

VELOSIT® RM 210

Universal Repair Mortar
For Vertical and Overhead
Application 1 – 100 mm



Application fields

VELOSIT RM 210 is a quick setting cementitious repair mortar for various types of construction substrates. It creates a good surface for coatings and overlays. Typical application fields besides others are as follows:

- Leveling of floor and wall surfaces
- Repair of surface defects on concrete, masonry, many natural stones and steel
- Application on horizontal and vertical incl. overhead areas
- Filling of blow holes, honeycombs and surface roughness
- Application thickness from feather-edge to 100 mm (4")
- Re-modeling of architectural features requiring a moldable mortar that can be shaved into shape

Properties

VELOSIT RM 210 is a shrinkage compensated cementitious repair mortar with rapid strength development. VELOSIT RM 210 binds the mixing water very fast reducing or completely eliminating the need for water curing and protection.

VELOSIT RM 210 surpasses the requirements of EN 1504-3 class R2 for concrete repair (CR) and can be used according to the principles 3.1 and 3.2 acc. to EN 1504-9.

VELOSIT RM 210 is applied by trowel and is workable for approx. 25 min.

- Excellent workability especially overhead
- Minimal shrinkage/expansion under dry resp. wet curing conditions minimizing the risk of micro-cracking
- High yield
- 25 min. working time and ready to receive coatings after 90 min.
- Final strength of more than 25 MPa (3626 psi) after 28 days
- Open to foot traffic after 1 ½ hours

- Very good adhesion to properly prepared concrete and masonry
- Water curing only under hot and dry conditions required for 2 hours
- Good weathering resistance
- Good sulfate resistance
- Light gray color close to concrete color

Application

1.) Substrate preparation

VELOSIT RM 210 is designed for mineralic substrates like concrete, masonry or absorptive natural stones. Steel may be coated with a suitable bonding bridge.

a.) 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 VELOSIT PR 303 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.

b.) Mineralic substrates (concrete, masonry, cement compatible natural stones) must be prepared with a wire brush, sand blasting, shot blasting or ideally high pressure water blasting (> 100 bar/1450 psi) 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 (1/4") behind rebar to fully embed the steel into VELOSIT RM 210.

Substrate must be rough, open porous and load bearing. The minimum requirement for adhesive strength is 0.8 MPa (116 psi) and for the compressive strength 10 MPa (1450 psi). Lower strength values can be accepted if lower adhesive

strength is acceptable. Before the application of VELOSIT RM 210, dampen the substrate with clean water to a saturated surface dry (SSD) condition.

2.) Processing

Mixing: Mix VELOSIT RM 210 with 23 – 25 % potable water, i.e. 5.8 – 6.3 l (1.5 – 1.7 gal.) water per 25 kg (55 lb.) bag. Fill the 23 % mixing water (5.8 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. 2 %) under stirring until the desired consistency is achieved. Let the material mature for 2 min. and stir another 30 seconds. Only mix as much material as can be used in 25 min. Clean mixing paddle immediately after mixing.

The product is workable for 25 min. at 23 °C.

Priming: If required apply a prime coat of VELOSIT RM 210 with a wet sponge to the pre-dampened substrate. Work approximately 0.5-1 kg per m² (1-2 lbs. per 10 ft²) into the surface pores.

a.) Trowel application:

Trowel VELOSIT RM 210 onto the predampened substrate or fresh in fresh into the prime coat of VELOSIT RM 210. The product can be applied up to 100 mm (4") on vertical areas. Larger overhead areas may limit the thickness to max. 50 mm (2"). A splatter dash coat is recommended for larger thick applications. Make sure to work in sections that can be finished within 25 min. Rebars and other penetrations must be fully embedded into the mortar. Rebar and other exposed metal parts must be embedded with a suitable cover into the mortar.

If required VELOSIT RM 210 can receive a sponge finish after it has started to set (30-45 min.)

b.) Re-modeling of architectural features:

Once VELOSIT RM 210 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.

3.) Curing

VELOSIT RM 210 does not require long term curing as it reacts relatively fast with water. Only under hot weather or very dry conditions water curing for 2 hours is required.

Estimating

Repair of surface defects:

25 kg (55 lbs.) VELOSIT RM 210 result in approx. 17.5 liter (0.62 ft³) cured mortar.

Surface Overlay:

4 kg (9 lbs.)* VELOSIT RM 210 per m² (10.7 ft²) for 3 mm (1/8") dry mortar thickness on smooth substrates. Depending on surface roughness application rates can be significantly higher.

* 4 kg VELOSIT RM 210 powder + 1.0 kg water, i.e. 5.0 kg mixed material per 3 mm and m²

Cleaning

VELOSIT RM 210 can be removed in the fresh state with water. Once it has cured acidic cleaners like muriatic acid and mechanical cleaning are required.

Quality features

Color:	gray
Mixing ratio by weight:	100 : 24
Mixing ratio by volume:	100 : 36
Density:	1.5 kg/l
Substrate temperature:	5 – 35 °C (40 – 95 °F)
Initial set:	50 min.
Final set:	70 min.
Compressive / flexural strength:	
28 days:	>25 / 5 MPa (3625/725 psi)
Adhesive strength*:	1.0 MPa (145 psi)
Fire rating EN13501-1:	Class A1

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

VELOSIT RM 210 is available in 25 kg (55 lb.) watertight plastic bags.

Storage

VELOSIT RM 210 can be stored in unopened original packs for 12 months at 5 – 35 °C (40 – 95 °F) 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.

Recommendations

VELOSIT RM 210 is only available for professional applicators.

Never add water to VELOSIT RM 210 when it has started to set. Stiffened material must be disposed.

VELOSIT RM 210 may stiffen after 2-4 min. Re-stir the mix to achieve a good working consistency.

All described product features are determined under controlled laboratory conditions according to the relevant international standards. Values determined under job site conditions may deviate from the stated values.

Please always use the latest version of this data sheet available from our website www.velosit.de.

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