

Neoproof® Polyurea

Pure aliphatic cold-applied polyurea
waterproofing coating, with ultra-long service life



Description

Two-component, brushable elastomeric, pure aliphatic polyaspartic polyurea waterproofing coating, for the protection of exposed roofs. It exhibits outstanding UV stability, impeccable water uptake resistance and very high mechanical properties, thus protecting the substrate for ultra-long time periods.

Fields of application

- Exposed roofs made of concrete, cement tiles, cementitious screeds
- Rooftops where extremely high resistance to ponding water is required
- Metallic surfaces
- Directly over new or old liquid waterproofing membranes
- Over PU foam insulation for its protection
- On top of bitumen membranes
- On top of single-ply PVC and TPO membranes
- As a topcoat over hot spray-applied aromatic polyurea

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

Properties - Advantages

- Extreme resistance to UV radiation (*pure aliphatic*)
- Certified cool roofing properties (for the white colour shade)
- Impeccable water uptake resistance (zero absorption)
- Outstanding mechanical properties - ideal for walkable roofs
- Exceptional adhesion on various substrates
- Remains elastic in a broad range of temperatures from -35°C to +80°C
- Blister-free final surface
- Resistant to early rain in 3 hours after its application
- Excellent crack-bridging properties
- Applicable by roller or airless spray
- Long pot life
- Compatible with other Neoproof® Polyurea coatings
- Ultra-long service life secured



Packing

Sets (A+B) of 21kg and 5,25kg

Colours

RAL 9003

Certificates – Test reports

- Certification according to the Guideline for European Technical Approval ETAG 005 (Liquid Applied Roof Waterproofing Kits)
European Technical Assessment ETA 18/0563 by the accredited body of technical assessment KIWA Nederland B.V. (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
Measurement report for the solar reflectance (SR) and infrared emittance conducted by the National and Kapodistrian University of Athens – Physics Dept.
- Test report by the external independent quality control laboratory Geoterra (No. 2020/190_7)
- 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:



Technical characteristics

Mixing ratio A:B (by weight)	13:8
Density (EN ISO 2811-1)	1,45kg/L (±0,1)
Elongation at break (ASTM D412)	420% (±30)
Tensile strength at break (ASTM D412)	11,1MPa (±0,5)
Tensile strength at break (reinforced with Neotextile® NP, ASTM D412)	>14MPa
Adhesion strength (EN 1542)	>3N/mm ²
Resistance to fatigue movement – multiple crack bridging (ETAG 005, TR 008)	1000 cycles at -10°C (W3 – 25 years)
Resistance to UV ageing (ETAG 005, TR 010)	S / W3 / I ₄
Hardness Shore A (ASTM D2240)	78
Hardness Shore D (ASTM D2240)	30
Liquid water permeability (EN 1062-3)	<0,1kg/m ² h ^{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)	7,9m (Class II)
Service temperature	-35°C min. / +80°C max.
Total Reflectance SR% (ASTM E903-96)	87% (white)
Infrared Emittance (ASTM E408-71)	0,85 (white)
Solar Reflectance Index SRI (ASTM E1980-01)	109 (white)
Consumption: 1-1,2kg/m² for two layers (cementitious surface)	

Categorization based on ETAG 005

Neoproof® Polyurea has been tested according to the European standard ETAG 005 and has passed successfully the most rigorous tests of the standard, with respect to, amongst others, severe weather conditions (category **S**) and the most adverse user load (category **P4**), *for a system without reinforcement*.

Even under such conditions, **Neoproof® Polyurea** is classified in the superior category **W3** of ETAG 005, *with expected working life of 25 years*.

Working life	Category W3 (expected working life 25 years) ¹
Climatic zones	Categories M & S (moderate & severe) ²
Roof slope	Categories S1-S4 (slopes <5% till >30%)
User load	Category P4 (heavy / special) ³
Lowest surface temperature	Category TL3 (-20°C)
Highest surface temperature	Category TH2 (+60°C)

¹ Table of categorization for expected working life acc. to ETAG 005

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

² Table of categorization for climatic zones acc. to ETAG 005

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/m ² and/or	≥22°C

³ Table of categorization for user load acc. to ETAG 005

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)	<85%
Application temperature (ambient - substrate)	+5°C min. / +35°C max.

Curing details

Pot life (RH 50%)**	+5°C	140 minutes
	+23°C	100 minutes
	+35°C	60 minutes
Drying time (RH 50%)	+5°C	10 hours
	+23°C	5 hours
	+35°C	3 hours
Dry to recoat (RH 50%)	+5°C	24 hours
	+23°C	18 hours
	+35°C	12 hours
Early rain resistance		3 hours
Full hardening		~7 days

* Low temperatures and low humidity during application and/or curing prolong the above times, while high temperatures and high humidity reduce them

** Due to the high viscosity of the mixture over time, for easier application it is recommended to take into account half the time of the one mentioned at the table

Appropriate primers on usual substrates

Substrate	Primer	Description - Details
Concrete, cement screed	Acqua Primer NP	Water-based epoxy primer (Application temperature: +12°C min. / +35°C max.)
	Epoxol® Primer	Solvent-based epoxy primer (Application temperature: +5°C min. / +35°C max.)
	Neodur® Fast Track PR	Fast-drying hybrid (polyurea-polyurethane) primer. Enables the application of the 1 st layer of the Neoproof® Polyurea system on the same day
	Neopox® Primer WS	Solvent-free epoxy primer for damp surfaces. Ideal for substrates with high moisture content (without ponding water or rising moisture)
Bitumen membranes	Neopox® Primer BM	Epoxy primer for applications on bitumen membranes with or without slates
Metal (iron, steel)	Neopox® Special Primer 1225	Anti-corrosive epoxy primers. Excellent adhesion on metal surfaces and anti-corrosive protection.
	Neopox® Primer 815	
Inox, galvanized steel, aluminium	Neotex® Inox Primer	One-component water-based primer, with high adhesion strength on glossy non-porous substrates
PVC membranes	-	Direct application after treating the surface with solvent Neotex® 1021
New PU foam insulation	-	Direct application without primer

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® Polyurea**, 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 water-based epoxy primer **Acqua Primer NP**. In that case, the application temperature must be higher than +12°C.

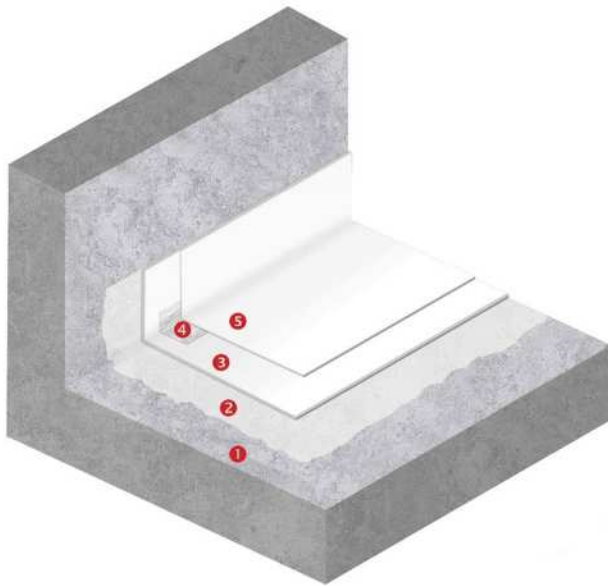
Application

Following the priming of the surface, **Neoproof® Polyurea** is applied undiluted in at least two layers by roller, brush or airless spray. Every layer should be applied in a vertical or different direction than the previous one.

Before mixing the two components, component A should be mechanically stirred thoroughly for app. 1 minute. Components A & B are then mixed at the predetermined ratio (13A:8B w/w) and stirred for app. 3 minutes with a low-speed electric stirrer until the mixture is homogeneous.

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® Polyurea** is locally applied in advance, reinforced with the specially designed non-woven polyester fabric **Neotextile® NP** of 100gr/m² weight ("wet-on-wet" application of two layers with the fabric positioned in between).

Indicative system build-up



EXPOSED ROOF WATERPROOFING ON CEMENTITIOUS SUBSTRATE

- ① Cementitious substrate
- ② *Primer: Acqua Primer NP*
- ③ *Waterproofing base coat:
Neoproof® Polyurea*
- ④ *Corner reinforcement: Neotextile® NP tape*
- ⑤ *Waterproofing topcoat:
Neoproof® Polyurea*

*Consumption of Neoproof® Polyurea: 1-1,2kg/m²
(for two layers)*

Special notes

- **Neoproof® Polyurea** 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
- The components should not have been stored at very low or very high temperatures, especially before mixing. Mixing and stirring of the mixture should be preferably done in the shade. The stirring of the mixture must be done mechanically and not manually with a rod, etc.
- Excessive stirring of the material should be avoided, in order to mitigate the risk of air entrapment. After stirring the mixture, it is recommended to apply the material shortly in order to avoid the development of high temperatures and potential hardening inside the can
- 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
- The consumption of each unreinforced layer of **Neoproof® Polyurea** should be lower than 1kg/m², in order to mitigate the risk of any solvent entrapments in the mass of the waterproofing membrane




- In cases of projects with higher demand in terms of mechanical resistance and crack bridging, it is recommended that **Neoproof® Polyurea** is thoroughly reinforced with the non-woven polyester fabric **Neotextile® NP** or the fiber glass reinforcement **Fiberglass Mat 225 P.B.** in the whole application surface
- For the release of any trapped water vapour of the substrate, it is recommended to apply air vents in the whole roof's surface per 20-25m²
- 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 $\frac{3}{4}$ 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® Polyurea** 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® NP** 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 RAL 9003 Available in other shades upon request
Packing	Sets (A+B) of 21kg and 5,25kg in metallic cans
Cleaning of tools – Stains removal	By Neotex® 1021 or Neotex® PU 0413 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 AjWB: 500g/l (Limit 1.1.2010) - V.O.C. content of the ready-to-use product <500g/l
UFI code	<i>Component A:</i> K390-WOEG-C00M-X8HX <i>Component B:</i> 8690-E03V-P003-MM40
Versions	Neoproof® Polyurea R , with high mechanical strength and remarkable resistance to early rain (only 1 hour after application) Neoproof® Polyurea H , hybrid polyurea – polyurethane system Neoproof® Polyurea C1 , high-build, applicable in a single coat when the substrate is flat and smooth Neoproof® Polyurea F , with certification for reaction to fire
Storage stability	<i>Component A:</i> 2 years, stored in its original sealed packing, protected from frost, humidity, and exposure to sunlight <i>Component B:</i> 1 year, stored in its original sealed packing, protected from frost, humidity, and exposure to sunlight

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1922-CPR-0386 DoP No.: 4950-68 EN 1504-2 Neoproof® Polyurea Surface protection products Coating	
Water vapour permeability	Class II
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

The information supplied in this datasheet, concerning the uses and the applications of the product, is based on the experience and knowledge of NEOTEX® SA. It is offered as a service to designers and contractors to help them find potential solutions. However, as a supplier, NEOTEX® SA does not control the actual use of the product and therefore cannot be held responsible for the results of its use. As a result of continual technical evolution, it is up to our clients to check with our technical department that this present data sheet has not been modified by a more recent edition.

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