

MasterEmaco[®] S 466

High Strength dual shrinkage compensated, flowable micro concrete for concrete repairs

DESCRIPTION

MasterEmaco S 466 micro concrete pourable mortar is a dual shrinkage compensated, high flow, high strength formulation for structural concrete repairs.

MasterEmaco S 466 is suitable for placing in thicknesses of 25mm to 200 mm.

MasterEmaco S 466 provides a durable, strong structural repair fully compatible with host concrete.

RECOMMENDED USES

MasterEmaco S 466 is the ideal material for vertical or horizontal structural repairs where the thickness of repair is more than 25mm and use of pourable mortar is preferable to hand or machine applied repair systems. Typical applications are:

- Extensive repairs to beams, columns and other structural elements
- Repairs to piers, navigation locks, dams seawalls and other marine structures
- Repair of structural members subjected to repetitive loading
- Repairs to bridges, tunnels, garages, silos etc
- Jacketing of beams, columns and other structural elements for strengthening

FEATURES AND BENEFITS

- **Dual shrinkage compensated** - Volume stable in wet and hardened state reducing cracking tendency
- **One component, factory made only addition of water**- Uniform predictable performance even in remote situations
- **No bonding agent required** - Simple installation
- **Impermeable to aggressive element**: long life repairs
- **Pourable mortar**- Able to repair complex profiles easily
- **Fast and easy placing**-Reduced time for repairs

PROPERTIES

Appearance	Grey powder
Water powder ratio	0.16
Compressive strength (ASTM C109 7cm cube)	20 MPa 1 Day
	35 MPa 3 Days
	50 MPa 7 Days
	65 MPa 28 Days
Density	2.25 ± 0.1 g/cc

Mixing water per 25kg bag	Approx. 3.75-4.25 litres
Temperature for application (substrate and material)	Between +5 and +40°C (+5 and +30°C)
Flexural Strength (ASTM C 348)	>8 MPa
Resistivity approx.	12500Ωcm
Water penetration	< 5mm

APPLICATION

Surface preparation

All loose traces of concrete or mortar, dust, grease oil, etc. must be removed. Damaged or contaminated concrete shall be removed to obtain a keyed aggregate exposed surface. Non-impact/vibrating cleaning methods, e.g. grit or high-pressure water blasting are recommended. Cut the edges of the repair vertically to a minimum depth of 20 mm. Clean all exposed reinforcement to a minimum grade of Sa 2 according to ISO 8501-1 / ISO 2944-4. Ensure back of reinforcing bar is also clean

Where reinforcing bars are corroded, cut back the concrete to at least 20mm behind the reinforcing bars Water powder ratio and coat the old and new reinforcement with **MasterEmaco P 130** for superior protection from corrosion.

Grit blast around the reinforcing bars to remove corrosion products. Replace the affected part of reinforcing bar if the diameter after grit blasting is found reduced by more than 20% of the original diameter on the advice of the structural engineer responsible for the works.

Formwork

The forms must be of good quality, treated with a chemical release agent such as **MasterFinish** for smooth release, provided with water drain holes, strong and well braced to withstand the fluid pressure of the mortar until it hardens.

Mixing

Only full bags are mixed. Damaged or opened bags should not be used. Mix **MasterEmaco S 466** in a forced action pan mixer, or with a helical paddle attached to a low speed (300-600rpm) mixer for 3 minutes until a lump free, flowable consistency is achieved. Only use clean water.

Mixing water needed: 3.75 to 4.25 litres per 25kg bag. Allow the mortar to rest for 2 - 3 minutes and then remix briefly before pouring into formwork. If

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the temperature is more than 40 °C. Better use chilled water for mixing.

Mortar application

The minimum temperatures must be maintained during application and for at least 24 hours thereafter for optimum curing of the product. The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying **MasterEmaco S 466** ensure all water is removed from formwork prior to installation and formwork is resealed. **MasterEmaco S 466** should be pumped or poured into the prepared formwork until the void is filled. Pumping is recommended for larger pours. Do not vibrate **MasterEmaco S 466** as it could lead to segregation.

The formwork should be removed after 1-3 days and a curing compound applied. If subsequent coats are to be applied the use of clear polyethene recommended for the first three days after removal of formwork. For repairs beyond 80mm to 100mm in thickness, extend **MasterEmaco S 466** with up to 25kg of 5-12mm sized washed, saturated surface-dry (SSD), graded low absorption, high density aggregates. Please consult your local Master Builders Solutions representative for advice

Protective coatings

Subsequent coatings of **MasterProtect** anti-carbonation barriers or silane impregnations should be applied as recommend on the individual datasheets.

CURING

MasterEmaco S 466 should be cured after formwork removal by **MasterKure 181** or with wet hessian cloth.

ESTIMATING DATA

Each bag of **MasterEmaco S 466** when mixed with 4L of water yields 13.2L. This is near approximate value and user is requested to establish trials at site.

PACKAGING

MasterEmaco S 466 is available in 25kg bags.

SHELF LIFE

MasterEmaco S 466 has a shelf life of 6 months. Store out of direct sunlight, clear of the ground on pallets protected from rainfall.

PRECAUTIONS

It is highly recommended to use necessary PPE (Gloves, mask etc.,) during installation of the product. In case of Incidents of direct inhalation, causing dizziness/giddiness, loss of consciousness, contact with eyes etc, seek immediate medical advice. The requirements may vary depending on the application areas. Please ensure to have proper ventilation while working in confined areas. Contact Master Builders Solutions representative in case you need further details or refer to the material safety datasheet of the product to know more.

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