

Cementitious repair system for concrete floors

Uses

For patching and replacement of worn out areas, filling of holes or depressions in concrete floor slabs in factories, go-downs, commercial or domestic buildings.

Advantages

- High strength : Nearly three times harder than the normal concrete
- Non shrink - Eliminates shrinkage problems associated with conventional cement concrete / mortars and ensures effective bonding.
- Reliability : Factory controlled prepacked product eliminates material selection, quality control and other associated problems on site.
- Durability : Very high ultimate strengths combined with a uniform microcellular material structure provides heavy duty performance and durability.
- Early usage : Floor usable in 24 hours for light traffic and in 72 hours for all traffic.
- Iron free, chloride free : No metallic iron present to corrode and cause staining or deterioration due to rust expansion. Allows early strength development without the use of chlorides.

Description

Superpatch mortar is supplied as a ready to use dry powder requiring only the addition of water to produce a high strength mortar with non shrink property. The material is a mixture of specially processed cement and carefully graded fine aggregate. Additives impart controlled expansion characteristics and reduce water necessary to produce cohesive mortar mix. The very low water/powder ratio (0.14) ensures high early and ultimate strengths.

For repairing thick sections of more than 25mm depth it is necessary to use well graded aggregates (machine crushed, washed and cleaned) in the size range of 3mm to 10mm. Quantity of aggregates should not exceed 1 part of graded aggregate to 1 part of Superpatch by weight in which case the water/powder ratio will need to be increased to 0.18.

Technical support

A technical advisory service is available for onsite assistance in the use of Berger Fosroc product range.

Properties

The following are the typical values obtained with Superpatch at recommended water powder ratio.

Compressive strength (N/mm²)

| 1 D | 3D | 7D | 28D |
|-----|----|----|-----|
| 25 | 40 | 50 | 60 |

Application instructions

Mix specification

The amount of water required to obtain a cohesive mortar consistency only should be used. Accurate gauging methods must be employed. The water addition to each 25 kg standard pack of Superpatch should be :

Mortar Consistency 3.5 litres

Mortar with coarse aggregates 4.5 litres (max.)

Mixing

A mechanically powered free fall concrete mixer may be used for small quantities upto 50 kg (25 litres of mortar) mixing may be carried out using a steel paddle in a hand held heavy duty industrial drill. Under no circumstances should Superpatch be mixed by hand.

- Place about 80% of the specified volume of water in the mixer and also place in the drum 6 to 8 hard, clean stones or old concrete cubes of 100mm size to increase mixing efficiency.
- Slowly add the required quantity of Superpatch and mix continuously.
- Add the remaining water and continue mixing until an even consistency mortar free from lumps is obtained.
- Addition of extra water will reduce the strength of the mortar.

Surface preparation

The patch to be repaired must be chipped to a minimum depth of 25mm and all loose particles, dust, etc., removed to leave a clean, vertical edge all round. It must be ensured that patches to be treated must be cut back and made either square or rectangular in shape. The area to be repaired should be cleaned by vacuum or compressed air to ensure proper cleaning.

Priming

The cleaned surface free from dust and loose particles should be primed with a first coat of Nitobond PVA / Nitobond AR (one part of which is diluted in 5 parts of water) - by means of a brush and allowed to dry for at least 1 - 3 hrs depending upon temperature and humidity.

A second coat of Nitobond PVA / Nitobond AR is applied on the surface and the repair mortar is placed when the primer is still tacky.

Where Superpatch is mixed with aggregates for larger areas, priming must be done with Nitobond AR. Water and cement ratio is the ratio of 1 : 1 : 3. Application of Superpatch must be done when the primer is tacky.

Note : In the areas where water stagnation is expected, the primer shall be Nitobond AR.

Application of mortar

The Superpatch mortar which is obtained by mixing water with the recommended water powder ratio (see mixing) is placed on the second coat of primer whilst tacky, and trowelled firmly into all edges first and over the entire area to fill it completely and levelled with a steel or wooden float. The finished area must be covered with a thick gauge polythene sheet and made air-tight for at least 4 - 6 hours after which normal curing with wet hessian cloth or water ponding must be carried out for a minimum period of 72 hours after which the floor may be opened to all industrial traffic.

The application of Superpatch mortar must be carried out in small bays measuring 2 m² area at a time.

Curing

The area repaired with Superpatch mortar must be cured as soon as the surface slightly stiffens and not later than 4 hours. Normal curing with water ponding or wet hessian cloth must be carried out for a minimum period of 72 hours.

The floor may be used for light traffic viz. foot traffic and light trolleys after 24 hours in which case a steel sheet of at least 2mm thick is laid over the polythene cover over which light traffic may be run as mentioned above.

Estimating

Packaging

Nitobond PVA and Nitobond AR are available in 1, 5, 20 litre packings. Superpatch is available in airtight HDPE packs of 25 kg.

Coverage and yield

1 litre of Nitobond PVA when diluted with 5 litres of water will cover approx. 10 -15 sq.m in two coats and Nitobond AR will cover approx. 6 - 8 sq.m depending upon the texture of the concrete surface.

Superpatch mortar with recommended water powder ratio will yield approx. 13 litre per 25 kg pack.

Storage

Superpatch has a shelf life of 6 months in unopened bags if kept in a dry store. In humid locations the shelf life may be further reduced.

Precautions

Health & Safety instructions

Nitobond PVA/Nitobond AR are non toxic. Gloves should be worn while handling. Superpatch mortar is non toxic and is slightly alkaline in nature. Splashes of mortar should be washed off with clean water.

Additional information

Fosroc manufactures a wide range of products specifically designed for the repair and refurbishment of damaged reinforced concrete. This includes repair mortars, fluid micro-concretes, chemical resistant epoxy mortars in addition to comprehensive package of protective coatings. In addition, a wide range of complementary products are available. This includes joint sealants, waterproofing membranes, grouts and anchors and specialised flooring materials.

Separate datasheets are available on these products.



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