

# EMACO<sup>®</sup> S22 NB

**A single component, high strength fibre reinforced structural repair mortar, engineered for repairs to new construction.**

## Composition

Emaco S22 NB is a combination of Portland cement, well graded sands, specially selected fibres and additives to improve physical, and installation properties and reduce the possibility of shrinkage cracks

When mixed with water Emaco S22 NB produces a thixotropic repair mortar, ideally suited to hand, and spray application\*

## Typical applications

Repairs to honeycombing and other defects in all structural elements such as:

- Beams, columns, walls and slabs in high rise buildings
- Oil gas and petrochemical foundations and supports
- Columns, Piers and cross beams on highway structures
- Marine and other civil structures
- Water production, treatment, intake and outfall structures and sewerage facilities
- Tunnels, pipes and other below ground construction
- Cooling towers and chimneys and other industrial environments

## Benefits

- Cost effective
- Excellent workability for easy mixing, placing and finishing
- Reduced cracking tendency by use of EE Fibre technology and synergistic shrinkage control systems
- High modulus ensuring transfer of loads to parent concrete
- Can be applied up to 40mm thick in one layer for reduced installation time

- Concrete coloured when cured

## Packaging

Emaco S22 NB is available in 25 kg bags

## \*Technical data

Comp. strength BS 1881 Pt 116 - 28 days	> 65 N/mm <sup>2</sup>
Flexural Strength BS EN 1015 Pt 11	> 10 N/mm <sup>2</sup>
Tensile Strength BS 6319 Pt 7 1985	> 4 N/mm <sup>2</sup>
Wet density	Approx. 2219kg/m <sup>3</sup>
EE Fibres	
Diameter	16 micron
E Modulus	> 15 GPa
Density	1.18
E-Modulus	35,500 N/mm <sup>2</sup>
Water penetration BS EN 12390 Pt 8 2000	< 7mm
Rapid chloride permeability AASHTO T 277 : 93	Low
Slant shear bond ASTM C882	> 10 N/mm <sup>2</sup>
Indirect tensile strength BS 1881 Pt 117 : 1983	> 4 N/mm <sup>2</sup>
Consistency BS EN 413 Pt2 2005	5 mm @ 20 mins
Flow BS EN 1015 Pt 3	> 140mm at 30 mins
Drying shrinkage ASTM C157:93	<500 microstrain

## Application guidelines

### Substrate preparation

All repair areas must be clean, sound and free from all dirt dust, loose material and any oil or grease which would impair adhesion.



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Defective concrete, honeycombing and cold joints must be removed to obtain a keyed surface. The chosen method of preparation should avoid the formation of micro-cracks and fractured aggregate.

The edges of all repairs should be cut vertically to a minimum depth of 10mm.

## Reinforcing steel preparation

In cases where the reinforcing steel has been exposed the reinforcing shall be prepared to a clean bright finish.

## Priming of the substrate

Generally priming of the substrate is not necessary however the concrete should be thoroughly soaked constantly, to a saturated but surface dry condition for a minimum of 4 hours prior to installation of the repair.

For overhead repairs where soaking with water is not practical an alternative method of priming is by the use of CONGRESIVE 1414.

## Mixing

It is recommended that only full bags of 25 kg are mixed.

Emaco S22 NB should be mixed by mechanical means. Single bags may be mixed using a slow speed drill and spiral paddle or forced action mechanical mixer.

Place the mixing water into the mixing bucket and add the Emaco S22 NB powder and mix for approximately 3 minutes until a smooth lump free consistency is achieved.

The water additions shall be 3.2 – 3.75 litres per 25kg bag depending upon the consistency required.

## Application

Following mixing, the Emaco S22 NB can be installed by hand and trowel, ensuring good compaction. The Emaco S22 NB shall applied at a minimum thickness of 10mm and a maximum layer thickness of 40mm. Deeper repair sections should be applied in layers.

Depending upon the geometry of the repair area Emaco S22 NB may be installed in a single layer thickness greater than 40mm.

As soon as the Emaco S22 NB starts to stiffen, finishing can be done by wooden, plastic or steel float depending upon the type of finish required.

For spray application please refer to BASF Technical Services Department

## Curing

Good curing practice must always be followed. Curing of the installed repair should be carried out by either.

- Masterkure<sup>®</sup> curing agents
- Damp Hessian and polythene

## Yield/Coverage

A 25kg bag of Emaco S22 NB will yield approximately 12.5 - 13 litres of mortar.

One bag of Emaco S22 NB will cover 1.25 m<sup>2</sup> at thickness of 10mm. This coverage is theoretical and depends upon the surface profile of the substrate and the wastage.

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## Storage

Emaco S22 NB should be stored in dry conditions out of direct sunlight. Shelf life when stored correctly is 12 months.

## Watchpoints

- During the summer months or where elevated ambient temperatures are encountered the Emaco S22 NB should be mixed using chilled water to ensure that the mixed temperature does not exceed 32°C.
- \*Spray application may change the physical properties of the cured material
- Do not add cement sand, or which may affect it's properties.
- Do not add water or fresh mortar to material which has begun to set.

## Safety precautions

Avoid contact with eyes and prolonged contact with skin. In case of contact with eyes immediately flush for at least 15 minutes with fresh clean water. Call a physician.

In case of contact with skin wash skin thoroughly.

## Quality and care

All products originating from the BASF facility in Dubai are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health and safety standards ISO 9001, ISO 14001 and OHSAS 18001.

## Note

Similar to all the other recommendations and technical information, this technical data sheet serves only as a description of the product characteristics, mode of use and applications.

The data and information given are based on our technical knowledge obtained in the bibliography, laboratory tests and in practice. The data on consumption and dosage contained in this data sheet are based on our own experience and are therefore subject to variations due to different work conditions.

BASF Construction Chemicals UAE LLC reserves the right to modify the composition of the products provided these continue to comply with the characteristics described in the data sheet. In the case of defects in the manufacturing quality of our products we provide a guarantee, any additional claims being exempt and our liability being only to return the value of the goods supplied. The possible reservations with respect to patents or third party rights should be noted.

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\* Properties listed are based on laboratory controlled tests.

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