

Isocrete MC

Product sheet

Product Description

Isocrete MC is a high flow, shrinkage compensated, micro concrete specifically developed with a high strength formulation for structural concrete repairs with gap sizes up to 200 mm. **Isocrete MC** provides a durable, strong structural repair fully compatible with host concrete. Specifically developed for the repair of large areas of concrete where access is restricted or where reinforcement is congested.

Primary Applications

Isocrete MC is the ideal material for vertical or horizontal structural repairs where the thickness of repair is more than 25 mm and use of pourable mortar is preferable to hand or machine applied repair systems. Typical applications include:

- Extensive repairs to beams, columns and other structural elements
- Repairs to piers, navigation locks, dams, seawalls and other marine structures
- Repairs to bridges, tunnels, garages and silos
- Repair of structural members subject to repetitive loading
- Jacketing of beams, columns and other structural elements for strengthening

Features / Benefits

- Shrinkage compensated
- Sulphate Resistant
- Pourable mortar - able to repair complex profiles easily
- Fast and easy placing - reduced time for repairs
- Low alkali content minimises risk of alkali-silica reaction
- Contains no chloride admixtures
- Suitable for placement by pumping or pouring techniques into restricted locations
- Self-compacting nature eliminates honeycombing and displaces air without vibration

- High strength and low permeability provide maximum protection against carbon dioxide and chlorides
- The alkali content is controlled to less than 3 kg/m³ and non-reactive aggregates are used.
- Easily overcoated with specialist membranes to provide further protection and aesthetic quality

Appearance

Isocrete MC is a free-flowing powder designed to be mixed with water. After mixing and placing, the colour may appear darker than the surrounding concrete. While this colour will lighten as the **Isocrete MC** cures and dries out, the repair may always appear darker than the surrounding concrete.

Packaging

Isocrete MC is packaged in 25 kg moisture resistant bags. Yield: 12 L, 25 kg bag when mixed with 3.0 L of water.

Coverage

Approximately 12.0 L / 25 kg bag.

Shelf Life

1 year in original, unopened packaging.

Technical Information

Performance tests	Result	Requirement
		Structural Class R4
Mix ratio	11.0%	--
Determination of compressive strength, UNE-EN 12190:1999	79.7 N/mm ²	≥ 45 MPa
Chloride ion content, UNE-EN 1015-17:2000	0,01%	≤ 0,05 %
Measurement of bond strength by pull-off, UNE-EN 1542:1999	3,6 MPa	≥ 2,0 MPa
Determination of retraction and expansion, UNE-EN 12617-4:2002, Method controlled movements	Shrinkage: 3,3 MPa Expansion: 3,4 MPa	≥ 2,0 MPa
Freeze-thaw cycling with icing salt immersion, EN 13687-1:2002	3,2 MPa	Bond strength after 50 cycles ≥ 2,0 MPa
Determination of resistance to carbonation, UNE-EN 13295:2005	Complies	Dk ≤ reference concrete MC(0,45)
Determination of the module of elasticity in compression, UNE-EN 13412:2008	36.7 GPa	≥ 20 GPa
Determination of slip/skid resistance, EN 13036-4:2012	75-dry value 44-wet value	Class I:>40 wet test Class II:>40 dry test Class III:>55 wet test

Directions for Use

Surface Preparation: The substrate should be prepared by suitable mechanical preparation techniques such as high pressure water jetting, breakers, blast cleaning, scabblers, etc. The concrete substrates should be pre-soaked with clean water continuously for 2 - 6 hours to ensure a saturated surface dry condition throughout the operation. Immediately before pouring grout, remove all excess or standing water from within. All loose traces of concrete or mortar, dust, grease oil, etc. must be removed. Cut the edges of the repair

vertically to a minimum depth of 25 mm. Clean all exposed reinforcement to a minimum grade of Sa 2 according to ISO 8501-1 / ISO 2944-4. Ensure back of reinforcing bar is also clean.

Priming: Several hours prior to placing, the prepared concrete substrates should be saturated by filling the prepared formwork with clean water. Immediately prior to the application of **Isocrete MC**, any excess water should be removed. In exceptional circumstances, e.g. where a substrate/repair barrier is required, **M-Bond** bonding aid should be used. Contact the local Flowcrete office for further information.

Mixing: Mixing time 3 mins minimum. Care should be taken to ensure that **Isocrete MC** is thoroughly mixed.

A forced-action mixer is essential. Mixing in a suitably sized drum using a Mixing Paddle with a slow speed (400/500 rpm) heavy-duty drill is acceptable. Free-fall mixers must not be used. Mixing of part bags should never be attempted. It is essential that machine mixing capacity and labour availability is adequate to enable the placing operation to be carried out continuously. Measure 2.75 -3.0 litres of drinking quality water and pour three quarters into the mixer. With the machine in operation, add one full 25 kg bag **Isocrete MC** and mix for 1 minute before adding the rest of the water. Mix for a further 2 to 3 minutes until a smooth even consistency is obtained. Note that powder must always be added to water. The quantities mixed may be scaled up as required. When the drill and paddle mixing method is used, the complete 3.0 litres of water should be placed in the mixing drum. With the paddle rotating, add one full 25 kg bag of **Isocrete MC** and mix for 2 to 3 minutes until a smooth even consistency is obtained.

Placement: The mixed material should be placed within 30 minutes of mixing in order to gain the full benefit of fluidity. If placing by pump, standard concrete pumping practice should be followed ensuring continuous grout flow during the complete grouting operation to avoid trapping air. For large volume placement, grout pumps are recommended, minimum pipe size 50 mm.

Curing & Sealing: The formwork should be left in place until the compressive strength of the **Isocrete MC** is 10 MPa or as otherwise specified by the Supervising Officer. **Isocrete MC** is a cement-based concrete reinstatement material. In common with all cementitious materials, **Isocrete MC** must be cured immediately after the formwork is stripped in accordance with good concrete practice.

Immediately after striking the formwork, all exposed faces of the repair should be thoroughly soaked with clean water and then sprayed with a liquid curing membrane such as KURESEAL. In fast drying conditions, supplementary curing with polythene sheeting taped down at the edges must be used. In cold conditions, the finished repair must be protected from freezing.

Clean Up

Clean tools and equipment with water before the material hardens.

Precautions / Limitations

- For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Flowcrete Material Safety Data Sheet (MSDS) from our office or our website.

Any suggested practices or installation specifications for the composite floor or wall system (as opposed to individual product performance specifications) included in this communication (or any other) from Flowcrete UK Ltd constitute potential options only and do not constitute nor replace professional advice in such regard. Flowcrete UK Ltd recommends any customer seek independent advice from a qualified consultant prior to reaching any decision on design, installation or otherwise.

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