

MasterEmaco[®] S 488 (Formerly known as Emaco[®] S88C)

Structural Repair Mortar

DESCRIPTION OF PRODUCT

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

Complies with EN 1504-3/R4

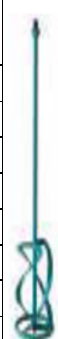
FIELDS OF APPLICATION

- Structural repairs of deep segregations on reinforced concrete members
- 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

TECHNICAL DATA

Product Chemistry	Mineral Fillers, Fibre and Polymer Modified Cement	
Color	Grey	MK
Compressive Strength TS EN 12190 (1 day) (7 day) (28 days)	>25 N/mm ² >50 N/mm ² >60 N/mm ²	
Flexural Strength TS EN 196 (28 days)	>8 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. 50 mm	
Application Temperature	+5°C + 30°C	
Service Temperature	-20°C + 400°C	
Pot Life	30 minutes	
Fully Cured at 20°C	24 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

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 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 Quity	<0,16 liter	<4,00 liter
Mixed Density	~2,25 kg/liter	

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APPLICATION METHOD

MasterEmaco® S 488 should be applied to the prepared surface by using a steel trowel. Application thickness should be between 1-5 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.

SHELF LIFE

12 months under proper storage conditions after production date.

HEALTH AND SAFETY PRECAUTIONS

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixtures should not come into contact with skin and eyes; in case of contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

DISCLAIMER

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti.** is only responsible for the quality of the product **Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti.** 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.

CONTACT INFORMATION

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MasterEmaco® S 488 Technical Data Sheet -Revision
Date: 05/2023

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DOP NO: 02.1504.3.001	
1020 – CPR – 040 065838	
EN 1504-3:2005 MASTEREMACO S 488	
Yapısal olan ve yapısal olmayan tamir (Structural and Non-Structural Repair Mortar)	
Sınıf R4 (Class R4)	
3.1 Elle harç uygulaması (Concrete restoration by applying mortar by hand)	
3.2 Yeniden beton dökülmesi (Concrete restoration by recasting with concrete)	
4.4 Harç veya beton ilavesi (structural strengthening by adding mortar or concrete)	
7.2 Bozunmuş betonun yenilenmesi (Replacing contaminated or carbonated concrete)	
Basınç Dayanımı (Compressive Strength)	≥ 45 N/mm ²
Klorür İçeriği (Chloride ion Content)	≤ % 0,05
Adezyon Dayanımı (Adhesive bond)	≥ 2,0 N/mm ²
Kontrollü Büzülme / Genleşme (Restrained shrinkage/expansion)	≥ 2,0 N/mm ²
Karbonatlaşma Direnci (Carbonation resistance)	sağlanıyor (passes)
Elastisite Modülü (Elastic Modulus)	≥ 20 Gpa
Yangına tepki (Reaction to fire)	A1
Tehlikeli maddeler (Dangerous substances)	Madde 5.4'e uygun (Comply with clause 5.4)