Neoroof®

Hybrid elastomeric waterproofing coating for roofs with high solar reflectance & thermal emittance properties

Description

Hybrid (PU-acrylic) elastomeric waterproofing coating for roofs (UV-curable) with high solar reflectance and thermal emittance properties.

Remains elastic in very low temperatures, while it does not get tacky even under extremely high temperatures, retaining its whiteness over time.

Certified for its cool roofing properties even after the long-term UV ageing of the membrane (4.000h acc. to ISO 16474-3 – simulation of *15-year* exposure to UV radiation in real conditions)

Classified in the highest *category **W3*** as a reinforced system, according to EAD 030350-00-0402, with an ***expected service life of 25 years*** (ETA 24-1246) under *severe* climate conditions, suitable for *all surface slope* categories and for *the most adverse low and high surface temperature conditions* defined by the standard.

Packing

13kg, 4kg & 1kg

Colour

WHITE

Fields of application

- Roofs made of concrete, cement tiles, cementitious screeds
- Rooftops where increased resistance to ponding water is required
- Metallic surfaces
- On top of new or old waterproofing coatings
- On top of mineral bitumen membranes
- Next to and under photovoltaic panels, enhancing their efficiency
- Thermal-insulating polyurethane panels and polycarbonate panels
- Over old roofing made of asbestos

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

Properties - Advantages

- Certified cool roofing properties
- Very high dirt pick-up resistance, prevents the deposit of dust and pollutants

on the cured membrane
- Retains the whiteness of the membrane and its high energy saving properties
- Does not get tacky even under extremely high temperatures
- Long-lasting resistance to UV radiation & adverse weather conditions
- Remains elastic in a broad range of temperatures from -35°C to +80°C
- Suitable for walkable roofs
- Increased resistance to ponding water
- Water vapour permeable, allows the roof to "breathe"
- Eco-friendly & user-friendly (water-based, one-component)
- Economical solution, also due its high spreading rate

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.
- Certified cool roofing material by the Center for Renewable Energy Sources
  Reflectance test report by the Center for Renewable Energy Sources (CRES) - Energy Measurement Laboratory
- Certified cool roofing properties of the membrane after 4.000h of accelerated UV ageing acc. to ISO 16474-3 by the National Center for Scientific Research "Demokritos"
  Reflectance and emissivity report by the Advanced Ceramics & Composites laboratory of the research center NCSR "Demokritos"
- Energy studies conducted by the National and Kapodistrian University of Athens - Physics Dept.
  - *Calculation of the energy saving achieved in residencies with the combined use of **Neoroof®** and **Silatex® Reflect** of **NEOTEX®***
  - *Calculation of the energy saving achieved in residencies with the combined use of **Neoroof®**, **Silatex® Reflect** and **N-Thermon® 9mm** of **NEOTEX®***
- Test reports by the external independent quality control laboratory Geoterra (No. 2015-397, No. 2020-190_1)
- 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

ΚΑΠΕ
CRES

Certified by:
NCSR DEMOKRITOS

Technical characteristics	
Density (EN ISO 2811-1)	1,35kg/L (±0,05)
Elongation at break (ASTM D412)	300% (±20)
Tensile strength at break (ASTM D412)	2MPa (±0,3)
Tensile strength at break (reinforced with Neotextile®, ASTM D412)	>5MPa
Adhesion strength (EN 1542)	>1,5N/mm²
Hardness Shore A (ASTM D2240)	44
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)	0,5m (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 (-30°C)
Resistance to fatigue movement (EAD 030350-00-0402)	1000 cycles at -10°C (W3 – 25 years)
Service temperature	-35°C min. / +80°C max.
Reflectance (ASTM E903-96, ASTM G159-98)	91,8% (visible: 400-750nm)
Total Reflectance SR% (ASTM E903-96, ASTM G159-98)	88%
Infrared Emittance (ASTM E408-71)	0,86
Solar Reflectance Index SRI (ASTM E1980)	111
Total Reflectance SR% (ASTM C1549, after 4.000h of accelerated UV ageing* acc. to ISO 16474-3)	75,4%
Infrared Emittance (ASTM E408, after 4.000h of accelerated UV ageing* acc. to ISO 16474-3)	0,97
Solar Reflectance Index SRI (ASTM E1980-11, after 4.000h of accelerated UV ageing* acc. to ISO 16474-3)	94
** UVA-340, 4h UV @60°C + 4h condensation @50°C*	
Consumption: · 700g/m² for two layers (cementitious surface) · 1-1,25kg/m² for two layers (mineral bitumen membrane)	

Categorization based on EAD 030350-00-0402

Neoroof® 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 the *most 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*.

Neoroof® – ETA 24/1246 Substrate: Concrete - Steel **Neoroof® 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 **P1** (low)[3]
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	<6%
Relative air humidity (RH)	<80%
Application temperature (ambient - substrate)	+12°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 **Neoroof®**, the proper **NEOTEX®** primer should be applied, depending on the substrate. 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**.

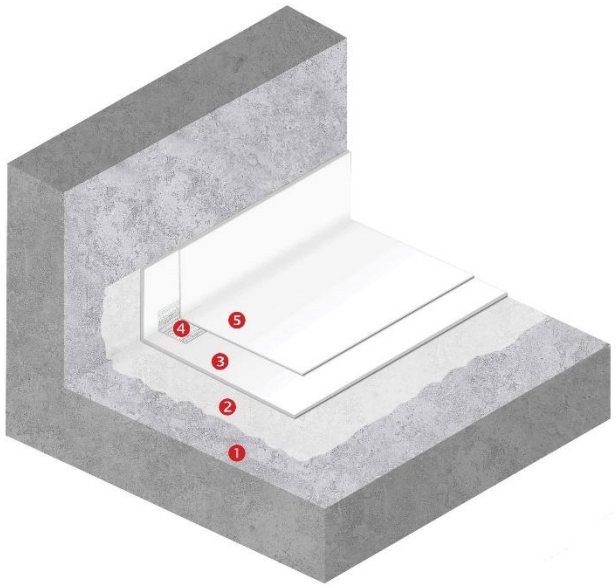
Application

Following the priming of the surface, **Neoroof®** 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 **Neoroof®** 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 **Neoroof®** 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 **Neoroof®** is thoroughly reinforced with the non-woven polyester fabric **Neotextile®** in the whole application surface.

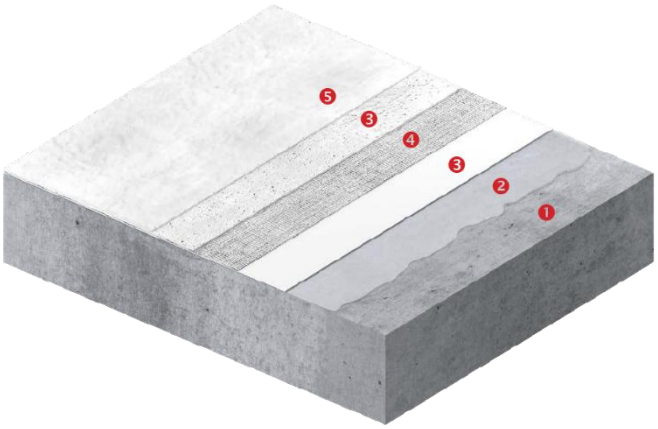
Indicative systems build-up



EXPOSED ROOF WATERPROOFING ON CEMENTITIOUS SUBSTRATE

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

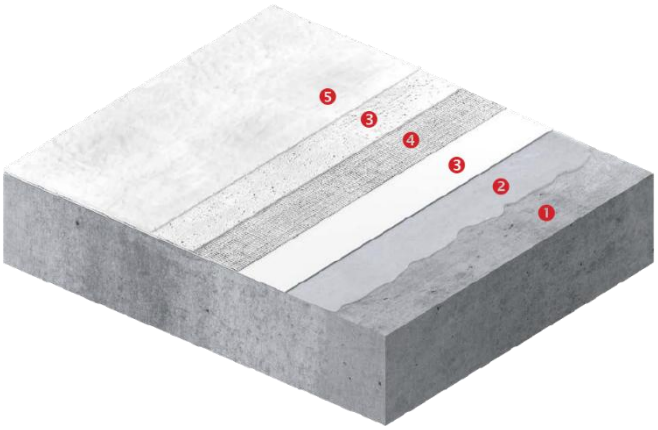
*Consumption of **Neoroof®**: 0,7kg/m^2 for two layers*



REINFORCED WATERPROOFING SYSTEM FOR EXPOSED WALKABLE ROOFS

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

*Consumption of **Neoroof®**: 1,5-1,8kg/m²*



REINFORCED WATERPROOFING SYSTEM FOR EXPOSED ROOFS WITH SERVICE LIFE OF 25 YEARS, BASED ON 030350-00-0402 *(ETA 24-1246)*

1. Cementitious substrate
2. *Primer:* **Neoproof® PU Primer** or **Revinex®** diluted with water (ratio 1:4)
3. *Waterproofing base coats:*
   Neoroof® (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):*
   Neoroof® (without dilution)

*Consumption of **Neoroof®**: ≥2,5kg/m²*

Special notes

- **Neoroof®** 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
- Applicable only on exterior surfaces exposed to UV radiation (not in interior/contained spaces). Not intended for application on surfaces that are not exposed to UV.
- Under conditions with no sunshine, the curing of the membrane takes more time and the surface remains tacky for longer time periods
- 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.
- In areas with an increased likelihood of stagnant water remaining for an extended period of time, **Neoroof®** is recommended to be reinforced with the polyester fabric **Neotextile®**. In such case at least 3 coats of **Neoroof®** 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 15-20m^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, **Neoroof®** 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 Available in other shades upon request
Packing	13kg, 4kg & 1kg 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	TM90-X0JV-600K-WA1A
Versions	**Neoroof® Nordic**, in terracotta shade **Neoroof® BM**, ideal for applications on mineral bitumen membranes
Storage stability	2 years, stored in its original sealed packing, protected from frost, humidity and exposure to sunlight

CE

1922

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GR 19600 Industrial Area Mandra, Athens, Greece

14

1922-CPR-0386

DoP No.: 4950-01

EN 1504-2

Neoroof®

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	Comply with 5.3

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25

ETA 24/1246

EAD 030350-00-0402

DoP No.: 4951-10

Neoroof®

External fire performance (EN 13501-5)	NPA
Fire reaction (EN 13501-1)	NPA
Resistance to water vapour	μ=1172
Watertightness	Pass
Resistance to wind loads	≥50kPa
Resistance to mechanical damage	P1
Expected working life	W3 (25 years)
Climatic zone	S (Severe)
Roof slopes	S1-S4
Minimum surface temperature	TL4 (-30°C)
Maximum surface temperature	TH4 (90°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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