

EMACO™ S88C T

High strength, fibre reinforced, thixotropic repair mortar

Description

EMACO S88C T repair mortar is a one-component thixotropic, dual shrinkage-compensated, fibre-reinforced high strength formulation for structural concrete repairs. EMACO S88C T can be applied vertically or overhead by low-pressure wet-spraying or hand trowelling.

EMACO S88C T is reinforced with specially designed bean shaped, alkali resistant synthetic fibres for exceptional resistance to cracking.

Uses

EMACO S88C T is recommended for repair situations requiring application of mortar up to 50mm thickness in one layer, such as:

- Repairs to bridges, parking garages, tunnels.
- Repairs to piers, navigation locks, dams, sea walls and other marine structures.
- Repairs to industrial structures such as oil storage facilities, silos, chimneys etc.
- Extensive repairs to beams, columns and other structural elements.
- Repair of structural members subjected to repetitive loading.

Advantages

- Dual shrinkage compensated.
- One component – only addition of water
- High early and ultimate strengths.
- Quality controlled – Uniform, predictable results
- No additional bonding agent required
- Sprayable, Virtually no rebound.
- Impermeable to aggressive elements.

Typical properties

Aspect	: Grey powder
Water/powder ratio, by weight	: 0.14
Fresh wet density	: 2300 kg/m ³
Compressive strength, (ASTM C109, 7cm cube)	: 20 MPa at 1 Day 50 MPa at 3 Days 60 MPa at 7 Days 70 MPa at 28 Days
Flexural strength (ASTM C348)	: >9 MPa at 28 Days
Tensile strength (ASTM C496)	: >4 MPa at 28 Days
Resistivity approx.	: 12500 Ωcm
Water penetration (DIN 1048)	: < 5 mm
Coefficient of oxygen diffusion	: 2.58 x 10 ⁻⁸

Specification Clause

The dual shrinkage-compensated, cementitious patch repair mortar shall be EMACO S88C T, high strength single component mortar modified with fibres. The repair mortar shall have compressive strength minimum of 20 MPa at 1 day and 70 MPa at 28 days. The repair mortar shall not require polymer bonding agent as primer and shall be thixotropic consistency, capable of applying 50mm thick in single layer.

Directions for use

Surface preparation

Correct substrate preparation is critical for optimum performance.

The prepared surface should be structurally sound and free from contaminants. Remove concrete that has been saturated with oil or grease. Simple light sandblasting will not provide a sufficient profile for most repairs.

Depending on the substrate condition and environmental requirements, use an effective method for removal of weak concrete 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 repair area vertical.

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

Where rebars are corroded, cut back the concrete to at least 20 mm behind rebars. Grit blast around the rebars to remove corrosion products. Replace the affected part of rebar if the diameter after grit blasting is found 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 CONCRETE ZRi – the zinc rich epoxy primer or with STRUCTURITE PRIMER in environments not laden with chlorides.

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

Mixing

EMACO S88C T must be mixed mechanically. Use a heavy-duty, slow speed drill with spiral mixing paddle or a Pan type mixers etc. Mixers attached to spray units such as, MEYCO DEGUNA are suitable.

Place approximately 80% of the water in the mixer. Keeping the mixer running, add EMACO S88C T slowly. Mix for 3-4 minutes or until a lump-free mix is obtained. Add from the balance 20% 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 Trowelable	13% (3.25L)	15% (3.75L)

If ambient temperature is >30°C, use chilled water and condition the bagged product in an air-conditioned store prior to use. Maximum mixed temperature should be no more than 35°C. EMACO S88C T can be used when the ambient temperature is between 5 and 40°C.

Placing

EMACO S88C T has been formulated for placing both by trowel and spray application, depending on the size and location of the repair area.

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

When applying by hand force EMACO S88C T tightly onto the substrate to ensure intimate contact with the pre-wetted substrate.

If applying by spray, for best results, utilise the services of an experienced nozzle-man.

Finish the final surface smooth using a wood, plastic or synthetic sponge faced trowel. When the material has stiffened to the point where finger pressure lightly marks the surface, give a final firm trowelling using a steel float.

Curing

Good curing is essential. Particular care is required in hot and/or windy conditions. Cure either by a single coat of MASTERKURE 181 curing membrane, which is compatible with most subsequent protective coatings or by covering the work with plastic sheet fixed over wet hessian or wet foam rubber.

Coverage

One 25kg bag of EMACO S88C T mixed with 3.5 litres water will yield approximately 12.4 litres.

Approximately four bags of 25kg are required per 1 m² area at 50mm thick application.

Packaging

EMACO S88C T is available in 25kg bags.

Storage and Shelf life

Store under cover, out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment.

Shelf life is 6 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice please consult BASF's Technical Services Department.

Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product fully cured or dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet. MSDS available on demand or on BASF construction chemicals web site.

Note

All BASF Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue.

Field services where provided, does not constitute supervisory responsibility, for additional information contact your local BASF representative.

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