

CWC®SMARTCEM MC 40

Single Component General Purpose Pre-mixed Flowable Micro Concrete

Description

CWC®SMARTCEM MC 40 is a single component cementitious, polymer modified repair mortar to provide high strength properties. This is used as a micro concrete material to repair damaged structural concrete especially in restricted accessible areas. It is based on cement, graded aggregates and special additives. **CWC®SMARTCEM MC 40** can be applied in thickness up to 100 mm thickness. It is suitable to apply by trowel, knife, hand or pump. More Layer thickness can be achieved in repeated layers. It is used as a premixed mortar for concrete repairs and structural strengthening.

Indicative Characteristics

Appearance	Free flowing grey powder
Compressive Strength, N/mm² (Typical) at 27°C, as per IS 4031	Free flowing Mix (W/P= 0.15), Typical
3 days	>16
7 days	>32
28 days	>40
Free linear Expansion, ASTM C 827	0-2%
Coefficient of Thermal Expansion, per °C	11-12x10 ⁻⁶ (Similar to Concrete)
Young's Modulus, N/mm²	27000
Fresh wet density, kg/m³	2050-2250
Material required for 1m³ Volume of Grout, kg	1850-1950
28 days Comp. Strength, Blended with 50% 10mm aggregate	>45 N/mm ² (Typical) at 27°C

Advantages

- Controlled expansion to ensure positive surface contact and low water permeability.
- Chloride and iron free, hence no rusting or staining on exposed edges.
- Pre-mixed, addition of water is only needed.
- Easy to pour free flowing and self-leveling nature; it can be pumped or poured into restricted locations.

Domains of Application

CWC®SMARTCEM MC 40 is a cementitious repair compound which is used to reinstate damaged and deteriorated concrete for structural repairs and strengthening.

Method of Application

Surface Preparation

Surface laitance and unsound concrete must be chipped away and smooth surface should be made reasonably roughed to provide proper bonding between old concrete to new micro concrete, After cleaning, saturate the concrete surfaces with clean water. Ensure that the formwork has suitable drainage outlet for excess water so that no free standing water is present on surfaces before applying of **CWC®SMARTCEM MC 40**.

Mixing

Use mechanical mortar mixers, preferably of the slow speed (300-400 rpm) paddle mixer or revolving drum type mixer. Hand mixing rarely achieves the desired result. Allow approx 5 minutes for mixing. Thorough mixing is essential for achieving maximum results. Add **CWC®SMARTCEM MC 40** slowly into recommended amount of clean water in a mixer. Use as little water as is required for ease of placement.

For Flowable Mix :3.50 – 4.25kg of water to 25 kg of **CWC®SMARTCEM MC 40** (W/P Ratio : 0.14 to 0.17)

For Plastic Mix : 3.00 – 3.75kg of water to 25 kg of **CWC®SMARTCEM MC 40** (W/P Ratio : 0.12 to 0.15)

Job placing conditions, including temperatures may require mixing water adjustments as may be essential for practical purposes. Small trial batches to ascertain the best working consistency for the operation are recommended.

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Application

Pre-wet the existing concrete surface to a SSD condition prior to application of micro concrete. In order to prevent air voids apply mixed **CWC®SMARTCEM MC 40** from one side or corner only. **CWC®SMARTCEM MC 40** should be placed within half an hour of mixing. During that time keep material in mixer well agitated. After half an hour discard any mix that shows signs of stiffening. Flowable mix may be used with low pressure cement grouting equipment or may be hand rodded into restrained sections. High points must be adequately vented to allow entrapped air to escape. Plastic mortar may be rodded into place or trowel handled where freedom of movement permits. Consistency can range from thick cream to smooth plastic. For large volume of placement areas **CWC®SMARTCEM MC 40** may be pumped with a heavy duty diaphragm pump, screw or any other standard pump.

CWC®SMARTCEM MC 40 shall be used in the thickness range of 20mm to 100mm in single pour. For thickness of a section is more than 100 mm, 40-50 % (by weight of **CWC®SMARTCEM MC 40**) 6-10mm down washed coarse graded aggregate shall be used to reduce temperature built up which may cause crack in the hardened micro concrete. For large flat floor area, 50% aggregate can also be used if the thickness is 50-75mm with glass/aluminium strip in 1.5 -2 m box grid to avoid irregular crack development.

Curing

Curing is essential part of **CWC®SMARTCEM MC 40** system. After completion of concreting work the open edges shall be cured by applying suitable **CWC®Kure WB** or any other effective curing membrane manufactured by CWC. Other curing methods, such as covering with plastic sheet, wet hessian cloth are also accepted.

Shelf Life & Storage

12 months from the date of manufacturing when stored in unopened, original sealed and dry condition at a temperature range from +5°C to 40°C

Packing

25kg waterproof laminated HDPE bag

Safety

- Wear hand gloves, safety shoes and safety goggles while using and handling the product.
- In case eyes or mouth are affected wash with plenty of clean water and seek medical treatment immediately.

Before use, refer to the Material Safety Data Sheet. The MSDS is available on www.cwcchemical.in

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