



The Chemical Company

MasterEmaco® S 488 (Formerly known as EMACO® S88C)

Structural Repair Mortar

Description of Product

MasterEmaco® S 488, is cement based one component, polymer modified, fibre reinforced, thixotropic structural repair mortar.

Complies with EN 1504-3/R4

Fields of Application

- Repair of the reinforced concrete elements,
- Protection of the concrete against sulphate and chloride attacks,
- Repair of the marine structures,
- Repair of the underground structures,
- Structural and non-structural repairs of high strength concrete elements,
- Surface repair of the RC elements before polymer coating applications,
- Repair of the tie-rod, test and cone holes.

Features and Benefits

- Mixed with only water and can be applied easily.
- Perfect bonding to the concrete and steel.
- High strength.
- Thixotropic and can be used in over-head applications.
- Waterproof.
- Resistant to freeze-thaw cycle.
- Resistant to sulphate and chloride attacks.
- Resistant to oils.
- Shrinkage compensated.

Application Procedure

Preparation of Substrate

The concrete surfaces must be sound, clean and dry. It shouldn't be weakened by over-troweling and lack of curing. The concrete should

Technical Data

Product Chemistry	Mineral Fillers, Fibre and Polymer Modified Cement	
Color	Grey	MK
Compressive Strength TS EN 196 (1 day) (7 days) (28 days)	> 20 N/mm ² > 50 N/mm ² > 60 N/mm ²	
Flexural Strength TS EN 196 (28 days)	7 N/mm ²	
Bonding Strength to concrete (28 days)	> 2.0 N/mm ²	
Elasticity Modulus (28 days)	> 20,000 N/mm ²	
Capillary Water Absorption (TS EN 13057)	≤ 0,5 kg.m-2.hour-0.5	
Application Thickness	Min 10 mm Max 40 mm	
Application Temperature	+5°C - +30°C	
Service Temperature	-20°C - +400°C	
Pot Life	30 minutes	
Fully Cured at 20°C	28 days	

Typical values are obtained from the test results of 4x4x16 mortar prism in 23°C and 50% relative humidity conditions. High temperatures shortens the curing and working time, lower temperatures extends the durations





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be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material and dust. The perimeters of repairs to concrete that involve concrete removal and subsequent materials replacement shall be saw cut perpendicular to the repair surface, corroded reinforcements should be cleaned and if needed replaced with new ones. The surfaces should be wetted before application. If there is a water leakage it must be drained or properly plugged.

Mixing

Add enough water into a clean mixing bucket by using a proper water gauge. Add the powder into the bucket slowly and continuously. Mix the fresh mortar with a proper electrical mixer (300-600 rpm) for 4 minutes until having a homogenous consistency. Let the mortar have rest for 4 minutes and re-mix for 30 seconds.

Mixing Ratio

MasterEmaco® S 488	1 kg powder	25 kg bag
Water Quantity	< 0.16 litre	< 4.00 litre
Mixed Density	~2.25 kg/litre	

Application Method

MasterEmaco® S 488 should be applied to the prepared surface by using a steel trowel. Application thickness should be between 1-4 cm. For thicker applications second layer of the mortar should be applied after 24 hours in same way. After the mortar finishes its first setting, some water should be sprayed onto the mortar and the surface should be finished with using steel or wooden trowel.

Open areas should be protected from the rain, wind, etc. aggressive whether conditions during the first 24-48 hours after finishing repair by using wet clothes, curing membranes etc.

Coverage

19.20 kg/m² for obtaining 1 cm thick layer.

Watch Points

- Repair mortar should be applied in 30 minutes in 20°C.
- Open areas should be protected from the rain, wind, etc. aggressive whether conditions during the first 24 hours after finishing repair.
- Cement based materials' pot life and curing times vary depending on the relative humidity, substrate and ambient temperature. Reaction gets slow in low temperatures and it causes to extension on pot life and working time. On the other hand high temperatures speed up the reaction, which results to short pot life and working time. For full curing of material, both the substrate and ambient temperature shouldn't be under allowed application temperature.
- Do not use MasterEmaco® S 488 in case of contacting to liquids with a PH under 5.5.
- Do not use as a screed or concrete topping in wide areas.

Cleaning of Tools

After the application all tools should be cleaned with water. MasterEmaco® S 488 can be cleaned with only mechanical abrasion after hardening.

Packaging

25 kg bag

Storage

Store in original container in cool (+5°C - +25°C) and dry indoor conditions.





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Shelf Life

12 months under proper storage conditions after production date.

Health and Safety Precautions


It is dangerous to get close to the store areas with fire. The store must be well ventilated.

Work clothes, protective gloves, glasses and mask defined in Labour Laws must be used during the application. Avoid from material to contact with skin and eyes. In case of contacting wash your skin with water and go to doctor immediately.

Don't bring any food and drink to the application area. Store the material away from the children. For further information Material Safety Data Sheets should be read.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge **BASF Yapi Kimyasallari Sanayi A.Ş.** is only responsible for the quality of the product. **BASF Yapi Kimyasallari Sanayi A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones (08/2013).

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EN 1504-3 Structural and non-structural repair Class R4	
Principle 3: Concrete Restoration	3,1 Applying mortar by hand 3,2 Recasting with concrete
Principle 4: Structural Strengthening	4,4 Adding mortar or concrete
Principle 7: Preserving or Restoring Passivity	7,2 Replacing contaminated concrete
Compressive Strength	≥ 45 N/mm ²
Chloride Ion Content	≤ 0,05%
Adhesive Bond	≥ 2,0 N/mm ²
Restrained Shrinkage/Expansion	≥ 2,0 N/mm ²
Carbonation Resistance	Passes
E-modulus In Compression	≥ 20 Gpa
Reaction To Fire	A1
Dangerous Substances	Complies with 5.4