

# VELOSIT® WR 924

## Multi Purpose Water Repelling Additive Impregnation And Moisture Barrier Concentrate



### Application fields

VELOSIT WR 924 is a multi-purpose, water based silane-siloxane emulsion supplied in a highly concentrated form. VELOSIT WR 924 chemically reacts to provide long term hydrophobicity significantly reducing water ingress & preventing detrimental water-bourn ion migration. After dilution with water, VELOSIT WR 924 can be used for multiple applications. Typical application fields include but are not limited to:

- Production of hydrophobic mortars, plasters and concretes
- Reduced water absorption & staining of mineralic surfaces such as brick, masonry and natural stone against driving rain such as above-grade marine structures
- Anti-carbonation surface treatment of cast-in-situ & pre-cast reinforced concrete surfaces; i.e. tunnels, bridge decks & columns,...etc
- Moisture barrier against rising moisture in brick & natural stone walls in basements and cellars

### Properties

VELOSIT WR 924 is a VOC, milky, water-based, silane-siloxane concentrate that provides water repellency whilst allowing breathability.

VELOSIT WR 924 is added to cementitious mixes such as concrete, mortar or plaster to produce hydrophobic properties.

VELOSIT WR 924 can be spray, brush or roller applied on vertical or horizontal mineralic surfaces such as natural stone, masonry, renders or concrete for water repellency and anti-carbonation (surpasses the requirements of EN 1504-2 when applied using principle 1, method 1.1 according to EN 1504-9

VELOSIT WR 924 can also be applied as a horizontal barrier in natural stone and masonry walls.

- VOC compliant - contains no organic solvents
- Highly concentrated: very low consumption
- Small molecular structure of silanes allows deep substrate impregnation while chemically reacting & bonding with capillaries/pore walls producing a durable hydrophobic treatment
- Excellent reduction in water penetration

- Higher durability and resistance than conventional silicone based treatments
- Reduces dirt penetration into capillaries & pores
- Breathable
- Excellent resistance to ultraviolet rays and chloride ions

## Application

### 1.) Dilution

VELOSIT WR 924 is diluted with water. Add 12 parts water to 1 part VELOSIT WR 924 in a plastic container and stir well before each use.

For best results use a low shear mixer for 1 minute. Continuous hand mixing for at least 3 minutes is also possible.

### 2.) Substrate preparation

#### 2.a Hydrophobic cementitious mixes

No surface preparation applicable.

#### 2.b Surface impregnation (repellency and anti-carbonation)

All surfaces must be rough and free of dirt, dust, grease, paint and oil, efflorescence, wax, curing compounds, coatings, or any other surface materials that may block or interfere with surface absorption.

#### 2.c & d. Horizontal moisture barrier (injection & gravity feed)

All voids and missing bedding mortars should be filled with VELOSIT RM 202.

### 3.) Processing

To assure desired results and determine consumption rates always start with a small test area before starting with the general application.

It is a must that all repairs are carried out at least 24 hours prior to application.

3.a. Hydrophobic cementitious mixes: Use 1.3kg - 1.5kg of the diluted VELOSIT WR 924 for every 100kg

of cement used in the production of concrete mortar or plaster.

### 3.b.) Surface impregnation:

Water repellency: the diluted VELOSIT WR 924 is applied by brush or roller. For large areas a Knapsack (back-pack) spray gun is more suitable.

Floor surfaces: apply in a thick coat (160 grams to 280 grams per square meter)

Vertical surfaces: application in two to three consecutive coats (depending on porosity/absorption) with a minimum waiting time of 5 minutes between coats. Each coat must not be less than 80 grams per square meter.

Anti-carbonation: dependent on surface absorption, apply three coats with a minimum of 80 grams per square meter per coat with a minimum waiting time of 10 minutes between coats.

#### 3.c.1 Low pressure injection (less than 10 bars)

Drill in a straight horizontal line (or two parallel lines as directed by the consultant) 30mm diameter boreholes into the wall every 100 to 125mm and at an angle between 30° & 45° through the entire wall cross section less 50mm for dense walls and 80mm for weak & porous walls such as natural stone or masonry.

#### 3.c.2 Gravity feed

Drill at a 45° angle in one or two parallel horizontal lines (as directed by the consultant) 10mm diameter boreholes into the wall every 100 to 125mm through the entire wall cross section less the last 50mm for dense walls and less than the last 80mm for weak & porous walls such as natural stone or masonry. Drilling from both sides of the wall is recommended at corners and where wall thicknesses are 60cm or above.

### 4.) Curing

VELOSIT WR 924 treated surfaces do not require curing. Protect surfaces from rain for at least 24 hours after application

## Estimating

Typical consumption rates of VELOSIT WR 924:

Application type	VELOSIT WR 924 consumption	
	Concentrate	Diluted solution (1:12 parts water)
Concrete/mortar/plaster admixture	100 – 115 grams/ 100kg cement	1.3 - 1.5 kgs/ 100kg cement
Surface applied water repellent (1 - 2 coats)	12 - 20 grams/ square meter	0.16 - 0.25 kgs/ square meter
Anti-carbonation protection (2 - 3 coats)	20 – 25 grams/ square meter	0.25 - 0.30 kgs/ square meter
Horizontal barrier (low pressure < 10 bar)	85 grams/ hole (32 cm thick wall)	1.1 kg / hole (32 cm thick wall)
Horizontal barrier (gravity feed)	70 grams/ hole (32 cm thick wall)	0.9 kg / hole (32 cm thick wall)

## Cleaning

VELOSIT WR 924 can be removed in the fresh state with hot water. Once it has cured it may be removed mechanically.

## Limitations

- Air and surface temperatures must be 7°C or higher at the time of application.
- Minimum age of concrete, mortar or plaster must be at least 3 weeks for surface impregnation & anti carbonation.
- Subsequent paint over VELOSIT WR 924 impregnated surfaces is possible after conducting compliance test.

## Quality features

Color:	white
Mixing ratio by weight:	1 : 12
Mixing ratio by volume:	1 : 12
Density:	1.0 kg/l
Substrate temperature:	5 – 40°C* (40-104°F)
Fire rating EN13501-1:	Class A1

## Packaging

VELOSIT WR 924 is available in 20 & 200 kg containers.

## Storage

VELOSIT WR 924 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 WR 924 is only available for professional applicators.

Never add water to VELOSIT WR 924 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

July 2018

## Manufacturer

VELOSIT GmbH & Co. KG  
Industriepark 7  
32805 Horn-Bad Meinberg  
Germany