

Techno Bond SBR

Polymer bonding aid and mortar additive bonding agent for old and new concrete

Uses

For improving the physical properties of cementations mixes. Typical uses include, but are not limited to, the following:

- Bonding concrete repair mortars.
- Floor toppings and screeds.
- Waterproof renders and cementations slurries.
- Bonding agent for slip bricks, ceramic tiles, etc.

Advantages

- Single component liquid can be easily gauged as required.
- Improves cohesion and workability.
- Improves mortars to provide waterproof repairs, renders and toppings which are highly resistant to freeze/thaw cycling.
- Improved tensile and flexural properties allow thin applications.
- Excellent bond to concrete, masonry, stonework, plaster and block board.
- Contains no chloride admixtures.

Description

Techno Bond SBR is a modified styrene butadiene rubber emulsion which is supplied as a ready to use white liquid. It is designed to improve the quality of site-batched cementations mortars and slurries. Being resistant to hydrolysis, it is ideal for internal and external applications in conjunction with cement. Properties

The results listed below were achieved by assessing the mechanical properties of a 3:1 sand :cement mortar containing Techno Bond SBR in the proportions 10 liters per 50 kg cement against a 3:1 sand: cement control mortar. The test methods used were in full accordance with BS 6319 at 28 days - air cured.

Test method Control

Typical result

Compressive strength (BS6319,Pt2)	35 N/mm ²	N/mm ²
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Tensile strength (ASTM C-190)	5.5N/mm ²	N/mm ²	2
Flexural strength (BS6319, Pt3)	11.5 N/mm ²	N/mm ²	7
Slant shear bond (BS6319, Pt4)	38 N/mm ²	N/mm ²	2
Active solids content	45% minimum		

Design criteria

The application parameters for mortars modified by the use of Techno Bond SBR will differ depending on the actual mix design used, but should always be subject to a minimum applied thickness of 6 mm.

Techno Bond SBR modified mortars can generally be applied in sections of up to 40 mm thickness in horizontal locations and 15 mm in vertical locations, without the use of formwork. In overhead locations the thickness achievable without the use of formwork is largely dependent on the profile of the Substrate.

Instructions for use

Preparation

Form the extremities of the application area to a depth of at least 10 mm to avoid feather-edging and to provide a square edge. Ensure a minimum depth of 6 mm is observed in the remaining area, up to the previously formed edge. Clean the surface and remove any dust, unsound or contaminated material, plaster, oil, paint, grease, corrosion deposits or algae. Where breaking out is not required, roughen the surface and remove any laitance by light scabbling or grit-blasting. The effectiveness of decontamination should then be assessed by a pull-off test.

Substrate priming

The substrate should be thoroughly soaked with clean water and any excess removed prior to commencement. A slurry primer should be prepared consisting of 1 volume Techno Bond SBR to 1 volume clean water to 3 volumes fresh cement. To obtain a smooth consistency, the cement should be blended slowly into the premixed liquids. The slurry primer should be stirred frequently during use to offset settlement.

Preparation of reinforcement (repairs only) Expose fully any corroded steel in the repair area and remove all loose scale and corrosion deposits. Steel should be cleaned to a bright condition paying particular attention to the back of exposed steel bars. Grit-blasting is recommended for this process. Where corrosion has occurred due to the presence of chlorides,

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the steel should be high-pressure washed with clean water immediately after grit-blasting to remove corrosion products from pits and imperfections within its surface.

Reinforcing steel priming

Apply one full coat of Techno zinc prime to any exposed steel reinforcement and allow to dry before continuing.

Mix designs

A wide range of mix designs is achievable using Techno Bond SBR. Typical designs are detailed below:

1. Patching and repair mortar

(Recommended thickness: 6 mm to 40 mm)

50 kg Ordinary Portland Cement

150 kg sand

10 liters Techno Bond SBR

8 liters (approximately) clean water

2. Heavy-duty floor screed

(Recommended thickness: 10 mm to 40 mm)

50 kg Ordinary Portland cement

75 kg 3 to 6 mm granite chips

75 kg grade C/M sharp sand

10 liters Techno Bond SBR

6 liters (approximately) clean water

The screed should be of a semi-dry cohesive consistency.

3. Render

(Recommended thickness: 6mm to 9mm)

50 kg Ordinary Portland cement.

150kg sand 10 liters Techno Bond SBR.

6 liters (approximately) clean water

The render should be of a semi-dry cohesive consistency.

4. Bonding mortar for slip bricks, tiles, etc

(Recommended thickness: 6 mm to 40 mm) 50 kg Ordinary Portland Cement

125 kg sand

10 liters Techno Bond SBR

7 liters (approximately) clean water

Water is adjusted to give a firm mortar.

Mixing

Care should be taken to ensure that Techno Bond SBR mortars are thoroughly mixed. Mixing in a suitably sized drum using an approved spiral paddle in a slow speed. Continue mixing up to a maximum of 5 minutes until a smooth and fully homogeneous consistency is achieved with the required workability and application properties. It is critical that allowance is made for the moisture content of the sand and aggregate, particularly where stored on site.

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Application

For application to all surfaces, Techno Bond SBR mortars, toppings and renders must be well-compacted on to the primed substrate by trowel. It is frequently beneficial to work a thin layer of the mortar into the slurry primer and then build the mortar on to this layer. Exposed steel reinforcement should be completely encapsulated by the mortar.

Techno Bond SBR mortars can be applied at a minimum thickness of 6 mm and up to 40 mm thickness, dependent on the location and configuration of the repair zone. Refer to the recommended thicknesses shown in the 'Mix design' section above.

Finishing

Techno Bond SBR mortars can be finished with a steel, plastic or wood float, or by a damp sponge technique, to achieve the desired surface texture. The completed surface should not be overworked.

Curing

Techno Bond SBR mortars, toppings and renders are cement-based. In common with all cementations materials, they must be cured immediately after finishing in accordance with good concrete practice.

The use of Techno bond LX or Techno cure 900, sprayed on to the surface of the finished mortar in a continuous film, is recommended. In harsh drying conditions, supplementary curing with polythene sheeting must be used.

Limitations

- Techno Bond SBR mortars, toppings and renders should not be applied when the temperature is below 5 °C and falling.
- Techno Bond SBR mortars should not be exposed to moving water during application. Exposure to heavy rainfall prior to the final set may result in surface scour.

Estimating

Supply

Techno Bond SBR	:20 and 210 liter drums
Techno Epoxy Zinc	:1Kg & 6kg cans
Techno cure 900	: 20 and 210 liter drums

Coverage

Techno Bond SBR : Refer to mix designs
Techno Bond SBR

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(as slurry Primer) : Approx. 2 to 3 m²/liter

Note

The actual usage of Techno Bond SBR will depend on the mix design used. The coverage figures for liquid products including the Techno Bond SBR slurry primer are theoretical - due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Storage

Shelf life

All products have a shelf life of 12 months if kept in a dry store in the original, unopened bags or packs.

Storage conditions

Store in dry conditions in the original packs. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced. Techno Bond SBR and Techno bond LX should be protected from frost.

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