

MasterEmaco S 420

Rapid Setting, High Strength Structural Repair Mortar, Regulation 31 approved for use in contact with potable water

DESCRIPTION OF PRODUCT

MasterEmaco S420 is a rapid setting polymer modified repair mortar for application where high compressive strengths are required. The material cures to a concrete grey colour.

FIELDS OF APPLICATION

MasterEmaco S420 is suitable for structural repairs of reinforced and non-reinforced concrete. The material is ideal for repairing damage caused by:

- Corrosion of reinforcement bars
- Alkali aggregate reaction
- Impact damage

FEATURES AND BENEFITS

- Separate primers and bonding coats are not required allowing for complete repair in a single operation with substantial time savings
- Rapid-setting qualities provide high production rates saving access and labour costs
- High performance for extreme durability and protection of embedded reinforcement.
- Regulation 31 approved for contact with potable water after just 3 days curing.
- Can be applied at 10-50mm in thickness per layer

TESTS AND APPROVALS

Awarded British board of Agreement Certificate No. 89/2353

Approved by the Secretary of State for the Environment under Regulation 31 (4)(a) for use in contact with potable water. Specific instructions for use available upon request.

Conforms to DOT BD 27/86 Clause 6.1.

APPLICATION PROCEDURE PREPARATION OF SUBSTRATE

Remove all damaged concrete back to a sound base. Remove all concrete from around exposed reinforcement to give 15mm clear cover and for 50mm at each end. The edges of the repair area must be cut square to give a minimum depth of 10mm. Ultra high pressure water methods are preferred. If percussion tools are used, ensure that the cutting edges are maintained in a sharp condition.

Remove all loose rust and scale from reinforcement by using a needle gun or by abrasive blasting; wire brushing is not recommended.

If chlorides are present or where it is not possible to apply a minimum of 10mm of MasterEmaco S420 over the reinforcement, it is necessary to clean back to bright steel before applying 2 coats of MasterEmaco P5000 AP Primer.

MIXING

LIQUID REQUIREMENT

Dilute MasterSeal 600 with an equal part of clean potable water; stir gently.

2.5 -2.8 litres of liquid per 25kg of MasterEmaco S420, the recommended level is 2.7 litres.

The quantity will vary slightly depending on ambient conditions. It is the consistency of the mixed material that is important.

BONDING SLURRY

Blend a small amount of MasterEmaco S 420 powder to part of the mixing liquid, mixing with a trowel until a lump-free slurry consistency is obtained.

APPLICATION

Do not apply to frozen surfaces or if the ambient temperature is below 5°C or expected fall below 5°C within 8 hours.

Apply MasterEmaco S420 bonding slurry to a pre-dampened surface using a stiff brush. Brush firmly into the substrate, completely covering the area to be repaired and any reinforcement bars. Do not allow to dry out.

TROWEL MIX

Add more MasterEmaco S420 powder to the mix until a cohesive mass is formed with sufficient stiffness to be compressed in the hand. Do not over mix.

Larger quantities can be mixed with a small forced-action mixer only.

Do not mix more than can be placed in 5 minutes (at 20°C) or re-temper.

Trowel apply the thickened MasterEmaco S420 mortar into place using firm pressure to fully compact the material, taking particular care around reinforcing bars.

Apply in layers from 10 to 50mm per application allowing approximately 20 minutes (at 20°C) between layers. Scratch previous application to improve bond.

If MasterEmaco S420 hardens before completion of repair, re-apply a bonding slurry.

To obtain difficult profiles or sharp arrises simply overfill the repair area, leave until the initial set has taken place and shave to the required shape with a clean trowel.

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CURING

Fog-spray all applications with clean water after the initial set has taken place for as long as practicable.

In cool conditions, cover with insulated tarpaulin, polystyrene or other insulating material.

A separate curing compound is not necessary.

COVERAGE

One 25kg bag yields 12.8 Litres of mortar or 1m² at 13mm thick.

78 x 25 bags per m³.

PACKAGING

MasterEmaco S420 is available in 25kg bags.
MasterSeal 600 is available in 20 litre plastic containers.

STORAGE

All materials should be stored under cover, clear of the ground and stacked not more than 6 bags high. Protect the materials from all sources of moisture and frost.

SHELF LIFE

Rotate stock in order not to exceed the shelf life of 12 months for MasterEmaco S420 and MasterSeal 600.

HANDLING AND TRANSPORT

Usual preventive measures for the handling of chemical products should be observed when using this product, for example do not eat, smoke or drink while working and wash hands when taking a break or when the job is completed.

Specific safety information referring the handling and transport of this product can be found in the Material Safety Data Sheet. For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

Disposal of product and its container should be carried out according to the local legislation in force. Responsibility for this lies with the final owner of the product.

CONTACT DETAILS

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Product Data		
Property	Units	Data
Pot Life	Minutes	10
Wet Density	kN/m ²	2180
Modulus of Elasticity	kN/mm ²	30
Coefficient of thermal expansion	°C ⁻¹	6.42 x 10 ⁻⁶
Initial Setting Time	Minutes	10 – 15
Final Setting Time	Minutes	16 – 20
Mechanical Properties		
Compressive Strength		
4 Hours	N/mm ²	6.3
24 Hours	N/mm ²	27.0
7 Days	N/mm ²	50.0
28 days	N/mm ²	60.0
Tensile Strength (28 days)	N/mm ²	4.5
Flexural Strength (28 days)	N/mm ²	8.0
Adhesive Strength (28 days)	N/mm ²	1.7

Note – Typical Values at 20°C.

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Health and Safety

*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

Solvent Based Products

Use in well ventilated areas; avoid inhaling. Suitable respiratory equipment may be needed, eg when spraying. Can cause skin, eye irritation. Wear protective eye shields and gloves during use. Do not smoke or allow sparks or naked lights when stored or in use.

Resin Products

Can cause irritation, dermatitis or allergic reaction. Use protective equipment particularly for skin and eyes. Use only in well ventilated areas.

Spillage

Chemical products can cause damage; clean spillage immediately.

DISCLAIMER

"Master Builders Solutions UK Ltd" (the Company) endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, the Company has no control over the selection of its products for particular applications. It is important that any prospective customer, user or specifier, satisfies him/her-self that the product is suitable for the specific application. In this process, due regard should be taken of the nature and composition of the background/base and the ambient conditions both at the time of laying/applying/installing the material and when the completed work is to be brought into use.

Accordingly, no liability will be accepted by the Company for the selection, by others, of a product, which is inappropriate to a particular application.

Products are sold subject to the Company's standard conditions of sale and all customers, users and specifiers, should ensure that they examine the Company's latest Product Literature.