UltraRep FR

A single component, high strength fibre reinforced structural repair mortar

PACKAGING

UltraRep FR is available in 25 kg bags.

COVERAGE AND YIELD

A 25kg bag of **UltraRep FR** will yield approximately 12.3 – 12.8 L of mortar.
One bag of **UltraRep FR** will cover 1.25 m² at thickness of 10mm. This coverage is theoretical and depends upon the surface profile of the substrate and the wastage.

STORAGE AND SHELFLIFE

UltraRep FR 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 FR is a cement-based, fibre reinforced thixotropic repair mortar, ideally suited to hand, and spray application at 10-40mm thickness.

It is combination of Portland cement, well graded sands, specially selected fibres and additives to improve physical, and installation properties and reduce the possibility of shrinkage cracks

TYPICAL APPLICATIONS

Repairs to honeycombing and other defects in all structural elements such as:

- Repairs of reinforced concrete elements
- Beams, columns, walls and slabs in high rise buildings
- Horizontal and vertical repairs
- Columns, Piers and cross beams on highway structures
- Marine and other civil structures
- Sewerage facilities, water production, intake and outfall structures and
- Below ground construction
- Cooling towers and chimneys and other industrial environments

ADVANTAGES

- Cost effective
- Excellent adhesion
- Shrinkage Compensated
- Very good cohesion and mixing Cost effective
- Excellent workability for easy mixing, placing and finishing
- Reduced cracking tendency by use of Fibre
- High modulus ensuring transfer of loads to parent concrete
- Can be applied up to 40mm thick in one layer for reduced installation time

TYPICAL PROPERTIES

Compressive strength ASTM C109 @ 28 days	>65 N/mm²
Flexural Strength ASTN C580	>10 N/mm²
Wet density	~2225 kg/m³
Water penetration BS EN 12390 Part 8 2000	<10mm @ 5 bar
Rapid chloride permeability ASTM C1202	Low
Drying shrinkage BS EN 445	<1000 microstrains
Adhesion to concrete by pull off test BS EN 1542	>2 N/mm²

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APPLICATION GUIDELINES

Substrate preparation
The concrete shall be thoroughly clean, rough, free from dust, loose material, surface contamination and materials which reduce bond or prevent suction or wetting by repair materials. Defective, weak and damaged concrete, honeycombing, must be removed to obtain a keyed 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 cases where the reinforcing steel has been exposed the reinforcing 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.
For overhead repairs where soaking with water is not practical an alternative method of priming is by the use of epoxy bonding agents

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

MIXING
Care should be taken to ensure that **UltraRep FR** is thoroughly mixed. Mixing in a suitable sized drum using a slow speed drill and spiral paddle or forced action mechanical mixer. Free fall mixers must not be used.
It is recommended that only full bags of 25 kg are mixed.
Place the mixing water into the mixing bucket and add the **UltraRep FR** powder and mix for approximately 3-5 minutes until a smooth lump free consistency is achieved. The wate radditions shall be 3.2 - 3.5 litres per 25kg bag depending upon the consistency required.

Application
Following mixing, the **UltraRep FR** can be installed by hand and trowel, ensuring good compaction. The **UltraRep FR** shall applied at a minimum thickness of 10mm and a maximum layer thickness of 40mm. Deeper repair sections should be applied in layers.

As soon as the **UltraRep FR** starts to stiffen, finishing can be done by wooden, plastic or steel float depending upon the type of finish required.

For spray application please refer to Gulf Additive Factory Technical Services Department.

CURING
Good curing practice must always be followed. Curing of the installed repair should be carried out by either.
– **UltraKure** curing agents
– Damp Hessian

WATCH POINTS
- During the summer months or where elevated ambient temperatures are encountered the **UltraRep FR** should be mixed using chilled water to ensure that the mixed temperature does not exceed 32°C.
- Spray application may change the physical properties of the cured material
- Do not add cement sand, or 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 Gulf Additive Factory, Qatar facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001

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