

# VELOSIT® WP 102

## Rapid, High Strength Cementitious Waterproofing Slurry

### Application fields

VELOSIT WP 102 is a rapid-setting and rapid strength development cementitious waterproofing slurry for concrete and masonry. It is a good substrate for coatings and overlays. It is especially strong against negative side water pressure. Typical application fields include:

- 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 102 is a shrinkage compensated cementitious waterproofing slurry with rapid strength development. VELOSIT WP 102 gains

strength a lot faster than conventional products reducing or completely eliminating the need for days of water curing and protection. Once cured, VELOSIT WP 102 creates a rigid abrasion resistant coating.

VELOSIT WP 102 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
- 15 min. working time and 12 MPa compressive strength after 4 hours
- Final strength of more than 50 MPa (7250 psi) after 28 days
- Open to foot traffic after 2 hours
- Ready for water pressure after 24 hours
- Very good adhesion to concrete and masonry
- Water curing only under hot and dry conditions required for max. 2 hours
- No cracking even 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 102 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 pore and of load bearing capacity. Typically a minimum adhesive strength of 1.5 MPa (218 psi) and compressive strength of 25 MPa (3625 psi) is required. Lower strengths are possible if lower adhesive strength is acceptable to the Resident Engineer. 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 102 or VELOSIT RM 202 repair mortar. Before VELOSIT WP 102 application, pre-dampen the substrate with clean water to a saturated surface dry (SSD) condition.

### 2.) Processing

Mixing: Mix VELOSIT WP 102 with 17 – 20% potable water, i.e. 4.3 – 5.0 l (1.1 – 1.3 gal.) water per 25 kg (55 lb.) bag. Fill 17% mixing water (4.3 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 while stirring to adjust the desired consistency. The product is workable for 15 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 102 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 102 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 102 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 102 is a very fast curing material and may be difficult to remove if left in the machine.

d.) VELOSIT WP 102 can be used as a repair mortar for small repairs and especially as a cove mortar. Apply a slurry coat of VELOSIT WP 102 to at on the slab and approx. 25 cm (10") on the lower section of the wall. The cove mortar can be produced with less water addition and can be applied wet in wet onto the slurry coat.

### 3.) Curing

VELOSIT WP 102 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

Brush application 2 mm:  
 1<sup>st</sup> coat VELOSIT WP 102: 1.6 kg/m<sup>2</sup>\*  
 2<sup>nd</sup> coat VELOSIT WP 102: 1.6 kg/m<sup>2</sup>\*

Trowel application 2 mm  
 Scratch coat VELOSIT WP 102: 0-0.5kg/m<sup>2</sup>\*

2<sup>nd</sup> coat VELOSIT WP 102: 2.7-3.2kg/m<sup>2</sup>\*

Spray application 2 mm:  
VELOSIT WP 102: 3.2 kg/m<sup>2</sup>\*

Other thickness requirements: 1.6 kg\* VELOSIT WP 102 per m<sup>2</sup> for 1 mm dry film thickness on smooth substrates. Depending on surface roughness application rates can be significantly higher.

\* 1.6 kg VELOSIT WP 102 powder + 0.3 kg water, i.e. 1.9 kg mixed material per mm and m<sup>2</sup> (3.3 lbs per 40 mil dft and 10 sq.ft.)

## Cleaning

VELOSIT WP 102 can be removed in the fresh state with water. Once cured, VELOSIT WP 102 can be removed mechanically or by using acidic cleaners like muriatic acid are required.

## Quality features

|                                       |  |
|---------------------------------------|--|
| Color:                                | gray                                     |
| Mixing ratio by weight:               | 100 : 18                                 |
| Mixing ratio by volume:               | 100 : 28                                 |
| Density:                              | 1.6 kg/l                                 |
| Substrate temperature:                | 5 – 35°C*<br>(40-95°F)                   |
| Water impermeability acc. EN 12390-8: |  |
| - Positive side:                      | 5 bar (72 psi)                           |
| - Negative side:                      | 5 bar (72 psi)                           |
| Compressive / flexural strength:      |  |
| 2 hours:                              | 12 / 2 MPa (1740/290 psi)                |
| 24 hours:                             | 24 / 5 MPa (3480/725 psi)                |
| 7 days :                              | 38 / 6 MPa (5510/870 psi)                |
| 28 days:                              | 50 / 7 MPa (7250/1015 psi)               |
| Chloride ions:                        | < 0.05%                                  |
| Carbonation resistance:               | passed                                   |
| Capillary water absorption:           | 0.1 kg/m <sup>2</sup> x h <sup>0.5</sup> |
| Adhesive strength:                    | 1.6 MPa (232 psi)                        |
| Restrained shrinkage:                 | 1.5 MPa (218 psi)                        |
| Fire rating EN13501-1:                | Class A1                                 |

## Packaging

VELOSIT WP 102 is available in 25 kg (55 lb.) watertight plastic bags.

## Storage

VELOSIT WP 102 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 102 is only available for professional applicators.

Never add water to VELOSIT WP 102 when it has started to set. Stiffened material must be disposed.

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](http://www.velosit.de).

## Effective date

December 2015

## Manufacturer

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