

# MasterEmaco<sup>®</sup> S 466

Shrinkage compensated, free flowing precision concrete

## DESCRIPTION

**MasterEmaco S 466** is a high strength precision concrete, requiring only the on-site addition of water to provide a free flowing concrete ideally suited for placing in nominal thicknesses of 40mm and above.

When mixed, applied and cured in accordance with the manufacturers instructions, **MasterEmaco S 466** produces a free flowing precision concrete free from segregation and bleeding.

**MasterEmaco S 466** is a pre-packaged blend of Portland cement, carefully graded natural aggregate, specially selected sands, fillers, shrinkage control agents and fluidifiers. When mixed with the stated amount of water it produces a free flowing, cohesive, precision concrete that hardens to produce a dense, durable surface.

## TYPICAL APPLICATIONS

Whenever a material is required to reconstruct heavily congested areas and areas with difficult access.

**MasterEmaco S 466** is the ideal material for vertical or horizontal structural repairs wherever the use of formwork is preferable to hand or machine applied repair systems.

Its high early and ultimate strength enables formwork to be stripped at an early age thus minimising delays.

Due to its rheoplastic nature **MasterEmaco S 466** can be utilised as a grout and poured under a head of pressure. **MasterEmaco S 466** should not be used where the depth of voids to be filled is less than 20mm.

Used as the capping medium in conjunction with **MasterSeal 910** in the Master Builders Solutions pile head waterproofing system. For further details of this system, please contact your Master Builders Solutions representative.

General repair and renovation of decayed, defective or damaged concrete such as:

- Columns
- Walls
- Beams
- Honeycombed concrete
- Floors

## ADVANTAGES

- Guaranteed performance - material is precision blended in the factory to ensure consistent results
- Durable - utilisation of low water cement ratio ensures minimum permeability and high durability
- Free flowing - eliminates honeycombing in areas of congested reinforcement
- Self compacting - ensures complete filling of spalled/damaged areas
- Shrinkage compensated - unique formulation provides dual expansion system in plastic and hardened states
- Easy to use - simple on site addition of water

## PACKAGING

**MasterEmaco S 466** is supplied in 25kg bags.

## TYPICAL PROPERTIES\*

Wet density	approx. 2285 kg/m <sup>3</sup>
Compressive strength at 25°C BS 1881 Part 116	>25 N/mm <sup>2</sup> at 1 day >35 N/mm <sup>2</sup> at 3 days >45 N/mm <sup>2</sup> at 7 days >65 N/mm <sup>2</sup> at 28 days
Tensile strength BS 1881 Part 117	>3 N/mm <sup>2</sup> at 28 days
Resistivity	5000-10000Ωcm
Flexural strength BS 4551 Part 1 1998 / BS EN 12390-3	>10 N/mm <sup>2</sup>
Rapid Chloride Permeability ASTM C1202: 2009	<1000 coulombs
Water permeability BS EN 12390 Part 8	<10 mm

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## METHOD OF USE

**MasterEmaco S 466** is a versatile repair and renovation mortar. Surface preparation, method of use etc. are dependent on the job in hand. Detailed below are general guidelines for the use of **MasterEmaco S 466**. For full specification details and advice on specific repairs contact your local representative.

## APPLICATION GUIDELINES

### SURFACE PREPARATION

It is essential that the surface of the concrete to be repaired is sound, clean and uncontaminated. Corrosion must be removed from steel reinforcement before application of **MasterEmaco S 466**. In certain instances where there is a significant loss of section, the steel may have to be replaced. Defective areas should have a 20mm deep saw cut made around the perimeter. Cut back all defective concrete to a sound base. Feather edging must be avoided.

Care should be taken to ensure formwork is water tight and constructed in line with normal concreting practice. The use of formwork tape is recommended in order to eliminate grout loss. The unrestrained surface of the repair should be kept to a minimum and care should be taken to ensure at least 20mm cover to reinforcement. Soaking prior to placement is essential and provision should be made for drainage outlets. Where **MasterEmaco S 466** is to be poured ensure access is available and a head of pressure can be maintained.

### PRIMING

Prime reinforcing steel with 2 coats of **MasterEmaco 8100 AP**.

Areas to be repaired should be soaked with water for several hours prior to application of **MasterEmaco S 466** to minimise local absorption and to assist in the free flow of the concrete. Before placing ensure concrete surfaces are damp but free of standing water and seal drainage outlets. Ensure formwork is secure to prevent movement during placing and curing. Providing the substrate has been thoroughly soaked priming is not normally necessary.

The use of **MasterBrace ADH 1414**, epoxy bonding agent is recommended where high soluble salts are present in the parent concrete. **MasterBrace ADH 1414** epoxy bonding agent is recommended as it prevents migration to the repair of deleterious salts such as chlorides or sulphates as well as bonding new concrete to old.

When **MasterBrace ADH 1414** is used, pre-soaking is not necessary, but care should be taken to ensure formwork is erected and **MasterEmaco S 466** placed within open time of **MasterBrace ADH 1414** (generally within 4 hours) at 25°C.

### MIXING

Since **MasterEmaco S 466** is a precision concrete it is important that care is exercised in mixing and placing. It is essential that a mechanically powered mixer is used or suitable drill and paddle. The specified amount of water to obtain the desired consistency can be varied according to site conditions but should not exceed 3.5 L per 25kg bag.

Under no circumstances should **MasterEmaco S 466** be re-tempered by the later addition of water. Damp down the inside of the mixer with water prior to mixing the initial batch of **MasterEmaco S 466**. Ensure the mixer is damp but free of standing water. Add the pre-measured quantity of water. Slowly add the **MasterEmaco S 466** powder mixing continuously. Mix for 3 to 5 minutes until a smooth, uniform, homogenous mix is achieved.

### PLACING / APPLICATION

**MasterEmaco S 466** should be placed in a single continuous operation. Poured material should be introduced slowly to prevent entrapment of air. It is essential to place the mixed material within 30 minutes of batching.

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## CURING

As with all cementitious material curing is of vital importance to ensure that optimum properties are obtained.

## SUBSEQUENT SURFACE FINISHES

It is recommended that products from the **MasterProtect** range of protective finishes be applied.

**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.

## CLEANING

Treat as concrete. Clean all tools with water immediately after use. Hardened material can be removed using mechanical means.

## COVERAGE / YIELD

Yield approximately 12.5 L per 25kg.

## STORAGE AND SHELF LIFE

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

## HEALTH AND SAFETY

As with other products containing Portland cement, the cementitious material in **MasterEmaco S 466** 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.

## QUALITY AND CARE

All products originating from Master Builders Solutions 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 and ISO 14001.

\* Properties listed are based on laboratory controlled tests.

® = Registered trademark of the MBCC Group in many countries.

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### STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions 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 Master Builders Solutions either orally 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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