DFT

## Coverage - Antislip (approx.)

(for medium texture)

Nitoprime 25	: 5.5 - 6.5 m <sup>2</sup> /litre
Nitoflor FC150 (base coat)	: 4.0m <sup>2</sup> /litre @ 250 microns WFT/DFT
Antislip Grain No 2*	: 1.25-3.0m <sup>2</sup> /kg
Nitoflor FC150 (top coat)	: 4.0m <sup>2</sup> /litre
Estimated system thickness (for fine texture)	: 1.5 - 2.0mm
Nitoprime 25	: 5.5 - 6.5 m <sup>2</sup> /litre
Nitoflor FC150 (base coat)	: 4.0m <sup>2</sup> /litre @ 250 microns WFT/DFT
Antislip Grain No 3*	: 1.25 - 3.5m <sup>2</sup> /kg
Nitoflor FC150 (top coat)	: 4.0m <sup>2</sup> /litre
Estimated system thickness	: 0.50 - 1.5mm

\* Depending on the type of texture required.

Note: Coverage figures given are theoretical - due to wastage factors and the variety and nature of substrates, practical coverage figures may be reduced, this will vary with site and application conditions.

## Storage

### Shelf life

Nitoflor FC150 has a shelf life of 12 months when stored in warehouse conditions below 35°C in the original, unopened packs.

### Storage conditions

Store under warehouse conditions, below 35°C in the original, unopened packs.

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

### Disposal

The left out of epoxy base and hardener (expired or small bottom quantity) before disposing to empty cans/tins/pail buckets, take out the material and mix both base and hardener, make it solid and then dispose through authorized PCB vendor. Used empty epoxy Base & Hardener pail buckets/Tins, (Ensure completely drained out the material) dispose through approved vendor only.

### Precautions

### Health and safety

Nitoflor FC150, Nitoprime 25 and Nitoflor Sol should not come in contact with skin and eyes or be swallowed. Avoid prolonged inhalation of solvent vapours.

Some people are sensitive to epoxy resins, hardeners and solvents. Gloves, goggles and a barrier cream should be used.



# Nitoflor FC150

Ensure adequate ventilation and if working in enclosed areas, use suitable breathing apparatus.

If mixed resin comes into contact with the skin, it must be removed before it hardens with a resin removing cream followed by washing with soap. Should accidental eye contamination occur, wash well with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately. Do not induce vomiting.

## Fire

Nitoprime 25 and Nitofl or Sol are flammable. Do not expose to naked flames or other source of ignition. No smoking during use. Containers should be tightly sealed when not in use. In the event of a fire, extinguish with CO<sub>2</sub> or foam.

## Flash points

Nitoprime 25 : 57°C

Nitoflor Sol : 33°C

## Do's and Don'ts

### Do's

- Cleaning regularly with Mop and Soft washing agent or with soft mopping device.
- Trolley and Forklift movement with rubber or Teflon wheel
- All normal activity without any mechanical damage of the floor.
- Consult with manufacturer if any cut to be made over the floor
- Clean the floor immediately, if any strong chemical or hot liquid fall on the floor.

### Don'ts

- Use any Harsh chemicals, acid base or any cleaning solution without confirming the manufacturer
- Dragging of sharp, heavy object and trolley with metal wheel
- Allow any Impact with heavy object on the floor
- Carry out any hot activity like welding or with any activity which create fire
- Drill or core cutting without confirmation from manufacturer
- Expose to high temperature > 60°C

## Additional Information

Fosroc manufactures a wide range of complementary products which include :

waterproofing membranes & waterstops

joint sealants & filler boards

cementitious & epoxy grouts

specialised flooring materials

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Fosroc's 'Systematic Approach' to concrete

- repair features the following :
- hand-placed repair mortars
- spray grade repair mortars
- fluid micro-concretes
- chemically resistant epoxy mortars
- anti-carbonation/anti-chloride protective coatings
- chemical and abrasion resistant coatings

For further information on any of the above, please consult your local Fosroc office - as below.

### 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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