Nitoflor Hardtop

constructive solutions

Monolithic surface hardening compound

Uses

Nitoflor Hardtop Natural provides a highly abrasion resistant surface to concrete floors by the dry shake method which ensures the hard wearing surface bonds monolithically to the base concrete. It is ideally suited for all industrial areas subject to heavy traffic, e.g. loading bays, trucking lanes, car parks, workshops, machine shops, ramps and spillways.

Advantages

- Provides hard, abrasion resistant floors.
- Provides high impact resistance.
- Forms a monolithic bond with base concrete.
- Good non-slip properties.
- Easy and economical to apply.

Description

Nitoflor Hardtop Natural is a quality controlled hardwearing aggregate mixed with Portland Cement. The aggregate are selected for its physical properties of abrasion and wear resistance as well as shape and grading. Nitoflor Hardtop Natural cures monolithically to provide a dense floor surface.

Technical Support

Fosroc offers comprehensive technical support, including help at the design stage, application advice and on the site problem solving. Specifiers and contractors are encouraged to contact our trained staff for answers to their questions.

Specification Clauses

All base slab concrete areas so designated shall be applied with monolithic hard wearing, abrasion resistant floor hardener tested to BS 6431-Part 20 (Wet Abrasive Method), such as Nitoflor Hardtop Natural manufactured by Fosroc.

Typical Properties

Nitoflor Hardtop Natural has been tested to ASTM.D4060 - Taber Abrader and BS 6431 - Part 20 (Wet Abrasive Method), alongside concrete mortar control panels. The test results show that Nitoflor Hardtop Natural improves the abrasion resistance of plain concrete by over 200%. Compressive Strength (BS.6319.Pt.1.) At water contents equivalent to those obtained in practical applications, the typical 28 day strength of Nitoflor Hardtop Natural cubes exceeds 60 MPa.

Mohs Hardness	:	>6
Specific Gravity	:	3.1
Corrosive Elements	:	None
Sieve Analysis		
# 8 (2.5mm)	:	>98% passing
#30 (0.5mm)	:	< 5% passing

Application Instructions

Base Concrete

The base concrete should have a minimum cement content of 300kg/m3. The concrete mix should be designed to minimise segregation and bleeding. Free water:cement ratios of less than 0.55 are required. The concrete should have a slump of between 75 and 100mm. The base concrete should be laid and compacted in accordance with good concrete practice. Accurate finished profile and minimum laitance build up should be ensured. Particular attention should be paid to bay edges and corners to ensure full compaction. Vacuum dewatering is not recommended when w/c ratios of less than 0.55 have been used.

Application

It is recommended that the floor be marked off into bays of known area. Sufficient material should then be laid out to meet the required spread rates. Application of Hardtop Natural can begin when the base concrete has stiffened to the point when light foot traffic leaves an imprint of about 3mm. Any bleed water should now have evaporated. Hardtop Natural is applied in two application stages.

The first application is made using 1/2 to 2/3 of the material required for the eventual end use. Hardtop Natural is evenly broadcast onto the concrete surface. When the material becomes uniformly dark by the absorption of moisture from the concrete this first application can be floated. Wooden floats, or, on large

areas a power float may be used. It is important, however, that the surface is not over-worked.

Immediately after floating, the remaining Hardtop Natural is thrown evenly over the surface. Again moisture is absorbed and the surface can be floated in the same way as before. Final finishing of the floor using the blades of a power float can be carried out when the floor has stiffened sufficiently so that damage will not be caused.

Limitations

1. Timing of Application

Timing of the application of the Hardtop Natural Is important. Too early and excess water will be absorbed and the resultant floor surface will be of lower strength and subject to dusting. Also the dense aggregate of Hardtop Natural could sink and be lost from the surface. Too late and insufficient moisture will be available to completely hydrate the Hardtop Natural. Crazing and pitting of the surface are likely to result.

2. Bay Edges

Where bay edges are likely to suffer particularly heavy impact or wear these can be given additional protection.

Immediately after the base concrete is levelled, sprinkle Hardtop Natural on a strip 100-150mm wide along the bay edges. Steel trowel into the surface. Areas where saw-cut transverse control joints are located can also be pre-treated in this manner.

3. Curing

Tests have shown that proper curing of concrete floors treated with products such as Hardtop Natural is essential to ensure the physical properties of the floor. The most efficient method of curing is to use Fosroc Concure curing membranes which conform to ASTM and DOT specifications. However, in indoor applications where curing conditions are less arduous and breakdown of the membrane slower, alternative approved methods of curing such as polythene sheeting are acceptable.

Estimating

Pack sizes

Nitoflor Hardtop Natural	25 kg bags.

Coverage

Dry-mixed Nitoflor Hardtop Natural is applied at different rates per m^2 to provide floor surfaces suitable for different types of industrial use.

Application rate Intended traffic use

4.0 kg/m^2	General vehicular traffic
6.0 kg/m^2	Heavy vehicular traffic

Storage

There is no minimum shelf life for Hardtop Natural. Bags should be stored in dry conditions.

Precautions

Health & Safety

Portland cement is alkaline when in contact with water. Avoid prolonged contact with the skin. Any eye contamination should be washed immediately with plenty of clean water and medical advice sought.

Fire

Hardtop Premix is non-flammable. For further health and safety information please consult your local Fosroc office for a copy of the products health and safety datasheet

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