

# EMACO®

## S188

Dense, high strength repair mortar

### DESCRIPTION

**Emaco S188** is a ready to use cementitious powder which on mixing with the specified quantity of water provides a non-segregating, shrinkage compensated, thixotropic repair mortar with high strength characteristics, that can be spray or trowel applied.

**Emaco S188** is reinforced with synthetic fibres, and is free from chlorides. The dense cured mortar strongly resists ingress of corrosive agents such as chlorides and sulphates.

### RECOMMENDED FOR

**Emaco S188** is recommended for repair situations requiring application of mortar up to 40 mm thickness, such as:

- maintenance of marine structures.
- repairs to industrial structures such as oil storage facilities, silos, chimneys etc.
- extensive repairs to beams, columns and other structural elements.
- protective screeds against corrosive environment.

### FEATURES AND BENEFITS

<b>Dense structure</b>	Reduced permeability to aggressive environment
<b>Prepacked</b>	Ready to use. No batching errors
<b>Thixotropic</b>	Does not sag under recommended application thickness
<b>Fibre reinforced</b>	Can be applied to vertical or overhead sections
<b>High strength</b>	Stronger repairs
<b>Chloride free</b>	Does not corrode steel

### TYPICAL PERFORMANCE DATA

(Values in N/mm<sup>2</sup>)

Compressive (ASTM C109)	3 days	: 15
	28 days	: 50
Flexural (ASTM C348)	28 days	: 5
Tensile strength (ASTM C190)		: 3.3
E-Modulus (SS 78: Part A21)	28 days	: 50,000

### PROPERTIES

Supply form	: powder
Colour	: cement grey
Density (wet)	: 2.25 kg/L
Storage temperature	: 10-50°C
Application temperature	: >10°C

### APPLICATION

#### Surface Preparation

Correct substrate preparation is critical for optimum performance.

The prepared surface should be structurally sound and free from contaminants such as oil, grease, curing membrane, previous coatings, dust, fungus, moss, etc.

Depending on the substrate condition and environmental requirements, use an effective method recommended by ICRI for removal of the concrete surface such as, wet grit blasting, high pressure water jetting and needle scaling.

Saw cut the boundary of repair area perpendicular to the surface to at least 10 mm depth and remove concrete within the saw-cut boundary at least to that depth. Where saw cutting is not possible, after material removal, prepare the edge of the vertical repair area.

Where rebars are corroded, cut back the concrete to at least 25 mm behind rebars. Gritblast the rebars to remove corrosion products. Replace the affected part of rebar if the diameter after grit blasting is found to be reduced by more than 20% of the original diameter.

*Note: It is recommended that the decision on replacement of rebars is taken based on the advice of the structural engineer responsible for the works.*

For superior protection from corrosion in aggressive environments, coat the rebars with **Barrazinc SP** – a zinc rich epoxy primer.

Prepare the final surface free from dust and debris and to a rough profile with at least 5mm level difference between surface troughs and ridges.

Saturate the prepared surface with clean water for at least one to two hours before applying the mortar.

#### Priming

To obtain an extra strong bond, the damp substrate can be primed with a slurry brush coat of **Emaco S188** (2 parts powder to 1 part water) or with **Barra Emulsion 57** diluted with water (ratio 1:1).

Normally, priming is not recommended if the mortar is to be applied by spraying.

**Mixing**

Mechanical Mixing is necessary.

Place approximately 80% of the water in the mixer. Keeping the mixer running, add **Emaco S188** continuously. Mix for 3-4 minutes or until a lump-free mix is obtained. Add the balance of water while continuing to mix until the desired consistency is achieved.

**Water requirement**

<b>Consistency</b>	<b>Min. water content per 25 kg</b>	<b>Max. water content per 25 kg</b>
Sprayable or Trowellable	15.5% (3.9 L)	17.5%. (4.4 L)

**Placing**

**Emaco S188** has been formulated for placing both by trowel and spray application to required build thickness.

For best results, apply the first layer by gloved hand including packing behind the rebars, and then firmly trowel on the rest to required thickness.

If applying by spray, a **Deguna 30** spray unit or a similar machine may be used. For satisfactory results, an experienced operator in sprayed concrete is essential.

Finish the final surface smooth using a wood, plastic, or synthetic sponge faced trowel. Trowelling after spray application may start only after the mortar has set sufficiently to resist the penetration by fingers into the surface.

**CURING**

**EMACO S188** requires adequate curing to achieve optimum performance. Apply a uniform coat of a **MBT** curing compound such as **Masterkure 181** immediately after final finishing by roller or low-pressure spray.

*Note: **Masterkure 181** is the appropriate curing compound if a polymer based finish coating or an acrylic based protective coating is to follow. Consult **MBT** for advice.*

**Protective coating**

For optimum protection against the ingress of water, carbon dioxide, sulphur dioxide chlorides and other water borne corrosive agents, **MBT** recommends treating the whole surface of reinforced concrete with an appropriate grade of **Enviroseal** – silane based penetrating sealer and **Thorocoat** – acrylic based decorative and protective top coat.

**ESTIMATING DATA**

A 25 kg bag of **Emaco S188** mixed with 4.2 L of water yields 13 litres (0.013 m<sup>3</sup>). Therefore material requirement is 19.2 kg/m<sup>2</sup> at 10 mm thickness.

**PACKAGING**

25 kg, multi-ply paper sacks with polythene liner.

**SHELF LIFE**

**Emaco S188** can be stored in tightly sealed original bags for up to 12 months, if kept dry and at even temperature.

**PRECAUTIONS**

**Health:** **Emaco S188** is alkaline like normal cement and can cause skin irritations to persons with sensitive skin. Wear gloves and mask while handling the product. Take all precautions normally taken while handling cement.

**Safety:** Take adequate safety measures during spraying. Consult the supplier of the spraying machine.

For detailed Health, Safety and Environmental Recommendations, please consult and follow all instructions on the product Material Safety Data Sheet.

**Fire:** **Emaco S188** is not flammable.

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### STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this MBT 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 MBT either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not MBT, are responsible for carrying out procedures appropriate to a specific application.

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