

High strength epoxy bonding agent for new to old concrete and primer for repair mortars to concrete substrates

Uses

For bonding fresh wet cementitious materials to existing cementitious surfaces. For use on horizontal or 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.

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.

Advantages

- High strength adhesion - exceeds that of the tensile strength of the host concrete
- Exhibits high mechanical strength
- Can be applied on to dry or SSD damp substrates
- 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 black, providing visual evidence (uniform grey colour) that adequate mixing has been achieved.

Design criteria

Nitobond EP is designed to have an overlay time of 90 minutes at 20°C. The minimum application temperature for Nitobond EP is 5°C. Consult your local Fosroc sales office for further information.

Specification clause

Epoxy bonding agent

The bonding agent shall be Nitobond EP, a two-component solvent-free epoxy resin. The 2 components shall be differentially pigmented in order to ensure visually that correct mixing has taken place prior to the application. The product shall achieve 50MPa compressive strength, 20MPa tensile strength, 35 MPa flexural strength and 25MPa shear strength. The adhesive bond to the concrete substrate shall exceed the tensile strength of the host concrete.

Properties

Test method	Typical result
Compressive strength:	50 MPa
Tensile strength:	20 MPa
Flexural strength:	35 MPa
Shear strength:	25 MPa
Adhesive bond to concrete:	In general, the bond will exceed the tensile strength of the host concrete
VOC content:	19g / litre

The following properties were measured at 20°C:

Pot life:	35 - 45 minutes
Initial hardness:	24 hours
Full cure:	7 days
Max. overlay time:	90 minutes

Note: at temperatures below 20°C, the cure rate will be slower. Conversely, at temperatures above 20°C, the cure rate will be faster.

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 and expose 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 heavy duty 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.

Fosroc®

Nitobond® EP

Application

Nitobond EP should be applied as soon as the mixing process has been completed. It should be brush or spray applied to the prepared surfaces. Spray application requires a heavy duty airless spray machine such as Graco airless spray fitted with 19 -20 thou tip. Refer to Graco for specific advice.

The new concrete or screed should be applied to the coated substrate after the Nitobond EP has become tacky and within 90 minutes at 20°C, ie. while the Nitobond EP is still tacky. If the Nitobond EP is allowed to become tack-free, a second coat will be required. This second coat must be applied the same day as the first coat otherwise the first coat will need to be mechanically removed.

As soon as the Nitobond EP has been applied, any required steel reinforcement and/or formwork should be erected and fixed securely in place.

When required to form a barrier between chloride contaminated concrete and Renderoc repair material, the prepared concrete should be primed with Nitobond EP and allowed to cure for 8 to 24 hours. This coating should be impermeate and any unfilled voids (blow-holes) should be filled with Nitomortar AP before proceeding. Apply a second coat of Nitobond EP and leave for 30 minutes before the Renderoc is applied to the tacky surface.

Low temperature working

To facilitate mixing and application at temperatures below 15°C, the separate components should be warmed up to a maximum temperature of 25°C before beginning to mix. If heated to 25°C, the subsequently mixed material will need to be used more speedily as the pot-life will be reduced to 20 minutes. Alternatively, the material should be stored in an environment heated to 20°C and only removed immediately before use.

High temperature working

At ambient temperatures above 30°C, the material should be stored in the shade or in an air-conditioned environment for 12 hours before use.

Cleaning

Nitobond EP should be removed from tools, equipment and mixers with Fosroc Solvent 10 immediately after use. Hardened material can only be removed mechanically.

Limitations

Nitobond EP should not be applied when the temperature is below 5°C or is 5°C and falling. If any doubts arise concerning temperature or substrate conditions, contact Fosroc. Before the application of any repair material or topping, Nitobond EP should be allowed to become tacky after its application to the host substrate. Due to the relatively slow setting time of Nitobond EP, care should be taken when the product is used in cold conditions and or when the material being subsequently applied to the Nitobond EP is rapid setting. In cold conditions (<15°C) the Nitobond may not set quick enough to bond to a rapidly setting topping which may then "curl" due to shrinkage tension. This would result in delamination of the topping away from the host substrate. If there is a possibility of these conditions on site, users are advised to contact Fosroc for specific guidance.

Supply

Nitobond EP is supplied in 1.5 litre and 6 litre 2 component packs.

Nitobond EP Base of 1.5L pack:	FC321025-1L
Nitobond EP Hardener of 1.5L pack:	FC321026-500ML
Nitobond EP Base of 6L pack:	FC321025-4L
Nitobond EP Hardener of 6L pack:	FC321026-2L

Coverage

Nitobond EP: 4 - 5 m²/litre

Note: the coverage figures for Nitobond EP is theoretical – due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Storage

Nitobond EP has a shelf life of 24 months from date of manufacture if kept in a dry store in the original unopened packs. If stored at high temperatures, the shelf life may be reduced.

Important notice

A Safety Data Sheet (SDS) is available from the Fosroc website. Read the SDS and TDS carefully prior to use as application or performance data may change from time to time. In emergency, contact any Poisons Information Centre (phone 13 11 26 within Australia) or a doctor for advice.

Product disclaimer

This Technical Data Sheet (TDS) summarises our best knowledge of the product, including how to use and apply the product based on the information available at the time. You should read this TDS carefully and consider the information in the context of how the product will be used, including in conjunction with any other product and the type of surfaces to, and the manner in which, the product will be applied. Our responsibility for products sold is subject to our standard terms and conditions of sale. Parchem does not accept any liability either directly or indirectly for any losses suffered in connection with the use or application of the product whether or not in accordance with any advice, specification, recommendation or information given by it.