VELOSIT® PU 452

Elastomeric, Moisture-Cured, Single-Component, Liquid Polyurethane Membrane; 105 Solar Reflectance Index

CE
EN1504-2

Application fields

VELOSIT PU 452 is a pigmented, single component, moisture-cured, high-performance, liquid-applied polyurethane liquid that cures to form a reflective, UV resistant, seamless and monolithic waterproofing membrane. VELOSIT PU 452 is available in standard White or Grey colors and may be applied by brush, roller or airless spray on concrete, metal, gypsum, cement boards, asphalt membranes, etc as a stand alone, exposed finish and may also be covered. Other colors are available on request.

Once cured, VELOSIT PU 452 creates an elastomeric yet resilient, long lasting coat capable of accommodating movements of the underlying substrate.

VELOSIT® PU 452 is designed to give a minimum 25 year service life (W3) in **severe** (S3) temperature zones in accordance with EOTA Guidelines.

VELOSIT PU 452 is also CE certified and fulfills the requirements of EN 1504-2 as a protective coating. Typical application fields include protection and waterproofing of:

- Flat slabs, roofs and podium slabs as a final coating or under thermal insulation boards
- Balconies, bathrooms and kitchens
- Asphalt membranes
- Bridge decks
- Stadiums
- Metal, galvanized steel, gypsum and wood

Properties

VELOSIT PU 452 can be used as a base or as a stand alone final roof coating.

VELOSIT PU 452 offers the following advantages:

- Excellent adhesion to most substrates
- Easily applied by brush or roller without thinning
- Applied by airless spray after thinning
- Fast curing allows same day re-coating

- High elongation; above **725%**
- Excellent mechanical and chemical resistance
- Excellent adhesion
- High abrasion and tear resistance
- Excellent UV resistance for white and light colors
- Solar Reflectance Index 105 for White color, lower for Grey
- Long pot life
- Resilient
- Does not soften at elevated temperatures (up to 90 °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 of sound load-bearing capacity and free from cracks, dust, paint, oil or any adhesion inhibiting substances.

2.) Priming and levelling

Priming
All surfaces - except for metals - must be primed with VELOSIT PU 412 at a rate of 0.2kg/square meter. Allow 2 to 3 hours - depending on ambient temperature and humidity - before application of VELOSIT PU 452.

With high residual substrate moisture or where high levels of humidity prevail, primers such as VELOSIT PU 411 or VELOSIT PR 303 must be used.

Levelling of undulations
Depending on prevailing temperatures, use VELOSIT WP 101 or VELOSIT WP 102 to level off undulations. Allow 14 hours in case of VELOSIT WP 101 and 7 hours in case of VELOSIT WP 102 @ 25°C before application of VELOSIT PU 452.

3.) Processing

Prior to application, gently stir VELOSIT PU 452 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 452. The fabric must be centrally placed along the crack.

If cracks are 1.0 mm wide or greater, saw-cut (using a crack chaser) to create a “V” shaped groove with a depth of 5 mm and a minimum width of 5 mm. These chased “V” grooves must be filled 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 an 8 to 24 hour waiting interval between coats depending on prevailing temperature at a total consumption rate between 1.0 & 1.5 kg/square meter.

When higher consumption rates are stated by the specifier, always observe NOT to exceed 0.75 kg/ square meter per coat.

Airless spray
It may be necessary to dilute VELOSIT PU 452 with up to 10 % xylene to adjust the viscosity for spray application.

4.) Protection

Protect VELOSIT PU 452 from rain for at least 6 hours after application.

5.) Curing

No curing is required. VELOSIT PU 452 is fully cured within 7 days @ 25°C.

Estimating

Consumption depends on surface roughness and absorptivity. A 25 kg pack of VELOSIT PU 452 will typically cover 12.0 m² to 15.0 m² (1.55 - 2.0 kg/m²) in two coats.

Cleaning

Uncured VELOSIT PU 452 may be removed with xylene. Once cured, VELOSIT PU 452 can only be removed mechanically.

Quality features

Typical properties of VELOSIT PU 452 @ 25°C:

Color:	White /Grey
Solids content (ASTM D1353):	89 % (+/- 2 %)
Density:	1.44 kg/lt (+/- 0.5)
Viscosity (Brookfield):	5500 cP (+/- 500)
Tack free (RH = 55%):	6 hours
Re-coat open time:	6 to 24 hours
Substrate temperature:	5 – 35 °C
Maximum Elongation (ASTM D412):	**750 %** (+/- 50)
Tensile strength (ASTM D412):	40 kg/cm²
Adhesion to concrete (ASTM D4541):	> 20 kg/cm²
Shore A hardness (ASTM D2240):	80 (+/- 2)
Water impermeability (DIN 1048):	5 atmospheres
Water Vapor permeability: (EN ISO 7783-2)	Sd = 0.82 m
Permeability to CO_2:	Sd > 50 m
Capillary absorption (EN 1062-3):	0.01 kg/m²xh$^{0.5}$
Solar Reflectance (ASTM E903-96):	84 % (White)
Infrared Emittance (ASTM C1371-04a):	0.9 (White)
Solar Reflectance Index (ASTM E1980-01):	105 (White)
Artificial weathering (EN 1062-11):	Pass
Service temperature:	- 35 °C to + 90 °C
Service temperature for short time:	+ 190 °C
Flash Point:	+ 42 °C
Reaction to fire (EN 13501-1):	Euroclass F

Packaging

VELOSIT PU 452 is available in 25 kg containers in two basic colors; White & Grey. Other colors available on request.

Storage

VELOSIT PU 452 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 452 is only available for professional applicators.

Always note that VELOSIT PU 452 is not color stable, and may show slight yellowing with time. For a color-stable finish, apply a pigmented coat of VELOSIT PU 458.

VELOSIT PU 452 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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