

MasterCrete® S88 PG

Structural Repair Mortar

Material Description

MasterCrete® S88 PG is cement based one part, polymer modified, fibre reinforced, pourable, structural repair mortar.

Complies with TS EN 1504-3/R4

Areas 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

Characteristics and Benefits

- Mixed with only water and can be poured into form easily
- Perfect bonding to the concrete and steel
- High strength
- Waterproof
- Resistant to freeze-thaw cycle
- Resistant to sulphate and chloride attacks
- Resistant to oils
- Shrinkage compensated

Processing Method

(A) 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

Technical Properties							
Structure of the Material	Mineral Fillers, Fibre and Polymer Modified Cement						
Color	Grey						
Compressive Strength (20°C) TE EN 12190	<table border="0"> <tr> <td>1 day</td> <td>> 20 N/mm²</td> </tr> <tr> <td>7 days</td> <td>> 40 N/mm²</td> </tr> <tr> <td>28 days</td> <td>> 50 N/mm²</td> </tr> </table>	1 day	> 20 N/mm ²	7 days	> 40 N/mm ²	28 days	> 50 N/mm ²
1 day	> 20 N/mm ²						
7 days	> 40 N/mm ²						
28 days	> 50 N/mm ²						
Flexural Strength (20°C) (28 days) TS EN 196	> 8 N/mm ² MK						
Bonding Strength (to concrete) (28 days)	> 2 N/mm ²						
Elasticity Modulus (28 days)	> 20,000 N/mm ²						
Capillary Water Adsorption (TS EN 13057)	< 0,5 kg.m ⁻² .saat ^{-0.5}						
Application Thickness	Min. 10 mm Max. 50 mm						
Application Temperature	+ 5°C + 30°C						
Service Temperature	-20°C + 400°C						
Pot Life 20°C	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

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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.

Placing Additional Reinforcement

If the application thickness exceeds 5 cm, additional reinforcement should be placed. The concrete cover should be 10 mm at minimum.

(B) 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 (400 - 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

MasterCrete® S88 PG	1 kg Powder	25 kg Bag
Quantity	< 0,16 liter	< 4,00 liter
Mixed Density	~2,25 kg/liter	

(C) Processing

MasterCrete® S88 PG should be poured in to the form from single opening and continuously. For preventing air gaps in the form, avoid from casting the mortar from multiple openings. Application thickness should be between 1-5 cm. For placing the mortar, a steel hook should be use. Do not use vibrator. Do not remove the forms before 24 hours. 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.

Consumption

19,40 kg/m² for obtaining 10 mm thick layer.

Point to Consider

- 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 environment 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 environment temperature shouldn't be under allowed application temperature.
- Do not use MasterCrete® S88 PG in case of contacting to liquids with a PH under 5.5.
- Do not use as a screed or concrete topping in wide areas.
- Do not use vibrator for placing the mortar.

Cleaning of Tools

All the tools and equipments must be cleaned by water after the application. After MasterCrete® S88 PG is hardened, it can only be removed from the surface mechanically.

Packaging

MasterCrete® S88 PG is available in 25 kg polyethylene reinforced kraft bag.

Shelf Life

12 months after the production date under appropriate storing conditions. Opened packages have to be stored by tightly sealing the bag/cover and must be used in one week.

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Storage

Must be stored in unopened original packing, in cool (+5°C - +35°C) and dry environment protected from freezing. In short-term storing, maximum 3 palettes can be stowed on top of each other and delivery has to be according to first in first out system. In long-term storing, the palettes must not be stowed on top of each other.

Health and Safety


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 mixture should not come into contact with skin and eyes; in case of a 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. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret 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.

Contact

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MasterCrete® S88 PG	
TS EN 1504-3:2005	
Yapısal Tamir (Structural Repair Mortar) 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 ve Beton İlavesi / 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
Adhezyon Dayanımı (Adhesive Bond)	≥ 2,0 N/mm ²
Kontrollü Büzülme / Genleşme (Restrained Shrinkage/Expansion)	≥ 2,0 N/mm ²
Karbonatlaşma Direnci (Carbonation Resistance)	Geçer/Pass
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)

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