

# VELOSIT® NG 517

Non-Shrink Grout  
For 6 – 150 mm



## Application fields

VELOSIT NG 517 is a cementitious non-shrink grout for concrete substrates. It is used to fill large voids or underneath base plates of machinery or building columns up to 150 mm (6") clearance. Typical application fields besides others are as follows:

- Repair of large surface defects on concrete
- Filling of gaps between two concrete bodies
- Grouting of machinery and construction columns
- Use as micro-concrete

## Properties

VELOSIT NG 517 is a shrinkage compensated cementitious grout.

VELOSIT NG 517 creates an extremely well bonded, high strength connection between concrete and concrete or concrete and steel.

VELOSIT NG 517 surpasses the requirements of EN 1504-3 class R4 for concrete repair (CR) and can be used according to the principles 3, 4 and 7 acc. to EN 1504-9.

VELOSIT NG 517 can be poured or pumped.

- Low shrinkage
- Slight volume increase in the plastic stage to ensure good bond to base plates
- Excellent workability
- Wide range of water addition allowing consistencies from plastic to fluid
- Fiber reinforced
- Advanced corrosion inhibitor technology
- 120 min. working time and 41 MPa (5945 psi) compressive strength after 24 hours
- Final strength of more than 70 MPa (10150 psi) after 28 days in fluid consistency
- Excellent adhesion to properly prepared concrete and steel
- Minimal water penetration

## Application

### 1.) Substrate preparation

VELOSIT NG 517 is designed for concrete and steel substrates.

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 ideally high pressure water blasting (> 100 bar/ 1450 psi) to remove all bond breaking substances.

Remove all carbonated concrete. Test with Phenolphthalein or other suitable indicator until concrete with sufficient alkalinity for rebar protection is reached. If rebar is exposed remove concrete at least 12 mm (½") behind rebar to fully embed the steel into VELOSIT NG 517.

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). Before the application of VELOSIT NG 517, dampen the substrate with clean water to a saturated surface dry (SSD) condition. Remove standing water puddles .

### 2.) Processing

Mixing:

Mix VELOSIT NG 517 with 11 – 13 % potable water, i.e. 2.7 – 3.3 l (0.7 – 0.9 gal.) water per 25 kg (55 lb.). The water is metered in pumps by checking the flow with a flow cone. It should be between 24 cm for 11% and 30 cm for 13% water addition.

Fill the 11 % 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. Add up to 2 % water under stirring until the desired consistency is achieved.

The product is workable for 45 min. at 23 °C.

a.) Manual application:

Pour VELOSIT NG 517 can be applied fresh in fresh into the prime coat. The product can be applied into voids of minimum 6 mm (1/4") and up to 150 mm (6") width. For smaller gaps use VELOSIT NG 511. Make sure to work in sections that can be finished within 30 min. Cooler temperatures extend, warmer temperatures reduce the working time. Rebars and other penetrations must be fully embedded into the mortar. If grouting underneath large base plates use a fluid consistency.

b.) Pump application:

Suitable grouting pumps are for example:

- PFT GmbH: PFT G4
- HighTech GmbH: HighComb Big
- Wagner GmbH: PC 25
- Putzmeister GmbH: SP12 or MP 25

In mixing pumps feed the powder into the product hopper and adjust the water to the desired consistency. With grout pumps add the mixed product as described under „Mixing“ into the feed hopper of the pump and pump continuously. Long spray interruptions may result in clogging of the spray 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 work interruptions. VELOSIT NG 517 is a fast curing material and may be hard to remove if left in the machine.

Never vibrate VELOSIT NG 517 to increase flow. Use wood or a steel rod to move the material in place.

### 3.) Curing

VELOSIT NG 517 requires a curing for at least 16 hours until sufficient strength is achieved.

### Estimating

25 kg VELOSIT NG 517 result in 12.4 l hardened grout.

## Cleaning

VELOSIT NG 517 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 : 12
Mixing ratio by volume:	100 : 20
Density:	1.7 kg/l
Substrate temperature:	5 – 35 °C (40 – 95 °F)
Initial set:	240 min.
Final set:	300 min.
Compressive / flexural strength in fluid consistency (12 % water per bag):	
24 hours:	41 / 6 MPa (5945/870 psi)
7 days:	62 / 7 MPa (8990/1015 psi)
28 days:	70 / 8 MPa (10150/1160 psi)
Adhesive strength*, concr.:	> 2.0 MPa (290 psi)
Fire rating EN13501-1:	Class A1

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

## Packaging

VELOSIT NG 517 is available in 25 kg bags.

## Storage

VELOSIT NG 517 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 NG 517 is only available for professional applicators.

Never add water to VELOSIT NG 517 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).

## Manufacturer

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