

MasterEmaco® S 488

Shrinkage compensated, polymer fiber reinforced, thixotropic repair mortar

DESCRIPTION

MasterEmaco® S 488, is a cementitious prebagged 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 fibers. 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 troweled 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.
- 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.
- Low VOC & Emission

PACKAGING

MasterEmaco® S 488, is available in 25kg bags.

TYPICAL PROPERTIES

When mixed with 3.5 liters of water a 25kg bag will have the following properties		
Compressive Strength N/mm ² at 25°C BS 1881 :116	1 day	> 25
	28 day	> 70
Indirect Tensile Strength N/mm ² BS 1881 : Part 117	28 days	3.6
Resistivity approx.	12500Ωcm	
Water penetration DIN 1048 : Part 5	Nil @ 5 bar	
RCPT (ASTM 1202)	Ver low	
VOC (SCAQMD Rule 1113)	< 1g/l	
CDPH (emission rate)	< 10µg/m ² *h	
Wet density	Approx. 2195 kg/m 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 a 5 mm amplitude at 20 mm 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.

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 Crete angle, Mixal, Pan Mixers etc. Mixers attached to spray units such as Meyco Deguna or Putzmeister are suitable.

Add 3.5 liters 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 liters / 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 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 be no 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.

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 troweling 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

One 25kg bag of **MasterEmaco[®] S 488** with 3.5 liters of added water will yield approximately 12.6 liters of mortar which will cover 1m² 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.

STORAGE

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

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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 AND CARE

All Master Builders Solutions Products are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health and safety standards of ISO 9001 and Master Builders Solutions ESHQ recommendations.

* Properties listed are based on laboratory controlled tests.

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CONTACT

Should you require any further information, please do not hesitate to contact us:

www.master-builders-solutions.com/en-sa
enquirycc.saudi@mbcc-group.com
M: +966 13 853 8600

Master Builders Solutions Saudi Arabia for
Manufacturing LLC.
P.O. Box 1884, Al Khobar, KSA

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