

# VELOSIT® SL 525

## Economic Self Leveling Underlayment for Carpet, Vinyl and Laminate Floors



### Application fields

VELOSIT SL 525 is an economic cementitious self leveling C25 underlayment on concrete, gypsum, magnesia and asphalt substrates. VELOSIT SL 525 creates a smooth surface for coatings and floor coverings. Typical application fields include:

- Leveling of floors receiving thin flooring materials
- Leveling of undulations prior to installation of wall-to-wall carpet, vinyl sheets, vinyl carpet and laminate floors
- Application thickness from 1 mm (40 mils) to 12 mm (½")
- As a binder for terrazzo floors

### Properties

VELOSIT SL 525 is a shrinkage compensated cementitious self leveling underlayment with quick strength development. VELOSIT SL 525 binds the mixing water very fast allowing very short wait times

prior to covering. VELOSIT SL 525 creates a well bonded and very smooth layer on the substrate.

VELOSIT SL 525 meets the requirements of EN 13813 and is classified CT-C25-F5.

VELOSIT SL 525 can be applied by rake or suitable pumping equipment.

- Minimal shrinkage/expansion under dry resp. wet curing conditions minimizing the risk of micro-cracking
- Excellent flow with good slump life
- Extremely smooth surface profile
- Easy to sand and/or polish after curing
- Fast air release with minimal agitation requirement
- Ready for covering with ceramic tiles after 5 hours and moisture sensitive floor coverings after 48 hours.
- 30 – 40 min. working time and 10 MPa (1450 psi) compressive strength after 5 hours
- Final strength of more than 25 MPa (3652 psi) at 28 days
- Open to foot traffic after 3 hours

- Very good adhesion to properly prepared substrates
- Excellent water resistance, no strength loss under water
- Mid gray color

## Application

### 1.) Substrate preparation

VELOSIT SL 525 is designed for concrete and various screed types. Steel may be coated with a suitable bonding bridge. Also plywood or OSB-floors with an engineers design for minimal deflection can be coated.

#### a.) Steel

must be prepared to a purity of SA 2.5 acc. SIS 05 5900.

b.) Concrete, gypsum, magnesia and asphalt substrates must be prepared with sand blasting, shot blasting or grinding to remove all bond breaking substances.

Substrate must be rough, open porous and load bearing. The minimum requirement for adhesive strength is 1.0 MPa (145 psi) and for the compressive strength 20 MPa (2900 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.

#### c.) Wooden substrates

must be free from bond breaking substances. Otherwise the surface must be sanded before priming.

#### Priming:

#### a.) Steel:

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 (suitable

quartz sand 0.7 mm – 1.25 mm). 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.) Concrete substrates

with a humidity of max. 4 % and a water vapor emission rate of less than 0.6 g/m<sup>2</sup>h (3 lbs./24h x 1000 ft<sup>2</sup>) can be primed with VELOSIT PA 911 (Acrylic Primer). VELOSIT PA 911 is ready to receive the leveler usually after 2 – 3 h curing. At higher moisture levels or in case the moisture levels in the substrate are expected to increase, priming must be done with VELOSIT PR 303. VELOSIT SL 525 can be applied into the tacky coating within 2 – 4 hours after application. Longer wait times require a full broadcast with suitable quartz sand 0.7 mm – 1.25 mm into the primer.

#### c.) Wooden substrates

must be primed with VELOSIT PU 412. Wood substrates swell with water. An overlay is only permitted if these are completely dry before the application and no negative side water source will impact the topping later on. Wood is generally not a sufficiently load bearing substrate to achieve high adhesive strengths. A mechanically fastened mesh can increase the bond to the wood substrate.

## 2.) Processing

#### Mixing:

Mix VELOSIT SL 525 with 22 – 24 % potable water, i.e. 4.4 – 4.8 l (1.2 – 1.3 gal.) water per 20 kg (44 lb.) bag. Fill the 22 % mixing water (4.4 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. Use a cage type mixing paddle to reduce the air entrainment into the mix. Add max. 2 % (0.4 l) additional water under stirring until the desired consistency is achieved. VELOSIT SL 525 may be used as a binder for terrazzo. For this application 2.5 % of inorganic pigments like

iron oxide or titanium oxide may be added and the water demand can be increased by up to 4 %. Do not over water the product!

The product is workable for 30 – 40 min. at 23 °C.

**a.) Rake application:**

Pour VELOSIT SL 525 onto the primed substrate and rake to the desired thickness. Make sure there are no bond breaking substances on the primer. The product can be applied up to 12 mm (½ ") in one application. Make sure to work in sections that can be finished within 30 min. Immediately after pouring use gauge rake to achieve thickness and force entrapped air to the surface. Alternatively a spiked roller can be used to help air to surface at larger application thickness. Finish with a smooth rake.

**b.) Pump application:**

Suitable mortar pumps are for example:

- PFT GmbH: PFT G4
- HighTech GmbH: HighComb Big
- Wagner GmbH: PC 25
- Putzmeister GmbH: SP11 or MP 25
- Inotec GmbH: INOMAT-M8
- m-tec duo-mix 2000

In mixing pumps feed the powder into the product hopper and adjust the water to the specified rate. The water rate can be adjusted by comparing the flow with a hand-mixed batch with a correct water addition. Control the flow with a flow cone every 5 to 10 min. With mortar pumps add the mixed product as described under „Mixing“ into the feed hopper of the pump and pump continuously. Rake and smooth the material as described under section a.).

Long pump interruptions may result in clogging of the pump hose. The product may cure a lot faster if the hose is exposed to direct sunlight. Always empty and flush the machine after pumping or before long spray interruptions. VELOSIT SL 525 is a fast curing material and may be hard to remove if left in the machine.

Never overcoat joints or untreated cracks as this will most likely result in surface cracks!

**c.) Application as a terrazzo binder:**

VELOSIT SL 525 can be blended with 2.0 to 2.2 kg terrazzo aggregate 6 – 9 mm per kg VELOSIT SL 525 (for example in a free fall mixer). The mix must be compacted manually to ensure a uniform distribution of the aggregates.

Alternatively, the aggregate can be applied as a loose mix with a small amount of a transparent binder the substrate. After the binder has cured VELOSIT SL 525 is poured onto the surface until all voids between the aggregates have been filled. The terrazzo floor can be ground with a diamond grinder after 5 – 6 hours. The fine grinding and polishing should be made the following day or later.

**3.) Curing**

VELOSIT SL 525 does not require curing. Protect the applied product for 24 hours against direct sun light, wind and temperature changes exceeding 5 °C (9 °F).

**4.) Finishing**

To remove rake marks or if a smoother surface is desired VELOSIT SL 525 can be sanded or polished after it has gained sufficient strength. This is usually after 6 – 8 hours depending on application thickness and climatic conditions.

**Estimating**

Volume yield:

20 kg (44 lbs.) VELOSIT SL 525 result in approx. 12.8 liter (0.45 ft<sup>3</sup>) cured mortar.

Standard leveling:

4.7 kg (10.36 lbs.)\* VELOSIT SL 525 per m<sup>2</sup> (10.7 ft<sup>2</sup>) for 3 mm (1/8") dry mortar thickness on smooth substrates. Depending on surface roughness application rates can be significantly higher.

\* 4.7 kg VELOSIT SL 525 powder + 1.8 kg water, i.e. 5.8 kg mixed material per 3 mm and m<sup>2</sup>

**Cleaning**

VELOSIT SL 525 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 : 22
Mixing ratio by volume:	100 : 35
Density:	1.1 kg/l
Substrate temperature:	10 – 35 °C (50 – 95 °F)
Initial set:	60 min.
Final set:	90 min.
Compressive / flexural strength:	
4 hours:	8 / 2 MPa (1160/290 psi)
24 hours:	14 / 3 MPa (2031/435 psi)
7 days:	20 / 4 MPa (2901/580 psi)
28 days:	25 / 5 MPa (3626/725 psi)
Adhesive strength*:	
- primed with PR 303:	1.5 MPa (218 psi)
- primed with PA 911:	1.2 MPa (174 psi)
Length change after 56 days:	
- dry storage:	- 0.3 mm/m (- 0.03 %)
Fire rating EN13501-1:	Class A1 <sub>n</sub>

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

## Packaging

VELOSIT SL 525 is available in 20 kg (44 lb.) watertight plastic bags.

## Storage

VELOSIT SL 525 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 SL 525 is only available for professional applicators.

Never add water to VELOSIT SL 525 when it has started to set. Stiffened material must be disposed.

For application with mixing pumps we recommend spiked rolling after 2 – 5 min. for a better surface smoothness.

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).

## Manufacturer

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VELOSIT GmbH & Co. KG Industriepark 7 D-32805 Horn-Bad Meinberg 17 <b>VELOSIT SL 525</b>	
EN 13813 Zementestrichmörtel für Fußboden- konstruktionen in Innenräumen CT-C25-F4	
Brandverhalten	A1 <sub>n</sub>
Freisetzung korrosiver Substanzen	CT
Druckfestigkeit	C25
Biegezugfestigkeit	F4