MasterEmaco® S 423

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

DESCRIPTION

MasterEmaco S 423 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 **MasterEmaco S 423** produces a flowable micro concrete ideally suited to poured/cast applications at 25-150mm thickness (volume dependent).

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.

ADVANTAGES

- 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

MasterEmaco S 423 is available in 25kg bags

STANDARDS

BS EN 1504

TYPICAL PROPERTIES*

Compressive strength BS 1881 Part 116 - 28 days	>65 N/mm²
Flexural Strength BS EN 1015 Part 11	>8 N/mm²
Tensile Strength BS 6319 Part 7 : 1985	>4 N/mm²
Wet density	Approx. 2260 kg/m³
Drying shrinkage ASTM C157:93	<1000 microstrain
E-Modulus BS EN 13412-07	>25,000 N/mm²
Water penetration BS EN 12390 Part 8 : 2000	<10mm @ 5 bar pressure
Rapid chloride permeability AASHTO T 277 : 93 / ASTM C1202	Low
Slant shear bond strength ASTM C882	>10 N/mm²
Determination of the adhesion to concrete by pull off test BS EN 1542	>2 N/mm²

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

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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 **MasterBrace ADH 1414** or
MasterEmaco P 210.

Priming of reinforcement
For corrosion damaged reinforcement, priming of the steel is recommended with **MasterEmaco 8100 AP**, a single component, zinc rich epoxy primer.

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 **MasterEmaco S 423** powder. The **MasterEmaco S 423** 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 L per 25kg bag.

In elevated temperatures the **MasterEmaco S 423** should be mixed using chilled water to ensure that the mixed temperature is no higher 32°C.

REPAIR INSTALLATION

Following mixing the **MasterEmaco S 423** can be installed by shutter and casting techniques. Where large pours are necessary the **MasterEmaco S 423** shall be introduced into the shuttering in layers working along the length of the formwork.

MasterEmaco S 423 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** curing agents
- Damp Hessian and polythene

COVERAGE / YIELD

A 25kg bag of **MasterEmaco S 423** will yield approximately 12 -12.5 L of mortar

One bag of **MasterEmaco S 423** will cover 0.62 m² at thickness of 20mm. This coverage is theoretical and depends upon the surface profile of the substrate and the wastage.

WATCHPOINTS

- During summer months or where elevated ambient temperatures are encountered the **MasterEmaco S 423** should be mixed using chilled water to ensure that the mixed temperature does not exceed 32°C.
- Do not add cement sand, or which may affect its properties.
- Do not add water or fresh mortar to material which has begun to set.

STORAGE AND SHELF LIFE

MasterEmaco S 423 should be stored in dry conditions out of direct sunlight. Shelf life is 12 months when stored as above.

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HEALTH AND SAFETY

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 Master Builders Solutions 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 and ISO 14001.

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.

Master Builders Solutions 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.

* Properties listed are based on laboratory controlled tests.

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NOTE

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