

Product Description

La StrucRep MC40 D is a blend of special portland cement and high performance additives. 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 La StrucRep MC40 D may be modified by the addition of 5mm to 12mm clean, graded, saturated surface dry aggregates at site.

Uses

La StrucRep MC40 D 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

- No bonding agent required - Simple installation.
- Formulated with special additives to compensate cement shrinkage and eliminates bleeding and segregations
- Free flow consistency facilitates easy placement by pour
- Can be easily mixed and placed into restricted locations
- Dual shrinkage property ensures dimensional stability
- Strong bond is achieved between placed material and repair substrate without using bonding agent.
- Pre-packed to overcome site-batched variations. Only to be mixed at site
- Contains no chloride admixture

Design Criteria

La StrucRep MC40 D can be poured in sections upto 100mm deep. Upto 75% aggregate under SSD condition can be added to the mix. The percentage of aggregate to be mixed however depends upon the desired flowability of the mix required for placement in structural members. This will depend on the specific configuration of the repair location.

Technical 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)			
1day	3days	7days	28days
15	30	40	50

Compressive strength (N/mm ²) (With 50% aggregates)			
1day	3days	7days	28days
17	32	42	53

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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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Fresh Wet Density	2.3 ± 0.1 g/cc
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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 micro concrete 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/mm² after 24 hours, 40N/mm² after 7 days and 50 N/mm² after 28 days at 30°C. Most importantly, the cured micro concrete 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 micro concrete shall have the coefficient of thermal expansion similar to that of the host concrete. The mixed density of micro concrete shall exceed 2280kg/m³ 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.

Defective concrete surfaces must be cut back to a sound base. Smooth surfaces should be mechanically roughened.

Corroded reinforcing steel should be exposed around its full circumference and cleaned to remove all loose scale and corrosion deposits. It is important to clean the steel to a bright condition using La BarCote RR rust remover. For under reinforced section new steel has to be replaced.

One coat of La BarCote ZP should be applied on the reinforcing steel. If any discontinuity in the applied film is noticed, one more coat has to be applied.

Several hours prior to placing, the concrete substrates should be saturated with clean water. Immediately prior to placing, any free water should be removed.

For structural integrity and uniform transfer of load all the concrete surfaces should be primed using La Bond EP, a slow-setting epoxy bond aid before pouring micro concrete. La Bond EP shall be applied only on dry substrate.

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 using wet hessian or with La CureCrete WB. In adverse ambient conditions of rapid drying such as temperatures and winds apply a second coat of La CureCrete WB after first coat has dried. Alternatively, all prepared concrete substrates should be cured using La Bond AR an acrylic co-polymer.

Note: For repair sections generally deeper than 100mm it may be necessary to mix the La StrucRep MC40 D 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.

Packaging

La StrucRep MC40 D is supplied in 25 & 30kg moisture resistant bags

Yield

Approximately 13L/25kg bag without aggregate. Actual yield per bag will depend on the water added for flowable consistency of La StrucRep MC40, quantity and water absorption of coarse aggregate added.

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: La Greens India Pvt. Ltd., 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, La Greens India 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.



Smart Solutions for Sustainable Construction

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