Neoproof® Polyurea F

Cold-applied elastomeric polyurea waterproofing coating, with enhanced reaction to fire

Description

Two-component, brushable elastomeric polyaspartic polyurea with enhanced reaction to fire, ideal for the long-term protection of various surfaces.
It forms a blister-free and impermeable to moisture film, with high resistance to UV radiation and mechanical stress.
Certified for its reaction to fire (**Class E** acc. to **EN 13501-1**).
Creates a waterproofing system with certified high performance under external fire exposure (**B_{roof} (t1)** acc. to **EN 13501-5**)

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
- On top of bitumen membranes
- Non-exposed surfaces (e.g. under tiles)
- Underground exterior walls
- Protection of PU foam insulation

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

Packing

Set (A+B) of 19kg

Colour

RAL 9003

Properties - Advantages

- Very high mechanical properties – ideal solution for walkable roofs
- Excellent resistance to UV radiation
- Exceptional water uptake resistance
- Enhanced reaction to fire – delays the flame spread
- Certified high performance under external fire exposure
- Excellent 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 1 hour after its application

- Excellent crack-bridging properties
- Applicable by roller or airless spray
- Ultra-long service life secured

Certificates – Test reports

- CE certification acc. to EN 1504-2
  Certificate of Conformity No. 1922-CPR-0386
- Certification for reaction to fire acc. to EN 13501-1
  *Classified as **Class E** based on test report acc. to EN 13823 (No. 0885/DC/REA/17) by the independent accredited laboratory CSI S.p.A*
- Certified performance under external fire exposure acc. to EN 13501-5
  *System classification $\boldsymbol{B_{roof}}$ **(t1)** based on the classification report No. D/3/1/2022 acc. to EN 13501-5 and the test report No. 61/22/105/1/D-3/O_{ENV} of tests conducted acc. to CEN/TS 1187 by the external independent laboratory Łukasiewicz IMBiGS*
- Test report by the external independent quality control laboratory Geoterra (No. 2021/483_4)
- 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)	13:6
Density (EN ISO 2811-1)	1,45kg/L (±0,1)
Elongation at break (ASTM D412)	400% (±30)
Tensile strength at break (ASTM D412)	6,5MPa (±0,5)
Tensile strength at break (reinforced with Neotextile® NP, ASTM D412)	>9MPa
Adhesion strength (EN 1542)	>3N/mm²
Hardness Shore A (ASTM D2240)	73
Hardness Shore D (ASTM D2240)	22
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)	>5m (Class II)
Accelerated UV ageing in the presence of moisture (UVB-313, 4h UV @60°C + 4h condensation @50°C, ASTM G154)	Pass (>1000 hours)
Service temperature	-35°C min. / +80°C max.
Reaction to fire (EN 13501-1)	Class E

Exposure to external fire (EN 13501-5)	B_{roof} (t1)* *Classification report: *No. D/3/1/2022 - Łukasiewicz IMBiGS*
Consumption: 1-1,2kg/m² for two layers (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	100 minutes
	+23°C	80 minutes
	+35°C	45 minutes
Drying time (RH 50%)	+5°C	8 hours
	+23°C	3 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		1 hour
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 1st 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 F**, 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 surface temperature must be higher than +12°C.

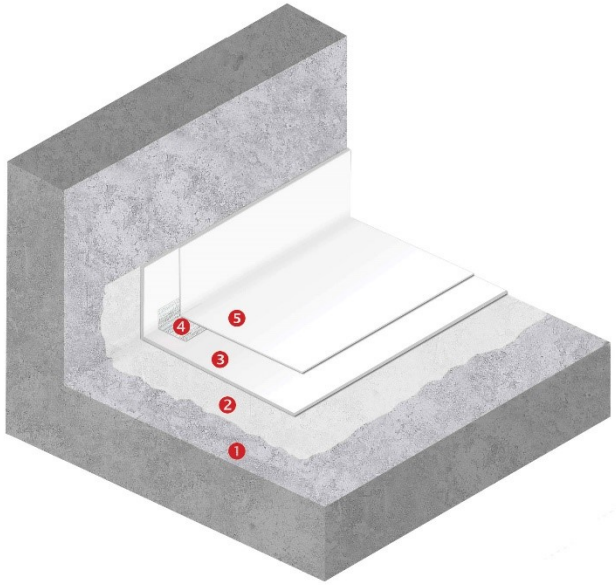
Application

Following the priming of the surface, **Neoproof® Polyurea F** 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:6B 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 F** is locally applied in advance, reinforced with the specially designed non-woven polyester fabric **Neotextile® NP** of 100gr/m^2 weight (“wet-on-wet” application of two layers with the fabric positioned in between).

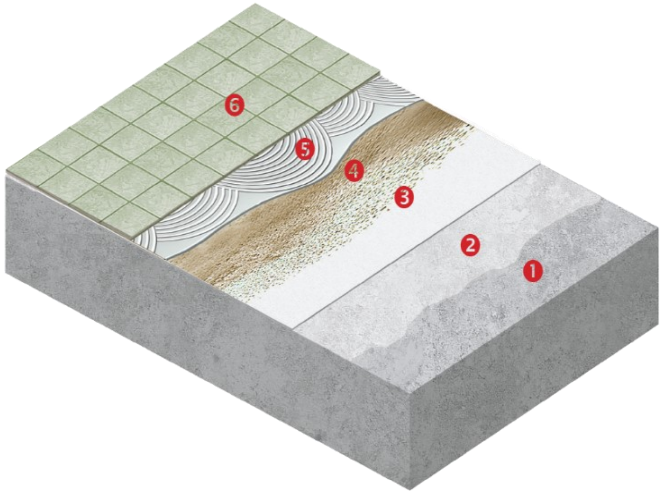
Indicative systems build-up



EXPOSED ROOF WATERPROOFING ON CEMENTITIOUS SUBSTRATE

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

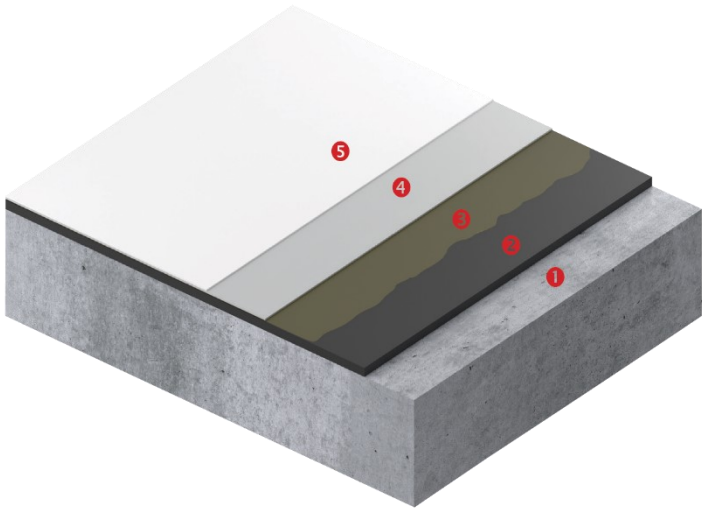
*Consumption of **Neoproof® Polyurea F**: 1-1,2kg/m² (for 2 layers)*



ROOF / TERRACE / BALCONY WATERPROOFING UNDER TILES

1. Cementitious substrate
2. *Primer:* **Acqua Primer NP**
3. *Waterproofing layers:* **Neoproof® Polyurea F** (min. 2 layers)
4. Quartz sand (broadcast)
5. Elastic tile adhesive
6. Tiles

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



ROOF WATERPROOFING
ON TOP OF BITUMEN MEMBRANE

1. Cementitious substrate
2. Smooth bitumen membrane
3. *Primer:* **Neopox® Primer BM**
4. *Waterproofing base coat:* **Neoproof® Polyurea F**
5. *Waterproofing topcoat:* **Neoproof® Polyurea F**

*Consumption of **Neoproof® Polyurea F**: 1,2-1,5kg/m² (for 2 layers)*

Special notes

- **Neoproof® Polyurea F** 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 F** 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 application under tiles, it is recommended to broadcast quartz sand during the application of the final layer of the product, while it is still fresh, in order to enhance the adhesion of the subsequent layer of the tile adhesive. After the hardening of **Neoproof® Polyurea F**, any loose grains should be removed with a high suction vacuum cleaner. It is advisable to use an elastic tile adhesive (indicative proposed type C2TE S1).
- In cases of projects with higher demand in terms of mechanical resistance and crack bridging, it is recommended that **Neoproof® Polyurea F** 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 20-25m^2
- In case of new cement screed and soon after its laying, it is recommended to create suitable joints (per 15-20m^2 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® Polyurea F** 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	Set (A+B) of 19kg 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 AjSB: 500g/l (Limit 1.1.2010) - V.O.C. content of the ready-to-use product <500g/l

UFI code	*Component A:* WS80-V0NW-400M-9W6P *Component B:* YU80-D0C9-F004-Y7SR
Versions	**Neoproof® Polyurea,** pure aliphatic polyurea waterproofing system, with ultra-long service life **Neoproof® Polyurea R**, with high mechanical strength an excellent resistance to early rain (only in 1 hour after the 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 AR**, with enhanced resistance to root penetration
Storage stability	*Component A:* 2 years, stored in its original sealed packing, protected from frost, humidity, and exposure to sunlight *Component B:* 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.: 4950-71 **EN 1504-2** **Neoproof® Polyurea F** 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 E
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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