MC-RIM® PROTECT-MR

Highly sulphate resistant, fibre-reinforced surface protection for use on mechanically stressed areas in wastewater industry

Product Properties

- One-component, polymer-modified
- Application by hand and wet or dry spraying
- Resistant to pH 3.35 to pH 14
- Very high chloride resistance
- Open to water vapour diffusion
- Impermeable to water and resistant to permanent water exposure
- Highly abrasion resistant, tested according to Böhme
- Class R4 according to EN 1504 part 3

Areas of Application

- Surface protection of concrete-, reinforced concrete- and prestressed concrete components (new and existing constructions) in wastewater structures
- Suitable for inlet- and drainage channels, inlet structures, sand traps, spiral pump hutch of spiral hoists, scraper trackways
- Suitable for exposure to XD 1-3, XS 1-3, XM 1-2, XF 1+3, XA 1-3 and XWW 1-3
- Certified according to EN 1504 part 3 for principle 3, procedure 3.1 and 3.3

Application

Substrate Preparation
See leaflet “General Application Advice Product Line MC-RIM® PROTECT”.

Mixing
MC-RIM® PROTECT-MR is added to the prepared water under constant stirring and mixed until homogeneous and lump-free. Forced mixers or slowly rotating double-mixers must be used for mixing. Mixing by hand or preparation of partial quantities is not permitted. Mixing takes 5 minutes.

Mixing Ratio
Please refer to the “Technical Data” table. For a 25 kg bag of MC-RIM® PROTECT-MR approx. 3.75to 4.00 litres of water are required. As with other cement-bound products the quantity of added water may vary.

Application
MC-RIM® PROTECT-MR can be applied by hand and spraying technique. Hand application is carried out using trowels and steel floats. Wet spraying is carried out with variably adjustable worm pumps. Dry spraying should be carried out using the GUNMIX®-technology of Velco. Please request our technical advice or the equipment planner leaflet for spray application.

Depending on system build-up and application MC-RIM® PROTECT-MR is to be applied in 2 to 3 work steps. Please see leaflet „General Application Advice Product Range MC-RIM® PROTECT“.

Finishing
MC-RIM® PROTECT-MR may remain spray-rough or beabraded or smoothed. Please see leaflet „General Application Advice Product Range MC-RIM® PROTECT“.

Curing
MC-RIM® PROTECT-MR must be cured for 5 days using moist jute and plastic foil. The jute must not dry out during this time and must be kept moist. Alternatively MC-RIM® PROTECT-MR may also be cured with the curing agent MC-RIM® PROTECT-C.

General Information
Exposure to direct sun must be avoided during application of MC-RIM® PROTECT-MR.

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Technical Data MC-RIM® PROTECT-MR

Characteristic	Unit	Value*	Comment
Largest aggregate	mm	1.2	
Fresh mortar density	kg/dm^3	approx. 2.03	
Flexural tensile- / Compressive strength	MPa	7.4 / 43.5 8.8 / 57.3	after 7 days after 28 days
Dynamic E-Modulus	MPa	27,500	
Sulphate resistance	mm/m	0.08	after 91 days (SVA-method)
Chloride migration coefficient	m^2/s	0.26x10^{-12}	
Total pore volume	vol.-%	6.3 4.7	after 28 days after 90 days
Water penetration depth	mm	< 1	at 5 bar water pressure
Abrasion resistance	class	A6	according to EN 13813
Water load capacity	days	2 1	at + 10 °C at + 20 °C
Coverage	kg/m^2/mm	1.75	MC-RIM® PROTECT-MR
Application time	minutes	30	at + 20 °C
Layer thicknesses** (above grain tips)	mm	5 15	min. layer thickness each workstep max. total layer thickness
Application conditions	°C	≥ 5 - ≤ 30	air, material and substrate temperature
Mixing ratio	p.b.w.	100 : 15 - 16	MC-RIM® PROTECT-MR : water

Product Characteristics MC-RIM® PROTECT-MR

Colour	cement-grey
Delivery	25 kg bags
Storage	Can be stored in cool and dry conditions for at least one year in original unopened packs. Protect from frost.
Disposal	Packs must be emptied completely.

* All technical data are lab values and relate to + 23 °C and 50 % relative humidity.

** The standard layer thickness should be 8 - 10 mm. For use on scraper trackways the total layer thickness must be applied and MC-DUR 1177 WV-A is to be applied as additional surface finish. Coating of screw pumping stations, layer thickness must be > 20 mm (application by courtesy of a rotating screw conveyor).

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