



UltraRep MC

A single component High strength, shrinkage compensated, microconcrete, engineered for repairs to new construction

PACKAGING

UltraRep MC is available in 25kg bags

COVERAGE AND YIELD

A 25kg bag of UltraRep MC will yield approximately 12 -12.5 L of mortar

One bag of UltraRep MC will cover 0.62 m² at thickness of 20mm. This coverage is theoretical and depends upon the surface profile of the substrate and the wastage.

STORAGE AND SHELF LIFE

UltraRep MC should be stored in dry conditions out of direct sunlight. Shelf life is 12 months when stored as above.

HEALTH AND SAFETY

Avoid contact with eyes and prolonged contact with skin. In case of contact with eyes immediately flush for at least 15 minutes with fresh clean water. Call a physician.

In case of contact with skin wash skin thoroughly.

DESCRIPTION

UltraRep MC is a combination of Portland cement, well graded sands and aggregates and special additives to improve physical, and installation properties and reduce the possibility of shrinkage cracks

When mixed with water UltraRep MC produces a flowable micro concrete ideally suited to poured/cast applications at 25-150mm thickness (volume dependent).

TYPICAL APPLICATIONS

Large volume repairs, honeycombing and other construction defects to all structural elements within:

- High rise buildings such as beams, columns and walls.
- Oil gas and petrochemical industry foundations and supports.
- Columns, Piers and cross beams on highway structures.
- Marine and other civil structures.
- Water production, treatment, intake and outfall structures and sewerage facilities.
- Tunnels, pipes and other below ground construction.
- Cooling towers and chimneys and other industrial environments.

ADVANTAGES

- Cost effective
- Reduced cracking tendency by incorporating synergistic shrinkage control systems
- Lower installation time, easy mixing, and placing with excellent flow characteristics
- High modulus ensuring transfer of loads to parent concrete
- Concrete coloured when cured

TYPICAL PROPERTIES

Compressive strength ASTM C109 - 28 days	>65 N/mm ²
Flexural Strength ASTM C580	>8 N/mm ²
Tensile Strength ASTM D638	>4N/mm ²
Wet density	Approx.2260kg/m ³
Drying shrinkage BS EN 445	<1000 microstrain
Water penetration BS EN 12390 Part 8: 2000	<10mm @ 5 bar pressure
Rapid chloride permeability ASTM C1202	Low
Determination of the adhesion to concrete by pull off test BS EN 1542	>2 N/mm ²



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APPLICATION GUIDELINES

Substrate preparation

All repair areas must be clean, sound and free from all dirt dust, loose material and any oil or grease which would impair adhesion.

Defective concrete, honeycombing and cold joints must be removed to obtain a roughened surface. The chosen method of preparation should avoid the formation of micro-cracks and fractured aggregate. The edges of all repairs should be cut vertically to a minimum depth of 10mm.

Reinforcing steel preparation

In new construction corrosion of the reinforcing steel and chloride contamination is not usually present. In cases where the reinforcing steel has been exposed and corrosion is present the reinforcement shall be prepared to a clean bright finish.

Priming of the substrate

Generally priming of the substrate is not necessary however the concrete should be thoroughly soaked constantly, to a saturated but surface dry condition for a minimum of 4 hours prior to installation of the repair.

Where soaking with water is not practical an alternative method of priming is by bonding agent (UltraBond ADH EP).

Priming of reinforcement

For corrosion damaged reinforcement, priming of the steel is recommended with a zinc rich epoxy primer such as UltraZinc EP.

MIXING

It is recommended that only full bags of 25 kg are mixed. Single bags may be mixed using a slow speed drill and spiral paddle. For larger repairs and multiple bagmixes a forced action mechanical mixer should be used.

Place the gauging water into the mixing bucket and start the mixer and add the **UltraRep MC** powder. The **UltraRep MC** should be mixed for a approximately 3 minutes until a smooth lump free consistency is achieved.

The water additions shall be 3.0 to 3.5 L per 25kg bag.

In elevated temperatures the **UltraRep MC** should be mixed using chilled water to ensure that the mixed temperature is no higher 32°C.

REPAIR INSTALLATION

Following mixing, the **UltraRep MC** can be installed by shutter and casting techniques. Where large pours are necessary the **UltraRep MC** shall be introduced into the shuttering in layers working along the length of the formwork.

UltraRep MC is self-compacting and does not require vibration. Simply light tapping of the formwork is required

CURING

Good curing practice must always be followed. Curing of the installed repair should be carried out by either.

- **UltraKure** curing agents
- Damp Hessian and polythene

WATCH POINTS

- During summer months or where elevated ambient temperatures are encountered the **UltraRep MC** should be mixed using chilled water to ensure that the mixed temperature does not exceed 32°C.
- Do not add cement or sand which may affect its properties.
- Do not add water or fresh mortar to material which has begun to set.

QUALITY AND CARE

All products originating from the Gulf additive Factory in Qatar are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health, and safety standards ISO 9001.

NOTE

Similar to all the other recommendations and technical information, this technical data sheet serves only as a description of the product characteristics, mode of use and applications. The data and information given are based on our technical knowledge obtained in laboratory tests and in practice.

The data on consumption and dosage contained in this data sheet are based on our own experience and are therefore subject to variations due to different work conditions.

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