

# EMACO<sup>®</sup> S88 CT

## Shrinkage compensated, polymer fibre reinforced, thixotropic repair mortar

### Description

EMACO<sup>®</sup> S88 CT, is a cementitious pre-bagged ready-to-use structural repair mortar in powder form. When mixed with the correct amount of water, it produces a thixotropic, high strength repair mortar, reinforced with acrylic polymer fibres. It possess excellent bond characteristics to steel reinforcement and to concrete.

EMACO<sup>®</sup> S88 CT mortar is shrinkage compensated. It has low permeability and is extremely durable. EMACO<sup>®</sup> S88 CT contains no metallic aggregate and is chloride free.

EMACO<sup>®</sup> S88 CT is formulated for sprayed or trowelled applications, in thicknesses up to 50 mm in one layer by hand application. Greater thicknesses can be achieved when spray applied.

### Typical applications

- All types of structural repair which can be applied by trowel or wet spray.
- Repair of structural members subjected to repetitive loading.
- Repairs to reinforced or pre-stressed beams or columns.
- Protection of concrete subject to attack from water containing chlorides and sulphates etc.
- Repairs in industrial areas, especially those containing mineral oils, lubricants.
- Repairs in marine environments.

### Advantages

- Shrinkage compensation - reduces the risk of cracking due to shrinkage and ensures full contact with host concrete and load transfer in structural repair situations.

- No primer required - allows rapid application at reduced cost.
- Can be spray applied - rapid application of large quantities.
- Low rebound - when spray applied rebound is minimal, with subsequent saving in material cost.
- Extremely low permeability - gives excellent resistance to attack by aggressive elements.

### Packaging

EMACO<sup>®</sup> S88 CT is available in 25kg bags.

### \*Typical properties

Appearance:	grey powder containing micro fine fibres
Wet density:	Approx. 2195 kg/m <sup>3</sup>
Compressive strength at 25°C BS 1881 : Part 116:	> 25 N/mm <sup>2</sup> at 1 day > 70 N/mm <sup>2</sup> at 28 days
Indirect tensile strength BS 1881 : Part 117:	3.6N/mm <sup>2</sup> at 28 days
Resistivity approx.:	12500Ωcm
Water penetration DIN 1048 : Part 5:	<5mm

### Application procedure

#### Preparation of substrate:

It is essential that the substrate to be repaired is sound, clean and free of all contamination.

The damaged areas of concrete to be removed should be clearly identified. The perimeter of the area should be saw cut to a depth of 10mm and the edges cut as neatly as possible keeping the sides square. Feather-edging is not permitted and a minimum thickness of 10mm must be maintained over the whole repair area.

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The substrate should be prepared to provide a rough surface having at least a 5mm amplitude at 20mm frequency.

If unsound or contaminated concrete is found to extend beyond the premarked area, consult the engineer in charge. Subject to his approval cut out as necessary back to clean sound concrete.

If reinforcement is corroded ensure that the back of the steel has been exposed. Reinforcement should have all rust removed by the use of power tools, abrasive blasting (wet or dry) or wire brushing. Reinforcing steel should be exposed and cleaned around its whole circumference. Steel should be prepared to Swedish Standard SIS 05-900:1967-SA 2½ or BS 4232 Ref. 24 second quality.

Extra protection to the reinforcement can be provided by use of CONCRETE ZR dependant upon the circumstances of use and requirement of the client.

Severely corroded reinforcement may require replacement and the engineer must be consulted.

## **Water saturation:**

Thoroughly saturate the surface of the concrete to provide a saturated surface dry condition. Poor quality concrete may require soaking for a significant length of time. Any surface water should be removed using an oil free compressed airjet.

## **Mixing:**

EMACO<sup>®</sup> S88 CT must be mixed mechanically. The following mixing equipment is suitable, heavy duty slow speed drill with spiral mixing paddle, forced action mixer, such as Creteangle, Mixal, Pan Mixers etc. Mixers attached to spray units such as Meyco Deguna or Putzmeister are suitable.

Add 3.5 litres of water into the mixer. Start the mixer and add the EMACO<sup>®</sup> S88 CT powder rapidly and continuously. Mix for 3 minutes after all the powder has been added until mortar is homogeneous and lump free.

Add water, if necessary, within the limits given, until the required consistency is achieved. Mix for a further 1-2 minutes. The amount of water required will be affected by ambient temperature and relative humidity.

EMACO<sup>®</sup> S88 CT can be used when the ambient temperature is between 5 and 50°C. If ambient temperature is >30°C, use chilled water and condition the bagged product in an air-conditioned store prior to use. Maximum mixed temperature should be no more than 35°C.

## **Application:**

After mixing, EMACO<sup>®</sup> S88 CT can be sprayed or trowel applied. Suitable spraying units are Meyco Deguna 20, Turbosol T20 and Putzmeister P11.

When applying by hand EMACO<sup>®</sup> S88 CT must be forced tightly into the substrate to ensure intimate contact with the pre-wetted substrate.

Levelling and initial finishing should be carried using a wooden or plastic float.

Final finishing should be carried out using a steel float.

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When the material has stiffened to the point where finger pressure lightly marks the surface, a final firm trowelling should be given using the steel float.

## Curing:

Good curing is essential. Particular care is required in hot and/or windy conditions. Curing can either be with a single coat of MASTERKURE 181 curing membrane, which is compatible with most subsequent protective coatings, or by covering the work with plastic sheet fixed over wet hessian or wet foam rubber.

## Coverage:

One 25kg bag of EMACO<sup>®</sup> S88 CT with 4 litres of added water will yield approximately 12.6 litres of mortar which will cover 1m<sup>2</sup> at 12.6mm average thickness.

**Note:** In addition to shrinkage compensation, this product has been designed to develop tensile strength sufficient to withstand the internal stress generated by volume change to reduce the incidence of drying shrinkage cracking.

## Storage

Store out of direct sunlight, clear of the ground on pallets, protect from rainfall. Avoid excessive compaction. Shelf life is 12 months when stored as above.

## Safety precautions

As with other products containing Portland cement, the cementitious material in EMACO<sup>®</sup> S88 CT grout may cause irritation. In case of contact with eyes, immediately flush with plenty of water for at least 15 minutes. Call a physician. In case of contact with skin, wash skin thoroughly.

## Note

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

## Quality and care

All products originating from BASF's Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and OHSAS 18001.

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\* Properties listed are based on laboratory controlled tests.

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