

CCI NEOCRETE MC 40

Single Component General Purpose Premixed Flowable Micro Concrete

Description

CCI Neocrete 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. **CCI Neocrete 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/mm ² (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 C827	0% to 2%
Coefficient of Thermal expansion, per °C	11-12 × 10 ⁻⁶ (Similar to concrete)
Young's Modulus, N/mm ²	27000
Fresh wet density, kg/m ³	2050 to 2250
Material required for 1 m ³ volume of grout, kg	1850 to 1950
28 days Compressive strength, blended with 50% of 10 mm aggregate	> 45 N/mm ² (Typical) at 27°C

Domains of Application

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

Advantages

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

Method of Application

Surface Preparation

Surface laitance and unsound concrete must be chipped away, and smooth surface should be made reasonably rough 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 **CCI Neocrete MC 40**.

Mixing

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

For Flowable Mix	3.50 kg to 4.25 kg of water to 25 kg of CCI Neocrete MC 40 (W/P Ratio: 0.14 to 0.17)
For Plastic Mix	3.00 kg to 3.75 kg of water to 25 kg of Neocrete MC 60 (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.

Application

Pre-wet the existing concrete surface to an SSD condition prior to application of micro concrete. To prevent air voids, apply mixed **CCI Neocrete MC 40** from one side or corner only. **CCI Neocrete 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 **CCI Neocrete MC 40** may be pumped with a heavy-duty diaphragm pump, screw, or any other standard pump.

CCI Neocrete MC 40 shall be used in the thickness range of 20 mm to 100 mm in single pour. For thickness of a section is more than 75 mm, 40% to 60% (by weight of **CCI Neocrete MC 40**) 6 mm to 10 mm 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 mm to 75 mm with glass/aluminium strip in 1.5 m to 2 m box grid to avoid irregular crack development.

Curing

Curing is an essential part of **CCI Neocrete MC 40** system. After completion of concreting work, the open edges shall be cured by applying suitable Novacure WB or any other effective curing membrane manufactured by CCI. Other curing methods, such as covering them with plastic sheets, wet hessian cloths are also accepted.

Packaging

25 kg waterproof laminated HDPE bags.

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.

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 (MSDS). The MSDS is available on www.ccichemicals.in or contact us at info@ccichemicals.in.

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