

Techno Struc Rep MC 40

Non-Shrink, General Purpose Cementitious Micro Concrete

Product Description

Techno Struc Rep MC 40 is a blend of special portland cement high quality non ASR reactive aggregates and includes micro silica. The product contain no iron, high alumina cement chloride or deleterious substances. The mortar, when mixed with water, produces a homogeneous concrete which will not segregate or bleed and is non-shrink. At higher temperatures the higher water addition may be required to obtain the preferred consistency.

For larger repairs, the mixed Techno Struc Rep MC 40 may be modified by the addition of 5mm to 12mm clean, graded, saturated surface dry aggregates at site.

Uses

Techno StrucRep MC 40 is used for repairs to damaged reinforced concrete elements, particularly where access is restricted and where vibration of the placed material is difficult or impossible.

It is suitable for various structural strengthening measures such as encasement build-ups, jacketing

Advantages

- Formulated with special additives to compensate cement shrinkage and eliminates bleeding and segreggations
- Free flow consistency facilitates easy placement by pour
- Can be easily mixed and placed into restricted locations
- Good flowable consistency and excellent void filling action
- Strong bond is achieved between placed material and repair substrate
- Pre-packed to overcome site-batched variations. Only to be mixed at site
- Contains no chloride admixture

Design Criteria

Techno Struc Rep MC 40 can be applied in sections upto 100mm z deep. For larger sections, the addition of approved aggregates may be required. This will depend on the specific configuration of the repair location.

Properties

The following results were obtained at a Water: Powder Ratio of 0.16 @ 30°C

Test	Typical result at 30°C
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Compressive strength (N/mm ²) (Without aggregates)	
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1day	3days	7days	28days
13	32	42	52

Compressive strength (N/mm ²) (With 25% aggregates)	
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1day	3days	7days	28days
15	34	44	55

Flexural strength (BS4551 - 80)	6.2N/mm ² @ 28 days
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Flowability ASTM C939	20 - 22cm @ 0.16% W/P @ 30°C
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Average Unrestrained Expansion	2.8%
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Unrestrained Expansion range	1-4%
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Specification Clauses

Performance specification

The fluid micro concrete repair material shall be a single component, cement based, micro-concrete to which only the site addition of clean water (and approved graded coarse aggregates where specified) shall be permitted. The microconcrete shall contain no metallic aggregates, or chlorides and shall be shrinkage compensated in the plastic state.

The micro concrete in the flowable consistency should achieve a compressive strength of not less than 10N/mm^2 after 24 hours, 40N/mm^2 after 7 days and 50N/mm^2 after 28 days at 30°C . Most importantly, the cured microconcrete shall contain no metallic aggregates, or chlorides and shall be shrinkage compensated in the plastic state. The unrestrained expansion shall be between 1-4%. The microconcrete shall have the coefficient of thermal expansion similar to that of the host concrete. The mixed density of microconcrete shall exceed 2100kg/m^3 at 27°C .

Application instructions

Preparation

Ensure all contact surfaces are clean, free of contamination and marine or other growth. Concrete surfaces should be soaked for a few hours then blown free of standing water prior to concreting. Shutters must give sufficient hydrostatic head for the concrete to flow across the work area and be strong enough to resist the hydrostatic force of concreting.

Mixing

Place the required quantity of water in a suitable mixing vessel. Slowly add the powder to the water whilst continuously mixing. Suitable mixers include a slow speed high torque drill with a mortar stirrer. After all the powder has been added mix for a further minute. For larger mixes the use of forced action mixer is recommended. Mixing by hand may not give the consistency.

Placing

When placing by pouring, ensure that sufficient product has been mixed and available such that the placing operation can be carried out in one continuous pour. Place the mixed product from one side of the work piece until the area is full and material appears on the opposite side from the pour.

Curing

After concreting completed or shutters removed, any exposed concrete must be cured immediately with Techno Cure WB. In adverse ambient conditions of rapid drying such as temperatures and winds apply a second coat of Techno Cure WB after first coat has dried. Alternatively, all prepared concrete substrates should be primed using Techno Bond EP, a slow - setting epoxy bond aid. Techno Bond EP shall be applied only on dry substrate.

Note: For repair sections generally deeper than 100mm it may be necessary to mix the Techno Struc Rep MC 40 with graded 5mm to 12mm (25% of aggregates to be added) silt free aggregates. The quantity of aggregate required may vary depending on the nature and configuration of the repair location. The typical results with a few aggregate proportions, for various applications are furnished below for guidelines.

Estimating

Packaging

Techno Struc Rep MC 40 is supplied in 25 kg moisture resistant bags

Yield

Approximately 13.7 litres per 25 kg bag. Actual yield per bag will depend on the consistency of Techno Struc Rep MC 40 and quantity of coarse aggregate added

Storage

Shelf life

9 months if kept in a dry store in the original, unopened bags. If stored at high temperatures and/or high humidity conditions the shelf life may be reduced.

Important: Technokem products are guaranteed against defective materials and are sold subject to its standard terms and conditions of sale. It is the Customer's responsibility to satisfy themselves by checking with the Company whether the information is still current at the time of use. The customer must be satisfied that the product is suitable for the use intended. All products comply with the properties shown on current Technical Literatures. However, Technokem does not warranty or guarantee the installation of the products as it does not have any control over installation or end use of the product. All information and particularly the recommendation relating to application and end use are given in good faith.

For Complaints/Suggestions:

Please write to our Customer Care Executive at

TechnoKem Manufactures of Construction Chemicals

#301, Krishna Classic, Road No.17,
Plot No. 51, Sardar Patel Nagar,
Kukatpally, Hyderabad - 500085,
Off: 040 - 29559256



info@technokem.com

www.technokem.com

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