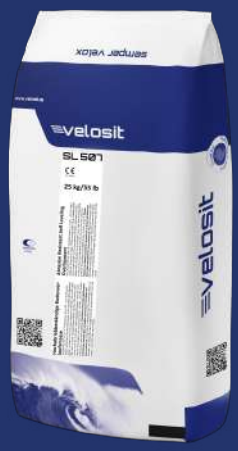
VELOSIT® SL 507

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 ½“)

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 13813 class CT-C50-F8-A3.

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 50 MPa (7252 psi) after 28 days
- Excellent adhesion to properly prepared concrete

- Good resistance against CO_2 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.

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 (> 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 (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 low residual moisture of less than 4 % as well as a water vapor emission of less than 0.6 g/m²h can be primed with VELOSIT PA 911 (acrylic primer), which can be overcoated with the floor leveling compound after approx. 2 - 3 h. The primer can then be applied to the concrete. In case of higher humidity or an expected later increased exposure to humidity, the special primer VELOSIT PR 303 must be used. The primer must be sprinkled over the entire surface with suitable quartz sand 0.7 mm - 1.25 mm (according to technical data sheet).
After curing and removal of the excess sand, VELOSIT SL 507 can be applied.

2.) Processing

Mixing:
Mix VELOSIT SL 507 with 17 % – 19 % potable water, i.e. 3.40 l - 3.80 l (0.9 gal. – 1.0 gal.) water per 20 kg (44 lb.) bag. Fill the 17 % mixing water (3.4 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 % additional water (0.4 l) under stirring until the desired consistency is achieved. 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 properties are subject to change.

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.

b.) Pump application:
Suitable mortar pumps are for example:
- PFT GmbH: PFT G4
- HighTech GmbH: HighComb Big
- Putzmeister GmbH: SP11 or MP 25
- M-Tec Duomix 2000
- Wagner GmbH: PC 25

With mixing pumps, the powder is filled into the product hopper and adjust the water to the specified rate. The correct water dosage is set by measuring the consistency using the VELOSIT flow and flow ring (height 4.3 cm / ⌀ 7.2 cm).
The flow of SL 507 must be between 24 and 27 cm. If the flow is outside this range, segregation may occur.
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 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, 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 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

Approx. 1.75 kg (3.9 lbs.)powder VELOSIT SL 507 per 1 mm dry film thickness on 1 m^2 (10.7 ft^2)surface on smooth surfaces. On rough substrates, the consumption may be considerably higher.

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:	55 / 8 MPa (7977/1160 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 %)
Fire rating EN 13501-1:	class $A1_{fl}$

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

Packaging

VELOSIT SL 507 is available in 20 kg (44 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.

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

VELOSIT GmbH & Co. KG
Industriepark 5 – 7
D-32805 Horn-Bad Meinberg
Germany
www.velosit.de

CE

VELOSIT GmbH & Co. KG
Industriepark 5 – 7
D-32805 Horn-Bad Meinberg
23
VELOSIT SL 507

EN 13813
Cementitious screed material for use internally in buildings
CT-C50-F8-A3

Reaction to fire	$A1_n$
Release of corrosive substances	CT
Compressive strength	C50
Flexural strength	F8
Wear resistance	A3