

VELOSIT® PU 411

1-Component Polyurethane Primer



Application fields

VELOSIT PU 411 is a universal primer optimized as a substrate for polyurethane- and polyurea coating. VELOSIT PU 411 reaches very high adhesive strengths on mineralic substrates with a moisture content smaller than 4%. Typical application fields besides others are as follows:

- Adhesion primer on Concrete and masonry
- Bonding bridge on dry wood substrates
- Sealer for absorptive substrates

Properties

VELOSIT PU 411 is a solvent-free, 1-component polyurethane primer.

VELOSIT PU 411 surpasses the requirements of EN 1504-2 for impregnations (I) and can be used according to principle 1 acc. to EN 1504-9.

Because of its slightly thixotropic consistency it can be used on horizontal and vertical surfaces.

- One component
- Fast reaction with humidity, short wait time until a coating can be applied
- Open to foot traffic after max. 3 h
- Very good adhesion to typical construction substrates like concrete, wood and masonry
- Resistant against water and frost

Application

1.) Substrate preparation

a.) Concrete and masonry 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 open porous and load bearing. The minimum requirement for adhesive strength is 1 MPa (145 psi) and for the compressive strength 20 MPa (2900 psi). Lower values can be tolerated if no significant requirements to the adhesion of VELOSIT PU 411 exist. Active water leaks that would effect the waterproofing from the negative side must be treated and fully stopped. VELOSIT PU 411 is suitable for 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). VELOSIT PU 411 is ready

to receive the coating after 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 including a full broadcast with VELOSIT PQ 901.

b.) Wooden substrates can be primed with VELOSIT PU 411, if they are free from bond breaking substances. Otherwise the surface must be sanded before priming. Wood substrates swell with water. A waterproofing is only permitted if these are completely dry before the application and no negative side water source will impact the waterproofing layer later on. Wood is generally not a sufficiently load bearing substrate to achieve high adhesive strengths. Mechanical fasteners with washer heads can increase the bond to the wood substrate.

c.) Old polyurethane insulating foams or insulation boards based on polystyrene must be freed from bond breaking substances and fully adhered to the substrate. These can be primed with VELOSIT PU 411 immediately.

2.) Processing

VELOSIT PU 411 can be applied by brush or with a lamb wool roller in the specified application rate onto the substrate prepared as described above. VELOSIT PU 411 can be coated as soon as the surface is only slightly tacky. Do not wait more than 48 h as otherwise the reactive groups need to be reactivated.

3.) Curing

VELOSIT PU 411 does not require curing and can be over-coated within 3 h after application. VELOSIT PU 411 may yellow slightly under UV light, which does not impose any reduction in physical or chemical properties. As VELOSIT PU 411 receives a coating very quickly if used as intended the UV exposure is not relevant.

Cleaning

VELOSIT PU 411 can be removed in the fresh state with solvents like naphta. Once it has cured only mechanical cleaning is possible.

Quality features

Color:	brownish
Viscosity 23°C, mPas:	700
Reaction time 23°, 60%:	< 60 min.
Tack-free time 23°C, 60%:	< 180 min.
Substrate temperature:	5 – 50°C* (40-120°F) <small>* observe dew point!</small>
Capillary water absorption:	< 0.1 kg/m ² x h ^{0,5}
Impact resistance:	Class III
Adhesive strength on	
- Concrete with primer:	2.8 MPa (406 psi) <small>(concrete failure)</small>
- Wood (OSB):	0.2 MPa (29 psi) <small>(failure OSB)</small>
Depth of penetration:	5 mm (200 mils)
Fire rating EN13501-1:	Class E

Packaging

VELOSIT PU 411 is available in two pack sizes:
220 kg in 200 l drums
10 kg in 10 l metal pails

Storage

VELOSIT PU 411 can be stored in unopened original packs for 9 months at 15-25°C (59-77°F) in a dry storage place protected against sunlight. The product is supplied under a nitrogen atmosphere and is due to this protected against reaction with humidity. Open containers must be consumed quickly.

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 PU 411 is only available for professional applicators.

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.

Effective date

July 2014

Manufacturer

VELOSIT GmbH & Co. KG
Industriepark 7
32805 Horn-Bad Meinberg
Germany