

VELOSIT® PU 453

Elastomeric,
Moisture-Cured,
Single-Component,
Liquid Polyurethane
Membrane



Application fields

VELOSIT PU 453 is a single component, moisture-cured, high performance, liquid-applied polyurethane liquid that cures to form a UV resistant, seamless and monolithic waterproofing membrane. VELOSIT PU 453 is brush, roller or spray applied on concrete, gypsum, cement boards, asphalt membranes, etc.

Once cured, VELOSIT PU 453 creates an elastomeric yet resilient, long lasting coat capable of accommodating movements of the underlying substrate. VELOSIT PU 453 is designed to give a minimum 25 year service life (W3) in **severe** (S3) temperature zones in accordance with EOTA Guidelines. Typical application fields include protection and waterproofing of:

- Flat slabs, roofs and podium slabs
- Balconies, bathrooms and kitchens
- Asphalt membranes
- Parking structures and bridge decks

- Stadiums
- Metal, galvanized steel, gypsum and wood

Properties

VELOSIT PU 453 can be used as a base coat for deck coating systems or as a stand alone final coating.

VELOSIT PU 453 offers the following advantages:

- Excellent adhesion to most substrates
- Easily applied without thinning
- Fast curing allows same day re-coating
- High elongation; above **825 %**
- Excellent mechanical and chemical resistance
- High abrasion and tear resistance
- Excellent UV resistance on gray and white colors
- Long pot life
- Resilient
- Does not soften at elevated temperatures (up to + 80 °C)
- Capable of withstanding thermal shocks up to + 190 °C
- Remains elastic even at sub-zero temperatures (down to -35 °C)

Application

1.) Surface preparation

Substrates must have an open pore surface and sound with load-bearing capacity and free from cracks, dust, paint, oil or any adhesion inhibiting substances.

2.) Priming and levelling

Priming

When necessary or when high levels of humidity exist, primers such as VELOSIT® PU 411 or VELOSIT PR 303 may be used.

Levelling of undulations

Depending on prevailing temperatures, use VELOSIT WP 101 to level off undulations. Allow 14 hours in case of VELOSIT WP 101 before application of VELOSIT PU 453.

3.) Processing

Gently stir VELOSIT PU 453 using a slow speed drill attached with an appropriate mixing paddle for one minute. Ensure that no air is entrapped.

Cracks

Cracks smaller than 1 mm should be concealed by embedding a 100 mm wide strip of reinforcement fabric into VELOSIT PU 453. The fabric must be centrally placed along the crack. If cracks are 1.0 mm wide or greater, saw-cut with a slight "V" shaped groove to a depth of 5 mm and a minimum width of 5 mm and fill with VELOSIT PU 418 prior to the above mentioned concealing method.

Brush/roller

Use a soft bristle brush or short nap roller and work in two perpendicular coats observing a 6 to 24 hour waiting interval between coats @ 25 °C.

Airless spray

It may be necessary to dilute VELOSIT PU 453 with up to 10 % xylene to adjust the viscosity for spray application.

4.) Protection

Protect VELOSIT® PU 453 from rain for at least 6 hours after application.

5.) Curing

No curing is required. VELOSIT PU 453 is fully cured within 7 days @ 25 °C.

Estimating

Consumption depends on surface roughness and absorptivity. A 25 kg pack of VELOSIT PU 453 will typically cover 12.5 m² to 15 m² (1.6 - 2 kg/m²) in two coats

Cleaning

VELOSIT PU 453 may be removed with xylene. Once cured, VELOSIT PU 453 can only be removed mechanically.

Quality features

Typical properties of VELOSIT PU 453 @ 25°C:

Colours:	Grey, Red, White
Solids content (ASTM D1353):	95 % (+/- 1%)
Density:	1.35 kg/lit (+/- 0.5)
Viscosity (Brookfield):	4500 cP (+/- 1500)
Tack free (RH = 55%):	6 hours
Re-coat open time:	6 to 24 hours
Substrate temperature:	5 – 35 °C
Maximum Elongation (ASTM D412):	+ 825 %
Tensile strength (ASTM D412):	55 kg/cm ²
Water Vapour permeability (ASTM E96):	0.75 g/m ² h
Adhesion to concrete (ASTM D4541):	20 kg/cm ²
Shore A hardness (ASTM D2240):	65
Service temperature:	- 35 °C to + 80 °C
Service temperature for short time:	+ 190 °C
Flash Point:	+ 42 °C

Packaging

VELOSIT PU 453 is available in 25 kg containers.

Storage

VELOSIT PU 453 has a minimum shelf life of 12 months when stored in original unopened containers (elevated from floor), in a dry area and away from direct sunlight where temperatures are maintained below 30°C.

Safety

Please observe the actual valid material safety data sheet and follow the described safety measures for handling of the product.

Recommendations

VELOSIT PU 453 is only available for professional applicators.

Always note that VELOSIT PU 453 is not color stable, especially the Red color. For color-stable finishes, apply a pigmented coat of VELOSIT PU 458.


VELOSIT PU 453 is not suitable for swimming pools.

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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 2032	
VELOSIT GmbH & Co. KG Industriepark 5 – 7 D-32805 Horn-Bad Meinberg 23 VELOSIT PU 453 / 2037	
2032-CPR-10.11 EN 1504-2 Surface protection products Coating	
Permeability to CO ₂ :	Sd > 50 m
Water vapor permeability:	Class I (permeable)
Capillary absorption:	w < 0.1 kg/m ² ·h ^{0.5}
Adhesion:	≥ 1.0 N/mm ²
Reaction to fire:	Euroclass F
Dangerous substances comply with 5.3	