

VELOSIT® SL 507

Abrasion Resistant Self Leveling Overlayment



Application fields

VELOSIT SL 507 is a cementitious self leveling overlayment for concrete floors. It creates a highly abrasion resistant smooth surface. Typical application fields besides others are as follows:

- Interior and exterior floors
- Leveling of concrete slabs and floors as a finished surface
- Repair of surface defects on concrete floors
- Application thickness from 6 mm (1/4") to 38 mm (1 1/2")

Properties

VELOSIT SL 507 is a shrinkage compensated self leveling overlayment based on a special cement and corundum fillers with very quick strength development. VELOSIT SL 507 binds the mixing water very fast allowing a very short wait time before it becomes trafficable. VELOSIT SL 507 creates a well bonded and very smooth layer on the substrate.

VELOSIT SL 507 surpasses the requirements of EN 1504-3 class R4 and is classified as class C60-F10-A3 acc. EN 13813.

VELOSIT SL 507 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 abrasion resistance
- Excellent flow with long slump life
- Smooth surface profile
- Fast air release with minimal requirement for agitation
- Ready for foot traffic after 3 hours, for forklift traffic after 6 hours.
- 30 - 40 min. working time and 20 MPa (2900 psi) compressive strength after 4 hours
- Final strength of more than 60 MPa (8700 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
- Light gray color close to concrete color

Application

1.) Substrate preparation

VELOSIT SL 507 is designed for concrete substrates. Steel may be coated with a suitable bonding bridge.

a.) Steel must be prepared to a purity of SA 2&1/2 acc. SIS 05 5900.

b.) Concrete substrates must be prepared with sand blasting, shot blasting or high pressure water blasting (>400 bar/5800 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.

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. 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 must be primed with VELOSIT PR 303 with a full broadcast of fire dried quartz sand 0.7-1.2 mm.

2.) Processing

Mixing: Mix VELOSIT SL 507 with 17% potable water, i.e. 4.3 l (1.1 gal.) water per 25 kg (55 lb.) bag. Fill the mixing water 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. Do not over water the product! VELOSIT SL 507 may be extended with up

to 50% corundum aggregate 1 – 2 mm for large application thickness.

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

a.) Rake application: Pour VELOSIT SL 507 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 38 mm (1 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 the 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
- Putzmeister GmbH: SP12 or MP 25
- M-Tec Duomix 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 507 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!

For use as a wear surface a clear sealer or surface hardener is recommended to improve resistance against penetrating liquids like oil, grease or cleaning agents.

3.) Curing

VELOSIT SL 507 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

Volume yield:
25 kg (55 lbs.) VELOSIT SL 507 result in approx. 14.2 liter (0.50 ft³) cured mortar.

Standard leveling:
10.9 kg (24 lbs.)* VELOSIT SL 507 per m² (10.7 ft²) for 6 mm (1/4") dry mortar thickness on smooth substrates. Depending on surface roughness application rates can be significantly higher.

* 10.9 kg VELOSIT SL 507 powder + 1.9 l water, i.e. 12.8 kg mixed material per 6 mm and m²

Cleaning

VELOSIT SL 507 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 : 17
Mixing ratio by volume:	100 : 27
Density:	1.6 kg/l
Substrate temperature:	10 – 35°C* (50-95°F)
Initial set:	70 min.
Final set:	100 min.
Compressive / flexural strength:	
4 hours:	20 / 4 MPa (2900/580 psi)
24 hours:	37 / 5 MPa (5365/725 psi)
7 days :	51 / 7 MPa (7395/1015 psi)
28 days:	60 / 10 MPa (8700/1450 psi)
Adhesive strength**(on PR 303):	2.3 MPa (334 psi)
Abrasion resistance (Böhme):	2.6 cm ³ /50cm ²
Slip resistance:	Class R10
Length change after 56 days	
- dry storage:	-0.3 mm/m (-0.03%)
- water storage:	+0.0 mm/m (+0.00%)

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

Packaging

VELOSIT SL 507 is available in 25 kg (55 lb.) watertight plastic bags.

Storage

VELOSIT SL 507 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 SL 507 is only available for professional applicators.

Never add water to VELOSIT SL 507 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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