

HEGSEL Pox 466

Electrically conductive, highly chemically resistant, 2-component epoxy resin coating for WHG-applications

Description:

HEGSEL Pox 466 is a solvent-free, electrically conductive and crack-bridging, 2-component epoxy resin flow-coat with very good chemical resistance.

The coating is suitable for the application in collection trays and -rooms such as production / handling areas and storage / handling areas which have to be equipped with coating systems. The conductive property ensures protection against explosion. The material is especially suitable for production areas in the chemical and pharmaceutical industry, in laboratories, but also for other manufacturing areas with high exposure to chemicals. The coating is suitable for fork-lift traffic.

HEGSEL Pox 466 shows good resistance to chemicals. The material is resistant to solvents, motor fuel, oil, mineral acids, alkalis, and salts.

Due to the electrically conductive adjustment alteration in colour is possible for technical reasons. Colour alteration due to aging will not change the technical properties. The effect of chemicals may cause discolouration but does not affect the properties of the material.

Characteristics:

- Electrically conductive
- Highly chemically resistant
- Crack-bridging (0.2 mm)
- Suitable for vehicle traffic
- Solvent-free
- Free of deleterious substances against varnish
- Liquid tight

Application:

- Coating for collection-trays and -rooms with requirements according to the Water Resources Act and technical approval.
- Industrial flooring with vehicle traffic with requirements according to the Water Resources Act.
- Electrically conductive and chemical resistant industrial flooring.

Technical data:

Mixing ratio	Parts by weight Parts by volume	A : B = 4 : 1 A : B = 100 : 42
Processing time	Temperature Time	10 °C / 50 °F 40 minutes 20 °C / 68 °F 20 minutes 30 °C / 86 °F 10 minutes
Processing temperature		Minimum 10 °C / 58 °F - Maximum 30 °C / 86 °F (room- and floor-temperature)
Curing time (Accessibility)	Temperature Time	10 °C / 50 °F 24 - 36 hrs. 20 °C / 68 °F 14 - 18 hrs. 30 °C / 86 °F 10 - 14hrs.
Curing		2 - 3 days for mechanical load at 20 °C / 68 °F 7 days for chemical resistance at 20 °C / 68 °F
Electrical conductivity		Approx. 10 ⁶ Ohm (in combination with HEGSEL Pox 418)
Consumption		2.4 - 2.6 kg/m ²
Addition of quartz sand		Not permissible
Packaging		Hobbock-Combi 30 kg
Colours		Approx. RAL 1001, 3009, 6011, 7015, 7023, 7030, 7032, 7038, 7042
Shelf life		12 months (originally sealed)

1. Build-up of Coats

- Test substrate and shot blast.
- Base coat application with **HEGGEL Pox 481**, consumption 0.3 - 0.4 kg/m². Scatter with quartz sand, grain size 0.3/0.8 mm. Consumption: 1.0 kg/m².
- Optional: On rough surfaces, apply a scratch coat using **HEGGEL Pox 481 / HEGGEL quartz sand-mix 2/1**, mixing ratio: 1 : 0.8 parts by weight. Consumption: approx. 1.0 kg/m² of the mixture.
- Glue **HEGGEL Copper Strips** for discharge in an imagined grid-pattern (every 6 - 8 m, up to 1 - 2 m into the room) in place. Earth-connection by an electrician according to VDE-regulations.
- Apply the cross-conductive coat **HEGGEL Pox 418** with a roller, consumption approx. 0.100 - 0.140 kg/m².
- Apply **HEGGEL Pox 466** electrically conductive coating with a trowel, consumption approx. 2.5 kg/m². Vent with a spiked roller.

2. Resistance

- Motor fuel, super, regular (according to DIN 51600 and DIN EN 228) with a max. of 5 % bio-alcohol
- Wide cut fuel
- Fuel oil (according to DIN 51603-1), diesel fuel (according to DIN EN 590)
- All hydrocarbons
- Monovalent and polyvalent alcohol
- All halogen hydrocarbons except for fuel
- All organic esters and ketones
- Aqueous solutions of aliphatic aldehydes up to 40 %
- Aqueous solutions of organic acids (up to 10 %) and their salts (in aqueous solutions)
- Mineral acids up to 20 %, as well as acidic hydrolysing salts, excluding hydrofluoric acid, and acids with oxidising effect, and their salts (in aqueous solution)
- Inorganic alkalis and alkaline hydrolysing salts, except ammonia solutions and salts with oxidising effect
- Aqueous solutions of inorganic, non-oxidising salts with a pH-value of 6 - 8
- Amines and their salts in aqueous solutions
- Aqueous solutions of organic tensides.
- Cyclic and acyclic esters

Additionally the resistance to the following materials has also been tested:

- Phosphoric acid 85 %
- Sulphuric acid 90 %
- Hydrochloric acid 37 %
- Hydrofluoric acid 10 %
- Acetic acid 20 %
- Hydrogen peroxide 30 %
- Sodium hypochlorite solution 12 - 14 % active chlorine
- Concentrated ammonia 32 %
- Chromic acid 50 %

- Lactic acid 50 %

3. Substrate

The substrate to be coated has to be levelled, dry, free of dust, has to have adequate tensile and compressive strength, and be free from weakly-bonded components or surfaces. Materials impairing adhesion, such as grease, oil, and paint residues must be removed using suitable methods. Please refer to the product information of the recommended base coat **HEGGEL Pox 481**. The surface to be coated should be prepared mechanically, preferably by shot-blasting. The prepared surface has to be primed accurately, saturated, and free of pores. Estimating the substrate according to the necessary sealed state may be difficult, so a scratch coat is recommended for smoothing the surface. The conductive coating must be applied in the required thickness. It is essential to prepare the substrate thoroughly with a base- and scratch-coat. If the substrate hasn't been sealed completely bubbles and pores may appear because of rising air. Conduct a trial if in doubt.

4. Mixing

Combi-trading units will be supplied in the correctly measured mixing ratio. Component A has sufficient volume for the entire trading unit. Decant the hardener component B into the resin component A completely. Blend with a slow speed mixer (200 - 400 r/pm) for at least 2 - 3 minutes, for a material that is homogeneous and free of streaks. To avoid mixing errors it is recommended to principally empty the resin/hardener-mixture into a clean container and mix briefly once again ("repot").

5. Processing / Handling

Build-up of coating according to the Water Resources Act implicates the following steps:

1. Prepare the substrate in accordance to "Substrate" above. In particular, surfaces must be prepared by shot-blasting.
2. Apply a base coat using **HEGGEL Pox 481**. Apply the freshly mixed material with a roller, coating knife, or trowel. Re-work with a roller for a smooth sealed layer. Consumption: 0.3 - 0.4 kg/m². Thickness of layer: 0.3 - 0.4 mm. Scatter the fresh surface with quartz sand 0.3/0.8 mm. Consumption: 0.5 - 1.0 kg/m².
3. For levelling uneven, rough surfaces a scratch-coat is required using **HEGGEL Pox 481** and **HEGGEL quartz sand-mix 2/1** (mixing ratio: 1 : 0.8 parts by weight). Apply a uniform coat with a smoothing trowel or coating knife after the base coat has cured, but not later than 48 hours. Consumption: 0.5 - 1.0 kg/m². Mixture depending on

roughness. Thickness of layers: 0.3 - 0.7 mm.

4. If required, concave or triangular coverings may now be inserted. Produce these, using **HEGGEL Pox 481** with **HEGGEL quartz sand-mix 1**. If necessary add 1 - 2 % of **HEGGEL AD 960**. Mixing ratio **HEGGEL Pox 481** : **HEGGEL quartz sand-mix 1** is 1 : 7 - 9 parts by weight.
5. For earth connection glue self-adhesive **HEGGEL Copper Strips** in place and press on very well. Lay in a grid-pattern with a maximum distance of 8 - 10 m and at least up to 1 - 2 m into the area. Due to the laterally conductive coating, the copper band does not need to be placed continuously. Consumption: 6 - 10 running metres per 80 - 100 m². Press the copper band down on the substrate very well.
6. Apply the guiding-bed using **HEGGEL Pox 418** with a velour roller. Consumption: 0.100 - 0.140 kg/m² with a layer of 0.050 - 0.100 mm. Apply after the previous coat has set - but not longer than 48 hours.
7. Apply **HEGGEL Pox 466** after 18 hours but not longer than 48 hours. Process the material immediately after mixing with a coating knife or notched trowel. Apply an even layer with approx. 1.6 mm thickness. Consumption: 2.4 - 2.6 kg/m². The product is adjusted with an optimum of air venting. To upgrade the wettability of the substrate, optimize the flow-properties, and remove any air blows, it is recommended to re-work with a spiked roller, time-delayed after 10 - 15 minutes. Divide working areas before starting work. Always work "fresh-in-fresh" to avoid any shoulders.
8. For vertical surfaces mix **HEGGEL Pox 466** coating material with 2 - 4 % **HEGGEL AD 960** so that the material will stay on when applied. In advance prime the surface using **HEGGEL Pox 481** with 2 - 4 % **HEGGEL AD 960** added.

Floor- and air-temperature must not fall below 10 °C / 50 °F and humidity must not exceed 75 %. The difference in floor- and room-temperature must be less than 3 °C / 37.4 °F so the curing will not be disturbed. If a dew- point situation occurs adhesion may malfunction, curing may be disturbed, and spotting may occur. Curing time applies to 20 °C / 68 °F. Lower temperature may increase; higher temperature may decrease the curing and processing time. If working conditions are not complied with, deviations in the described technical properties may occur in the end product, especially electrical conductivity.

Testing the conductivity is carried out according to DIN EN 61340-4-1, from the coating surface to a ground point.

6. Cleaning

To remove fresh contamination and to clean tools use **Cleaner V20** or **V30** immediately. Hardened material can only be removed mechanically.

7. Storage

Store in dry and at frost-free conditions. Ideal storage temperature is between 10 - 20 °C / 50 - 68 °F. Bring to a suitable

working temperature before application. Tightly re-seal opened containers and use the content as soon as possible.

8. Special Remarks

The product is subject to the hazardous material, operational safety, and transport regulations for hazardous goods. Refer to the DIN-Safety Data Sheet and the information labelled on the containers!

GISCODE: RE 1

Indication of VOC-Content:

(EG-Regulation 2004/42)

Maximum Permissible Value 500 g/l
(2010,II,j/lb) Ready-for-use product
contains < 500 g/l VOC.

Technical Data*

Viscosity	Components A + B	2600	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Solid contents		> 99	%	HEGGEL-Method
Density	Components A + B	1.60	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)
Weight loss		0.3	weight-%	(after 28 days)
Water absorption		< 0.2	weight-%	DIN 53495
Shore-hardness D		65	-	DIN 53505 (after 7 days)
Abrasion (Taber Abraser)		50	mg	ASTM D4060
Bleeder resistance		Approx. 10 ⁶	Ohm	DIN EN 61340-4-1

(*Values achieved in sampling are average values. Variation in product specification is possible.)

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All information contained herein is based on the current state of our knowledge and practical experience at the time of release. Therefore, please make sure that this is the actual edition of the Technical Data Sheet. All data are only intended as a guideline for informational purposes and do not constitute a legally-binding warranty of the suitability for a certain purpose of use, due to its dependence on site conditions and possible processing, use and applications. All information contained in this technical datasheet is subject to change without notice.

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