

3mm self-smoothing epoxy polyurethane floor topping

Uses

Nitoflor EPU3000 provides a hard-wearing attractive floor which is chemical resistant, impervious and extremely easy to clean.

Available in a wide range of colours, Nitoflor EPU3000 is ideal for industrial or commercial locations where a hard-wearing, hygienic, dust-free environment is important (e.g. laboratories, hospital clean rooms, electronics assembly plants, switchgear plant rooms, pharmaceutical industries, food processing industries, showrooms, light industrial plants).

Advantages

- Hygienic Self smoothing formulation provides a dust-free, seamless floor which is extremely easy to clean
- Easy to lay Excellent rate of application can be achieved.
- Hard-wearing Good abrasion resistance. Withstands foot and vehicular traffic.
- Chemical resistant Very good resistance to many industrial chemicals
- Attractive Available in a wide range of colours to provide a very attractive floor finish.

Description

Nitoflor EPU3000 epoxy polyurethane floor topping is a special blend of selected epoxy resins, curing agents and graded inert aggregates which, when mixed, provides a 3mm epoxy polyurethane resin floor topping with unique laying properties. The materials are supplied in preweighed packs ready to mix and use on site. The system includes a two part epoxy resin primer, Nitoprime 25, which is also supplied in ready to use pre-weighed packs.

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

Material Properties

Nitoprime 25	27°C	35°C
Pot life	60 min.	30 min.

Max. overlay time with Nitoflor EPU3000 epoxy polyurethane coating	24 hours	18 hours
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Nitoflor EPU3000 epoxy polyurethane floor topping

Mixes density	1.85 - 1.95 g/cc
Pot life	40 min. @ 27 deg C

Initial cure (light foot traffic)	24 hours	18 hours
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Full cure (Vehicular traffic)	7 days	5 days
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Physical properties

Nitoflor EPU3000	
Compressive strength (to BS 6319, pt 2)	>45 N/mm ²

Flexural strength (to BS 6319, pt 3)	>25 N/mm ²
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Tensile strength (to BS 6319, pt 7)	>10 N/mm ²
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Bond strength to primed concrete substrate	Greater than the tensile strength of concrete (Elcometer tensile pull off)
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Abrasion resistance (ASTM D 4060)	<0.1 mg /cycle - loss of weight(with CS17wheel of 1000g weight)
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Shore D Hardness as per ASTM D 2240	70 - 80
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Chemical resistance

Nitoflor EPU3000 epoxy polyurethane flooring is resistant to a wide range of chemicals. Specific data is available on request.

Specification clauses

Self smoothing flow applied epoxy polyurethane coating applied on epoxy primed concrete surface within 18 hours at 35°C. When tested as per BS 6319, Nitoflor EPU3000 epoxy polyurethane topping shall possess a minimum compressive strength of 45N/mm², a flexural strength of 25N/mm², and a minimum tensile strength of 10N/mm², and offer an abrasion resistance of <0.1 mg/cycle when tested as per ASTM D4060, with CS17 wheel of 1000gms weight. It must also have a hardness of 70-80, when tested for Shore D Hardness.

Application instructions

Self-smoothing is a term used in the flooring industry to describe a composition which after being spread to a uniform layer of appropriate thickness, develops a smooth, resin-rich surface. This self-smoothing action is very localised and does not eradicate irregularities of level present in the original substrate. It is most important, therefore, that adequate surface preparation and repair is undertaken prior to application of Nitoflor SL flooring systems. Advice on specific applications may be obtained from Fosroc.

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 EPU3000 epoxy polyurethane coating. This can be checked by using a Thermo Hygrometer.

Surface preparation

The long term durability of the applied Nitoflor EPU3000 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 acid 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.

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 EPU3000 epoxy polyurethane coating is only 3mm topping, the substrate must be relatively even textured, as any major surface discrepancies may show through, or may cause colour variation in the applied topping.

Priming

Prepared substrates to be treated with Nitoflor EPU3000 epoxy polyurethane topping should be primed with Nitoprime 25 primer

Nitoprime 25 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 primer. Nitoprime 25 primer should be allowed to become tack free prior to application of Nitoflor EPU3000 epoxy polyurethane topping. (Reference maximum overcoat time, product properties).

Mixing

Nitoflor EPU3000 epoxy polyurethane coating is supplied in pre-weighed packs ready to use on site. Solvent or thinners, should not be added. A forced action mixer with a paddle fitted into a heavy duty, slow speed electric hand drill is recommended for mixing.

The colour pack should be added to the base container and mixed for 15-30 seconds, until homogeneous. Then add the hardener and mix for further 30 seconds, until an even colour and texture is obtained.

Thereafter, the contents of the graded aggregate pack should be slowly added and mixing carried out for a further 3 minutes until a completely homogenous material is obtained.

Where bulk mixing is required, Fosroc must be consulted.

Laying

The material is poured onto the primed substrate and spread to the required thickness with a steel trowel. Alternatively, a serrated trowel can be used. The resin floor should not be overworked but spread slowly and evenly.

Immediately after spreading, the floor should be firmly rolled with a spiked roller to help release any entrapped air in the material and level any slight trowel marks. The floor should now self-smooth to an even coloured dense, impervious floor.

Note

- For application on steel substrates, consult Fosroc.

Expansion joints

Nitoflor EPU3000 epoxy polyurethane topping should be discontinuous over sealants in joints unless otherwise specified.

Cleaning

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

Limitations

It is not compatible for application over asphalt, unmodified sand-cement screeds or PVC tiles and sheets. Nitoflor EPU3000 polyurethane coating laid floor will be scratched due to nails or sharp objects protruding from machinery, packings, or trolleys moving on the floor. Presence of sand will also cause abrasion.

The product is not advised to be applied below 15°C as the flow reduces. While applying the product above 35°C, there can be a problem of low pot life etc., and it will be difficult to apply the material. Cured product is not suitable for exposure to subzero temperatures and above 65°C.

When there is not enough material in a given area, roller marks caused due to spiked rolling may not close which will result in

an undesirable finish.

The product is not suitable for areas exposed to direct sunlight.

Estimating

Packing and coverage

	Pack size	Coverage
Nitoprime 25	1 L / 4 L	5.5-6.5 m ² /L
Primer coverage will depend on the texture and porosity of the substrate and also the application thickness.		
Nitoflor EPU3000	15L	Typically at 3mm thickness, 5 Sqm per pack depending on the substrate.

Storage

In unopened packs, Nitoflor EPU3000 and Nitoprime 25 primer have a shelf life of 12 months when stored in warehouse conditions below 35°C.

Precautions

Health and Safety instructions

Nitoflor EPU3000 epoxy polyurethane flooring base and hardener components, colour paste, 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

Nitoflor EPU3000



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

Nitoflor EPU3000 hardener, 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

Nitoflor EPU3000 Hardener	39°C
Nitoprime 25	25°C
Nitoflor Sol	33°C

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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