

VELOSIT® SL 505

White High Strength Self Leveling Overlayment



Application fields

VELOSIT SL 505 is a white cementitious self leveling overlayment for concrete floors. It creates smooth surfaces for coatings, etc.. It may also be used as a high strength underlayment for coatings and floor coverings. Typical application fields besides others are as follows:

- Interior and exterior floors
- Decorative applications
- Leveling of concrete slabs and floors as a finished surface
- Repair of surface defects on concrete floors
- Application thickness from 3 mm (1/8") to 15 mm (0.6")

Properties

VELOSIT SL 505 binds the mixing water very fast allowing a very short wait time before it becomes trafficable or can be covered. VELOSIT SL 505 creates a well bonded and very smooth layer on the substrate.

VELOSIT SL 505 surpasses the requirements of EN 13813 and meets class CT-C40-F6.

VELOSIT SL 505 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 long slump life
- Smooth surface profile
- Tintable with inorganic pigments
- Fast air release with minimal requirement for agitation
- Ready for foot traffic after approx 5 hours
- 20 – 40 min. working time
- Final strength of 40 MPa (5801 psi) after 28 days
- Excellent adhesion to properly prepared concrete
- Good resistance against CO₂ and Chloride penetration due to a very tight pore structure
- Excellent water resistance, no strength loss under water
- Good weathering resistance
- Good sulfate resistance
- White color

Application

1.) Substrate preparation

VELOSIT SL 505 is designed for concrete substrates. Steel may be coated with a suitable bonding bridge.

Rising components must be decoupled with the VELOSIT RD 800 edge insulation strip to prevent clamping. Movement and separation joints must be taken over, shrinkage must be excluded.

Any cracks in the substrate must be filled with VELOSIT GH 311 and sprinkled with suitable quartz sand 0.7 mm - 1.25 mm (see technical data sheet).

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

b.) Concrete substrates must be prepared with sand blasting, shot blasting or high pressure water blasting (> 100 bar/1450 psi) to remove all bond breaking substances. Substrate must be rough, open porous and load bearing. The minimum requirement for adhesive strength is 2.0 MPa (290 psi) and for the compressive strength 30 MPa (4350 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.

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, see technical data sheet). 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/m²h (3 lbs./24h x 1000 ft²) 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 505 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 (see technical data sheet) into the primer.

2.) Processing

Mixing:
Mix VELOSIT SL 505 with 20 – 22 % potable water, i.e. 5.0 – 5.5 l (1.3 – 1.5 gal.) water per 25 kg (55 lb.) bag. Fill the 20 % mixing water (5.0 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 % (0.5 l) additional water under stirring until the desired consistency is achieved. Do not over water the product!
The product is workable for 20 – 40 min. at 23 °C.

a.) Rake application:
Pour VELOSIT SL 505 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 15 mm (0.6 ") 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 the surface at larger application thickness.

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 above 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 505 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!

If used as an underlayment, VELOSIT SL 505 is ready to receive a coating after approx 1 day. For use as a wear surface a clear sealer, a surface hardener or VELOSIT FH 921 (silicone enhanced floor hardener) is recommended to improve resistance against penetrating liquids like oil, grease or cleaning agents.

3.) Curing

VELOSIT SL 505 does not require curing. Protect the applied product for 24 hours against direct sun light, wind and temperature changes exceeding 5 °C (9 °F).

Estimating

Approx. 1.65 kg (3.6 lbs.) VELOSIT SL 505 powder per 1 mm dry film thickness on 1 m² (10.7 ft²) surface on smooth surfaces. On rough substrates, the consumption may be considerably higher.

Cleaning

VELOSIT SL 505 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:	white
Mixing ratio by weight:	100 : 21
Density:	1.3 kg/l
Substrate temperature:	10 – 35 °C (50 – 95 °F)

Compressive / flexural strength:

4 hours: 5 / 3 MPa (725/435 psi)

24 hours: 20 / 6 MPa (2901/870 psi)

7 days: 25 / 7 MPa (3626/1015 psi)

28 days: 40 / 8 MPa (5801/1160 psi)

Length change after 56 days:

- dry storage: - 0.4 mm/m (- 0.04 %)

Fire rating EN13501-1: Class A1_{fl}

Packaging

VELOSIT SL 505 is available in 25 kg (55 lb.) watertight plastic bags.

Storage

VELOSIT SL 505 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 505 is only available for professional applicators.


Never add water to VELOSIT SL 505 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.

Manufacturer

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VELOSIT GmbH & Co. KG Industriepark 5 – 7 D-32805 Horn-Bad Meinberg 23 VELOSIT SL 505	
EN 13813 Cementitious screed material for use internally in buildings CT-C40-F6	
Reaction to fire	A1 _{fl}
Release of corrosive substances	CT
Compressive strength	C40
Flexural strength	F6