

Nitoflor® LH

High performance lithium based hardener, strengthener and densifier for concrete floors

Uses

Nitoflor LH is used for surface hardening of new and old concrete to prevent dust generation and to reduce wear, particularly on exposed concrete. Typical areas of application include warehouses, factories, platforms, car parks, corridors etc., on both new and existing concrete surfaces.

Advantages

- **Superior in performance** over Sodium based systems
- **ASR Protection** - contains Lithium, the chemical element known to mitigate damaging ASR (Alkali-silica reactivity)
- **Seals** micro-channels in concrete against water penetration and chemical attack
- **Hardens** - making concrete stronger and abrasion resistant
- **Dust proofs** - creating a cleaner, healthier environment
- **Permanent** - One penetrating application
- **Easy maintenance.** Makes cleaning easier. Reduces staining.
- **Satin sheen** to concrete

Description

Nitoflor LH is a lithium silicate based system which when applied on concrete surfaces penetrates into the micro channels and seals against water and chemical attack and improves abrasion resistance.

Technical support

Fosroc offers a comprehensive range of floor toppings and coatings. In addition, Fosroc offers technical support service to specifiers, end users and contractors, as well as on-site technical assistance in locations all over the country.

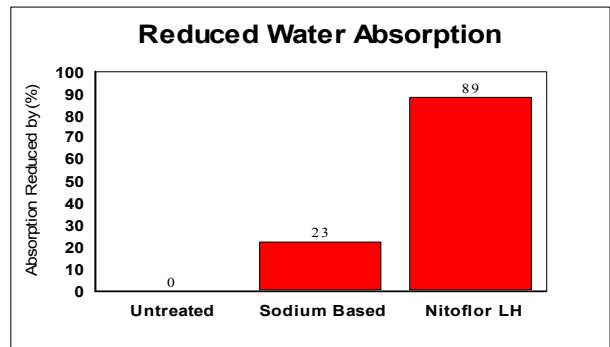
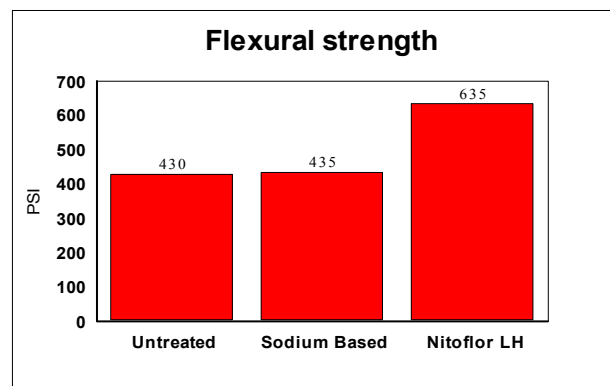
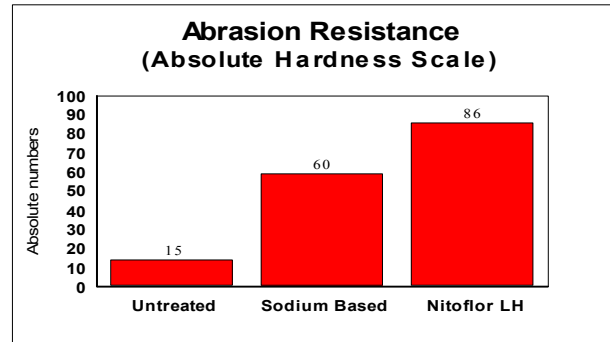
Properties

Abrasion Resistance (ASTM C779) - 45 % improvement

Hardening Test (ASTM C39) - 46% improvement @ 24 hrs.

Hardness Test (Moh's Scale Test) - 40% improvement

Curing Test (European Norms CenTC104SC3tg) - 94.5% @ 24 hrs.
86% @ 72 hrs.



Compatibility with cement types

Nitoflor LH is suitable for use on concrete made with all normal OPC and PPC cements. However, where high pozzolonic content cement is employed, free lime may be low and the use of other Nitoflor toppings may be preferable. Fosroc shall be consulted for advice in case of doubt.

Anti-dust

The main source of dust, from otherwise sound concrete floors, is the liberation of free lime which has not been converted fully in the hydration process. By converting this free lime into a hard crystalline material, this source of dust is eliminated. At the same time, the resistance of the concrete surface to penetration of oil and grease is considerably increased.

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Specification Clauses

Performance specification

The liquid liquid floor hardener used shall be a lithium silicate based system. When tested according to ASTM C779, the concrete treated with the system shall show an improvement in the abrasion resistance of atleast 45% over control. When tested as per ASTM C39, the concrete treated with the system shall show a 46% improvement in hardening over control. The system should also impart a 40% improvement in the Moh's hardness scale test result and pass the curing efficiency test of 94.5% at 24 hours as per European norms CENTC104SC3tg).

Supplier specification

The surface hardening of new and old concrete (specify details and areas of application) must be carried out using Nitoflor LH marketed by Fosroc, applied strictly in accordance with the technical datasheets.

Application instructions

Preparation

The substrate shall be thoroughly cleaned of all foreign materials such as bond breakers, curing agents, form release oils, dust, construction laitance by light mechanical grinding if required. Clean the surface with a high pH detergent and wash thoroughly. The surface shall be saturated with water and later excess water has to be removed.

Application

A low pressure, high volume sprayer shall be used to apply Nitoflor LH so as to form a glistening sheen and to ensure complete saturation of the surface. Enough Nitoflor LH shall be applied to keep the surface wet for at least 20 minutes.

If applying by hand, spread the sprayed material with a lambswool roller once or twice and then stop spreading. If spread excessively, it tends to dry in streaks. After 20 minutes, the excess material shall be removed and the surface shall be allowed to dry for 1 - 2 hrs. The floor is ready to use after the surface is dry. A light lithium residue may form on the surface after the floor is dry. This is the excess Nitoflor LH liquid floor hardener which was not absorbed and can be removed by a stiff broom or power sweeper.

For an immediate shine, Nitoflor LH shall be allowed to dry overnight and then polished with a high speed buffer equipped with a black pad, followed by a red pad.

Sealing / overcoating / striping

Concrete floors treated with Nitoflor LH can be sealed / overcoated with Nitoflor epoxy floor coatings after 24 hours. The treated surface can also be painted for striping as there will be no chemical incompatibility between Nitoflor LH treated surface and these paints.

Maintenance

Floors treated with Nitoflor LH benefit from good routine maintenance. Regular scrubbing with a high pH detergent is recommended and can increase the shine. Tyre marks can be removed with a citrus type of cleaner. Oils and acids should be removed properly to prevent damage.

Chemical Resistance

Concrete treated with Nitoflor LH shall resist chemical attack from the following compounds much more effectively. Extreme or prolonged exposures, especially to acids, may eventually cause some damage to concrete. However, concrete treated with Nitoflor LH will be more resistant to staining.

Acids

Acetic Acid	<10%
Acid waters	pH<6.5
Chromic	5%
Hydrochloric acid	10%
Phosphoric Acid	10% & 85%

Salts

Nitrate	Nitrite
Persulphate	Sodium sulphate
Sodium Chloride	Sodium Thiosulphate
Petroleum Oils	Light oil

Solvents and Alcohols

Carbon tetrachloride	Ethyl Alcohol
Methyl alcohol	Trichloroethylene
Acetone	Carbon Disulphide
Vegetable oils	Glycerine
Fats & Fatty acids	
Coal tar distillates	

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Miscellaneous

Cold ashes	Buttermilk
Chlorine Gas	Nickel plating solutions
Cider	Ores
Coal	Corn syrup
Lignite oils	Manure
Mine water waste Sugar	
Wine	Water
Fermenting fruits / vegetables Extracts	Formaldehyde

Stain Resistance

Concrete treated with Nitoflor LH is more resistant to staining. After cleaning, the stain was evaluated according to the following scale:

- 0 - No change in stain, very visible
- 3 - Slight change, but stain still very visible
- 8 - Large change, stain barely visible
- 10 - Stain completely removed and no longer visible.

Tomato paste	8	Mustard	8
Soda	10	Ice cream	8
Gum	8	Beer	8
Coffee	10	Tea	8
Wine	5	Paint	3
Ink	3	Butter	3

Estimating

Packaging

Nitoflor LH is supplied in 20 & 200 ltr containers.

Coverage

Spray applied - 10 - 12m² per Ltr on power trowelled surfaces. On textured surfaces the coverage will be much lower.

Storage

Shelf life

12 months if stored in a cool dry place in unopened packages.

Precautions

Health & Safety instructions

Nitoflor LH is non flammable, non toxic water based formulation. It contains no solvents, or harmful levels of VOCs. It is not carcinogenic or mutagenic and may be used in food preparation areas. Nitoflor LH is odorless during and after application and also allows concrete to breathe.

Fire

Nitoflor LH is non-flammable.

Additional information

Technical data and guidance can be provided on a wide range of concrete admixtures, concreting aids, waterproofing and other materials including floor sealers/toppings, repair systems and industrial machinery grouts.

Separate datasheets are available on these products.



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