



EUUCO MC

**SHRINKAGE COMPENSATED, FREE FLOWING, LOW ALKALI
MICRO CONCRETE (CONFORMING TO BS EN 1504-3 CLASS R4)**

EUCLID CHEMICAL

DESCRIPTION

EUUCO MC is a high flow, shrinkage compensated, micro concrete specifically developed with a high strength formulation for structural concrete repairs with gap sizes upto 200 mm. **EUUCO 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

EUUCO 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

EUUCO 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 **EUUCO MC** cures and dries out, the repair may always appear darker than the surrounding concrete.

PACKAGING

EUUCO MC is packaged in 25 kg moisture resistant bags. Yield: 12 L, 25 kg bag when mixed with 3 L of water

COVERAGE

Approximately 12.0 L / 25 kg bag

TECHNICAL INFORMATION

The following results were obtained at a water : powder ratio of 0.12 and a temperature of 20°C unless otherwise stated.

PROPERTY	STANDARD	EN 1504 R2 REQUIREMENT	TEST RESULT
Compressive Strength	EN 12190:1999	> 45 MPa	1 Day - 10 MPa 7 Days - 35 MPa 28 Days - 60 MPa
Chloride Ion Content	EN 1015-17:2000	< 0.05 MPa	<0.01%
Elastic Modulus in Compression	EN 13412	> 20 GPa	31 GPa @28 Days
Fire Rating	EN 13505-1		Class A1
Setting Time	BS 4551 Pt 14:1980		Initial set: 6 1/2 hours Final set: 9 hours
Shrinkage 25 x 25 x 285 prisms, 27 OC, 55% RH			< 300 microstrain @ 7 days
Min Application Thickness			25 mm
Max Application Thickness			200 mm
Min Application Temperature			5 °C
Max Application Temperature			40 °C
Working Life (Approx)			45 min @ 20 °C 30 min @ 40 °C

SHELF LIFE

1 year in original, unopened packaging.

DIRECTIONS FOR USE

Surface Preparation: The substrate should be prepared by suitable mechanical preparation techniques such as high pressure water jetting, breakers, blastcleaning, 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 **EUCO 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 Euclid office for further information.

Mixing: Mixing time 3 mins minimum. Care should be taken to ensure that **EUCO 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 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 **EUCO 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 **EUCO MC** and mix for 2 to 3 minutes until a smooth even consistency is obtained.

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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 **EUCO MC** is 10 MPa or as otherwise specified by the Supervising Officer. **EUCO MC** is a cement-based concrete reinstatement material. In common with all cementitious materials, **EUCO 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 Euclid Material Safety Data Sheet (MSDS) from our office or our website.

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