

Neodur® Polyurea

Transparent aliphatic polyurea system, ideal for the creation of decorative stone carpets, for exterior applications

Description

Two-component, transparent aliphatic polyurea system, ideal for the creation of decorative stone carpets for exterior applications, by adding quartz sand etc. Offers high mechanical resistance and presents long-term UV resistance, without yellowing



Packing

Sets (A+B) of 17kg

Fields of application

- Exterior decorative floors and stairs in shops, hotels etc.
- Swimming pools (perimeter or/and internally)
- Sidewalks and outdoor areas
- Terraces and yards

Properties - Advantages

- Long-lasting resistance to UV radiation, without yellowing even after several years
- Very high compressive and flexural strength, as well as abrasion resistance
- Excellent adhesion on various substrates
- Developed for the creation of highly durable decorative exterior floors

Technical characteristics

Mixing ratio A:B (by weight)	10:7
Density (EN ISO 2811-1)	1,11kg/L (±0,05)
Solids content by weight	~100%
Solids content by volume	~100%
Hardness Shore D (ASTM D2240)	60 (pure resin)
Accelerated UV ageing in the presence of moisture (UVB-313, 4h UV @60°C + 4h condensation @50°C, ASTM G154)	Pass (>6000 hours)
Resistance to temperatures (dry loading)	-30°C min. / +80°C max.

Consumption: 0,7kg/m² Neodur® Polyurea + 9kg/m² coloured quartz sand (e.g. NQS grey) 0,6-1,2mm (indicative for stone carpet of thickness 5mm)

Application conditions

Substrate moisture content	<4%
Relative air humidity (RH)	<60%
Application temperature (ambient - substrate)	+10°C min. / +30°C max.

Curing details

Pot life (+25°C, RH 50%)	25 minutes
Initial hardening (+25°C, RH 50%)	18 hours
Full hardening (+25°C, RH 50%)	~7 days

** Low temperatures during application and/or curing prolong the above times, while high temperatures and high humidity reduce them. Especially when the application conditions (atmospheric humidity and temperature) approach the maximum permissible limits, the pot life of the material is significantly reduced. For this reason, it is recommended to avoid application in such conditions, in order to ensure sufficient laying time for the mixture.*

Appropriate primers for horizontal cementitious substrate

	Primer	Description - Details
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
Solvent-based	Epoxol® Primer	Two-component, solvent-based epoxy primer

Instructions for use

Substrate preparation

Concrete

The concrete must be min. Grade C20/25, with a tensile strength of $\geq 1,5\text{MPa}$, 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**, after

proper priming. Depending on the substrate conditions, smoothing may be achieved during the application of the stone carpet of **Neodur[®] Polyurea**.

Priming

Horizontal surfaces

For the stabilization of the substrate, sealing of pores, as well as for improving the adhesion on the subsequent stone carpet, it is recommended to apply **Acqua 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.

In order to ensure the adhesion of the stone carpet that follows, especially in case it is applied more than 24 hours after the application of the primer, it is recommended to sparsely broadcast Quartz Sand M-32 (0,1-0,3mm, average grain size 0.26mm) on the still fresh layer of the primer, with an estimated sand consumption of 0,3-0,5kg/m². After drying, any loose grains should be removed with a high suction vacuum cleaner.

Vertical surfaces (for laying stone carpet of grain size up to 1,2mm)

It is recommended to apply **Neodur[®] Polyurea** as a primer, provided that the stone carpet will soon be applied on the vertical surface (in ~20 minutes after priming, depending on the conditions) and while the primer remains tacky.

For small vertical surfaces (e.g. stairs), **Neodur[®] Polyurea M** may be alternatively used as a primer, provided that the stone carpet will be applied even sooner on the vertical surface (in ~5-10 minutes after priming, depending on the conditions) and while the primer remains tacky.

Application

Once the primer is dry to overcoat, it is recommended to apply the resin mortar of **Neodur[®] Polyurea** mixed with quartz sand (e.g. NQS grey 0,6-1,2mm) in a ratio of 1:11 to 1:13 w/w, depending on the grain size of the aggregates and the desired layer thickness. For quartz sand of grain size 0,6-1,2mm, the recommended layer thickness of the stone carpet is 5mm.

The two components A & B are mixed in the predetermined ratio (10A : 7B w/w) and they are stirred for app. 3 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 is evenly distributed. The quartz sand is then gradually added in the proposed ratio, under continuous stirring until the mixture becomes homogeneous.

The resin mortar is, then, poured and applied in one layer on the surface, spreading and pressing it on the substrate by a smooth metal trowel. For the correct and easy application of the stone carpet, it is recommended to use the special non-stick agent **Mineral Oil Light** during the laying, which improves the sliding ability of the trowel, after previously wetting the trowel with it. As soon as the trowel begins to become sticky during the application, it is required to re-use **Mineral Oil Light**.

Special notes

- **Neodur® Polyurea** should not be applied under wet conditions, or if wet conditions 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
- Depending on the application and after the initial hardening of the stone carpet, it is recommended to apply a sealing layer with the aliphatic polyurea varnish **Neodur® Polyurea S**, applied undiluted in one layer by smooth trowel or squeegee, in order to protect the stone carpet from water absorption, further enhance its wear resistance and facilitate the easier washing of the surface.

Maintenance instructions for stone carpets

- It is highly recommended to avoid washing the surface (even with water) if at least 7 days have not passed from the application of the stone carpet
- High pressure water jetting should be avoided. If necessary, use water under small pressure.
- 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 removal of dirt or dust, a soft broom or a vacuum cleaner should be used
- 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
- It is recommended to regularly use automatic floor cleaning machines with rotating brushes, especially in cases of commercial floors/high traffic

Appearance	Transparent
Packing	Sets (A+B) of 17kg in metal 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 AjSB "Two-Pack reactive performance coatings": 500g/l (Limit 1.1.2010). V.O.C. content of the ready to use product <500g/l.
UFI code	<i>Component A:</i> PT40-KOWN-100V-V6DQ <i>Component B:</i> JOFO-R0S3-T00T-NQRM
Storage stability	1 year, stored in its original sealed packing, protected from frost, humidity and exposure to sunlight

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HEADQUARTERS - PLANT
V. Moira str., Xiropigado
LOGISTICS SALES & CENTER
Loutsas str., Voro

P.O. Box 2315, GR 19600
Industrial Area Mandra
Athens, Greece
T. +30 210 5557579

NORTHERN GREECE BRANCH
Ionias str., GR 57009
Kalochori, Thessaloniki, Greece
T. +30 2310 467275