

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, building segment 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 bonding agent is required or where the substrate is likely to remain permanently damp or wet.

Advantages

Nitobond EP can be applied by brush.

- More overlay time : Enables to place the concrete for longer period of time, without risk of delamination
- High bond strength : Bond strength is more than the tensile strength of good quality concrete
- Barrier coat : Acts as a 'barrier coat' to the migration of chloride ions from host concrete.
- Can be applied on to dry or damp substrates

Description

Nitobond EP is based on solvent free epoxy resins containing pigments and fine fillers. It is supplied as a two part material in preweighed quantities for ready onsite mixing and use. Coloured components - white base and green hardener - provide visual evidence that adequate mixing is achieved.

Technical support

The company provides a technical advisory service supported by a team of specialists in the field.

Design Criteria

Nitobond EP is designed with an overlay time of 5-6 hrs at 20°C, 2-3 hours at 30°C making it more suitable for use where additional steel reinforcement and formwork has to be fitted or where temperature is high. The minimum application temperature for Nitobond EP is 10 °C. Consult the local Fosroc office for further information.

Properties

Specific gravity : 1.15 to 1.2 g/cc

| | At 20°C | At 30°C |
|--------------------------------------|-----------|----------------------|
| Pot life | 5 - 6 hrs | 2 - 3 hrs |
| Full cure | 7 days | 5 days |
| Overlay time | 10 hrs | 6 hrs |
| Compressive strength BS 6319 Pt 2 | @ 7 days | 50 N/mm ² |
| Flexural strength BS 6319 Pt 3 | @ 7 days | 35 N/mm ² |
| Tensile strength BS 6319 Pt 7 | @ 7 days | 20 N/mm ² |
| Shear strength BS 6319 Pt 4 | @ 7 days | 10 N/mm ² |

Note: The typical physical properties given above are derived from testing in a controlled laboratory environment. Results derived from testing field-applied samples may vary, dependent actual site conditions.

Specification clauses

The bonding agent shall be Nitobond EP an epoxy based two component resin system prepacked in distinct colours to give visual evidence for proper mixing. The bonding agent should remain in tacky state after application for a minimum period of 5-6 hrs at 20°C & 2-3 hrs at 30°C. The product shall achieve 50 N/mm² compressive strength, 20 N/mm² tensile strength, 35 N/mm² flexural strength and 10 N/mm² shear strength. The adhesive bond to the concrete substrate shall exceed the tensile strength of the host concrete.

Application instructions

Preparation

All surfaces to be treated must be firm, dust free and clean. All laitence should be removed by etching with Reebaklens and wire-brushing. In some cases, the existing concrete must be chipped to a sound substrate. Where surfaces are contaminated with oil or grease, this should be removed by using a strong industrial detergent or organic degreaser. Surface should be washed thoroughly with water and dried before the application of Nitobond EP.

Nitobond EP

Mixing

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 can should be poured into the base container and the two materials thoroughly mixed until a uniform colour is obtained. To facilitate application at temperatures below 10 °C the separate components should be warmed in hot water to a maximum of 25 °C before mixing.

Coating

Where Nitobond EP is to be used as part of a repair system to form a substrate/repair barrier, care should be taken to achieve an unbroken coating. One coat should be applied and allow to gel. A second coat should be applied and used as the bonding coat. In some situations (e.g. sprayed concrete repairs) it may be advantageous to scatter dust free sharp sand over this coat and leave to harden.

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

Limitations

Nitobond EP should not be applied when the temperature is below 10°C. If any doubts arise concerning temperature or substrate conditions, consult the local Fosroc office.

Estimating

Packaging

Nitobond EP - 0.5, 1 & 4 Litre packs

Nitoflor Sol - 5 & 20 Litres

Coverage

Nitobond EP - Approximately 2.6 m²/litre.

Actual coverage will depend upon the texture and porosity of the substrate being covered.

Cleaning

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

Storage

Shelf life

12 months if stored under normal warehouse conditions below 35°C, in unopened containers.

Precautions

Health and Safety

Contact with skin and eyes should be avoided. Gloves should be used when handling these products. If contact with the resin occurs, wash immediately with a strong detergent or a resin removing cream. Eye contamination must be immediately washed with plenty of water and medical treatment sought.

Fire

Nitobond EP is inflammable. No naked flame should be allowed near the site. Do not smoke during use.

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 and a 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 data sheets are available on these products.

Nitobond EP



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