

# EMACO<sup>®</sup> S23 NB

**A single component High strength, shrinkage compensated, microconcrete, engineered for repairs to new construction**

## Composition

Emaco S23 NB is a combination of Portland cement, well graded sands and aggregates and special additives to improve physical, and installation properties and reduce the possibility of shrinkage cracks

When mixed with water Emaco S23 NB produces a flowable micro concrete ideally suited to poured/cast applications

## Typical applications

Large volume repairs, honeycombing and other construction defects to all structural elements within:

- High rise buildings such as beams, columns and walls.
- Oil gas and petrochemical industry 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
- Reduced cracking tendency by incorporating synergistic shrinkage control systems
- Lower installation time, easy mixing, and placing with excellent flow characteristics

- High modulus ensuring transfer of loads to parent concrete
- Concrete coloured when cured

## Packaging

Emaco S23 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. 2260kg/m <sup>3</sup>
Drying shrinkage ASTM C157:93	<1000 microstrain
E-Modulus	35,500 N/mm <sup>2</sup>
Water penetration BS EN 12390 Pt 8 2000	< 5mm
Rapid chloride permeability AASHTO T 277 : 93	Low
Slant shear bond strength ASTM C882	> 9 N/mm <sup>2</sup>
ASTM C1107 – 02 Type C	Complies

## 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.

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



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

## Reinforcing steel preparation

In new construction corrosion of the reinforcing steel and chloride contamination is not usually present. In cases where the reinforcing steel has been exposed and corrosion is present the reinforcement 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.

Where soaking with water is not practical an alternative method of priming is by the use of CONCRESEIVE 1414.

## Mixing

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

Single bags may be mixed using a slow speed drill and spiral paddle. For larger repairs and multiple bag mixes a forced action mechanical mixer should be used.

Place the gauging water into the mixing bucket and start the mixer and add the Emaco S23 NB powder. The Emaco S23 NB should be mixed for a approximately 3 minutes until a smooth lump free consistency is achieved.

The water additions shall be 3.0 to 3.5 liters per 25kg bag.

In elevated temperatures the Emaco S23 NB should be mixed using chilled water to ensure that the mixed temperature is no higher 32°C.

## Repair installation

Following mixing the Emaco S23 NB can be installed by shutter and casting techniques. Where large pours are necessary the Emaco S23 NB shall be introduced into the shuttering in layers working along the length of the formwork

Emaco S23 NB is self-compacting and does not require vibration. Simply light tapping of the formwork is required.

## 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 S23 NB will yield approximately 12 -12.5 litres of mortar

One bag of Emaco S23 NB will cover 0.62 m<sup>2</sup> at thickness of 20mm. This coverage is theoretical and depends upon the surface profile of the substrate and the wastage.

## Storage

Emaco S23 NB should be stored in dry conditions out of direct sunlight. Shelf life when stored correctly is 12 months.

## Watchpoints

During summer months or where elevated ambient temperatures are encountered the Emaco S23 NB should be mixed using chilled

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- water to ensure that the mixed temperature does not exceed 32°C.
- 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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