

# EMACO<sup>®</sup> S88C (Thixotropic)

Cementitious trowel applied shrinkage compensated structural repair mortar

## DESCRIPTION

**EMACO S88C** is a ready-to-use, high strength repair mortar. Mixed with water, it provides a rheoplastic, non-segregating, thixotropic mortar with high bond to steel and concrete.

**EMACO S88C** is synthetic fibre reinforced. It does not contain metallic aggregate and is free of chlorides.

## RECOMMENDED FOR

**EMACO S88C** is recommended for repairs needing mortar layers up to 40mm in thickness.

- maintenance works at ports or sea areas
- maintenance works at mechanical industries, especially in conditions where mineral oils, lubricants, etc. are present
- protection of concrete against aggressive waters containing sulphates, sulphides, chlorides, etc
- repair of damaged concrete members
- repair of concrete members subjected to repetitive stresses
- repair of structural members (reinforced or pre-stressed beams under normal or eccentric stress)
- vertical, overhead and horizontal applications

## FEATURES AND BENEFITS

- economical
- durable
- highly impermeable
- ready-to-use
- shrinkage compensated
- sprayable
- sulphate resistant
- excellent workability
- no added chloride
- contains non-corroding synthetic fibres
- high early and final strengths
- favourable E-Modulus

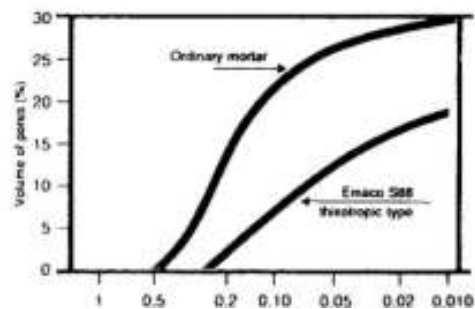
**EMACO S88C** is a ready-to-use powder that merely has to be mixed with water to yield an easily workable, shrinkage compensating repair mortar. **EMACO S88C** is resistant to aggressive environmental elements such as seawater, carbon dioxide, air pollution etc.

**EMACO S88C** mortar is shrinkage compensated both in the plastic and in the hardened state. It is impermeable and extremely durable even in aggressive conditions.

By virtue of its uniformly dispersed synthetic fibres, **EMACO S88C** can be either sprayed or trowelled onto horizontal, vertical and also overhead sections.

## TYPICAL PERFORMANCE DATA

	1 Day	28 Days
Compressive Strength	30 MPa	70 MPa
Flexural strength	4.5 MPa	8 MPa
E-Modulus		30 GPa
Bond to concrete		>3.0 MPa
Bond to steel (smooth)		4 MPa
Bond to steel (deformed)		30 MPa



Cumulative volume of pores of **EMACO S88C** Thixotropic, (measured by mercury porosimeter), compared with that of ordinary mortar having same flow.

**NOTE:** The data shown is based on controlled laboratory tests. Reasonable variations from the results can be expected in practice.

## PROPERTIES

Supply form:	powder
Water added per bag (20kg):	3.0 - 3.4L
Colour:	grey
Specific Gravity (mixed):	approx. 2.2
Storage temperature:	moderate
Application temperature:	not below 5°C
Effect of humidity:	same as cement
Physiological effects:	same as cement
Toxicity:	non-toxic

## APPLICATION

### Substrate Condition

Surfaces to which **EMACO S88C** mortar are applied, should be clean sound & free of dust or loose particles.

Cement laitance, oil, grease, mould release oil or curing compound must be removed from concrete surfaces by using high pressure water jetting (1100-2500 Bar), or bush hammer, scabbler, gritblasting or other approved means. Cut edges of recess or crack vertically, to a depth of at least 10mm. This step is very important as **EMACO S88C** needs a rough surface to achieve maximum grip. All absorbent substrate surfaces must be thoroughly wetted down to saturate all pores. During application, the temperature of the substrate should not be below 5°C.

If the mortar must be thicker than 25mm, anchor welded wire reinforcement to the concrete to be treated leaving space between the mesh and the surface. The successive cover of **EMACO S88C** over reinforcement must be at least 10mm thick. If application thickness is less than 25mm, no mesh is needed, provided that the surface has been roughened with ridges of approximately 5mm in height, in order to provide the needed restraint to the mortar expansion.

### Priming

No special primer is required. To obtain extra strong bonding, the damp substrate can be primed with a slurry brush coat of **EMACO S88C** (2 parts powder to 1 part water).



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## Mixing

Pour minimum required water into a suitable mixer and add **EMACO S88C** rapidly and continuously while mixing. Mix for 3-4 minutes or until a lump free, homogeneous mortar is obtained. Add extra water, if necessary, until the required consistency is obtained and mix again for 2 - 3 minutes. The amount of water to be added is highly dependent on ambient temperature and relative humidity. In hot and dry climates, slightly higher amounts of water may be necessary, the contrary in cold and humid climates.

## Water requirement to produce EMACO S88C thixotropic mortars:

Mixing	Type of Applic.	Rec. Consist.	Flow ASTM C-230*	Mixing Water	
				Min.	Max.
By Mixer	Spray Trowel	Plastic Plastic	70%	15%	16%
			45%	15%	16%

\* Test method was modified to 5 drops

## Method of use

**EMACO S88C** can either be sprayed or trowelled. If necessary, a wooden float may be used to level the surface. The final surface may be smoothed as desired by a wooden, plastic or synthetic sponge trowel.

Trowelling after the spray application may start only when the mortar has set, that is, when fingers do not sink beneath the surface, but mark it lightly.

## Tools

Mixing: low speed drill with suitable helical paddle (jiffy) or by pan mixer. Hand mixing of **EMACO S88C** is not recommended to avoid the introduction of excessive amounts of water.

Applic.: trowel, float or spatula, wet sprayer (worm gear type).

Finish: wood or steel trowel; plastic sponge trowel for very smooth texture.

## CURING

In normal ambient conditions, even without traditional curing, **EMACO S88C** will not craze or crack due to plastic shrinkage, as often occurs with mortars that are not protected adequately in the first 24 hours of curing.

Cover with plastic sheet for 24hrs or apply **MASTERKURE 402** liberally to surface to achieve optimum results. Do not immerse in water to cure.

## Setting Times

Temp't °C	Setting times (hrs) of EMACO S88C	
	Initial	Final
5	2.00	3.00
20	1.45	2.45
40	1.00	2.00

At consistency of 45% flow at flow table (ASTM C-230) 5 drops

## CLEANING

Tools should be cleaned with water before the material hardens.

## ESTIMATING DATA

A 20kg bag of **EMACO S88C** mixed with 3.2L of water yields 10.5L (0.0105m<sup>3</sup>), therefore material requirement is 19.1kg/m<sup>2</sup> at 10mm thickness.

## PACKAGING

**EMACO S88C** is available in 20kg moisture resistant bags.

## SHELF LIFE

**EMACO S88C** can be stored in tightly sealed original bags for 12 months, if kept dry and at moderate temperature.

## PRECAUTIONS

Do not use **EMACO S88C** thixotropic mortar:

- For precision grouting, use **Masterflow 880** Grout or **Masterflow 870** Grout.
- In contact with water with pH less than 5.5.

**EMACO S88C** contains non-toxic, non-mineral fibres that are not a known health hazard. As with other products containing Portland cement it has an alkaline nature and thus can be irritating to skin and eyes. Wear simple dust masks, goggles and gloves when handling. Wash off splashes of mortar with clean water. If irritation persists seek medical advice. For full safety and first aid instructions, refer to the product Material Safety Data sheet. Keep out of reach of children

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## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this **BASF** publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

## NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by **BASF** either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not **BASF**, are responsible for carrying out procedures appropriate to a specific application.

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