

Hydrafloor RM

CEMKRETE

Monolithic surface hardening compound for fresh concrete floors

Innovative products for your success

Uses

Cemfloor NM provides a highly abrasion resistant surface to fresh concrete floors by the dry shake method which ensures that the hard wearing surface bonds monolithically to the base concrete. It is ideally suited for all industrial areas subjected to heavy traffic such as:

- Power stations
- Heavy industry
- Agricultural building
- Distillation plants
- Laboratories
- Car parks
- Abattoirs
- Warehouse floors and loading bays
- Work shops

Advantages

- Supplied ready to use - no additives required
- Provides a hard, abrasion resistant surface
- Forms monolithic bond with fresh concrete base
- Hard, dense surface resistant to oils and grease
- Available in a range of colors to improve working environment
- Non-metallic aggregate - will not rust when wet

Description

Cemfloor NM surface hardening compound is a quality controlled, factory blended powder which is ready to use on site. It consists of special hard wearing emery aggregates selected for their physical properties of abrasion and wear resistance, Portland cement and special additives to improve workability.

This combination produces a material which is easy to trowel in the surface of fresh, wet concrete. Cemfloor NM cures monolithically to provide a dense, non porous surface which is extremely hard wearing and abrasion resistant. Monolithic cure ensures that problems normally associated with thin ('granolithic') screeds, e.g. curling, shrinkage, cracking, etc. are completely overcome.

Specification

High surface hardening compound shall be of monolithic surface hardening compound containing nonmetallic, rust-free aggregates having the apparent density of 1.4. The aggregate shall have a value not less than 7 on the Mohs original scale and the compound shall have the ability to improve the abrasion resistance of concrete by 200%.

The surface hardening compound powder shall be applied to the freshly-laid concrete floor by the dry-shake method. It shall be applied at the point where light foot traffic leaves an imprint of about 3-6 mm.

The powder shall be applied in two stages, in full accordance with the manufacturer instructions, to achieve an overall application rate not less than 5 kg/m². Special attention shall be paid to bay edges in accordance with the manufacturer's written requirements.

Design criteria

Base concrete

The base concrete should have a minimum cement content of 300 kg/m³. The concrete mix should be designed to minimize segregation and control bleeding, although some limited bleed is desirable to ensure sufficient moisture is available to wet out the Cemfloor NM when it is first applied.

The use of water reducing admixtures from the Cemplast range is strongly recommended in order to achieve water: cement ratio below 0.55. The base concrete should have an on-site slump of between 75 and 100 mm.

The base concrete should be laid and compacted in accordance with good concrete practice, taking care to ensure accurate finished profile and minimum laitance build up. Particular attention should be paid to bay edges and corners to ensure full compaction of the base concrete - see instructions for use of Bay edges.

Vacuum dewatering is not recommended.

Properties

Abrasion resistance

The abrasion resistance of Cemfloor NM has been tested using a taper abrasion machine (fitted with 1 Kg, H-22 wheels) showing that improves the abrasion resistance of concrete by minimum 200%.

Compressive strength (to BS 1881 Part 116 1983)

At water contents equivalent to those obtained in practical applications, the typical 28 day compressive strength of cubes is 70 N/mm².

Hardness (Mohs' scale)

The selected aggregates contained within Cemfloor NM have a hardness value of 7 - 8 on the Mohs original scale.

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Instructions for use

Hydrafloor RM should be applied at an even application rate of 5 kg/m². It is recommended that the floor be marked off into bays of known area. Sufficient materials should then be laid out to meet the recommended spread rate.

Application of **Hydrafloor RM** should begin without delay when the base concrete has stiffened to the point when light foot traffic leaves an imprint of about 3-6 mm. Any bleed water should now have evaporated, but the concrete should have a wet sheen.

On large floors it will be necessary to work progressively behind the laying team to ensure application at the correct time.

Hydrafloor RM is applied in two stages.

- a) The first application is broadcast at an even rate of 3 kg/m² onto the concrete surface. When the material becomes uniformly dark by the absorption of moisture from the base 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 overworked.
- b) Immediately after floating, the remaining 2 kg/m² of **Hydrafloor RM** is applied evenly over the surface at right angles to the first. Again, when moisture has been absorbed 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.

Bay edges

Where bay edges are likely to suffer particularly heavy wear or impact and where saw-cut transverse control joints are to be located, it is desirable to give these areas additional protection, by one of the following methods prior to full treatment of the entire surface:

- a) Immediately after leveling the freshly placed concrete, **Hydrafloor RM** should be sprinkled by hand at a rate of 0.5 kg/linear m. (5 kg/m²) in a strip 100 mm wide along the bay edge and hand-trowelled into the surface.
- b) Immediately after leveling the freshly placed concrete, remove a wedge of the concrete 10 mm deep at the slab edge and tapered up to slab level. Replace this with a very stiff paste of **Hydrafloor RM**, mixed thoroughly with a small amount of water. Ensure it is fully compacted on to the base concrete.

c) The reinforced areas will be further strengthened when the subsequent full treatment is applied.

d) Timing of the application of **Hydrafloor RM** is important and care should be taken to ensure adequate labour, machinery and material is available to complete the whole area while sufficient moisture is available to fully react with the powder to provide a good dense finish. Conversely, the full benefit will not be achieved if the material is applied too early when bleed water is still present.

e) Any addition of water to wet out the surface on either the first or second application of **Hydrafloor RM** will be detrimental to the overall quality of the floor.

f) Pigmented floors require extra care and need to be protected from damage and staining after completion. It is essential that the correct recommended rate of application is achieved over the entire floor area in order to avoid possible localized variations in shading.

Note: It is recommended that **Hydrafloor RM** is applied by an approved Cemcrete specialist applicator who has been given detailed training in its use. For further information, please contact your local Cemcrete office or representative.

Curing

Proper curing of concrete floors treated with **Hydrafloor RM** is essential to the physical properties of the finished floor, however, if the floor is to receive further surface treatments please consult your local Cemcrete office for advice on recommended curing methods.

For indoor applications where curing conditions are less arduous and breakdown of curing membrane is slower alternative approved methods of curing such as polythene sheets taped at the edges is acceptable.

Surface treatments

Subsequent surface treatments are not normally necessary with **Hydrafloor RM** because of the high density, low porosity finish. Where further treatments are required please consult your local Cemcrete office.

Limitations

- In particularly aggressive environments, where abrasion resistance of the highest order is required, consideration should be given to the use of Cemfloor Emery. For guidance contact your local Cemcrete office or representative.
- Do not use **Hydrafloor RM** in areas exposed to acids and their salts or other materials known to rapidly attack or deteriorate concrete containing Ordinary Portland Cement.
- Do not apply to concrete containing calcium chloride or concrete having greater than 3% air entrainment.

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Precautions

Health and safety

Hydrafloor RM contains cement powders which when mixed or become damp, release alkalis which can be harmful to the skin.

Hydrafloor RM is irritating to the eyes, respiratory system and skin. Avoid inhalation of dust and contact with skin and eyes. Wear suitable gloves and eye protection.

In case of contact with skin, wash with water. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

For further information, see Product Safety Data Sheet.

Fire

Hydrafloor RM is non-flammable.

Cleaning

All equipment should be washed with clean water immediately after use and before the material has hardened.

Estimating

Supply

Hydrafloor RM: 25 kg bags

Coverage

Hydrafloor RM : 5.0 m² /bag at 5 kg/ m²

Applications should comply with the recommended rate to obtain the published performance characteristics. Any reduction may have a detrimental effect on the finished floor's abrasion resistance and, in the case of pigmented floors, the quality and consistency of the finish.

The average figures for liquid products are theoretical. Due to the variety and nature of possible substrates, and wastage Factors, practical coverage figures will be reduced.

Storage

If protected from the environment in original undamaged packing, the shelf life of **Hydrafloor RM** is 12 months.

If stored in high temperature and high humidity locations the shelf life will be reduced.

Additional Information

Cemcrete manufactures and supplies a wide range of those complementary products which include:

- Waterproofing membranes & waterstops
- Joint sealants & filler boards
- Cementitious & epoxy grouts
- Specialized flooring materials
- Fireproof coating and systems
- Concrete admixture
- Repairing material

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

Important Note: Cemcrete warrants its materials free of manufacturing defects and produced as per standard specifications and sold under the terms and conditions of usages, whilst Cemcrete endeavors to ensure that any advice, recommendation, or information, given through its products literatures are reflects of the R&D in-house lab test and practical sites experience and knowledge based feed backs, however, the products are being used under various conditions and applied beyond its control where or how either directly or indirectly at various locations and places at a different stages that of an intended purposes and uses. Therefore, Cemcrete cannot hold warranty or responsible for resultant consequences, such as damages to the property or assets but the product itself.