

VELOSIT® SR 207

Sulphate Resistant, High Build Structural Grade Concrete Repair Mortar R4

Description

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 wastewater structures. VELOSIT® SR 207 is a shrinkage compensated cementitious repair mortar with quick strength development. VELOSIT® SR 207 is a sulphate-resistant, structural grade cementitious repair mortar for concrete restoration acc. to EN 1504-9. This product is formulated to be RCS (respirable crystalline silica) free and is manufactured using dust reduction technology.

Uses

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

Product Compliance

Meets, or exceeds, the performance requirements of EN 1504-3 structural class R4.

Compatible Materials

Substrates: Concrete. Steel reinforcement bars.

Applicator Material List

VELOSIT® CP 201 Bonding primer & corrosion protection, VELOSIT® SR 207, potable water.

Advantages

- 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 minute 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 sulphate resistance.

Product Data

Characteristic	Result
Appearance	Light Grey
Respirable Crystalline Silica	<0.1% RCS

Technical Data

Performance Characteristic	Test Method	Result
Compressive Strength (approx.)	EN 12190	4 hours: 12 MPa 24 hours: 30 MPa 7 days: 40 MPa 28 days: 45 MPa



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Performance Characteristic	Test Method	Result
Flexural Strength (approx.)	EN 196-4	4 hours: 3 MPa 24 hours: 6 MPa 7 days: 7 MPa 28 days: 7 MPa
Chloride ions	EN 1015-17	< 0.05%
Carbonation resistance	EN 13295	Passed
Bond strength*	EN 1542	Approx. 1.5 MPa

*According to EN 1542. Pull-off strength values are highly dependent on substrate preparation.

Application Data

Property	Property Value
Suitable application methods	Trowel / hand applied, wet spray
Application temperature	+5 °C minimum; +30 °C maximum (ambient air & substrate)
Mixing Ratio	12% water: powder. 2.4 litres of potable water per 20 kg bag
Density	1.7 kg/l
Working time	70 minutes at 23 °C
Initial Setting	50 minutes

Application Guidelines

SUBSTRATE PREPARATION

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

Concrete substrates

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

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)

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 minutes 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 minutes 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.

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.





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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 results in approx. 10.6 litre cured mortar.

Surface Coating: 45 kg* VELOSIT® SR 207 per m² 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 m².

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

VELOSIT® SR 207 is available in 20 kg watertight plastic bags.

Storage

VELOSIT® SR 207 can be kept in unopened original packs for 12 months at 5 – 35°C in a dry storage place protected against sunlight.

Safety

In an emergency, contact 000, the Poisons Information Centre (13 11 26 within Australia) or a doctor for advice. Please refer to the current SDS (Safety Data Sheet) and follow the prescribed safety precautions and handling procedures for the product. This material is RCS free.

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