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# MasterFlow® 928 (Formerly known as Emaco® S55)

## Cementitious High Strength Non-Shrink Precision Grout

### DESCRIPTION OF PRODUCT

**MasterFlow® 928**, is cement based one part, self compacting non-shrink grout.

**Complies with EN 1504-6 and EN 1504-3/R4 ASTM C1107 Type B and Type C**

### FIELDS OF APPLICATION


- Construction of shear wall caps and column caps
- Fixing of pre-cast concrete elements
- Fixing of the turbines on the foundations
- Fixing of the generators, compressors and pumps on the foundations

- Fixing of the industrial machines on the foundations
- Fixing of the steel columns on the RC foundations
- Filling of the voids in the jacketing applications

### FEATURES AND BENEFITS

- Mixed with only water and can be applied easily
- High compressive strength
- High fluid consistency
- Free of bleeding
- Resistant to water and weather conditions
- Perfect bonding to the concrete and steel
- Non-shrink

### TECHNICAL DATA

Product Chemistry	Mineral Fillers and Cement		
Color	Grey		
Compressive Strength TS EN 196 (1 day)	> 30 N/mm <sup>2</sup>		
(7 days)	> 50 N/mm <sup>2</sup>		
(28 days)	> 60 N/mm <sup>2</sup>		
Flexural Strength TS EN 196 (28 days)	> 8 N/mm <sup>2</sup>		
Bonding Strength (28 days) to concrete	> 2.0 N/mm <sup>2</sup>	MK 	
to steel	> 3.0 N/mm <sup>2</sup>		
Elasticity Modulus TS EN 13412 (28 days)	> 20,000 N/mm <sup>2</sup>		
Capillary Water Absorption (TS EN 130557)	≤ 0.5 kg.m-2 hour-0.5		
Application Thickness	Min. 10 mm Max. 80 mm		
Application Temperature	+5°C - +30°C		
Service Temperature	-20°C - +40°C		
Pot Life	45 minutes		
Open Time to Pedestrian Traffic	24 hours		
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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#### APPLICATION PROCEDURE

##### Preparation of Substrate

The concrete should be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material and dust. The concrete surfaces should be chipped and if there is a water leakage it must be drained or properly plugged. Base plate, rods and bolts should be free of oil stains, grease and dust. Enough number of holes should be opened on the base plate for air drain. Machine should be assembled and balanced before grouting. The concrete surfaces should be saturated with water at least 6 hours before the grouting.

##### Formwork Preparation

The form material should be waterproof and resistant to hydrostatic forces of the grout. Formwork installation should be done against the possible leakage of the cement paste. An opening should be designed in the formwork with a width of 5 cm at minimum for pouring the grout. For providing a constant pressure for easy compacting of the grout the forms should be as high as possible in the pouring side. In grouting of huge base plates, special pipe and pump systems can be used or grout can be prepared with 5% extra water. For preventing the pressure releases, the forms should be placed without any tolerances and gaps between the concrete and form material.

##### 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

MasterFlow® 928	1 kg powder	25 kg bag
Water Quantity	< 0.16 liter	< 4.00 liter
Mixed Density	~ 2.20 kg/liter	

#### APPLICATION METHOD

In the case of operating neighbour machines, a glass of water should be put on the grouting base and the vibrations caused by the environment can be observed. If needed, surrounding machines should be switched off until (10-12 hours in 20°C) the grout sets.

**MasterFlow® 928** should be poured directly into the formwork or it should be pumped under pressure. Application thickness should be 8 cm. For preventing the possible air gaps in the formwork, pour the grout from single opening and let the air draining. Use a steel hook for placing the grout under the plates and do not use vibrator. For thicker applications second layer of the mortar should be applied in same way or consult to the **BASF Yapı Kimyasalları** Technical Service.

#### COVERAGE

19.00 kg/m<sup>2</sup> for obtaining 1 cm thick layer.



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#### WATCH POINTS

- During the application the substrate and ambient temperature should be between 5-30°C.
- Open areas should be protected from the rain, wind, etc. aggressive weather conditions during the first 24-48 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 **MasterFlow<sup>®</sup> 928** in case of contacting to liquids with a pH under 5.5.
- Do not use vibrator for placing the mortar.
- In low temperatures (5°C-10°C) the following precautions should be taken;
  - The product should be stored in warm conditions,
  - Hot water (30°C-50°C) should be used for mixing,
  - Grouting area should be heated and protected from cold.
- In high temperatures (25°C-30°C) the following precautions should be taken;
  - The product should be stored in cool conditions,
  - Cold water (0°C-10°C) and ice should be used for mixing,

#### CLEANING OF TOOLS

After the application all tools should be cleaned with water. **MasterFlow<sup>®</sup> 928** 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 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.



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<b>BASF Türk Kimya Sanayi ve Tic. Ltd. Şti.</b> Gebze Organize Sanayi Bölgesi İhsan Dede Cad. 1000 Sok. Gebze-KOCAELİ/TÜRKİYE	
14 DOP NO: 02.1504.3.003.1 1020-CPR-040 045448	
<b>EN 1504-3</b> <b>MasterFlow 928</b> <b>Structural and Non-Structural Repair</b> <b>Class R4</b>	
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 <sup>2</sup>
Chloride Ion Content	≤ 0,05%
Adhesive Bond	≥ 2,0 N/mm <sup>2</sup>
Restrained Shrinkage / Expansion	≥ 2,0 N/mm <sup>2</sup>
Carbonation Resistance	Passes
E-modulus In Compression	≥ 20 Gpa
Reaction To Fire	A1
Dangerous Substances	Complies with 5,4

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11 1020-CPR-040 039923 EN 1504-6	
<b>MasterFlow 928</b> <b>Anchoring Product</b>	
Pull-out Strength: Displacement at load of 75 kN	≤ 0,6 mm
Chloride Ion Content	≤ 0,05 %