Neodur® Special

Aliphatic polyurethane coating, with glossy appearance, for exterior flooring applications

CE

Description

Premium, two-component, solvent-based, glossy aliphatic polyurethane coating, for flooring applications in exterior or interior areas. Suitable also for a wide variety of complementary applications involving protection of surfaces, which are permanently or periodically under the influence of fresh water or sea water, of chemical solutions and their vapours, etc.

Fields of application

- Exterior or interior floors of industries, parking areas, warehouses, gas stations, etc.
- Warehouse ramps, car ramps
- Exterior or interior metallic surfaces

The surfaces require appropriate preparation and priming prior to the application of ***Neodur® Special****.*

Packing

Set (A+B) of 10kg, 5kg & 1kg*

**Available only in RAL 9003*

Colours

RAL 9003	RAL 7005
RAL 7035	RAL 7040

Properties - Advantages

- Remains unaffected by UV radiation and weather conditions, with exceptional resistance to yellowing - Contains UV filters
- Very high adhesion strength and resistance to abrasion & scratching
- Excellent resistance to chemicals and mechanical stress
- Broad range of service temperature
- Wide range of applications
- Also ideal for the creation of exterior anti-slip floors
- Highly durable, even under adverse conditions

Certificates – Test reports

- CE Certification acc. to EN 1504-2
  Certificate of Conformity No. 1922-CPR-0386
- Test report by the external independent quality control laboratory Geoterra (No. 2019-300)
- 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)	75:25
Density (EN ISO 2811-1)	1,30kg/L (±0,1)
Gloss (60°)	96
Abrasion resistance (Taber Test, CS 10/1000/1000, ASTM D4060)	58mg
Adhesion strength (EN 1542)	≥3N/mm²
Flexibility (ASTM D522, 180° bend, 1/8'' mandrel)	Pass
Scratch hardness (Sclerometer Test - Elcometer 3092)	14N
Skid resistance (EN 13036-4, wet surface, with 2,5% w/w addition of Neotex® Antiskid M)	34 (PTV – slider 55)
Skid resistance (EN 13036-4, wet surface, by broadcasting Quartz Sand M-32)	>40 (PTV – slider 55)
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)	>5m (Class II)
Resistance to temperatures (dry loading)	-30°C min. / +80°C max.
Consumption: 350g/m² for two layers (depending on the substrate)	

Application conditions

Substrate moisture content	<4%
Relative air humidity (RH)	<70%
Application temperature (ambient - substrate)	+12°C min. / +35°C max.

Curing details

Pot life (RH 50%)	+12°C	1 hour
	+25°C	45 minutes
	+30°C	30 minutes
Dry to recoat (RH 50%)	+12°C	30 hours
	+25°C	24 hours
	+30°C	18 hours
Full hardening		~ 7 days

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

Appropriate primers on cementitious substrate		
	Primer	**Description - Details**
Solvent-based	**Epoxol® Primer**	Two-component solvent-based epoxy primer
Solvent-free	**Epoxol® Primer SF**	Two-component, solvent-free epoxy primer for flooring applications
	Epoxol® Primer SF-P	Two-component, solvent-free epoxy primer, ideal in cases of substrates with increased porosity
	Neopox® Primer WS	Two-component, solvent-free epoxy primer for wet surfaces (without ponding water or rising moisture)
	Neopox® Primer AY	Two-component, solvent-free anti-osmotic epoxy primer, for floors with rising moisture
Water-based	**Acqua Primer**	Two-component, water-based epoxy primer
Appropriate primers on asphalt substrate		
Solvent-based	**Neodur® Primer 1K**	One-component, polyurethane fast-drying primer, ideal for asphalt substrate
Appropriate primers on metallic substrate (iron - steel)		
Solvent-based	**Neopox® Primer 815**	Two-component, anticorrosive solvent-based epoxy primers suitable for metallic surfaces
	Neopox® Special Primer 1225	
Appropriate primers on galvanized substrate - stainless steel		
Water-based	**Neotex® Inox Primer**	One-component, water-based primer, ideal for inox, aluminium, galvanized surfaces

Instructions for use

Substrate preparation

Concrete

The concrete must be min. Grade C20/25, with a tensile strength of ≥1,5MPa, and allowed to cure for at least 28 days, taking all the necessary maintenance measures during its curing period. The cementitious substrate must be properly prepared mechanically (e.g. grinding, shot blasting, milling etc.) to smooth out the irregularities, achieve an open texture surface and ensure the optimum bonding.

The surface must be dry and protected from rising moisture, stable, clean and free of dust, grease, oil, etc. Loose friable material must be fully removed by brushing or sanding with a suitable machine and a high suction vacuum cleaner.

The surface must be as smooth and flat as possible, as well as continuous (ie without voids, cracks etc.)

Repairs to the substrate, filling of joints, blowholes/voids and surface leveling must be carried out using appropriate repairing products, such as the pourable epoxy-cement mortar **Epoxol® CM** and the epoxy putty **Epoxol® Putty**, or/and a mixture of **Epoxol® Primer SF-P** and Quartz Sand M-32 (indicative mixing ratio 1:1-2 w/w), after proper priming.

Metallic surfaces (iron – steel)
The metallic surfaces must be properly prepared by sandblasting or sanding with a wire brush and should be dry, free of dust, dirt, greasy and oily substances, as well as any poorly adhering coatings. In rusty areas, it is recommended to locally apply the chemical rust converter **Neodur® Metalforce.** New metallic surfaces should be degreased with solvent **Neotex® 1021**.

Priming
For the stabilization of the substrate and sealing of pores, as well as for creating the optimum conditions for stronger adhesion and higher coverage of the subsequent polyurethane coating, it is recommended to apply the solvent-based epoxy **Epoxol® Primer** or an alternative appropriate **NEOTEX®** primer (see table), depending on the substrate. In cases of substrates with increased porosity, an additional priming layer may be required.

Application
Smooth polyurethane coating
Once the primer is dry to overcoat, it is recommended to apply the first layer of **Neodur® Special** diluted 10% w/w with solvent **Neotex® PU 0413**, by roller, brush or airless spray. The second layer is applied in the same way ~24 hours after the application of the first one (depending also on the atmospheric conditions), diluted 5-10% w/w with solvent **Neotex® PU 0413**. For any additional layers, **Neodur® Special** shall be diluted 5% w/w with solvent **Neotex® PU 0413**.

The two components A & B are mixed in the predetermined ratio (75A : 25B w/w) and, after the addition of the solvent, they are stirred for app. 3-5 minutes with a low-speed electric stirrer. It is important to stir thoroughly at the bottom of the container, as well as near the sides, so that the hardener (component B) is evenly distributed.
The mixture is left for a short time period in the container (~1-2 minutes) and then applied. Prior to mixing, mechanical stirring of component A is recommended.

Consumption **Neodur® Special:** 0,35kg/m^2 in two layers

*Anti-slip polyurethane coating with addition of **Neotex® Antiskid M***
Once the primer is dry to overcoat, **Neodur® Special** is applied as mentioned above by roller, brush or airless spray. During the mixing process of **Neodur® Special** prior to the application of the final layer of the system, the anti-slip additive **Neotex® Antiskid M** is included in the mixture at a ratio of 1,5-2,5% w/w. Then, the mixture is stirred again with a low-speed electric stirrer for ~1 minute and **Neodur® Special** is applied on the surface by roller or brush.

Consumption **Neodur® Special:** 0,35kg/m^2 in two layers

Anti-slip polyurethane coating with broadcast of Quartz Sand M-32
After the priming and the application of the first layer of **Neodur® Special** (diluted 10% w/w with solvent **Neotex® PU 0413**), it is recommended to broadcast Quartz Sand M-32 until saturation on the still fresh layer of **Neodur® Special**, with an estimated sand consumption of 2-3kg/m^2. After drying, any loose grains should be removed with a high suction vacuum cleaner and any surface irregularities should be sanded down.

The surface is then sealed with **Neodur® Special**, diluted 5-10% w/w with solvent **Neotex® PU 0413**, applied in 1 or 2 layers, depending on the desired slip resistance.

Indicative consumption of **Neodur® Special: ~**0,40-0,50kg/m^2 in two or three layers

Special notes

- **Neodur® Special** 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
- The substrate temperature must be at least 3°C above dew point to reduce the risk of condensation or blooming on the floor finish
- In case that an extended period of time (>36 hours) has passed between successive layers, it is recommended to lightly sand the surface of the previous layer, in order to avoid possible adhesion problems of the next layer
- Depending on the desired slip resistance, quartz broadcast may be done by using quartz sand of greater granulometry (e.g. 0,4-0,8mm). In such case, the number of sealing layers and total consumption may increase

Maintenance instructions

- In case of minor spills and stains, it is recommended to remove them as soon as possible by using a soft cloth along with warm clean water (temperature <+60°C)
- For the maintenance cleaning of the surface from dust and dirt, it is recommended to use a vacuum cleaner or a soft bristle broom. The use of hard brushes or wires to remove the stains should be avoided
- For cleaning the surface from hardened stains, it is recommended to use a hard foam mop with a solution of water and ammonia (~3% dilution). Then, rinse off with clean warm water (temperature <+60°C) and dry the surface with a soft towel
- In case of using commercial cleaning products, the use of neutral ones is recommended (pH between 7 and 10). Soaps or all-purpose cleaners containing water-soluble salts or harmful ingredients with high concentration in alkalis or acids should be avoided. Follow the manufacturer's recommendations with respect to the optimum dilution with water. In any case, the first time a commercial cleaning product is used, it is recommended that a trial is made in a small surface area

Chemical resistance table

Chemical substances (% content)	Contact time with chemicals (+20°C)		
	1 hour	5 hours	24 hours
Phosphoric acid (10%)	A	A	A
Sulphuric acid (10%)	A	A	A
Hydrochloric acid (10%)	A	A	A
Lactic acid (10%)	A	A	A
Nitric acid (10%)	B	B	B
Caustic soda (10%)	A	B	B
Formaldehyde (10%)	A	A	A
Ammonia (10%)	A	A	A
Chlorine (5%)	A	A	A
Chlorine (13%)	A	A	A
Hydrogen peroxide (50%)	A	A	A
Diesel	A	A	A
Gasoline	A	A	A
Xylene	A	A	A
M.E.K	A	A	A
Alcohol 95^0	A	A	A
Saltwater 15%	A	A	A
Engine oil	A	A	A
Wine (red)	A	A	A

Evaluation of the resistance
A: Exceptional resistance
B: Good resistance (light discoloration)
C: Limited resistance (intense discoloration)
D: Not recommended

Appearance (cured)	Glossy
Colours	White RAL 9003, Light Grey RAL 7035, Grey RAL 7040, Dark Grey RAL 7005 Available in other shades also upon special arrangement
Packing	Set (A+B) of 10kg, 5kg and 1kg* in metallic containers **Set (A+B) of 1kg available only in RAL 9003*
Cleaning of tools – Stains removal	By **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:* C850-40CM-K00A-6WA1 *Component B:* 4A50-N020-V00U-U7W3
Versions	**Neodur® Special Mat**, aliphatic polyurethane coating, with mat appearance, for interior and exterior flooring applications
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

CE

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DoP No.: 4950-38

EN 1504-2

Neodur® Special

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

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