Neoproof® PU W

Water-based aliphatic polyurethane waterproofing coating for exposed roofs

Description

Water-based aliphatic polyurethane elastomeric waterproofing coating for roofs, when mechanical durability and outstanding waterproofing properties are required. It forms an impermeable to moisture film, with resistance to UV and mechanical stress.

Classified in the highest *category **W3*** as a reinforced system, in accordance with EAD 030350-00-0402, with an expected ***service life of 25 years*** (ETA 25-0091). The system has been tested under *severe* climate conditions, across *all surface slope categories*, and under *extremely adverse low and high surface temperature* conditions defined by the standard.

Packing

13kg & 4kg

Colours

WHITE	RAL 7040

**RAL 7040: available only in 13kg*

Fields of application

- Exposed roofs made of concrete, cement tiles, cementitious screeds
- Walkable roofs where high resistance to ponding water is required
- Metallic surfaces
- On top of new or old waterproofing coatings
- Over PU foam insulation for its protection
- On top of mineral bitumen membranes

*The above surfaces require appropriate preparation and priming prior to the application of **Neoproof® PU W**.*

Properties - Advantages

- High elongation and mechanical strength
- Excellent resistance to ponding water
- Certified cool roofing properties (for the white colour shade)
- Ideal waterproofing solution for walkable roofs
- Long-lasting resistance to UV radiation & adverse weather conditions
- Remains elastic in a broad range of temperatures from -15°C to +80°C
- No signs of blisters or craters on the surface, during the curing phase
- Increased hardness and crack-bridging properties

- Also applicable under cloudy weather conditions
- Eco-friendly & user-friendly (water-based, one-component)
- Long service life secured

Certificates – Test reports

- Certification according to the European Assessment Document EAD 030350-00-0402 (Liquid Applied Roof Waterproofing Kits)
  European Technical Assessment ETA 24/1246 by the approved Technical Assessment Body Instituto de Ciencias de la Construcción Eduardo Torroja (IETcc), member of EOTA
- CE Certification acc. to EN 1504-2
  Certificate of Conformity No. 1922-CPR-0386
- Certified cool roofing material by the University of Athens
  Evaluation of the optical properties conducted by the National and Kapodistrian University of Athens – Physics Dept.
- Test report by the external independent quality control laboratory Geoterra (No. 2015-397)
- Analysis report by the National Technical University of Athens (NTUA) – School of Chemical Engineering
- Fulfils the requirement LEED v4.1: SS Credit – Heat Island Reduction - Option 1 – High Reflectance Roof, Initial SRI ≥ 82
- Complies with the V.O.C. content requirements acc. to the E.U. Directive 2004/42/CE

Certified by:
UNIVERSITY OF ATHENS

Technical characteristics	
Density (EN ISO 2811-1)	1,35kg/L (±0,05)
Elongation at break (ASTM D412)	480% (±20)
Tensile strength at max. load (ASTM D412)	2,28MPa (±0,16)
Tensile strength at break (reinforced with Neotextile®, ASTM D412)	>5MPa
Adhesion strength (EN 1542)	>2,5N/mm²
Hardness Shore A (ASTM D2240)	68
Liquid water permeability (EN 1062-3)	<0,1kg/m²h^{0,5}
Permeability to CO_2 – Diffusion-equivalent air-layer thickness Sd (EN 1062-6)	>50m
Water vapour permeability – Diffusion-equivalent air-layer thickness Sd (EN ISO 7783)	0,6m (Class I – permeable)
Resistance to UV ageing in the presence of moisture (EAD 030350-00-0402)	S, W3 -25 years, I4 (5.000 hours)
Resistance to dynamic indentation (EAD 030350-00-0402)	I4 (-20°C)

Resistance to fatigue movement (EAD 030350-00-0402)	1000 cycles at -10°C (W3 – 25 years)
Service temperature	-15°C min. / +80°C max.
Total Reflectance SR% (ASTM E903-12, ASTM G159-98)	84% (white)
Infrared Emittance (ASTM C1371-04a)	0,89 (white)
Solar Reflectance Index SRI (ASTM E1980-01)	106 (white)
Consumption: 1-1,2kg/m^2 for two layers (cementitious surface)	

Categorization based on EAD 030350-00-0402

Neoproof® PU W has been tested as a waterproofing system according to European Assessment Document EAD 030350-00-0402. It has successfully passed the stringent tests of the standard for non-compressible substrates (concrete/steel), under demanding conditions simulating *severe climate*, *all surface slope categories*, and under *extremely adverse low and high surface temperature conditions* defined by the standard.
It is classified in the highest category **W3** of EAD 030350-00-0402, *with an expected service life of 25 years*.

Neoproof® PU W – ETA 25/0091
Substrate: Concrete - Steel
Neoproof® PU W System (≥2,5kg/m^2) reinforced with **Neotextile®**

Service life	Category **W3** (expected service life 25 years)[1]
Climatic zone	Category **S** (severe)[2]
Roof slope	Categories **S1-S4** (slopes <5% up to >30%)
User load	Category **P3** (normal): TH1 (+30°C) - TH2 (+60°C) Category **P2** (moderate): TH3 (+80°C) - TH4 (+90°C)
Lowest surface temperature	Category **TL4** (-30°C)
Highest surface temperature	Category **TH4** (+90°C)

[1] *Table of categorization for expected working life acc. to EAD 030350-00-0402*

Category	Expected working life
W1	5 years
W2	10 years
W3	25 years

[2] *Table of categorization for climatic zones acc. to EAD 030350-00-0402*

Category	Annual radiant exposure on horizontal surface	Average temperature of the warmest month per year
M (Moderate)	<5GJ/m^2	<22°C
S (Severe)	≥5GJ/m2 and/or	≥22°C

[3] *Table of categorization for user load acc. to EAD 030350-00-0402*

Category	User load	Examples of accessibility
P1	Low	Non accessible
P2	Moderate	Accessible for maintenance of the roof only
P3	Normal	Accessible for maintenance of plant and equipment and to pedestrian traffic
P4	Special - High	Roof gardens, inverted roofs, green roofs

Application conditions

Substrate moisture content	<4%
Relative air humidity (RH)	<80%
Application temperature (ambient - substrate)	+10°C min. / +40°C max.

Curing details

Drying time (+25°C, RH 50%)	2-3 hours (initially)
Dry to recoat (+25°C, RH 50%)	24 hours
Full hardening	~ 7 days
** Low temperatures and high humidity during application and/or curing prolong the above times, while high temperatures reduce them*	

Appropriate primers on usual substrates

Substrate	Primer	Description - Details
Concrete, cement screed	**Neoproof® PU Primer**	Hybrid, water-based, fast-drying micro-structured primer
	Revinex® (diluted with water 1:4)	Water-based primer of high adhesion on cementitious substrates
	Acqua Primer NP	Water-based epoxy primer
	Silatex® Primer	Acrylic solvent-based primer, with high penetrating ability
	Vinyfix® Primer	Solvent-based primer based on vinyl resins, ideal for stabilizing brittle substrates
Bitumen membrane with mineral slates	**Revinex®** (diluted with water 1:4)	Water-based primer, suitable for stabilizing bitumen membranes with mineral slates, offering an ideal bridge of adhesion
Metal (iron, steel)	**Neotex® Metal Primer**	Water-based, one-component anti-corrosive primer, with excellent adhesion on old or new metal surfaces
Inox, galvanized steel, aluminium	**Neotex® Inox Primer**	One-component water-based primer, with high adhesion strength on glossy non-porous substrates

Instructions for use

Substrate preparation

The surface must be stable, clean, dry, protected from rising moisture and free of dust, oil, grease and loose materials. Any poorly adhering materials and older coatings should be removed, and the surface should be thoroughly cleaned mechanically or chemically. Depending on the substrate, appropriate mechanical preparation may be required, to smooth the irregularities, open the pores and create the optimum conditions for adhesion. The surfaces should have the appropriate slopes and they should be sufficiently flat, smooth, and continuous (i.e., without holes, cracks, bays, etc.). In the opposite case, they should be treated accordingly (e.g. by proper puttying).

Priming

Prior to the application of **Neoproof® PU W**, the proper **NEOTEX®** primer should be applied, depending on the substrate (see table). In the case of cementitious substrates, it is proposed to apply the hybrid, water-based primer **Neoproof® PU Primer**. Alternatively, it is recommended to apply **Revinex®** diluted with water in a ratio **Revinex®**: water - 1:4 or one of the solvent-based primers **Silatex® Primer** or **Vinyfix® Primer**.

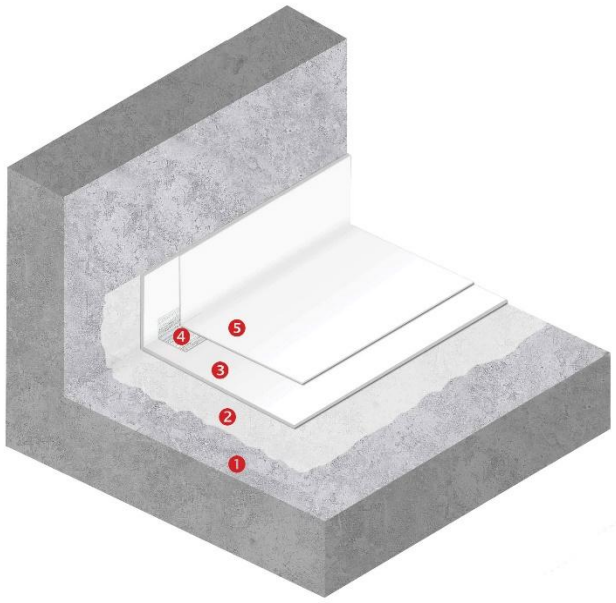
Application

Following the priming of the surface, **Neoproof® PU W** is applied, after thorough stirring, in at least two layers by roller, brush or airless spray. The first layer is diluted 5% with clean water, while the second layer (and every subsequent one) follows after app. 24 hours, applied undiluted. Every layer of **Neoproof® PU W** should be applied in a vertical or different direction than the previous one.

Along the upstands-floor intersections (as well as in all other corners), in construction details (such as around and inside roof drains), along the joints, as well as when covering cracks, it is advisable that **Neoproof® PU W** is locally applied in advance, reinforced with the specially designed non-woven polyester fabric **Neotextile®** of 50gr/m^2 weight (“wet-on-wet” application of two layers with the fabric positioned in between).

In cases of projects with higher demand in terms of mechanical resistance and crack bridging, it is recommended that **Neoproof® PU W** is thoroughly reinforced with the non-woven polyester fabric **Neotextile®** in the whole application surface.

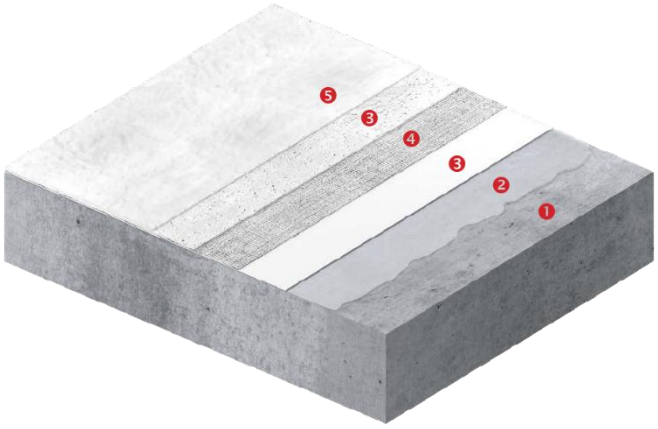
Indicative systems build-up



EXPOSED ROOF WATERPROOFING ON CEMENTITIOUS SUBSTRATE

1. Cementitious substrate
2. *Primer:* **Neoproof® PU Primer**
   *(or alternative appropriate **NEOTEX®** primer)*
3. *Waterproofing base coat:*
   Neoproof® PU W (diluted 5% with water)
4. *Corner reinforcement:* **Neotextile® tape**
5. *Waterproofing topcoat:*
   Neoproof® PU W (without dilution)

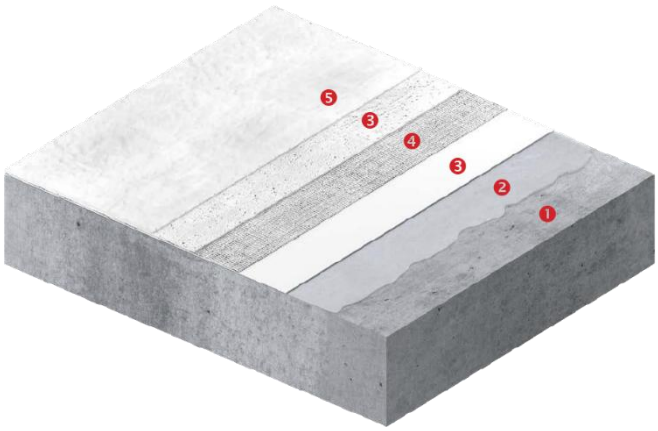
*Consumption of **Neoproof® PU W**: 1-1,2kg/m²*



REINFORCED WATERPROOFING SYSTEM FOR EXPOSED WALKABLE ROOFS

1. Cementitious substrate
2. *Primer:* **Neoproof® PU Primer** *(or alternative appropriate **NEOTEX®** primer)*
3. *Waterproofing base coats:*
   Neoproof® PU W (diluted 5% with water)
   "Wet-on-wet" application of two layers with the fabric positioned in between
4. *Polyester reinforcement*: **Neotextile®**
5. *Waterproofing topcoat:*
   Neoproof® PU W (without dilution)

*Consumption of **Neoproof® PU W**: 2-2,5kg/m²*



REINFORCED WATERPROOFING SYSTEM FOR EXPOSED ROOFS WITH ESTIMATED SERVICE LIFE OF 25 YEARS, BASED ON 030350-00-0402
(ETA 25-0091)

1. Cementitious substrate
2. *Primer:* **Neoproof® PU Primer** or **Revinex®** diluted with water (ratio 1:4)
3. *Waterproofing base coats:*
   Neoproof® PU W (diluted 5% with water)
   "Wet-on-wet" application of two layers with the fabric positioned in between
4. *Polyester reinforcement*: **Neotextile®**
5. *Waterproofing topcoat(s):*
   Neoproof® PU W (without dilution)

*Consumption of **Neoproof® PU W**: ≥2,5kg/m²*

Special notes

- **Neoproof® PU W** should not be applied under wet conditions, or if wet conditions or rainy weather are expected to prevail during the application or the curing period of the product
- Substrate temperature during application and curing must be at least 3°C above dew point to avoid condensation issues
- The application is continued sufficiently in the vertical surfaces of the roof (min. 30cm), in order to form a uniform waterproofing membrane. It is recommended in any case to cover the upstands entirely and to continue the waterproofing application in their horizontal sections.
- The durability of the waterproofing system is enhanced by the increase of the total dry film thickness, which may be achieved through the application of an additional layer or layers.
- In areas with an increased likelihood of stagnant water remaining for an extended period of time, **Neoproof® PU W** is recommended to be reinforced with the polyester fabric **Neotextile®**. In such case at least 3 coats of **Neoproof® PU W** are required locally. In any case though, it is deemed necessary that appropriate slopes are created in advance to facilitate the smooth flow of water away from the roof.
- In case of new cement screed and soon after its laying, it is recommended to create suitable joints (per 15-20m² of surface area and at a depth approximately equal to ¾ of the thickness of the cement screed), which shall then be properly sealed (eg with closed-cell PE foam cord and **Neotex® PU Joint** after proper priming of their sides). It is also necessary to create expansion joints around the perimeter, as above, and with a minimum width of 1cm. Any existing joints of the concrete slab should be transferred to the new substrate.

Maintenance instructions

- The total hardening of the film occurs app. 7 days after the application of the final layer, depending also on the atmospheric conditions. During this period, it is advisable that the access to the application area is prohibited or limited only to specialized personnel.
- It is recommended to annually inspect the coating for any damage caused by accidental impact or misuse
- In case of need for local repairs, **Neoproof® PU W** is re-applied in its original dry film thickness at the minimum, after cleaning and priming (if necessary) the affected area. Where appropriate, it is recommended that the non-woven polyester fabric **Neotextile®** is used as a reinforcement.
- Periodic cleaning by water-jetting is advisable (combined with a neutral washing agent, if needed), especially in case of heavy accumulation of dirt, dust and pollutants on the surface

Appearance	Viscous liquid
Colours	White, Grey RAL 7040 Also available in other shades upon request
Packing	13kg and 4kg (only in white) in plastic pails
Cleaning of tools – Stains removal	By water immediately after application. In case of hardened stains, by mechanical means
Volatile organic compounds (V.O.C.)	V.O.C. limit acc. to the E.U. Directive 2004/42/CE for this product of category AcWB: 40g/l (Limit 1.1.2010) - V.O.C. content of the ready-to-use product <40g/l
UFI code	3C90-E0GP-9003-X994
Versions	**Neoproof® PU Fiber**, fiber-reinforced waterproofing coating **Neoproof® PU W -40**, with resistance to extremely low temperatures down to -40°C **Neoproof® PU360**, for non-exposed surfaces
Storage stability	2 years, stored in its original sealed packing, protected from frost, humidity and exposure to sunlight

CE

1922

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1922-CPR-0386

DoP No.: 4950-07

EN 1504-2

Neoproof® PU W

Surface protection products

Coating

Water vapour permeability	Class I
Adhesion strength	≥1.5N/mm^2
Capillary absorption and permeability to water	W<0.1Kg/m^{2}h$^{0.5}$
Permeability to CO_2	S_D>50m
Reaction to fire	Euroclass F
Dangerous substances	Complies with 5.3

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ETA 25/0091

EAD 030350-00-0402

DoP No.: 4951-09

Neoproof® PU W

External fire performance (EN 13501-5)	NPA
Fire reaction (EN 13501-1)	NPA
Resistance to water vapour	μ=1724
Watertightness	Pass
Resistance to wind loads	≥50kPa
Resistance to mechanical damage	P2-P3
Expected working life	W3 (25 years)
Climatic zone	S (Severe)
Roof slopes	S1-S4
Minimum surface temperature	TL3 (-20°C)
Maximum surface temperature	TH4 (90°C)-TH1 (30°C)
Resistance to ageing media (heat and water)	W3
Resistance to UV radiation in the presence of moisture	W3, S (*severe*), 5000 ώρες
Resistance to Plant Roots	NPA
Slipperiness	NPA
Content, emission and/or release of dangerous substances	NPA

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