



KLB-SYSTEM EPOXID

EP 239 ESD

Low-emission, electrically conductive, coloured 2-component epoxy resin structured coating for economical solutions. Suitable for structured floor coatings with ESD and explosion protection.

Packaging units



Article no.	Content (kg)	Units/pallet
AK1499-50	10.00 kg	30
AK1499-25	25.00 kg	12

Product characteristics

Mixing ratio parts by weight	A : B = 5 : 1
Mixing ratio parts by volume	A : B = 100 : 31
Processing time	10 °C / 50 °F : 60 min. 20 °C / 68 °F : 40 min. 30 °C / 86 °F : 20 min.
Processing temperature	Minimum 10 °C / 50 °F (room and floor temperature)
Curing time (accessibility)	10 °C / 50 °F : 24 - 36 hrs. 20 °C / 68 °F : 18 - 24 hrs. 30 °C / 86 °F : 14 - 18 hrs.
Curing	2 - 3 days for mechanical load at 20 °C / 68 °F 7 days for chemical load at 20 °C / 68 °F
Consumption	Approx. 0.400 - 0.550 kg/m ²
Packaging	Bucket combo 10 kg, Hobbock combo 25 kg
Colours	KLB-Standard Colours – see chart. Other colours upon request!
Shelf life	6 months (originally sealed)

Product description

KLB-SYSTEM EPOXID EP 239 ESD is a low-emission, electrically conductive two-component epoxy resin coating for the production of structured thin coatings.

KLB-SYSTEM EPOXID EP 239 ESD can be used to create seamless coatings suitable for use in areas with explosion protection requirements as well as in areas with ESD protection requirements. As with other conductive coatings, the system is applied over the **KLB-SYSTEM EPOXID EP 799 Ableitgrund**. Alternatively, the conductive and transversely conductive scratch coat **KLB-SYSTEM EPOXID EP 77 Spachtel-Leitschicht** can be used instead of the two layers of scratch coat and **EP 799 Ableitgrund**, particularly for light colours. The consistency is adjusted so that the surface texture can be easily created using a structured roller. This results in attractive, structured surfaces.

After mixing, the ready-to-use coating is applied to the substrate with a notched trowel and structured evenly using a textured roller. This method allows high area coverage to be achieved.

The product is suitable for coating floor and wall surfaces.

KLB-SYSTEM EPOXID EP 239 ESD produces visually appealing floor and wall coatings with a structured, glossy and non-porous surface.

The coating is abrasion-resistant and withstands light mechanical stress. The addition of 10 to 15% silicon carbide significantly improves wear resistance and slip-resistance.

KLB-SYSTEM EPOXID EP 239 ESD is certified to 'Indoor Air Comfort Gold' and meets the emission criteria for building certification under DGNB, LEED or BREEAM. "Indoor Air Comfort Gold" sets the highest standards for the emission of volatile organic compounds and meets not only the German limit values according to AgBB or ABG, but also the emission regulations of many other European countries. The conductive coating may be used in occupied spaces with specific emission requirements.

The coating exhibits good resistance to chemicals, particularly aqueous salt solutions, acids and alkalis, as well as oil and petrol. Limited resistance is provided against diluted organic acids.

KLB-SYSTEM EPOXID EP 239 ESD has good colour stability; however, like all epoxy resins, it is not resistant to yellowing. Due to its ESD-conductive formulation, colour variations are possible, particularly with light colours.

Area of application

- For textured, plain-coloured thin coatings with non-porous surfaces.
- Suitable for explosion proof areas.
- For increased demand on ESD-protection.
- Complies with demand human-shoe-floor.
- For wall and floor coatings.
- For craft, work and storage rooms with light mechanical load.

Product features

- tested, low-emission quality
- for increased demands on ESD protection
- electrically conductive for explosion protection
- jointless coating
- rapid installation
- also suitable for vertical surfaces
- Total Solid according to GISCODE (Test method "Deutsche Bauchemie")
- surfaces with burling structure
- structured
- good cleanability
- good resistance range
- resistant to abrasion and wear

Technical data

Viscosity - Component A+B	thixotropic	-	
Density - Component A+B	1.45	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)
Weight loss	< 0.1	weight-%	after 28 days
Water absorption	< 0.2	weight-%	DIN 53495
Flexural strength	45	N/mm ²	DIN EN 196/1
Compressive strength	63	N/mm ²	DIN EN 196/1
Shore-hardness D	80	-	DIN 53505 (after 7 days)
Abrasion (Taber Abraser)	50	mg	ASTM D4060 (CS10/1000)
Resistance to ground	10 ⁶	Ohm	DIN EN 61340-5-1
Walking Body Model	< 100	V	DIN EN 61340-5-1
Human-shoe-floor	< 10 ⁹	Ohm	DIN EN 61340-5-1

The values established in tests are average values. Deviations from the product specification may occur.

Included in systems

- [System F7 - KLB CONDUCTIVE EP ESD Structured](#)

Please visit our website to get more information about our KLB systems: www.klb-koetzal.com

Tests

The following external and internal test certificates are available:

- Certified as low-emission according to Eurofins "Indoor Air Comfort Gold".
- Slip resistance grade R9 possible, according to DIN EN 16165 and DIN 51130.
- Product is compliant with DIN EN 13813: 2003-01.

Note:

Please ask for the tested system build-up!

Build-up of coats

- Prime with the recommended KLB primer resins such as **EP 58**, **EP 57** or **EP 53 Spezialgrund-AgBB**; coverage approx. 0.3 to 0.4 kg/m², depending on the substrate. Scratch coat to create a level substrate, e.g. using **EP 58**, **EP 57** or **EP 53 Spezialgrund-AgBB** and **KLB mixed sand 2/1** in a mixing ratio of 1 : 0.8 parts by weight, consumption approx. 1.0 kg/m².
- **KLB copper strips** for connection to the earthing point in an imaginary grid approx. every 8 to 10 m, extending approx. 1 to 2 m into the room. Earthing connection to be carried out by an electrician in accordance with VDE regulations.
- Apply a layer of **EP 799 Ableitgrund**, consumption approx. 0.100 to 0.140 kg/m².
- Alternatively, instead of the two layers of scratch coat and **EP 799 Ableitgrund**, the conductive and transversely conductive scratch coat **EP 77 Spachtel-Leitschicht** can be applied using a notched trowel, trowel or a hard rubber squeegee to create a level substrate; Consumption approx. 0.6 to 0.8 kg/m², depending on the roughness.
- Apply **EP 239 ESD** using the **A2 notched trowel** or Pajarito TKB-A2, at a consumption rate of approx. 0.400 to 0.550 kg/m², and texture evenly in a criss-cross pattern using a medium-pored textured roller.
- Add 10 to 15% silicon carbide, grain size 0.3/0.8 mm, for surfaces requiring increased slip resistance and wear resistance. The consumption of the mixture is then approx. 0.650 to 0.800 kg/m².

Substrate

The substrate to be coated must be even, dry, free of dust, sufficiently resistant to tension and compression as well as be free from weakly-bonded components or surfaces. Materials impairing adhesion such as grease, oil and paint residues should be removed with suitable measures. Please refer to the advice issued by the trade associations, e.g. the current edition of the KH-0/U and KH-0/S BEB worksheets as well as the product information for the recommended base coats, like **EP 58**, **EP 57** or **EP 53 Spezialgrund-AgBB**. The surface strength must then be at least 1.5 N/mm². For concrete, moisture content must not exceed 4.5 CM-%, remaining residual humidity. The possibility of moisture ingress from the rear must be permanently excluded. The substrates to be coated should be prepared mechanically, preferably by shot-blasting. The prepared surface has to be primed accurately and in a saturated and pore-free way. It is often difficult to judge the necessary pore-free condition of substrates. It is therefore recommended that a scratch coat be applied to smooth the surface. If the substrate has not been primed to be pore-free, bubbles and pores can develop in the coating due to air rising from the substrate. Old substrates must be cleaned before any mechanical preparation. If old synthetic resin surfaces are being sealed, it is necessary to check that sufficient adhesion is achieved. If in doubt, we recommend processing a sample area.

Reconstruction beyond the regular requirements demands further substrate testing, e.g. by conducting a tensile bonding test. Conductive coatings must be applied in the required thickness, it is thus mandatory to prepare the substrate thoroughly.

Mixing

Combo-packaging will be supplied in the correctly measured mixing ratio. The package of Component A has sufficient volume to contain the entire packaging unit. Empty all of the hardener compound B into the resin. Blend with a slow speed mixer (200 - 400 r/pm) for at least 2 - 3 minutes until a homogeneous, streak-free compound forms. To prevent mixing errors, empty ("repot") the resin/hardener mixture into a clean container and mix it once again briefly to ensure complete homogenisation.

Use the material immediately!

Processing

Distribute the fresh mix in portions on the floor, and then work it with a notched trowel. Mind a uniform coating. Work "fresh-in-fresh". The texture is reached with a medium-porous textured roller in criss-cross strokes. Lead the roller with the same pressure several times over the surface, until the wished texture is reached. It is possible to work on the surface with spiked shoes. The application quantities must be dosed carefully. Should there be too much material left on the ground, it will be shown by rolling marks. Do not use the roller to apply. Replace the roller after approx. 25 minutes.

Floor and air temperature must not fall below 10 °C / 50 °F and humidity should not be more than 75 %. The difference in floor and room temperature must be less than 3 °C / 3 K / 5.4 °F so the curing will not be disturbed. If a dew-point situation occurs, adhesion and curing may malfunction and spotting may occur. Water pollution should be avoided during the first 7 days. 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 final product.

Cleaning

To remove fresh contamination and to clean tools, use **VR 24** or **VR 33** immediately. Hardened material can only be removed mechanically.

Separate cleaning and care recommendations are available for cleaning floors produced with KLB coatings and sealers.

Storage

Store in dry and frost-free conditions. Ideal storage temperature is between 10 - 20 °C / 50 - 68 °F. Bring to a suitable processing temperature before application. Tightly re-seal opened packages and use up the content as soon as possible.

Special remarks

The product is regulated by the German Ordinance on Hazardous Substances (GefStoffV), the German Ordinance on Industrial Safety and Health (BetrSichV), and transport regulations for hazardous goods. The necessary information is contained in the DIN Safety Data Sheet. Observe all identification information on the container label!

GISCODE: RE30

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.

CE marking

CE	
KLB Kötztal Lacke + Beschichtungen GmbH Günztalstraße 25 89335 Ichenhausen, GERMANY	
26	
EP239ESD-V1-04/2026	
DIN EN 13813:2003-01	
Synthetic resin screed mortar DIN EN 13813: SR-B2,0-AR0,5-IR8	
Fire behaviour	E _{ff} -s1
Emission of corrosive substances	SR
Wear resistance BCA	AR 0,5
Adhesive tensile strength	B 2,0
Impact resistance	IR 8

VOC content

The product complies with the high requirements to low VOC contents, as required for sustainable construction. Therefore, these values are well below the limits set by the European Union directive 2004/42/EG (Decopaint Directive).

	Limit value	Actual content	
Decopaint Directive 2004/42/EG - Component A	< 500	16.3	g/l
Decopaint Directive 2004/42/EG - Component B	< 500	10 - 30	g/l
DGNB - Components A + B	k.A.	RE30, EUROFINs GOLD	
klima:aktiv – Components A + B	< 3	<1.25	%
LEED - Components A + B	< 100 g/l	15.3 - 20.9	
Minergie ECO ® - Components A + B	< 1(< 2)	<1.25	%

(According to the Decopaint directive, single components are used for calculation. In the sustainable building rating systems, the mixture of both components in the correct mixing ratio is the determining factor.)



Please consider the latest version of this product information on our website.

All stated information is based on our experience and technical preparation. We guarantee the correct and proper quality of our products. We do not assume any responsibility for the work not carried out by us, since we have no influence on the processing or processing conditions. We recommend on-site trials to be conducted in individual cases. With the publication of this new KLB product information, all prior information loses validity. The latest version is available electronically on our website www.klb-koetzal.com. In addition, our "General Terms and Conditions" apply.