

## Neodur® Floor SF

**Tough-elastic solvent-free polyurethane self-leveling system**



### Description

High-strength two-component, tough-elastic solvent-free polyurethane system, for the creation of interior self-leveling floors

Qualified for use in **LEED** projects globally, by showing compliance with the specifications for VOC emissions and VOC content.

Certified excellent reaction to fire (**Class B<sub>fl</sub>-s1**) acc. to **EN 13501-1**.

Suitable for the food industry – Complies with the overall migration limits *for all types of food* acc. to the Commission Regulation (EU) No 10/2011 on plastic materials and articles intended to come into contact with food.



### Fields of application

On interior floors which require very high mechanical and chemical resistance and/or elasticity of the top coating e.g. in:

- Factories, laboratories, and warehouses
- Parking and service garages (especially above the ground floor)
- Food facilities, especially in refrigerating rooms where the floor is subjected to temperature fluctuations

*The surfaces require appropriate preparation and priming prior to the application of Neodur® Floor SF*

### Packing

Set (A+B) of 10kg

### Colour

RAL 7040

### Properties - Advantages

- Tough-elastic properties – Combines high elasticity and final surface hardness with excellent resistance to mechanical and chemical stress
- Very high impact and abrasion resistance
- Remarkable hardness and durability
- Excellent crack-bridging properties
- High chemical resistance – Durable against alkalis and dilute acids, petroleum products, sea water and many solvents
- Excellent self-levelling properties
- Tested and evaluated for its suitability in food facilities
- Complies with the strict VOC requirements for sustainable buildings, according to **LEED** guidelines

- Certified high performance in terms of reaction to fire (Class **B<sub>f</sub>-s1** acc. to **EN 13501-1**)
- Provides a smooth final surface that is easily cleaned
- Excellent adhesion on concrete substrate
- Broad service temperature range
- Ideal solution for floors that are subjected to extremely low temperatures or temperature fluctuations
- Also applicable mixed with quartz sand for the creation of self-levelling coatings of high thickness (up to 3mm)
- Suitable for the creation of highly anti-slip interior floors (with intermediate quartz broadcast)
- Classified as SR-AR0,5-B2,0-IR10 according to EN 13813

## Certificates – Test reports

- CE Certification acc. to EN 1504-2  
*Certificate of Conformity No. 1922-CPR-0386*
- CE Certification acc. to EN 13813  
*Classified as a synthetic resin screed material SR-AR0,5-B2,0-IR10*
- Qualified for use in LEED projects globally, by showing compliance with the specifications for VOC emissions and VOC content, as attested by the external independent specialized laboratory of Eurofins - Fulfills the requirement LEED v4 & v4.1 (beta): EQ Credit - Low-Emitting Materials
  - *Attestation LEED v4 and v4.1 (beta): EQ Credit - Low-Emitting Materials*
  - *VOC Emission Test report No. 392-2024-00059003 – Regulation: CDPH (California Department of Public Health) v.1.2-2017*
  - *VOC Content Test report No. 392-2024-00059004 – Regulation: SCAQMD (South Coast Air Quality Management District) Rule 1113 (2016)*
- Complies with the French regulation regarding indoor VOC emissions
  - *Attestation French VOC Regulation*
  - *VOC Emission Test report No. 392-2024-00059003 – French VOC Regulation: Decree of March 2011 and Arrête of April 2011 and French CMR components: Regulation of April and May 2009*
- Certified for its high performance in terms of reaction to fire acc. to EN 13501-1  
*Classified as B<sub>f</sub>-s1 based on classification report No. 1480\DC\REA\24\_9 acc. to EN 13501-1 and individual test reports acc. to EN ISO 9239-1 and EN ISO 11925-2 (No. 1480\DC\REA\24\_7 & 8) by the independent accredited laboratory CSI S.p.A*
- Tested and evaluated for its suitability in food facilities – Complies with the overall migration limits for all types of food acc. to Table 3 of Annex III-Part 4 of the Commission Regulation (EU) No 10/2011 on plastic materials and articles intended to come into contact with food.  
*Test report for the overall migration into food simulants A-B-D2 acc. to EN 1186-2, EN 1186-3 and EN 1186-9, by the external independent specialized laboratory of TÜV AUSTRIA Food Allergens Labs (Certificate No. 5012-GR01056282-24-08)*



- Test reports by the external independent quality control laboratory Geoterra (No. 2023/702\_3A & 3B)
- Test report for the determination of wear resistance by the Aristotle University of Thessaloniki – Civil Engineering Dept.
- 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)	82:18
Density A+B (EN ISO 2811-1)	1,35kg/L (±0,1)
Solids content by weight	~98%
Solids content by volume	~97%
Gloss (60°)	~90
Elongation at break (ASTM D412)	90% (±10)
Tensile strength at break (ASTM D412)	13MPa (±1)
Adhesion strength (EN 1542)	≥2,5N/mm <sup>2</sup>
Abrasion resistance (Taber Test, CS 10/1000/1000, ASTM D4060)	<ul style="list-style-type: none"> <li>• 47mg (without quartz sand)</li> <li>• 54mg (mixed with quartz sand in a ratio 1:0,5 w/w)</li> </ul>
Hardness Shore D (ASTM D2240)	<ul style="list-style-type: none"> <li>• 42 (without quartz sand)</li> <li>• 50 (mixed with quartz sand in a ratio 1:0,5 w/w)</li> </ul>
Crack-bridging properties: Max. width of crack bridged (EN 1062-7 – Method A)	1,88mm - Class A4 (23,5°C)
Impact resistance (EN ISO 6272)	≥10Nm – IR10
Scratch hardness (Sclerometer Test - Elcometer 3092)	<ul style="list-style-type: none"> <li>• 7N (without quartz sand)</li> <li>• 8N (mixed with quartz sand in a ratio 1:0,5 w/w)</li> </ul>
Wear resistance BCA (EN 13892-4)	5µm (AR0,5)
Skid resistance (EN 13036-4, wet surface, by broadcasting Quartz Sand M-32)	>50 (PTV – slider 96)
Liquid water permeability (EN 1062-3)	<0,02kg/m <sup>2</sup> h <sup>0,5</sup>
Permeability to CO <sub>2</sub> – 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)	-40°C min. / +80°C max.
Reaction to fire (EN 13501-1)	Class B <sub>fi</sub> -s1* *Classification report: No. 1480\DC\REA\24_9 - CSI S.p.A.
<b>Consumption:</b> • ~1,35kg/m <sup>2</sup> per mm of thickness (without quartz sand) in one layer of 1-1,5mm thickness • ~1,0kg/m <sup>2</sup> Neodur® Floor SF + ~0,5kg/m <sup>2</sup> Quartz Sand M-32 per mm of thickness in one layer of 1,5-3mm thickness	

### Application conditions

Substrate moisture content	<4%
Relative air humidity (RH)	<75%
Application temperature (ambient - substrate)	+8°C min. / +35°C max.

### Curing details

Pot life (+25°C, RH 50%)	18 minutes
Drying time (+25°C, RH 50%)	7 hours
Dry to recoat (+25°C, RH 50%)	24 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 concrete substrate

	Primer	Description - Details
Solvent-free	<b>Epoxol® Primer SF</b>	Two-component, solvent-free epoxy primer for flooring applications
	<b>Epoxol® Primer SF-P</b>	Two-component, solvent-free epoxy primer, ideal in cases of substrates with increased porosity
	<b>Neopox® Primer WS</b>	Two-component, solvent-free epoxy primer for wet surfaces (without ponding water or rising moisture)
	<b>Neopox® Primer AY</b>	Two-component, solvent-free anti-osmotic epoxy primer, for floors with rising moisture
Water-based	<b>Acqua Primer</b>	Two-component water-based epoxy primer
Solvent-based	<b>Epoxol® Primer</b>	Two-component solvent-based epoxy primer

### Instructions for use

#### Substrate preparation

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-textured surface and ensure optimum adhesion.

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 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.

### **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 system, it is recommended to apply the solvent-free epoxy **Epoxol® Primer SF-P** 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 self-leveling polyurethane system 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/m<sup>2</sup>. After drying, any loose grains should be removed with a high suction vacuum cleaner.

After the primer has dried, any further existing surface imperfections (holes, cracks) may be repaired locally using **Epoxol® Putty** in a ratio 2A:1B or 1A:1B w/w, depending on application conditions.

### **Application**

#### *Smooth self-levelling system*

Once the primer is dry to overcoat, **Neodur® Floor SF** is applied by notched trowel, either as a tough-elastic self-levelling coating *without quartz sand in the mixture* in one layer of 1-1,5mm thickness or *mixed with Quartz Sand M-32* in a ratio of 1:0,5-0,7 w/w and in a layer of 1,5-3mm thickness.

Prior to mixing, mechanical stirring of component A for ~1 minute is recommended. This is followed by the addition of component B into component A in the predetermined ratio (100A : 22B w/w) and mechanical stirring of the two components for app. 3 minutes with a low-speed stirrer. It is important to stir thoroughly both near the sides and at the bottom of the container, so that the hardener (component B) is evenly distributed. If quartz sand is to be added, the mixture is left for app. 1-2 minutes and Quartz Sand M-32 is then gradually added under continuous stirring, until the mixture becomes homogenous.

During the application of the self-leveling coating on the floor, the thorough use of a special spiked roller is essential, in order to release any trapped air and create a smooth coating of uniform thickness without bubbles and with an even distribution of sand in its mass. During this procedure, the use of spiked shoes is also required.

Consumption (per mm of thickness): a) ~1,35kg/m<sup>2</sup> per mm of thickness (without quartz sand), b) ~1,0kg/m<sup>2</sup> **Neodur® Floor SF** + 0,5kg/m<sup>2</sup> Quartz Sand M-32 for a mixing ratio of 1:0,5 w/w

#### *Anti-slip self-levelling system*

Once the above-mentioned system has been applied, Quartz Sand M-32 or Quartz sand 0,4-0,8mm is broadcasted in excess (until saturation) on the still fresh layer of the self-leveling coating of **Neodur® Floor SF**, with an estimated sand consumption of 4-5kg/m<sup>2</sup>. After drying, any loose grains should be removed with a high suction vacuum cleaner and any surface irregularities should be sanded down.

Following the above procedure, and specifically after 24-36 hours, depending on the prevailing atmospheric conditions, it is proposed to apply **Neodur® Floor SF** as a sealing layer, by roller or squeegee in 1 or 2 layers. Prior to its application, the mixing instructions are followed as described above, but without the addition of quartz sand into the mixture.

Consumption of **Neodur® Floor SF** as a sealing layer: a) ~0,35kg/m<sup>2</sup> for broadcast with Quartz Sand M-32, b) ~0,5kg/m<sup>2</sup> for broadcast with Quartz sand 0,4-0,8mm



## Special notes

- **Neodur® Floor SF** 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.
- Due to the nature of the material, the direct and constant exposure of the final coating to UV radiation may cause the phenomenon of chalking over time. For this reason, it is not recommended for exposed applications outdoors. In general, a gradual change in the shade may occur over time. Such change especially depends on the levels of the UV radiation and the thermal loading of the area. Not recommended to be applied as a top coating in white (or near-white) colour shades due to the expected considerable colour change over time.
- 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.
- After the application of the system, it is recommended that the floor's expansion joints are sealed with the elastomeric polyurethane sealant **Neotex® PU Joint** or with the epoxy repairing material **Epoxol® Putty** in its elastic version (mixing ratio 1A : 2-2,5B w/w).

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## 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
- 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
Phosphoric acid (20%)	A	A	A
Phosphoric acid (50%)	A	A	A
Sulphuric acid (10%)	A	A	A
Sulphuric acid (20%)	A	A	A
Sulphuric acid (50%)	A	B	B
Sulphuric acid (80%)	C	C	C
Hydrochloric acid (10%)	A	A	B
Hydrochloric acid (20%)	A	B	B
Lactic acid (10%)	A	A	A
Lactic acid (20%)	A	A	C
Lactic acid (30%)	A	A	A
Nitric acid (10%)	A	B	C
Nitric acid (20%)	B	C	D
Sodium hydroxide (10%)	A	A	A
Sodium hydroxide (20%)	A	A	A
Formaldehyde (10%)	A	A	A
Ammonia (10%)	A	A	B
Ammonia (20%)	A	A	B
Chlorine (5%)	A	A	B
Hydrogen peroxide (50%)	B	B	B
Diesel	A	A	A
Gasoline unleaded	A	A	A
Xylene	A	A	A
M.E.K	A	A	A
Alcohol 95°	A	A	A
Saltwater 15%	A	A	A
Engine oil	A	A	A
Olive oil (virgin)	A	A	A
Wine (red)	A	A	A

### Evaluation of resistance

A: Excellent resistance


B: Good resistance (light discoloration)


C: Reduced resistance (intense discoloration)

D: Not recommended

<b>Appearance (cured)</b>	Glossy
<b>Colours</b>	Grey RAL 7040 Available in other shades upon request
<b>Packing</b>	Set (A+B) of 10kg in plastic containers
<b>Cleaning of tools – Stains removal</b>	By <b>Neotex® 1021</b> immediately after application. In case of hardened stains, by mechanical means
<b>Volatile organic compounds (V.O.C.)</b>	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
<b>UFI code</b>	<i>Component A:</i> EUM0-50Q3-N00F-NXD0 <i>Component B:</i> CXM0-P0DG-X00Y-98Y2
<b>Storage stability</b>	1 year, stored in its original sealed packing, protected from frost, humidity and exposure to sunlight



	
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<p>DoP No.: 4951-06</p> <p><b>EN 13813 SR-AR0,5-B2,0-IR10</b></p> <p><b>Neodur® Floor SF</b></p> <p>Synthetic Resin screed material for use internally in buildings</p>	
Release of corrosive substances	SR
Wear resistance	AR0,5
Impact resistance	IR10
Bond strength	B2,0
Reaction to fire	Bfl-s1

	
1922	
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24	
<p>1922-CPR-0386</p> <p>DoP No.: 4951-05</p> <p><b>EN 1504-2</b></p> <p><b>Neodur® Floor SF</b></p> <p>Surface protection products</p> <p>Coating</p>	
Water vapour permeability	Class II
Adhesion strength	$\geq 1,5\text{N/mm}^2$
Capillary absorption and permeability to water	$W < 0,1\text{Kg/m}^2\text{h}^{0.5}$
Permeability to CO <sub>2</sub>	$S_D > 50\text{m}$
Reaction to fire	Bfl-s1
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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