

MasterEmaco[®] S 188

Sulphate resistant, high strength repair mortar

DESCRIPTION

MasterEmaco S 188 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. **MasterEmaco S 188** is reinforced with synthetic fibres, and is free from chlorides.

RECOMMENDED USES

MasterEmaco S 188 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.
- As a protective screed against sulphate attack.

FEATURES AND BENEFITS

- **Dense Structure** - Reduced permeability to aggressive environment.
- **Prepacked** - Ready to use. No batching errors
- **Thixotropic** - Does not sag under recommended application thickness.
- **Fibre reinforced** - Can be applied to vertical or overhead sections.
- **High strength** Stronger repairs.
- **Chloride free** Does not corrode steel.
- **Sulphate resistant** - Advantage in sulphate/sulphide laden environment.

TYPICAL PERFORMANCE DATA

	Strength/(N/mm ²)	
	1 Day	28 Days
Compressive (ASTM C109)	15	>50
Flexural (ASTM C348)	1.5	5
E-Modulus (N/mm ²)	: 54,000	
Bond to concrete	: >tensile strength of concrete	

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. Surfaces should be structurally sound, clean, and free from loose particles, oil, grease, or any other contaminant.

Cement laitence, loose particles, oil, grease, mould release agent, curing membrane, and other contaminants must be removed from the surface by wet grit blasting, high pressure water jetting (approx 150 bars) or such other effective methods.

Prepare the surface of the concrete to a rough profile with a surface level difference of at least 5 mm between trough and ridge.

Where deeper removal of concrete is required to obtain a sound base, first saw cut the edges of the repair area perpendicular to the surface to at least 10 mm depth. Where required cut back the concrete to at least 25 mm behind the rebars. Remove all corrosion products from the rebars by grit blasting or other suitable technique.

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.

In a chloride laden environment, the rebars are recommended to be protected with MasterEmaco P 5000 zinc rich primer.

Where the thickness of repair will exceed 30 mm, place a 50 mm square welded steel mesh in mid section to minimise drying shrinkage cracking. Anchor the mesh firmly to the substrate or to the exposed steel so as to allow 15-20 mm cover over the mesh when the repair is completed. Saturate the surface thoroughly with clean water before applying the mortar.

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Priming

To obtain improved bonding, the damp substrate can be primed with a slurry brush coat of **MasterEmaco S 188** (2 parts powder to 1 part water) or with MasterEmaco P 157 diluted with water (ratio1:1).

Mixing

Mechanical Mixing is necessary.

Place approximately 80% of the water in the mixer. Keeping the mixer running, add **MasterEmaco S 188** 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

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

Placing

MasterEmaco S 188 has been formulated for placing both by trowel and spray application

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

Spray application should be by suitable spray equipment. Please refer to Master Builders Solutions for advice.

The final surface may be smoothed by a wooden, 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.

Protective coating

In high chloride / carbon dioxide laden atmosphere a flexible coating with low permeability to chlorides and

carbon dioxide is strongly recommended to be applied. Refer to Master Builders Solutions for product selection advice.

Curing

MasterEmaco S 188 requires adequate curing to achieve optimum performance. Apply a uniform coat of a Master Builders Solutions curing compound such as MasterKure 181 immediately after final finishing by roller or low pressure spray.

ESTIMATING DATA

A 25 kg bag of **MasterEmaco S 188** mixed with 4.2 L of water yields 13 litres

PACKAGING

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

SHELF LIFE

MasterEmaco S 188 can be stored in tightly sealed original bags for up to 12 months, if kept dry and at even temperature.

PRECAUTIONS

Health: MasterEmaco S 188 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.

Fire: MasterEmaco S 188 is not flammable.

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

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication is 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 commonwealth or State legislation. The owner, his representative or the contractor 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 Master Builders Solutions either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions are responsible for carrying out procedures appropriate to a specific application.

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