

Neoproof® Polyurea C1

Innovative, high-build, cold-applied elastomeric polyurea waterproofing coating, ideal for exposed roofs



Description

Innovative, high-build, two-component brushable elastomeric polyaspartic polyurea waterproofing coating, ideal for exposed roofs. Even if applied in a single coat, it forms an impermeable to moisture film, with high resistance to UV radiation and mechanical stress. Ideal for the protection of new PU foam insulation.



Fields of application

- 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
- Protection of PU foam insulation
- 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 C1.

Packing

Sets (A+B) of 20kg and 5kg

Colour

WHITE

Properties - Advantages

- Applicable in a single coat, when the substrate is flat and smooth
- Very high mechanical properties – ideal solution for walkable roofs
- Excellent resistance to UV radiation
- Impeccable water uptake resistance
- Remains elastic in a broad range of temperatures from -35°C to +80°C
- Blister-free final surface
- Resistant to early rain in 2 hours after its application
- Excellent crack-bridging properties
- Applicable by roller or airless spray
- Long pot life
- Ultra-long service life secured

Certificates – Test reports

- CE Certification acc. to EN 1504-2
Certificate of Conformity No. 1922-CPR-0386
- Test reports by the external independent quality control laboratory Geoterra (No. 2015/283 & 2020/190_5)
- Complies with the V.O.C. content requirements acc. to the E.U. Directive 2004/42/CE

Technical characteristics	
Mixing ratio A:B (by weight)	13:7
Density (EN ISO 2811-1)	1,45kg/L (±0,1)
Elongation at break (ASTM D412)	410% (±30)
Tensile strength at break (ASTM D412)	9,8MPa (±0,4)
Adhesion strength (EN 1542)	>3N/mm ²
Hardness Shore A (ASTM D2240)	76
Hardness Shore D (ASTM D2240)	25
Liquid water permeability (EN 1062-3)	<0,01kg/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)	>5m (Class II)
Accelerated UV ageing in the presence of moisture (UVB-313, 4h UV @60°C + 4h condensation @50°C, ASTM G154)	Pass (>2000 hours)
Service temperature	-35°C min. / +80°C max.
Consumption: 0,65-0,75kg/m² in one layer (cementitious surface)	

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	120 minutes
	+23°C	90 minutes
	+35°C	50 minutes
Drying time (RH 50%)	+5°C	8 hours
	+23°C	4 hours
	+35°C	2 hours

Dry to recoat (RH 50%)	+5°C	24 hours
	+23°C	18 hours
	+35°C	10 hours
Early rain resistance		2 hours
Total hardening		~ 7 days
<p><i>* Low temperatures and low humidity during application and/or curing prolong the above times, while high temperatures and high humidity reduce them</i></p> <p><i>** 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</i></p>		

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® Primer 1K	Fast-drying one-component polyurethane primer. Enables the application of the 1 st layer of the Neoproof® Polyurea system on the same day
	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	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 C1**, the proper **NEOTEX®** primer should be applied, depending on the substrate. In the case of cementitious substrates, it is proposed to apply the water-based epoxy primer **Acqua Primer NP**. In that case, the surface temperature must be higher than +12°C. Alternatively, the fast-drying hybrid polyurea-polyurethane primer **Neodur® Fast Track PR** may be applied, which allows the application of the subsequent waterproofing layer of **Neoproof® Polyurea C1** in just 3 hours (+25°C, RH 50%).

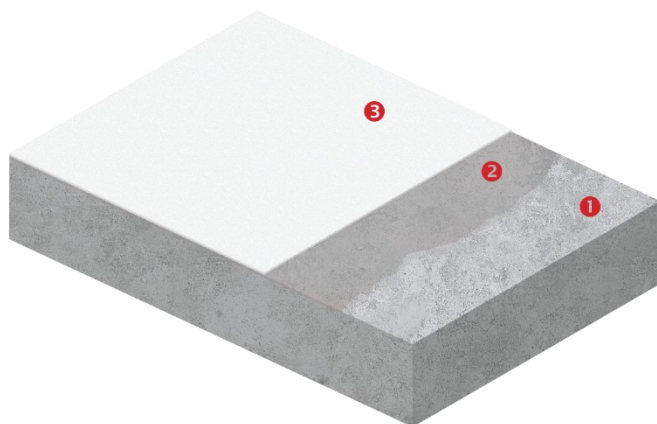
Application

Following the priming of the surface, **Neoproof® Polyurea C1** is applied undiluted in a single high-build layer (for a flat and smooth substrate) by roller, brush or airless spray. 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:7B w/w) and mechanically stirred for app. 3 minutes with a low-speed stirrer until the mixture is homogeneous.

If required, the second layer (and every potential subsequent one) 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® Polyurea C1** 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 systems build-up



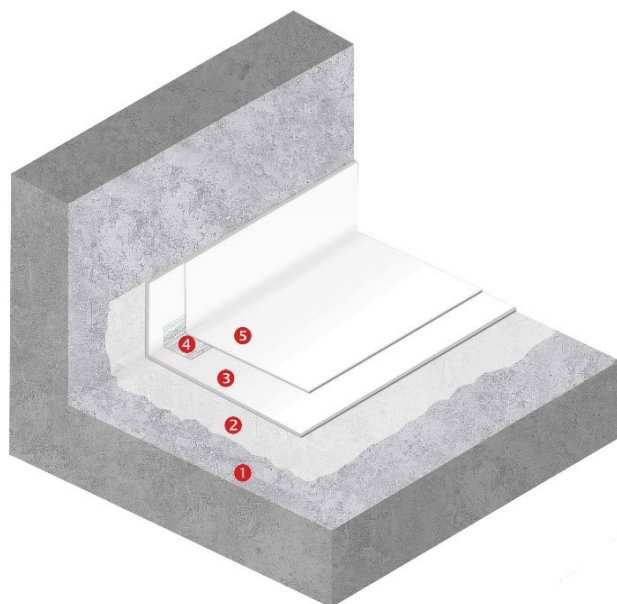
EXPOSED ROOF WATERPROOFING – SMOOTH CEMENTITIOUS SUBSTRATE

- 1 Cementitious substrate
- 2 **Primer: Neodur® Fast Track PR or Neodur® Primer 1K**
(for complete system application within one day)

Alternatively: **Acqua Primer NP** or another appropriate **NEOTEX®** primer

- 3 **Waterproofing layer:**
Neoproof® Polyurea C1

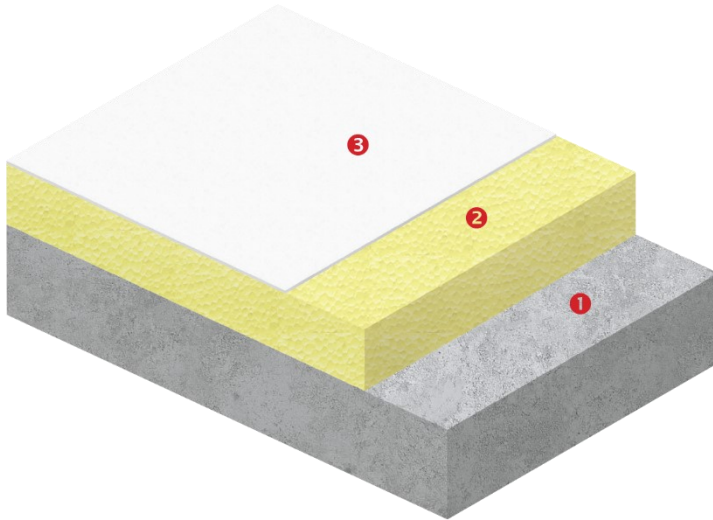
Consumption of **Neoproof® Polyurea C1**: min. 0,75kg/m²



ROOF WATERPROOFING – NON-SMOOTH CEMENTITIOUS SURFACE

- 1 Cementitious substrate
- 2 **Primer: Acqua Primer NP**
- 3 **Waterproofing base coat:**
Neoproof® Polyurea C1
- 4 **Corner reinforcement: Neotextile® NP tape**
- 5 **Waterproofing topcoat:**
Neoproof® Polyurea C1

Consumption of **Neoproof® Polyurea C1**: 1,2kg/m²



ROOF WATERPROOFING ON TOP OF PU FOAM INSULATION

- ① Cementitious substrate
- ② New PU foam insulation
- ③ *Waterproofing topcoat:*
Neoproof® Polyurea C1

*Consumption of Neoproof® Polyurea C1: min.
0,75kg/m²*

Special notes

- **Neoproof® Polyurea C1** 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 C1** 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 C1** 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 ¼ 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 C1** 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
Colour	White Available in other shades upon request
Packing	Sets (A+B) of 20kg and 5kg in metallic cans
Cleaning of tools – Stains removal	By Neotex® 1021 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> HK80-V093-H00N-Y71J <i>Component B:</i> 9P80-C0YG-U004-NJMM



Versions	<p>Neoproof® Polyurea, pure aliphatic polyurea waterproofing system, with ultra-long service life</p> <p>Neoproof® Polyurea R, with high mechanical strength and remarkable resistance to early rain (only 1 hour after application)</p> <p>Neoproof® Polyurea H, hybrid polyurea – polyurethane system</p> <p>Neoproof® Polyurea F, with certification for reaction to fire</p> <p>Neoproof® Polyurea AR, with resistance to root penetration</p>
Storage stability	<p><i>Component A</i>: 2 years, stored in its original sealed packing, protected from frost, humidity, and exposure to sunlight</p> <p><i>Component B</i>: 1 year, stored in its original sealed packing, protected from frost, humidity, and exposure to sunlight</p>

 1922	
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1922-CPR-0386 DoP No.: 4950-15 EN 1504-2 Neoproof® Polyurea C1 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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