

Flexcem® FMC

Shrinkage compensated free flowing micro concrete

Description

Flexcem® FMC is a single component polymer modified repair system which is composed of a blend of dry powders and selected aggregates which when mixed with water produce a shrinkage compensated, self-compacting and free flowing micro-concrete suitable for large volume concrete repairs.

It provides:

- Very good flowability without segregation. High initial and final strength.
- Shrinkage controlled polymer modified cementitious repair eliminates cracking.
- Suitable for internal and external applications.
- Efficient bonding to steel and concrete. Resistance to impact and vibration.
- Low water permeability.

Flexcem® FMC is classified as a type B grout, according to ASTM C 1107-99 and as a CC R4 mortar for concrete repairs,

Fields of application

- Assembly of pre-cast parts made of reinforced or pre-stressed concrete
- General void filling such as coring in concrete, jointing.
- Casting foundations for industrial equipment and heavy machinery
- Pile cap repair
- Concrete jacketing
- Deep repair of structural concrete elements such as slabs, beams, columns and footings

Technical Data

Form	cementitious mortar
Colour	grey
Water demand	3.7-4.5 l/25kg bag
Application temperature	from +5°C to +35°C
Pot life	~60 mins
Bulk Density	
• Dry Mortar	1.30 +/- 0.10 kg/l
• Fresh Mortar	2.05 +/- 0.10 kg/l
Effective bearing area	95%
Chloride content	0.0%
Compressive strength (ASTM C 579 – 01)	
• 1 day	> 23 MPa
• 7 days	> 50 MPa
• 28 days	> 61 MPa
Flexural Strength, 28 days, at 27°C	11 MPa
Free linear Expansion, (ASTM C 827)	0.2%
Adhesion Strength, 28 days at 27°C	2.2 MPa
Coefficient of Thermal Expansion, per °C	11 ⁻¹² x 10 ⁻⁶ (Similar to Concrete)

Directions to use

Substrate Preparation

All grouting surfaces should be clean and free of foreign substances including corrosion, if present on steel. Remove all spalled areas and areas of unsound concrete. Preparation work done on the grouting surfaces should be completed by high pressure water blast, breaker, hammer, or other appropriate mechanical means to obtain a properly prepared



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surface. Saturate repair area with clean water before grouting to ensure SSD condition. No standing water should be left in the repair area.

Priming

All grit blasted steel reinforcements should be primed within 2 - 4 hours with one or two coats of zinc rich epoxy coating.

Provided that the substrate has been thoroughly soaked with clean water, and is damp on application of product a primer is not normally required.

For concrete highly contaminated with soluble salts, it is recommended to use EPISEAL EK, an epoxy bonding agent, which prevents migration of salts such as chloride ions and sulphate to the repair patch, as well as providing bond for **Flexcem® FMC** to host concrete.

Mixing

Flexcem® FMC should be mechanically mixed for a minimum of 3 minutes using a drill and paddle mixer. For larger applications, a standard mortar mixer may be used. Add only enough water to achieve the preferred consistency. Add the powder to the water and mix to a lump free consistency.

Application

Flexcem® FMC should be poured in a single continuous operation, within 25 minutes of mixing. The mixed materials should be poured slowly to prevent air entrapment.

Flexcem® FMC can be applied in a single application for large repair voids at thicknesses greater than 50 mm and up to 300 mm.

Curing

A damp cure of at least 3 days is necessary to control the non-shrink characteristics and maintain strength levels.

Packaging

Flexcem® FMC is available in plastic containers of 5 kg and 10 kg and HDPE bags of 25kg.

Shelf life & storage

12 months from production date if stored in original, unopened packaging, in temperature between +5°C and +35°C. Protect from direct sun exposure and frost.

Health & safety

The product contains cement powders which, when mixed with water, release alkalis that could be harmful to the skin. It is preferable that the application be done in a ventilated area, and to wear protective gear for hands, eyes and respiratory system and to avoid breathing of the dust. Splashes on the skin should be washed away by cleaning with soap and water. In case of contact with eyes, wash thoroughly with clean water. If swallowed, do not induce vomiting, in both cases seek medical attention. The product is non-flammable.

Notes

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