VELOSIT® SR 207

Sulphate Resistant, High Build Structural Grade Concrete Repair Mortar R4

DATA SHEET

HYCHEM

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VELOSIT SR 207 is a Sulphate-resistant, structural grade cementitious repair mortar for concrete restoration acc. to EN 1504-9. It is used to fill large voids or build up larger cross-sections up to 100 mm specifically designed for repairs in sewage and waste water structures.

VELOSIT SR 207 is a shrinkage compensated cementitious repair mortar with quick strength development.

VELOSIT RM 207 is the result of many years in the field testing and research. VELOSIT SR 207 is a Sulphate-resistant, structural grade cementitious repair mortar for concrete restoration acc. to EN 1504-9.

TYPICAL APPLICATIONS

- Repair of large surface defects on in concrete manholes, primary & secondary sewage treatment basins and waste water treatment plants
- Overlays and repairs on concrete structures like dams, bridges, beams, balconies, facades
- Application Suitable on horizontal, and vertical incl. overhead applications
- Application thickness from 6 mm to 100 mm
- Used as micro-concrete

System components:

Corrosion inhibiting pimer: VELOSIT CP 201

Structural repair mortar: VELOSIT SR 207

PROPERTIES

- Minimal shrinkage/expansion under dry resp. wet curing conditions minimizing the risk of micro-cracking
- Excellent workability
- Wide range of water addition to meet different workability requirements
- Fiber reinforced with grain sizes reaching 4 mm
- Hydrophobic
- Advanced corrosion inhibitor technology
- 30 min. working time and 12 MPa compressive strength after 4 hours
- Final strength exceeds 45 MPa after at 28 days
- Open to foot traffic after 3 – 4 hours
- Water curing only under hot and dry conditions required for max. 4 hours
- Good weathering resistance
- Good sulfate resistance

TECHNICAL DETAILS

Color	light gray
Mixing ratio by weight	100 : 12
Mixing ratio by volume	100 : 20
Density	1.7 kg/l
Substrate temperature	5 – 35 °C
Initial set	50 min.
Final set	70 min.

Compressive / flexural strength	4 hours: 12 / 3 MPa 24 hours: 30 / 6 MPa 7 days: 40 / 7 MPa 28 days: 45 / 7 MPa
Chloride ions	< 0.05 %
Carbonation resistance	passed
Capillary water absorption	0.1 kg/m² x $h^{0.5}$
Adhesive strength*	primed with CP 201: 2.2 MPa
Restrained shrinkage*	2.1 MPa
Fire rating EN13501-1	Class A1

* acc. EN 1542. Adhesion depends very much on proper surface preparation!

APPLICATION GUIDELINES

Surface preparation

VELOSIT SR 207 is designed for concrete substrates. Steel may be coated with a VELOSIT CP 201 as a bridging primer.

Steel

must be prepared to a purity of SA 2.5 acc. SIS 05 5900. Apply a corrosion protection coat on rebar with VELOSIT CP 201. Mineralic substrates (concrete, masonry, cement compatible natural stones)

Concrete substrates

must be prepared with sand blasting, shot blasting or ideally high pressure water blasting (> 100 bar) to remove all bond breaking substances.

Processing

Mixing

Mix VELOSIT SR 207 with 12 % potable water, i.e. 2.4 l water per 20 kg bag. Fill the 12 % mixing water (2.4 l per bag) into a suitable bucket and mix the powder with a slow speed drill (300 – 600 rpm) into the water until a lump-free mix is achieved.

The product is workable for 30 min. at 23 °C.

Priming

Apply a prime coat of VELOSIT CP 201 before applying VELOSIT SR 207 onto concrete.

Trowel application

Trowel VELOSIT SR 207 can be applied fresh -in -fresh into the prime coat. The product can be applied up to 100 mm on vertical areas in a single application. Make sure to work in sections that can be finished within 30 min. at 23 °C. Higher temperatures reduce, lower temperatures increase the required wait times. Rebars and other penetrations must be fully embedded into the mortar.

Spray application

Use suitable spray machines such as:

- PFT GmbH: PFT G4
- HighTech GmbH: HighComb Big
- Wagner GmbH: PC 25
- Putzmeister GmbH: SP12 or MP 25
- Inotec GmbH: INOMAT-M8

In mixing pumps feed the powder into the product hopper and adjust the water to the desired consistency. With mortar pumps add the mixed product as described under "Mixing" into the feed hopper of the spray machine and spray continuously.

If a smooth surface is required, follow with a trowel shortly after spraying. Work in sections.

Long spray interruptions may result in clogging of the spray hose. The product may cure a lot faster if the hose is exposed to direct sunlight. Always empty and flush the machine after spraying or before long spray interruptions. VELOSIT SR 207 is a fast curing material and may be hard to remove if left in the machine. Once cured, VELOSIT SR 207 can only be removed mechanically.

Never overcoat joints or underrated cracks as this will most likely result in surface cracks!

Using as a micro-concrete

VELOSIT SR 207 can be mixed to a very plastic consistency and used as a micro-concrete. Pour the product into the shuttering and make sure to compact the pour properly for example with suitable vibration equipment.

Curing

VELOSIT SR 207 does not require long term curing as it reacts relatively fast with water. Only under hot weather or very dry conditions water curing for 3 – 4 hours is required.

ESTIMATING

Repair of surface defects

20 kg VELOSIT SR 207 result in approx. 10.6 litre cured mortar..

Surface Coating:

45 kg* VELOSIT SR 207 per m^2 for 25 mm dry mortar thickness on smooth & level substrates. Consumption will increase proportionately to roughness of substrate surfaces.Depending on surface roughness application rates can be significantly higher.

* 45 kg VELOSIT SR 207 powder + 5.4 kg water, i.e. 50.4 kg mixed material per 25 mm and m^2

CLEAN UP

VELOSIT SR 207 can be removed in the fresh state with water. Once it has cured acidic cleaners like muriatic acid and mechanical cleaning are required.

PACKAGING

20 kg watertight plastic bags

STORAGE

In unopened original packs for 12 months at 5 – 35 °C in a dry storage place protected against sunlight.

SAFETY

Please observe the actual valid material safety data sheet and follow the described safety measures for handling of the product.

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