Nitobond EP

constructive solutions

CE 1504-3

Epoxy resin concrete bonding agent

Uses

For bonding fresh wet cementitious materials to existing cementitious surfaces.

For use on horizontal surfaces or on vertical surfaces where mortar or concrete can be supported by formwork. The long 'open' life makes it suitable for use with formwork or where additional steel reinforcement has to be fitted.

The product is ideal for roads, bridges, pavements, loading bays and factories, and for bonded or granolithic floor toppings. Nitobond EP is equally suited to internal and external applications.

Advantages

Nitobond EP may also be used as part of a repair system where a substrate/repair barrier is required or where the substrate is likely to remain permanently damp or wet.

- Can be applied on to dry or damp substrates
- Exhibits high mechanical strength
- Positive adhesion - exceeds that of the tensile strength of the host concrete
- Slow cure allows time to erect steel reinforcement and formwork
- Solvent-free - can be used in enclosed locations

Description

Nitobond EP is based on solvent-free epoxy resins containing pigments and fine fillers. It is supplied as a two-component material in pre-weighed quantities ready for on-site mixing and use. The 'base' component is white and the 'hardener' component is green, providing visual evidence that adequate mixing has been achieved.

(Nitobond EPFS, suitable for cold weather working, can be made available when specifically requested.)

Standards compliance

ASTM C881: Type II, grade 2 class E & F.

Specification

Epoxy bonding agent

The bonding agent shall be Nitobond EP, a two component solvent-free epoxy resin. The two components shall be differentially pigmented in order to ensure visually that correct mixing has taken place prior to the application.

Properties

Compressive strength (EN 12190)	
at 7 days	70 N/mm^2
Tensile strength (BS 6319, Pt. 7)	
at 7 days	30 N/mm^2
Slant shear strength (EN 196-1)	
at 7 days	35 N/mm^2
Adhesion Strength to Concrete	In general, the bond will always exceed the tensile strength of the concrete.

Application Aspects

Pot life, 25°C	70 mins
Density, 25°C	1,15 g/cm³
Initial cure	12 hours
Full cure	7 days
Maximum Overlay Time	
20°C	70 mins
Minimum Application Temperature	5°C

Instructions for use

Preparation

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

Oil and grease deposits should be removed by steam cleaning, detergent scrubbing or the use of a proprietary degreaser. The effectiveness of decontamination and soundness of the substrate should then be assessed by a pull-off test.

Mixing

Any steel reinforcement and formwork should be prepared, cut to size and shape, and made ready for assembly before mixing commences.

Care should be taken to ensure that Nitobond EP 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.

Nitobond EP

Application
Nitobond EP should be applied as soon as the mixing process has been completed. It should be brush or roller applied to the prepared surfaces, being sure to achieve an unbroken coating across the entire substrate.
Nitobond EP should be tacky before the new concrete, screed or mortar is placed.
The maximum overlay times (see Properties) should also be carefully observed. Failure to apply the new concrete, screed or mortar within the maximum overcoating time will result in Nitobond EP becoming 'hard', thus creating a slip plane rather than a bonding action.
As soon as the Nitobond EP has been applied, any required steel reinforcement and/or formwork should be erected and fixed securely in place.

Cleaning
Nitobond EP should be removed from tools, equipment and mixers with Fosroc Solvent 102 immediately after use. Hardened material can only be removed mechanically.

High temperature working
Whilst the performance properties of Nitobond EP at elevated temperatures are assured, application under such conditions can sometimes be difficult. It is therefore suggested that, for temperatures above 35ºC, the following guidelines are adopted as a prudent working regime:

- Store unmixed materials in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.
- Keep mixing and placing equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.
- Try to eliminate application in the middle of the day, and certainly avoid application in direct sunlight.
- Have a ready supply of Fosroc Solvent 102 available for immediate cleaning of tools after use.

Storage
Nitobond EP has a shelf life of 12 months. Fosroc Solvent 102 has a shelf life of 24 months if kept in a dry store in the original unopened packs.

If stored at high temperatures, the shelf life may be reduced.

Limitations
Nitobond EP should not be applied when the temperature is below 5°C or is 5°C and falling.

Supply	
Nitobond EP	6 kg packs
Component A	4 kg
Component B	2 kg
Fosroc Solvent 102	5 litre cans
Consumption	
Nitobond EP	0,287 – 0,327 kg/m²

The coverage figures for Nitobond EP products are theoretical - due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Precautions
Health and safety
Nitobond EP and Fosroc Solvent 102 should not come in contact with skin or eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapours. Some people are sensitive to resins, hardeners and solvents. Wear suitable protective clothing, gloves and eye protection. If working in confined areas, suitable respiratory protective equipment must be used. The use of barrier creams provide additional skin protection. In case of contact with skin, remove immediately with resin removing cream followed by washing with soap and water.
Do not use solvent. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately – do not induce vomiting.

Fire
Nitobond EP is non-flammable. Fosroc Solvent 102 is flammable. Keep away from sources of ignition. No smoking. In the event of fire, extinguish with CO_2 or foam. Do not use a water jet.

Flash points
Fosroc Solvent 102 33°C

For further information, refer to the Product Material Safety Data Sheet.

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† See separate data sheet

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