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Resin rich, trowel applied heavy duty polyurethane floor screed

Uses

Nitoflor RT6000 US is designed for use in a wide range of heavy to very heavy duty industrial environments where a lasting solution to floor maintenance is required. The matt surface is lightly textured, the product dense, impervious, coloured and chemically resistant (see below). This makes it ideal for both wet and dry processing environments, such as the food, beverage and chemical industries, heavy engineering plants, oil refineries, electricity stations and battery rooms.

Advantages

- Stable to steam cleaning and hot water exposure at a thickness of 9mm
- Very high chemical resistance
- Suitable for cold storage and freezer rooms
- Water-based and non-tainting
- Seamless
- High abrasion resistance
- Slip resistant

Description

Fosroc Nitoflor RT6000 US is a heavy duty, trowel applied polyurethane floor screed. It is a three component product (base, hardener and filler) available in a range of standard colours. Laid at 6-9mm it provides the highest order of impact, abrasion and chemical resistance. It has a seamless, matt surface with a light, slip resistant texture. Nitoflor RT6000 US contains a white aggregate which imparts a slip resistant profile to the finished floor. When first installed, the floor has a uniform coloured surface. However, with general use, the white aggregate will begin to show through giving a decorative, mottled appearance.

Substrates

Concrete, polymer modified screeds, grano concrete.

Temperature Resistance

When applied at 9mm thickness, Nitoflor RT6000 US is suitable for freezer rooms. At 9mm thickness and with the floor at normal ambient temperature, Nitoflor RT6000 US is resistant to steam-cleaning process at 120°C using a moving lance. A sound substrate is required for such thermal shock exposure.

Typical Properties, 28 days at 20°C

BS 8204-6	Type 8 Floor (heavy duty to very heavy duty)
Service temperature range 6mm	-15°C to +70°C
Service temperature range 9mm (excursions to 120 °C possible during steam cleaning)	-45°C to +90°C



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Fosroc Nitoflor RT6000 US	
EN 13813 SR - B2,0 - AR0,5 - IR20 Synthetic resin screed material for use internally in buildings not subject to reaction to fire regulations.	
Reaction to fire	NPD
Release of corrosive substances	SR
Water permeability	NPD
Wear Resistance	AR0,5
Bond strength	B2,0
Impact resistance	IR20
Sound insulation	NPD
Sound absorption	NPD
Thermal resistance	NPD
Chemical resistance	NPD

The typical physical properties given above are derived from testing in a controlled laboratory environment. Results derived from testing field-applied samples may vary, dependent on actual site conditions.

The slip resistance figures given above are affected by application techniques and prevailing site conditions. Slip resistance can reduce over time due to poor maintenance, general wear or surface contaminants. Good housekeeping practices should be observed.

Chemical Resistance

Nitoflor RT6000 US is resistant to a wide range of commonly used chemicals in the food, dairy and pharmaceutical industries such as concentrated citric acid (fruits), spirit vinegar (50% acetic acid), lactic acid (food & dairy products) and common alcohols (methanol & ethanol).

Nitoflor RT6000 US is also resistant to a wide range of inorganic acids, fuels, hydraulic oils, mineral oils and solvents. Good housekeeping practices should be employed. Please consult Fosroc for further advice.

Some staining or discolouration may occur with some chemicals, depending on dwell time, temperature, type of chemical and degree of housekeeping employed. This does not affect the product service integrity or durability.

Fosroc® Nitoflor RT6000 US

Cure Schedule at 20°C

Working life of full packs *:

Nitoflor SL2000 U	15 minutes
Nitoflor RT6000 US	15 minutes

* Usable working life of material following mixing and immediate spreading as per the application instructions

Finished floor:

Cure time to light pedestrian traffic	12 hours
Cure time to light wheeled traffic	24 hours
Cure time to heavy duty traffic	48 hours
Full chemical resistance	7 days

Note: The above cure times are approximate and given as a guide only. These times can vary due to prevailing site conditions.

Application Conditions

Ideal ambient, materials and substrate temperature range is 15-25°C to achieve best results. The product should NOT be applied above this temperature range – contact Fosroc office for advice. The product can be applied below this ideal temperature range (subject to a minimum of 10°C) however the surface finish may be subject to e.g. trowel marks. In the case of low temperatures in the range 10 - 15 °C, the product components should be stored in a warm area, using localised forced heating equipment as appropriate, in order to bring product temperature within the ideal range. In these cases physical properties and durability of the floor are not affected. The substrate and uncured floor must be kept at least 3°C above the dew point to reduce the risk of condensation or blooming on the surface, from before priming to at least 48 hours after application of Nitoflor RT6000 US.

Instructions for preparation and use

Nitoflor RT6000 US should be installed by specialist applicators, who must follow the procedures laid down in guideline documents such as BS 8024 Part 6:2008 Code of practice – Synthetic Resin Floorings, and the Fosroc Method Statement - PU Cementitious Flooring.

Surface Preparation

Inadequate preparation will lead to loss of adhesion and failure. In coatings or flow-applied systems, there is a tendency for the finish to mirror imperfections in the substrate. Grinding or light vacuum-contained shot blasting is therefore preferred over planing for these systems. Percussive scabbling or acid etching is not recommended.

Anchorage grooves should be cut to a minimum of twice the thickness to be laid, up to a maximum of 10 mm and at least equal in width to the thickness of material to be laid, at the edges, day joints, up-stands, drains, doorways and at regular points across the floor, and all debris removed.

New concrete floors

The base should be a minimum of Grade RC30 of BS 8500-2: 2002 and should not contain a water repellent admixture. The surface strength when assessed using a rebound hammer should be above 25 or the surface tensile strength should exceed 1.5 MPa.

The laitance and any surface sealer or curing membrane should be removed by mechanical means such as shot blasting or grinding to expose the coarse aggregate. After surface preparation, all loose debris and dirt should be removed by vacuum equipment.

For concrete bases in contact with the ground, a damp proof membrane should have been incorporated into the slab design, in accordance with the requirements of CP102 (Code Of Practice For Protection Of Buildings Against Water From The Ground).

Old concrete floors

All laitance and surface contamination, e.g. oil, paint and rubber, should be removed by mechanical means such as shot-blasting or grinding to expose the coarse aggregate. After surface preparation, all loose debris and dirt should be removed by vacuum equipment. Heavy oil or grease deposits should first be removed either mechanically, by steam cleaning, or by biological treatment, then by high pressure water blasting followed by the application of a penetrating primer. Where oil or grease contamination has been severe or of long duration, none of these methods may prove satisfactory and in these cases removal of the affected base would be necessary.

In existing buildings without a functioning damp-proof membrane, the application of a surface-applied membrane should be considered. Hydrostatic pressure may, under certain circumstances, cause adhesive failure between the flooring and the substrate. Where this is likely to occur, such as in areas where the ground water table is higher than the substrate, and where external tanking has not been applied, pressure relief must be provided e.g. by direct drainage. A close visual examination should be made to verify cleanliness and soundness. Any weak or suspect areas should be repaired.



Fosroc® Nitoflor RT6000 US

Application Instructions

Priming

Nitoflor SL2000 U should be applied as a primer/ scratch coat at a coverage rate of up to a nominal 1 mm thickness; actual coverage rate will depend on concrete surface texture and porosity. This scratch coat is designed to prime and seal the floor.

Fosroc Nitoflor SL2000 U is a three-component product. A forced-action rotary paddle mixer is recommended for mixing the product. Thoroughly mix, then drain the contents of the coloured liquid base component into a large plastic container, and scrape down with a flat bladed scraper to ensure complete draining. Thoroughly drain the hardener component and mix for 1 minute or until a homogeneous mix is obtained. Load the aggregate component whilst mixing, and continue mixing for 3 minutes or until a lump-free mix is obtained.

Immediately discharge and spread the mix over the application area evenly by trowel, ensuring that anchorage grooves are fully wetted out. The scratch coat should be allowed to cure for 12 - 48 hours at 20°C before applying the Nitoflor RT6000 US. If the scratch coat has been allowed to cure for >48 hours then the coat must be thoroughly abraded and a fresh layer of scratch coat applied.

If severe pin-holing is evident in the scratch coat, indicating that air is rising from the substrate, then remedial action should be taken. Contact your local Fosroc office for advice. Failure to do so may result in increased risk of pin-holing of the surface topping.

Application of Nitoflor RT6000 US

Fosroc Nitoflor RT6000 US is a three-component product. A rotary drum mixer is required. Pre mixing of the coloured liquid base component in its packaging is essential to ensure any light settlement is reincorporated. Thoroughly drain the contents of the hardener component into the coloured base component and mix for a minimum of 1 minute or to provide a homogeneous mix. The resultant mixture should then be loaded into the rotary drum mixer and the aggregate component loaded and mixed in stages, then mix for 3 minutes or until a lump-free mix is obtained.

Apply to primed areas to the required thickness using a steel float. Ensure that anchorage grooves are fully wetted out with material. The cured product should be protected from other trades using Kraft paper or similar breathable material. Polythene should not be used. Protect the installed floor from damp, condensation and water for at least 4 days.

Supply

Nitoflor SL2000 U	27.3 kg packs
Nitoflor RT6000 US	30.3 kg packs

Coverage

Nitoflor SL2000 U (primer/scratch coat)	Coverage appropriate to texture and porosity of floor Nominal 14 m ² /pack
Nitoflor RT6000 US	2.5 m ² /pack at 6 mm 1.7 m ² /pack at 9 mm

Note: Coverage figures given are theoretical. Actual site practical coverage figures may vary, due to wastage factors and the type and condition of the substrate.

Colours

Fosroc Nitoflor RT6000 US is available in a range of standard Fosroc colours. Fosroc Nitoflor RT6000 US is not colour fast and may yellow over time. The rate of change will depend on UV light and heat levels and cannot be predicted. This will be more pronounced with lighter colours and blue shades and does not compromise the product's performance or chemical resistance characteristics.

Cleaning

Regular cleaning is essential to enhance and maintain the life expectancy, slip resistance and appearance of the floor. Fosroc Nitoflor RT6000 US can be easily cleaned using industry standard cleaning chemicals and techniques. Consult your cleaning chemical and equipment supplier for more information.

When applied at 9mm thickness, Fosroc Nitoflor RT6000 US is steam cleanable using a moving lance
Health and Safety

Fosroc Nitoflor SL2000 U and Nitoflor RT6000 US should not come into contact with the skin and eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapours. 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 provides additional skin protection. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. Do not use solvent.

In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed seek medical attention immediately - do not induce vomiting. Refer to Product Safety Data Sheets for further information.

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Fire

Fosroc Nitoflor SL2000 U and Fosroc Nitoflor RT6000 US are non-flammable.

Storage, Mixing & Application

Fosroc Nitoflor SL2000 U and Fosroc Nitoflor RT6000 US have a shelf life of 12 months (6 months for the aggregate components) if stored off the ground in unopened packs in a dry store under cover at temperature between 10°C and 30°C. Storage outside this range, or repeated fluctuations in storage temperature, can reduce the storage life. Protect from frost.

Limitations

Do not proceed with application if atmospheric relative humidity is, or is anticipated to be, >90% or if the surface temperature is <3°C above the dew point.

Application should not commence when the substrate temperature or the ambient temperature is, or is anticipated to be, <5°C during the application or within the tack-free period. Application can take place below the ideal range of 15 - 25°C, subject to a minimum of 10°C, however the surface finish may be subject to e.g. trowel marks. The product should NOT be applied above 25°C – contact Fosroc office for advice.

The design strength of concrete surfaces must be a minimum of 25 MPa compressive strength at 28 days.

The manufacture of Fosroc Nitoflor RT6000 US is a batch process and despite close manufacturing tolerances, colour variation may occur between batches.

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heat levels and cannot be predicted. This will be more pronounced with lighter colours and blue shades and does not compromise the product's performance or chemical resistance characteristics.

Technical Advice

For further information on this or any other Fosroc product, please contact your local Fosroc office.

Note

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