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ESD

# KLB-SYSTEM EPOXID EP 285 EL+

Chemical-resistant, electrically conductive, 2-component epoxy resin coating

Mixing Ratio	Parts by weight:	A : B =	100 : 25
	Parts by volume:	A : B =	100 : 42
Application	Temperature	10°C	20°C
	Time	40 mins.	20 mins. 10 mins.
Working temperature		minimum 10°C (room- and floor-temperature)	
Setting	Temperature	10°C	20°C
	Time	24 - 36 hrs.	14 - 18 hrs. 10 - 14 hrs.
Set to foot traffic		15 - 24 hours	
Hardening	Mechanical	2 - 3 days until resistant to mechanical wear at 20°C	
	Chemical	7 days until chemical-resistant at 20°C	
Further coatings		after 14 - 18 hours, but not later than 48 hours at 20° C	
Consistency		trowel consistency	
Consumption		2.40 - 2.60 kg/m <sup>2</sup> (total consumption)	
Minimum Thickness		1.4 - 1.8 mm	
Quartz sand aggregate		not permissible	
Colours		12 KLB standard colours, other colours on request	
Colour variation		due to the conductive composition, some variation in colour may occur	
Packaging		Combi-can 10 kg, Combi-Hobbock 30 kg	
Shelf life		12 months (in original, sealed packaging)	

## Description and Properties

KLB- System **EP 285 EL+** is a solvent-free, electrically conductive 2-component epoxy resin free-flow coating with increased chemical resistance. Due to special conductive fibre technology, the product has a light and pleasant colour instead of the usual dark colour of conductive coatings.

The hardened coating is suitable for use in commercial and industrial locations in which antistatic or electrically conductive flooring and high chemical resistance is required. The range of uses extends to many industrial and commercial situations in which the resistance properties of the coating is foremost and, at the same time, an electrically conductive flooring is required. These requirements are often specified in areas with flammable materials. Due to its conductive composition, protection against explosion is guaranteed and, therefore, the product is especially suitable for preparation areas in the chemical and pharmaceutical industries, laboratories and also in other installations with high exposure to chemicals.

**EP 285 EL+** is provided with very good resistance to chemicals such as, e.g. alkalis, oils, grease, water, salt solutions and various acids. To ensure that the coating is suitable for your application, refer to the resistances chart and request advice.

Due to the conductive composition, some variation in colour is possible for technical reasons.

## Product Features

- Electrically conductive
- Good chemical resistance
- Good resistance to solvents
- Solvent-free
- Resistant to hydrolysis and saponification
- Bright pigmented surface finish
- Hard and wear-resistant

## Areas of Use

- Electrically conductive commercial areas where there is special requirement for chemical resistance
- In areas with a high demand for flooring that is exposed to liquid and chemical spillages
- In cases of special demand for protection against explosion to avoid electrostatic loading

## Mixing

With combi-cans, factory-measured material in the precise mixing ratio is provided in one package. The can containing Component A is large enough to accept the total mix quantity. Fully decant hardener B into the can of resin. Blend mechanically with a slow-speed mixer (200 – 400 rpm) and for 2 – 3 minutes until a homogeneous, streak-free mixture is achieved. To avoid mixing errors, we recommend to pour the mixed resin into a clean drum and briefly mix again.

## Coating Construction

- Apply primer and scratch-coat to produce a smooth and level surface
- Bond copper-strip for connection to earth laid in a grid formation at 6 - 8 m centres, approx. 1 – 2 m into the area. Earth connection to be by an electrician in accordance with local regulations.
- Apply a laterally conductive layer using approx. 0.150 kg/m<sup>2</sup> of **EP 799 Ableitgrund**
- Trowel-apply the conductive wearing coat of **EP 285EL+** using a notched trowel (Pajarito 48), consumption approx. 2.5 kg/m<sup>2</sup>

## Substrate

The substrate to be coated must be level, dry, free from dust, have adequate tensile- and compressive- strength and be free from weakly bonded materials and surface finishes. Materials that impair adhesion, such as grease, oil and paint residues, must be removed using suitable processes. Refer to the recommendations of the trade associations, e.g. the current issues of BEB work-sheets KH-0/U and KH-0/S as well as the notes in the Product Information Sheets of the recommended KLB primers, e.g. **EP 30, EP 50, EP 51 S** and **EP 52**.

The surface to be coated must be mechanically prepared, preferably by shot-blasting. The prepared surfaces must be carefully and completely primed until fully sealed. Substrates are often very difficult to assess with regard to the necessary sealing of the surface and it is therefore recommended, also for smoothing the surface, to apply a scratch-coat.

Conductive coatings must be applied at the prescribed thickness and, therefore, careful surface preparation with primer and scratch-coat is absolutely essential. If the surface is not fully primed, bubbles and pin-holes can form in the coating as a result of air rising from the substrate. If in doubt, carry out a trial in a test area.

## Application

Application is carried out immediately after mixing using a rake or notched trowel Pajarito 48 by pulling out a coat of consistent thickness over the prepared surface. The product is designed to release any air incorporated during mixing – however, it is recommended to use a spike-roller to improved adhesion to the substrate, maximise flow and remove all air bubbles. Use of the spike-roller should be after 5 – 10 minutes. To avoid trowel-marks and edges, always work fresh-in-fresh and mark out working bays before commencing application. Scatter finishes are not recommended with conductive coatings as the conductivity will be reduced.

The floor and air temperature must not be below 10°C and the air humidity must not be above 75%. The temperature difference between floor and room temperature should be less than 3°C so that setting is not affected. In the event of a dew-point situation, proper drying cannot occur and setting will be disturbed and spots will form. Avoid exposure to wetting during the first 7 days. The stated setting times apply at 20°C; at lower temperatures the working- and setting- times are extended and, at higher temperatures, they are shortened.

If the application conditions are not maintained, this can lead to variations in the stated technical properties, especially the conductivity, of the end product.

For cleaning equipment, thinners **VR 24** or **VR 28** are recommended.

## Storage / Transport

Store in dry and, if possible, frost-free conditions. Ideal storage temperature is 10°C-20 °C. Before application, bring to suitable working temperature. Tightly seal opened containers and use as quickly as possible. The product falls outside the hazardous substances regulations and usage safety regulations, as well as the transport regulations for hazardous goods. The required notes are contained in the DIN Safety Data Sheet. Refer to the notes on the container label!

GISCODE: RE 1



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### Technical Data\*

Viscosity	Comp. A+B	2800	mPas	DIN EN ISO 3219 (23°C)
Solid state		> 99	%	(KLB factory standard)
Density	Comp. A+B	1.60	kg/litre	DIN EN ISO 2811-2 (23°C)
Weight loss		0.3	% by weight (after 28 days)	
Water absorption		< 0.2	% by weight	DIN 53495
Shore-hardness D		69	-	DIN 53505 (after 7 days)
Abrasion resistance (Taber)		< 50	mg	ASTM D4060
Adhesive tensile strength		10 <sup>6</sup>	Ohms	DIN ISO 61340-4-1

(\* values achieved in sampling are average values. Variations from the product specification are possible)

# KLB-SYSTEM EPOXID

## EP 285 CR - EP 285 EL+

### Chemical Resistance

Chemical	Storage Time	1 day	3 days	7 days	14 days	21 days	28 days	35 days	42 days
Super Benzene		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Toluene		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Methanol		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Ethyl Acetate		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Methyl Isobutyl Ketone		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Chlorine Bleach Liquor 13%		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Butylamine		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Tetrahydrofurane		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Phosphoric Acid 85%		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Sulphuric Acid 90%		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Nitric Acid < 20%		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Lactic Acid 50%		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Lactic Acid 10%		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Acetic Acid 10%		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Formic Acid		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Chromate 50%		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant
Skydrol 500		Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant	Resistant



Analysis was carried out as long-exposure testing. The results show the resistances of the products to the listed chemicals. Discoloration and bleaching from the effects of chemicals are not excluded and do not represent reasons for complaint.