

VELOSIT® WP 100

Standard Rigid Cementitious Waterproofing Slurry



Application fields

VELOSIT WP 100 is an economic cementitious waterproofing slurry for concrete and masonry. It is a good substrate for coatings and overlays. It is a good barrier against negative side water pressure. Typical application fields besides others are as follows:

- Waterproofing of basements and below grade parking structures
- Waterproofing of potable water structures
- Waterproofing of elevator pits
- Waterproofing against rising dampness in walls
- Negative side waterproofing underneath flexible waterproofing membranes
- Prime coat to fill blow holes, honeycombs and surface roughness

Properties

VELOSIT WP 100 is a shrinkage compensated cementitious waterproofing slurry with quick

strength development. VELOSIT WP 100 gains strength faster than conventional products reducing the need for water curing and protection to one day. VELOSIT WP 100 creates a rigid waterproof layer with good abrasion resistance on the substrate.

VELOSIT WP 100 surpasses the requirements of EN 1504-3 class R3 for concrete repair (CR) and can be used according to the principles 3.1 and 3.3 acc. to EN 1504-9.

VELOSIT WP 100 can be applied by brush, trowel or suitable spray equipment.

- Minimal shrinkage/expansion under dry resp. wet curing conditions
- Hydrophobic
- Resists 50 m (160 ft.) water pressure acc. to EN 12390-8
- 45 min. working time and 15 MPa compressive strength after 24 hours
- Final strength of 30 MPa (4351 psi) after 28 days
- Open to foot traffic after 4 – 6 hours
- Ready for water pressure after 3 days
- Good adhesion to concrete and masonry

- Water curing may be required for first 24 hours at high temperatures
- No cracking if applied too thick
- Good resistance against aggressive media with a pH range of 3 – 12 and against soft water with low ion content
- Good weathering resistance
- Potable water approved
- Good sulfate resistance

Application

1.) Substrate preparation

VELOSIT WP 100 is designed for mineralic substrates like concrete, masonry or absorptive natural stones.

Substrate must be prepared with sand blasting, shot blasting or ideally high pressure water blasting (>100 bar/1450 psi) to remove all bond breaking substances. Substrate must be open porous and load bearing. The minimum requirement for adhesive strength is 1.5 MPa (218 psi) and for the compressive strength 25 MPa (3625 psi). Lower strength values can be accepted if lower adhesive strength is acceptable. Active water leaks must be treated and fully stopped with VELOSIT PC 221. Leaking cracks need to be sealed with a PU injection material. Blowholes, honeycombs or other surface defects can be filled with VELOSIT WP 100 or the repair mortar VELOSIT RM 202. Before the application of VELOSIT WP 100, dampen the substrate with clean water to a saturated surface dry (SSD) condition.

2.) Processing

Mixing: Mix VELOSIT WP 100 with 21 – 26 % potable water, i.e. 5.00 – 5.20 l (1.3 – 1.4 gal.) water per 20 kg (44 lb.) bag. Fill 21 % mixing water (5.00 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 under stirring to adjust the desired consistency. The product is workable for 45 – 60 min. at 23 °C.

a.) Brush application: Apply the first coat with a masons brush in crossing applications to the pre-dampened substrate at the specified rate. Second coat can be applied after the first one has gained sufficient strength which is after 3 hours at 23 °C. Colder temperatures extend, warmer temperatures shorten the recoat time.

b.) If building code or specification does not require two coats, VELOSIT WP 100 can be applied in one coat by trowel. Make sure to adjust the consistency to a thixotropic workability. Apply a scratch coat of VELOSIT WP 100 to the damp substrate to fill surface irregularities. Immediately apply the desired material amount with a notched trowel to the substrate. 2 mm (80 mils) dry film thickness can be achieved with a 6 mm (1/4 inch) notch size and application at a 45° angle. Finish the surface immediately afterwards. Make sure all grooves are completely closed without air entrapment.

c.) Spray application: Use suitable spray machines such as:

- Inotec GmbH: INOMAT-M8
- HighTech GmbH: HighPump Small
- Desoi GmbH: Desoi SP-Y

Fill the product into the feed hopper of the spray machine and spray continuously. VELOSIT WP 100 can be applied in one lift if specification allows. Otherwise spray in two layers with a wait time of approx. 60 min. between coats. 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 WP 100 is a fast curing material and may be difficult to remove if left in the machine.

3.) Curing

VELOSIT WP 100 does not require long term curing as it reacts relatively fast with water. Only under hot weather or very dry conditions water curing for 24 hours is required.

Estimating

Brush application 2 mm:

1st coat VELOSIT WP 100: 1.7 kg/m²*

2nd coat VELOSIT WP 100: 1.7 kg/m²*

Trowel application 2 mm

Scratch coat VELOSIT WP 100: 0-0.5kg/m²*

2nd coat VELOSIT WP 100: 2.7-3.4kg/m²*

Spray application 2 mm:

VELOSIT WP 100: 3.4 kg/m²*

Other thickness requirements:

1.7 kg* VELOSIT WP 100 per m² for 1 mm dry film thickness on smooth substrates. Depending on surface roughness application rates can be significantly higher.

* 1.70 kg VELOSIT WP 100 powder + 0.35 kg water, i.e. 2.05 kg mixed material per mm and m² (3.2 lbs per 40 mil dft and 10 sq.ft.)

Cleaning

VELOSIT WP 100 can be removed in the fresh state with water. Once it has cured acidic cleaners like muriatic acid are required.

Quality features

Color: gray

Mixing ratio by weight: 100 : 22

Mixing ratio by volume: 100 : 34

Density: 1.6 kg/l

Substrate temperature: 5 – 35 °C
(40 – 95 °F)

Water impermeability acc. EN 12390-8:

- Positive side: 5.0 bar (72.5 psi)

- Negative side: 1.5 bar (14.5 psi)

Compressive / flexural strength:

4 hours: 7 / 2 MPa (1015/290 psi)

24 hours: 15 / 4 MPa (2176/580 psi)

7 days: 21 / 4.3 MPa (3045/624 psi)

28 days: 30 / 5 MPa (4351/725 psi)

Chloride ions: < 0.05 %

Carbonation resistance: passed

Capillary water absorption: 0.1 kg/m² x h^{0,5}

Adhesive strength: 1.0 MPa (232 psi)

Restrained shrinkage: 1.0 MPa (218 psi)

Fire rating EN13501-1: Class A1

Packaging

VELOSIT WP 100 is available in 20 kg (44 lb.) watertight plastic bags.

Storage

VELOSIT WP 100 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.

Used product containers must be emptied completely after use. They can be returned to VELOSIT GmbH & Co. KG on request.

Recommendations

VELOSIT WP 100 is only available for professional applicators.

Never add water to VELOSIT WP 100 when it has started to set.

Stiffened material must be disposed of in accordance with local regulations.

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.

Manufacturer

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