

## Epoxol® Floor S

**Solvent-free epoxy system, for the creation of highly durable self-leveling floors**



### Description

Two-component solvent-free epoxy system, suitable for the creation of highly durable self-leveling floors

### Fields of application

On interior floors which require very high mechanical and chemical resistance, e.g. in:

- Factories, laboratories, and warehouses
- Parking & car service garages
- Refrigerating rooms

*The surfaces require appropriate preparation and priming prior to the application of Epoxol® Floor S.*

### Properties - Advantages

- Very high mechanical and chemical resistance
- Excellent resistance to abrasion and impact
- Remarkable hardness and durability
- Excellent adhesion on concrete substrate
- Resistant to alkalis and dilute acids, petroleum products, sea water and many solvents
- Broad service temperature range
- Also ideal for the creation of ant-slip interior floors
- May also be applied as a high-build coating by roller
- Suitable also for mixing with quartz sand of various grain sizes for the creation of multi-purpose resin mortars
- Classified as SR-AR0,5-B2,0-IR4 according to EN 13813



### Packing

Set (A+B) of 13,5kg

### Colours

WHITE	RAL 1015	RAL 3009
RAL 7035	RAL 7040	

## Certificates – Test reports

- CE certification acc. to EN 13813  
*Classified as a synthetic resin screed material SR-AR0,5-B2,0-IR4*
- 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)	100:35
Density (EN ISO 2811-1)	1,30kg/L (±0,05)
Solids content by weight	~100%
Solids content by volume	~100%
Gloss (60°)	99
Abrasion resistance (Taber Test, CS 10/1000/1000, ASTM D4060)	60mg (mixed with Quartz sand M-32)
Adhesion strength (EN 13892-8)	≥2,5N/mm <sup>2</sup>
Hardness Shore D (ASTM D2240)	81
Impact resistance (EN ISO 6272)	≥4Nm
Scratch hardness (Sclerometer Test - Elcometer 3092)	8N
Compressive strength (EN 13892-2)	>45MPa
Wear resistance BCA (EN 13892-4)	17,5µm (AR0,5)
Skid resistance (EN 13036-4, wet surface, with sprinkling of Quartz Sand M-32)	>25 (PTV – slider 55)
Resistance to temperatures (dry loading)	-30°C min. / +100°C max.
<b>Consumption: 0,80kg/m<sup>2</sup> Epoxol® Floor S + 0,80kg/m<sup>2</sup> Quartz sand M-32 (per mm of thickness)</b>	

## 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	40 minutes
	+30°C	30 minutes
Dry to recoat - Walkability (RH 50%)	+12°C	36 hours
	+25°C	24 hours
	+30°C	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 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 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.

### **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 epoxy coating, 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 epoxy 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® Floor S** mixed with Quartz Sand M-32 (indicative mixing ratio 1:2 w/w). Alternatively, **Epoxol® Putty** may be used in a ratio 2A:1B or 1A:1B w/w, depending on application conditions.

### **Application**

#### *Smooth self-leveling system*

Once the primer is dry to overcoat, **Epoxol® Floor S** is applied mixed with Quartz Sand M-32 in a ratio of 1:0,8-1,2 w/w. The mixture is applied by notched trowel 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 (10A : 3,5B w/w) and mechanical stirring of the two components for app. 3-5 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. The mixture is then left for app. 1-2 minutes and Quartz Sand M-32 is then gradually added under continuous stirring, until the mixture becomes homogeneous.

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 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): 0,80kg/m<sup>2</sup> **Epoxol® Floor S** + 0,80kg/m<sup>2</sup> Quartz Sand M-32 for a mixing ratio of 1:1 w/w

#### *Anti-slip self-leveling system*

Once the above mentioned system has been applied, Quartz Sand M-32 or 0,4-0,8mm is broadcasted *until saturation* (in excess) on the still fresh layer of the self-leveling coating of **Epoxol® Floor S**, 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 **Epoxol® Floor S** 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 **Epoxol® Floor S** as sealing layer: a) ~0,40-0,45kg/m<sup>2</sup> in 1-2 layers, on top of Quartz Sand M-32 broadcast, b) ~0,60kg/m<sup>2</sup> in 2 layers by roller or 1 layer by squeegee, on top of Quartz Sand 0,4-0,8mm broadcast

*Smooth epoxy coating\**

Once the primer is dry to overcoat, **Epoxol® Floor S** is applied as an epoxy coating in min. two layers by roller. The second layer is applied ~24 hours after the application of the first one depending on the prevailing atmospheric conditions.

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 (10A : 3,5B w/w) and mechanical stirring of the two components for app. 3-5 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.

Consumption of **Epoxol® Floor S** as epoxy coating: 0,25-0,30kg/m<sup>2</sup> per layer by roller

Alternatively, **Epoxol® Floor S** is applied at an increased thickness per layer by trowel or squeegee, with a layer consumption of ~0,50-0,60kg/m<sup>2</sup>. In that case, it is advisable to periodically check the wet film thickness, in order to ensure a uniform application thickness, while the thorough use of a special spiked roller is also recommended.

*\* This application (either using a roller, trowel or squeegee) is not recommended when the material is in light shades (eg white, light beige), due to the reduced consumption in such case, which may lead to limited coverage of the substrate*

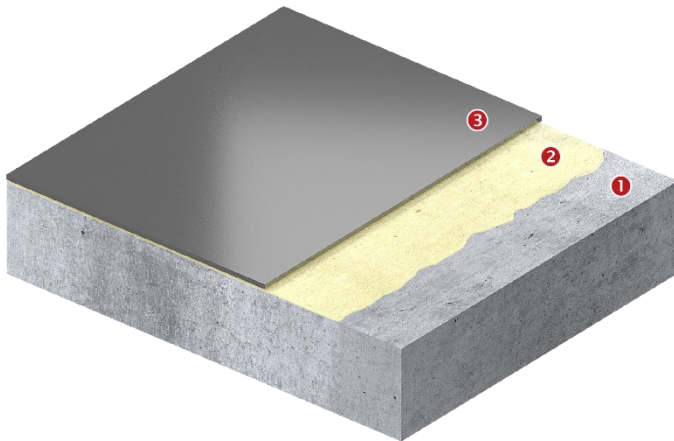
*Anti-slip epoxy coating*

After the priming and during the application of the first layer of **Epoxol® Floor S** as an epoxy coating, it is recommended to broadcast Quartz Sand M-32 or 0,4-0,8mm *until saturation* (in excess) on the still fresh layer of **Epoxol® Floor S**, with an estimated sand consumption of 3kg/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. The surface is then sealed with **Epoxol® Floor S**, applied by roller in 1 or 2 layers.

Consumption of **Epoxol® Floor S** as a sealing layer: a) 0,30-0,35kg/m<sup>2</sup> in 1 layer by roller, on top of Quartz Sand M-32 broadcast, b) ~0,50kg/m<sup>2</sup> in 1-2 layers by roller, on top of Quartz Sand 0,4-0,8mm broadcast



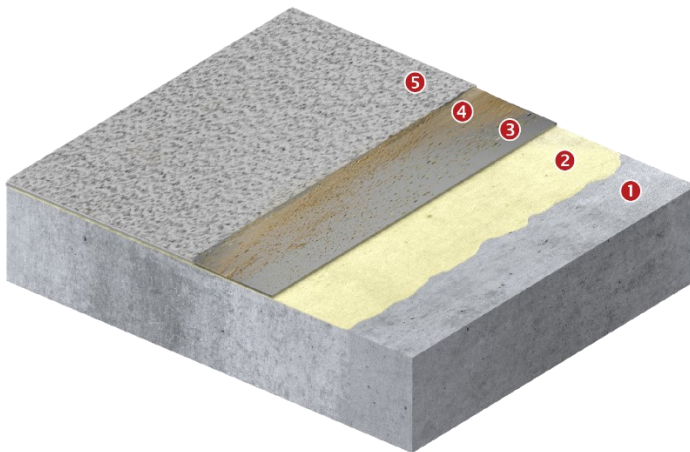
## Indicative systems build-up



### SMOOTH EPOXY FLOORING SYSTEM WITH HIGH MECHANICAL AND CHEMICAL RESISTANCE

Indicative thickness: 1,5-3mm

- ❶ Concrete substrate
- ❷ **Epoxol<sup>®</sup> Primer SF-P** (or alternative **NEOTEX<sup>®</sup>** epoxy primer)
- ❸ **Epoxol<sup>®</sup> Floor S** mixed with **Quartz Sand M-32** (ratio 1:0,8-1,2 w/w)



### SLIP RESISTANT EPOXY FLOORING SYSTEM WITH A HARD-WEARING FINISH

Indicative thickness: 3-4mm

- ❶ Concrete substrate
- ❷ **Epoxol<sup>®</sup> Primer SF-P** (or alternative **NEOTEX<sup>®</sup>** epoxy primer)
- ❸ **Epoxol<sup>®</sup> Floor S** mixed with **Quartz sand M-32** (ratio 1:0,8-1,2 w/w)
- ❹ Quartz sand (broadcast until saturation)
- ❺ **Epoxol<sup>®</sup> Floor S** as a sealing layer

## Special notes

- **Epoxol<sup>®</sup> Floor S** 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. Increased humidity may have a negative impact on the adhesion, the film properties and/or the final result (e.g. blurry surface, stickiness)

- 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.
- The application of **Epoxol® Floor S** by roller as a smooth epoxy coating leads to a mild embossed finish ("orange peel" 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
- 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)
- Depending on the desired slip resistance, quartz broadcast may be done by using quartz sand of greater granulometry (e.g. 0,8-1,2mm)
- Not recommended for use on surfaces subject to vibrations or thermal shocks

## 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	B	C
Sulphuric acid (10%)	A	B	B
Sulphuric acid (50%)	B	B	C
Hydrochloric acid (10%)	A	B	B
Lactic acid (10%)	A	B	B
Nitric acid (10%)	A	D	D
Sodium hydroxide (10%)	A	D	D
Formaldehyde (10%)	A	A	A
Ammonia (10%)	A	A	A
Chlorine (5%)	A	A	A
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
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>	White, Light beige RAL 1015, Light grey RAL 7035, Grey RAL 7040, Oxide red RAL 3009 Available in other shades upon request
<b>Packing</b>	Sets (A+B) of 13,5kg 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> 8520-W0HA-J00H-CMAQ <i>Component B:</i> D2E0-605R-F00C-DYAW
<b>Versions</b>	<b>Epoxol® Floor</b> , for highly durable self-levelling epoxy floors, certified for use in the food industry  <b>Epoxol® Floor Winter</b> , for applications in environments with high humidity (up to 80%) and low temperatures (up to +5°C). Mixing ratio 100A:30B w/w  <b>Epoxol® Floor Elastic</b> , with elasticity and high resistance to thermal shocks
<b>Storage stability</b>	2 years, stored in its original sealed packing, protected from frost, humidity and exposure to sunlight

	
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<p align="center">17</p>	
<p align="center">DoP No.: 4950-41</p> <p align="center"><b>EN 13813 SR-AR0,5-B2,0-IR4</b></p> <p align="center"><b>Epoxol® Floor S</b></p> <p align="center">Synthetic Resin screed material for use internally in buildings</p>	
Release of corrosive substances	SR
Wear resistance	AR0,5
Impact resistance	IR4
Bond strength	B2,0
Reaction to fire	NPD

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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