

MasterEmaco[®] S 488

Shrinkage compensated, polymer fibre reinforced, thixotropic repair mortar

DESCRIPTION OF PRODUCT

MasterEmaco S 488 is a 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 polymer fibre.

It possess 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 50 mm in one layer by hand application. Greater thicknesses can be achieved when spray applied.

TYPICAL APPLICATIONS

- All types of structural repair which can be applied by trowel or wet spray
- Repair of structural members subjected to repetitive loading
- Repair 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 and 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 30kg bags.

TYPICAL PROPERTIES

Appearance:	Grey powder containing micro fine fibres
Plastic density:	Approx. 2300kg/m ³
Compressive strength at 20°C	> 25N/mm ² at 1 day > 40N/mm ² at 3 days
BS 1881: Part 116:	> 45N/mm ² at 7 days > 70N/mm ² at 28 days (At 4.2ltr/bag)
Indirect tensile strength	3.6N/mm ² at 28 days
BS 1881: Part 117:	
Resistivity:	12500Ωcm
Water penetration	>30 times better than
DIN 1048: Part 5:	low permeability concrete (<5mm)
Coefficient of oxygen diffusion:	2.58x10 ⁻⁸
Flexural strength	>10N/mm ² @ 28 days
EN 12390-3 /	

APPLICATION PROCEDURE

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 5mm amplitude at 20mm frequency.

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

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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 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 **MasterBrace ADH**, 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 air jet.

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 4.2ltr of water into the mixer. Start the mixer and add the **MasterEmaco S 488** powder rapidly and continuously. Mix for 3 minutes after all the powder has been added until mortar is homogeneous and lump-free. Add water, if necessary, within the limits given, until the required consistency is achieved. Mix for 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 and 50°C. If ambient temperature is >30°C, use chilled water and condition the bagged product in an air-conditioned store prior to use. Maximum mixed temperature should not be more than 35°C.

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.

Leveling and initial finishing should be carried out 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 101** curing membrane, if subsequent coating is desired, or by covering the work with plastic sheet fixed over wet hessian or wet foam rubber.

COVERAGE

One 30kg bag of MasterEmaco S 488 with 4.2ltr of added water will yield approximately 15.12ltr of mortar, which will cover 1m² at 12.6mm average thickness.

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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.

STORAGE

Store out of direct sunlight, clear of the ground, on pallets and protect from rainfall. Avoid excessive compaction.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage and disposal advice, consult Master Builders Solutions's Technical Services Department.

SHELF LIFE

Up to 12 months if stored in unopened containers according to manufacturer's instructions.

SAFETY PRECAUTIONS

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.

NOTE

Field service, where provided, does not constitute supervisory responsibility. For additional information, contact your local Master Builders Solutions representative.

Master Builders Solutions reserves the right to have the true cause of any difficulty determined by accepted test methods.

QUALITY STATEMENT

All products manufactured by Master Builders Solutions Egypt, or imported from Master Builders Solutions affiliate companies world-wide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 standards.

* Properties listed are based on laboratory controlled tests.

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