Fosroc®
Nitomortar® EL-HB

FOSROC constructive solutions

Hand-applied, trowel finished, high build, chemical and abrasion resistant epoxy repair mortar

Uses

A high build epoxy mortar with maximum chemical and abrasion resistance for the protection of concrete and similar substrates. Ideal for patch repairs to manholes, sewers and general concrete structures.

Advantages

- Unaffected by a wide range of acids, alkalis and industrial chemicals
- Superior chemical and physical bond to virtually all substrates, dry or damp
- Strengths in excess of the concrete to which material is applied. Excellent resistance to abrasion and impact
- Unaffected by freeze-thaw attack which eliminates problems often encountered with conventional water-based materials
- Cured material provides a long lasting waterproof barrier
- No harmful vapours present

Description

Nitomortar EL-HB is a three component system consisting of epoxy resins without solvents and a special blend of chemical resistant fillers. When mixed, Nitomortar EL-HB has a thixotropic consistency for easy hand placement, prior to finishing surface of the application with a trowel.

Nitomortar EL-HB is simple and cost effective for overhead, vertical, horizontal patching and resurfacing to both dry and damp surfaces. The low odour, non-sag, and chemical resistant properties of Nitomortar EL-HB make the ideal material for long lasting concrete rehabilitation.

To line concrete structures with an epoxy mortar, Nitocote EP500 is available as a spray applied lining system.

Contact Fosroc for further information.

Design Criteria

Nitomortar EL-HB can be applied in sections up to 100mm thickness in horizontal locations. The material should not be applied at less than 5mm thickness. In vertical applications, the material should be “built-up” to a maximum thickness of 30mm.

Greater thicknesses than those specified above can be achieved by the application of subsequent layers.

Nitomortar EL-HB is not designed for application to large areas.

Specification Clause

High-build reinstatement mortar for the repair of structural concrete.

The high-build reinstatement mortar shall be a three component epoxy-based mortar. It shall be manufactured to achieve maximum compatibility with structural concrete and, as a consequence, shall exhibit compressive strength > 45MPa @ 7 days.

When continually immersed at 23°C for 28 days the product shall be chemically resistant to 25% Sulphuric acid, 25% Nitric acid, 25% Phosphoric acid and 25% Hydrochloric acid.

Properties

The following results were obtained at a temperature of 20°C unless otherwise specified.

Compressive strength at 7 days:	> 45 MPa
Pot life:	45 minutes @ 20°C
Initial hardness:	4 hours @ 20°C
Full cure:	7 days @ 20°C
Minimum application temperature:	5°C

Chemical resistance:
Performance of Nitomortar EL-HB blocks continually immersed at 23°C for 28 days:

Bleach		Excellent
Detergent		Excellent
Sodium hydroxide	25%	Excellent
Diesel fuel/petrol	100%	Excellent
Sulphuric acid	25%	Excellent
Nitric Acid	25%	Colour Change / Excellent
Phosphoric Acid	25%	Excellent
Hydrochloric Acid	25%	Excellent
Toluene	100%	Excellent
Kerosene	100%	Excellent

Application Instructions

Preparation

Clean the surface and remove any dust, unsound material, plaster, oil, paint, grease, corrosion deposits or algae. Roughen the surface and remove any laitance by light scabbling or grit-blasting.

Saw cut or cut back the extremities of the repair locations to a depth of at least 5mm to avoid feather-edging and to provide a square edge. Break out the complete repair area to a minimum depth of 5mm up to the sawn edge.

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Prior to application of Nitomortar EL-HB all active hydrostatic leaks must be stopped by the use of Vandex Plug, a rapid setting mortar.

Priming

Nitobond EP primer should be applied as soon as the mixing process has been completed. It should be brush applied to the prepared surfaces. Note: Primer can be applied on dry or damp (SSD) substrates.

Mixing

Care should be taken to ensure that Nitobond EP primer is thoroughly mixed. The 'hardener' and 'base' components should be stirred separately before mixing to disperse any settlement. The entire contents of the 'hardener' tin should then be poured into the 'base' tin and the two materials thoroughly mixed using a suitable slow-speed drill and mixing paddle for 2 minutes until a fully uniform colour is obtained. The sides of the tin should then be scraped and mixing should continue for a further 2 minutes.

Nitomortar EL-HB is supplied in the correct proportions to facilitate easy on site mixing. Do not attempt to mix part packs as incorrect proportioning can severely affect the cured properties of the product.

A slow speed electric drill with a suitable paddle can be used for efficient mixing.

Satisfactory mixing can be achieved by removing the filler component bag and then thoroughly mixing all contents of the resin (part A) and hardener (part B) in the original container. Mix continuously for approximately 5 minutes until a uniform colour and gel-like consistency has been reached.

The filler aggregate should then be added and mixing continued, ensuring that the aggregate is thoroughly wetted out with resin.

Application

The Nitomortar EL-HB should be applied to the primer coated substrate within 90 minutes at 20°C, ie. while the Nitobond EP is still tacky. If the Nitobond EP primer is allowed to dry, a second coat will be required.

Apply the Nitomortar EL-HB with gloved hand and work the material firmly into the substrate surface. Build up to the desired substrate level and finish off with a steel trowel. To close the surface to a smooth finish lubricate the trowel with water.

Note: DO NOT thin components as solvents will prevent proper cure.

Nitomortar EL-HB should be applied only when the substrate temperature and the ambient temperature is above 5°C.

Cleaning

Nitomortar EL-HB and Nitobond EP should be removed from tools, equipment and mixers with water or Fosroc Solvent 10 immediately after use.

Limitations

Nitomortar EL-HB should not be used when the temperature is below 5°C and falling. Do not mix part packs under any circumstances. If any doubts arise concerning temperature or substrate conditions, contact Fosroc.

Nitomortar EL-HB is designed for small pocket type repairs only. The total build and volume of material that can be applied in one application will depend on the size and geometry of the repair.

Supply

Nitomortar EL-HB is supplied in 9 litre 3 component packs:	
Nitomortar EL-HB Base 9L Pack:	FC342250-1.77L
Nitomortar EL-HB Hardener 9L Pack:	FC342255-920ML
Nitomortar EL-HB Fillers 9L Pack:	FC342260-10.4KG
Nitobond EP:	1.5 and 6.0 litre packs
Fosroc Solvent 10:	4 and 20 litre pails

Coverage

Nitomortar EL-HB	Each 9 litre pack will cover approximately 0.9m^2 at 10mm thick
Nitobond EP:	4 - 5 m^2/litre

Notes: the coverage figures for Nitomortar EL-HB and Nitobond EP are theoretical - due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Storage

Nitomortar EL-HB has a shelf life of 5 years if kept in a cool, dry conditions in the original, unopened packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

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