

# MasterEmaco<sup>®</sup> S 488

Shrinkage compensated, fiber reinforced, thixotropic repair mortar

## DESCRIPTION

**MasterEmaco S 488** is a cementitious pre-bagged ready-to-use structural repair mortar in powder form. When mixed with the correct amount of water, it produces a thixotropic, high strength repair mortar, reinforced with acrylic fibres. It possesses excellent bond characteristics to steel reinforcement and to concrete.

**MasterEmaco S 488** mortar is shrinkage compensated. It has low permeability and is extremely durable. **MasterEmaco S 488** contains no metallic aggregate and is chloride free.

**MasterEmaco S 488** is formulated for sprayed or trowelled applications, in thicknesses up to 50mm in one layer by hand application.

## TYPICAL APPLICATIONS

- All types of structural repair which can be applied by trowel or wet spray.
- Repair of structural members subjected to repetitive loading.
- Repairs to reinforced or pre-stressed beams or columns.
- Protection of concrete subject to attack from water containing chlorides and sulphates etc.
- Repairs in industrial areas, especially those containing mineral oils, lubricants.
- Repairs in marine environments.

## ADVANTAGES

- Shrinkage compensation - reduces the risk of cracking due to shrinkage and ensures full contact with host concrete and load transfer in structural repair situations
- No primer required - allows rapid application at reduced cost
- Can be spray applied - rapid application of large quantities
- Low rebound - when spray applied rebound is minimal, with subsequent saving in material cost
- Extremely low permeability - gives excellent resistance to attack by aggressive elements

## PACKAGING

**MasterEmaco S 488** is available in 25kg bags.

## TYPICAL PROPERTIES @ 4 L OF WATER / BAG

Appearance	grey powder containing micro fine fibres
Wet density	Approx. 2195 kg/m <sup>3</sup>
Compressive strength at 25°C BS 1881 : Part 116	>25 N/mm <sup>2</sup> @ 1 day >70 N/mm <sup>2</sup> @ 28 days
Resistivity approx.	12500 Ωcm
Water penetration DIN 1048 : Part 5	<5 mm
Flexural strength EN 12390-3	>10 N/mm <sup>2</sup> @ 28 days

## APPLICATION GUIDELINES

### PREPARATION OF SUBSTRATE

It is essential that the substrate to be repaired is sound, clean and free of all contamination.

The damaged areas of concrete to be removed should be clearly identified. The perimeter of the area should be saw cut to a depth of 10mm and the edges cut as neatly as possible keeping the sides square. Feather-edging is not permitted and a minimum thickness of 10mm must be maintained over the whole repair area.

The substrate should be prepared to provide a rough surface having at least a 5mm amplitude at 20mm frequency.

If unsound or contaminated concrete is found to extend beyond the premarked area, consult the engineer in charge. Subject to his approval cut out as necessary back to clean sound concrete.

If reinforcement is corroded ensure that the back of the steel has been exposed. Reinforcement should have all rust removed by the use of power tools, abrasive blasting (wet or dry) or wire brushing. Reinforcing steel should be exposed and cleaned around its whole

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circumference. Steel should be prepared to Swedish Standard SIS 05-900:1967-SA 2½ or BS 4232 Ref. 24 second quality.

Extra protection to the reinforcement can be provided by use of **MasterEmaco 8100 AP** dependent upon the circumstances of use and requirement of the client.

Severely corroded reinforcement may require replacement and the engineer must be consulted.

## WATER SATURATION

Thoroughly saturate the surface of the concrete to provide a saturated surface dry condition. Poor quality concrete may require soaking for a significant length of time. Any surface water should be removed using an oil free compressed airjet.

## MIXING

**MasterEmaco S 488** must be mixed mechanically. The following mixing equipment is suitable, heavy duty slow speed drill with spiral mixing paddle, forced action mixer, such as Creteangle, Mixal, Pan Mixers etc. Mixers attached to spray units such as Meyco Deguna or Putzmeister are suitable.

Add 3.5 L of water into the mixer. Start the mixer and add the **MasterEmaco S 488** powder rapidly and continuously. Mix for 3-5 minutes after all the powder has been added until mortar is homogeneous and lump free.

Add water, if necessary, within the limits given (max 4 L / bag), until the required consistency is achieved. Mix for a further 1-2 minutes. The amount of water required will be affected by ambient temperature and relative humidity.

**MasterEmaco S 488** can be used when the ambient temperature is between 5-50°C. If ambient temperature is >30°C, use chilled water to ensure that the maximum mixed temperature should be no more than 35°C.

## PLACING / APPLICATION

After mixing, **MasterEmaco S 488** can be sprayed or trowel applied. Suitable spraying units are Meyco Deguna 20, Turbosol T20 and Putzmeister P11.

When applying by hand **MasterEmaco S 488** must be forced tightly into the substrate to ensure intimate contact with the pre-wetted substrate.

Levelling and initial finishing should be carried using a wooden or plastic float.

Final finishing should be carried out using a steel float.

When the material has stiffened to the point where finger pressure lightly marks the surface, a final firm trowelling should be given using the steel float.

## CURING

Good curing is essential. Particular care is required in hot and/or windy conditions. Curing can either be with a single coat of **MasterKure 181** curing membrane, which is compatible with most subsequent protective coatings, or by covering the work with plastic sheet fixed over wet hessian or wet foam rubber.

## COVERAGE / YIELD

One 25kg bag of **MasterEmaco S 488** with 4 L of added water will yield approximately 12.6 L of mortar which will cover 1m<sup>2</sup> at 12.6mm average thickness.

Note: In addition to shrinkage compensation, this product has been designed to develop tensile strength sufficient to withstand the internal stress generated by volume change to reduce the incidence of drying shrinkage cracking.



We create chemistry

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## STORAGE AND SHELF LIFE

Store out of direct sunlight, clear of the ground on pallets, protect from rainfall. Avoid excessive compaction. Shelf life is 12 months when stored as above

## HEALTH AND SAFETY

As with other products containing Portland cement, the cementitious material in **MasterEmaco S 488** grout may cause irritation. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Call a physician. In case of contact with skin, wash skin thoroughly.

## QUALITY AND CARE

All products originating from BASF's Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and ISO 45001.

\* Properties listed are based on laboratory controlled tests.

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