

VELOSIT[®] RM 202

Universal Vertical and Overhead Repair Mortar

DATA SHEET



HYCHEM

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VELOSIT RM 202 is a cementitious repair mortar for all types of construction substrates. It creates a good surface for coatings and overlays.

VELOSIT RM 202 is a shrinkage compensated cementitious repair mortar with very quick strength development.

VELOSIT RM 202 is the result of many years in the field testing and research. VELOSIT RM 202 creates an extremely well bonded, rigid abrasion resistant layer on the substrate.

TYPICAL APPLICATIONS

- Repair of large surface defects on concrete
- Overlays and repairs on concrete structures like dams, bridges, beams, balconies, facades
- Application on horizontal and vertical incl. overhead areas
- Filling of blow holes, honeycombs and surface roughness
- Application thickness from feather-edge to 100 mm
- Re-modeling of architectural features requiring a moldable mortar that can be shaved into shape

PROPERTIES

- Minimal shrinkage/expansion under dry resp. wet curing conditions minimizing the risk of micro-cracking
- Excellent workability especially overhead
- Fiber reinforced
- 40 min. working time and 15 MPa compressive strength after 4 hours
- Final strength of more than 50 MPa after 28 days
- Open to foot traffic after 3 - 4 hours
- Good resistance against CO₂ and Chloride penetration due to a very tight pore structure
- Good resistance against aggressive media with a pH range of 3-12 and against soft water with low ion content
- Good weathering resistance
- Good sulfate resistance

TECHNICAL DETAILS

Color	gray
Mixing ratio by weight	100 : 17
Mixing ratio by volume	100 : 27
Density	1.6 kg/l
Substrate temperature	5 - 35 °C
Initial set	55 min.
Final set	120 min.
Compressive / flexural strength	4 hours: 15 / 2 MPa 24 hours: 31 / 5 MPa 7 days: 45 / 8 MPa 28 days: 56 / 9 MPa
Adhesive strength *	primed with RM 202: 1.8 MPa primed with CP 201: 2.2 MPa
Restrained shrinkage*	1.5 MPa

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

APPLICATION GUIDELINES

Surface preparation

VELOSIT RM 202 is designed for mineralic substrates like concrete, masonry or absorptive natural stones. Steel may be coated with a suitable bonding bridge.

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. Other steel areas can be primed with Hychem E100SS or E500P with a full broadcast. Steel may expand and contract differently under temperature changes than a cementitious mortar. Thus steel application is only recommended if steel is embedded in larger concrete bodies or the temperature is not subject to major changes.

Mineralic substrates (concrete, masonry, cement compatible natural stones)

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

On reinforced concrete remove all carbonated concrete. Test with Phenolphthalein or other suitable indicator until concrete with sufficient alkalinity for rebar protection is reached. If rebar is exposed remove concrete at least 6 mm behind rebar to fully embed the steel into VELOSIT RM 202.

Substrate must be rough, open porous and load bearing. The minimum requirement for adhesive strength is 1.5 MPa and for the compressive strength 25 MPa. Lower strength values can be accepted if lower adhesive strength is acceptable. Active water leaks must be treated and fully stopped with VELOSIT PC 222. Leaking cracks need to be sealed with Hychem Spetec PU. Before the application of VELOSIT RM 202, dampen the substrate with clean water to a saturated surface dry (SSD) condition.

Concrete repair

acc. EN 1504-9 principle 3, 4 or 7 requires a prime coat with VELOSIT CP 201 on concrete and rebar surface to ensure best adhesion strength results.

Processing

Mixing

Mix VELOSIT PRM 202 with 15 - 18 % potable water, i.e. 3.0 - 3.6 l water per 20 kg bag. Fill the 15 % mixing water (3.0 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. Add more water (max. 3 %) under stirring until the desired consistency is achieved.

The product is workable for 40 min. at 23 °C.

Priming

Apply a prime coat of VELOSIT RM 202 with a wet sponge to the pre-dampened substrate. Work approximately 0.5 - 1 kg per m²

into the surface pores.

If working acc. to EN 1504-9 the prime coat must be applied with VELOSIT CP 201!

Trowel application

Trowel VELOSIT RM 202 fresh in fresh into the prime coat. The product can be applied up to 100 mm on vertical areas. Larger overhead areas may limit the thickness to max. 50 mm. Make sure to work in sections that can be finished within 40 min. 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 material is sprayed. 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 RM 202 is a fast curing material and may be hard to remove if left in the machine.

Re-modeling of architectural features

Once VELOSIT RM 202 applied by trowel or spray machine has started to set it can be sculpted as needed. Shave off material in thin layers to achieve desired form. If needed finish surface with a slightly wet sponge to remove surface imperfections and air voids.

Curing

VELOSIT RM 202 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 RM 202 result in approx. 12,5 litre cured mortar.

Surface Coating:

10 kg* VELOSIT RM 202 per m² for 6 mm dry mortar thickness on smooth substrates. Depending on surface roughness application rates can be significantly higher.

* 10 kg VELOSIT RM 202 powder + 1.7 kg water, i.e. 11.7 kg mixed material per 6 mm and m²

CLEAN UP

VELOSIT RM 202 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.

NOTE: Customer responsibility

The technical information and application advice given here is based on the best information available at the time of print. As the information herein is of a general nature, no assumption can be made as to the products suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation.

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If unsure contact Hychem for further technical advice before proceeding.

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