Product Code:
300102

Protect-proof 1K PU

Polyurethane liquid membrane for waterproofing & protection, easy application.

DESCRIPTION

Protect-proof 1K PU is the industry standard in waterproofing. For over 30 years, it has provided a simple solution for waterproofing and protection. It is a one component, low viscosity, polyurethane fluid that cures with the humidity in the atmosphere to produce a highly elastic membrane with strong adhesion to many types of surfaces.

It is based on pure elastomeric hydrophobic polyurethane resin plus special inorganic fillers, which result in excellent mechanical, chemical, thermal, UV and natural element resistance properties.

Apply with brush, roller or airless spraying in two coats. Minimum total consumption: 1.5-1.8 kg/m^2.

COMPLIANCE - CERTIFICATION

- ASTM C 836-95

RECOMMENDED FOR

Waterproofing and protection of:

- gypsum and cement boards,
- tiles (under),
- bathrooms,
- roofs,
- light roofing made of metal or fibrous cement,
- asphalt membranes.
- as the main waterproofing membrane in car park waterproofing systems.

LIMITATIONS

Not recommended for:

- unsound substrates (in some cases, application is possible with the use of geotextile reinforcement; please contact our technical department for consultations).
- waterproofing of swimming pool surfaces in contact with chemically treated water.

When used in dark colours for exposed use, a protective topcoat of **Protect-proof TC Sealing2K PU** (always pigmented at the desired colour)
In order to maintain long-term solar reflectance and better colour protection, it is beneficial to apply the aforementioned topcoat layers even when **Protect-proof 1K PU** is applied in light colours.

FEATURES & BENEFITS

- No thinning is required but Protect-proof Solvent may be used.
- Excellent weather and UV resistance. The white colour reflects much of the solar energy and so reduces the internal temperature of buildings considerably.

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- Excellent thermal resistance, the product never turns soft. Max service temperature 90 °C, max shock temperature 200 °C.
- Resistance in the cold: The film remains elastic even down to -40 °C.
- Excellent mechanical properties.
- Good chemical resistance.
- Non-toxic after full cure.

- Water vapor transmission: The film breathes so there is no accumulation of humidity under the coat.

APPLICATION PREREQUISITES

Can be successfully applied on:
Concrete/steel reinforced concrete or otherwise, fibrous cement, mosaic, cement roof tiles, old (but well adhered) acrylic and asphalt coats, wood, corroded metal, and galvanized steel. For information about other substrates, please contact our tech department.

Concrete substrate conditions (standard):
- Hardness: R_{28} = 15Mpa.
- Humidity: W < 10%.
- Temperature: 5-35 °C.
- Relative humidity: < 85%.

Primer selection for special conditions and substrates:
Please refer to the ***Primer Selection Table***.

APPLICATION PROCEDURE

Clean the surface using a high-pressure washer, if possible. Remove oil, grease and wax contaminants. Cement laitance, loose particles, mould release agents, cured membranes must be removed. Fill surface irregularities with appropriate products.

Priming:
Apply the required primer following the guidelines above.

Mixing:
Use a low speed (300 rpm) mixer. May optionally be thinned with 5-10% Protect-proof Cleaner. For application by spraying (airless) thin with 10% Protect-proof Cleaner.

Application:
Apply the material with roller or brush in two, at least, coats. Leave 6-24 hours between coats. If more time passes (for example more than 4 days) or if you are unsure of the interlayer adhesion please contact our technical department.

CONSUMPTION

First coat: 0.75-0.9 kg/m^2.
Second coat: 0.75-0.9 kg/m^2.

Minimum total consumption: **1.5-1.8 kg/m^2**.

CLEANING

Clean tools and equipment first with paper towels and then using Protect-proof Cleaner. Rollers will not be re-usable.

PACKAGING

1 kg, 6 kg, 15 kg, 25 kg.

SHELF LIFE

Can be kept for minimum 12 months in the original unopened pails in dry places and at temperatures of 5-25 °C. Once a pail has been opened, use as soon as possible.

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PRECAUTIONS

Contains volatile flammable solvents. Apply in well-ventilated, no smoking areas, away from naked flames. In closed spaces use ventilators and carbon active masks. Keep in mind that solvents are heavier than air so they creep on the floor. The MSDS (Material Safety Data Sheet) is available on request.

CLASSIFICATION ACCORDING TO EOTA (EUROPEAN ORGANISATION OF TECHNICAL APPROVAL) & BBA (BRITISH BOARD OF AGRÉMENT)

REQUIREMENT	**Protect-proof 1K PU**	**Protect-proof 1K PU + Protect-proof Sealing 1K PU**
Minimum expected working life	W3 (25 years)	W2 (10 years)
Climatic zone	S (Severe)	
User load	P1	P3
Roof slope	S1-S4	
Minimum surface temperature	TL3 (-20 °C)	
Maximum surface temperature	TH4 (90 °C)	
Exposure to external fire	Broof (t1,t4)	
Reaction to fire	Class E	

TECHNICAL SPECIFICATIONS

The product in liquid form (before application):

PROPERTY	**UNITS**	**METHOD**	**SPECIFICATION**
Viscosity (BROOKFIELD)	cP	ASTM D2196-86, @ 25 °C	3000-6000
Specific weight	gr/cm^3	ASTM D1475 / DIN 53217 / ISO 2811, @ 20°C	1,35-1,45
Flash point	°C	ASTM D93, closed cup	42
Tack free time, @ 77 °F (25 °C) & 55% RH	hours	-	4
Recoat time	hours	-	6-24

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The cured membrane:

PROPERTY	UNITS	METHOD	SPECIFICATION
Service temperature	°C	-	-40 to 90
Max. temperature short time (shock)	°C	-	200
Hardness	Shore A	ASTM D2240 / DIN 53505 / ISO R868	60
Tensile strength at break @ 23 °C	Kg/cm^2 (N/mm^2)	ASTM D412 / EN-ISO-527-3	>80 (>8)
Percent elongation @ 23 °C	%	ASTM D412 / EN-ISO-527-3	> 500
Water vapor transmission	$gr/m^2.hr$	ASTM E96 (Water Method)	0.8
Adhesion to concrete	Kg/cm^2 (N/mm^2)	ASTM D4541	> 20 (> 2)
QUV Accelerated Weathering Test (4hr UV, @ 60 °C (UVB-Lamps) & 4hr COND @ 50 °C)	-	ASTM G53	passed (2000 hours)
Hydrolysis (8% KOH, 15 days @ 50°C)	-	-	no significant elastomeric property change
Hydrolysis (H_2O, 14-day cycle RT-100 °C)	-	-	no significant elastomeric property change
Hydrolysis (H_2O, 30-day cycle 60-100 °C)	-	-	no significant elastomeric property change
HCL (PH=2, 10 days @ RT)	-	-	no significant elastomeric property change
Thermal resistance (100 days @ 80 °C)	-	EOTA TR011	passed

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