# KLB-SYSTEM EPOXID
## EP 99

Economical, solvent-free 2-component coating resin for self-filling with mixed sand KLB-Mischsand 2/1

**Packaging units**


| Article no. | Packaging | Content (kg) | Units/pallet |
|---|---|---|---|
| AK1072-50 | Bucket combo | 10.00 kg | 30 |
| AK1072-30 | Hobbock combo | 30.00 kg | 12 |

**Product characteristics**

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|---|---|
| Mixing ratio parts by weight | A : B = 2 : 1 |
| Mixing ratio parts by volume | A : B = 100 : 55 |
| Processing time | 10 °C / 50 °F : 55 min.<br>20 °C / 68 °F : 30 min.<br>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.<br>20 °C / 68 °F : 14 - 18 hrs.<br>30 °C / 86 °F : 10 - 14 hrs. |
| Curing | 2 - 3 days until mechanical load at 20°C / 68 °F<br>7 days until chemical load at 20°C / 68 °F |
| Further coatings | After 14 - 18 hours, but after 48 hours at the latest at 20 °C / 68 °F |
| Consumption | 1.3 - 1.5 kg/m² resin (at 2 mm thickness) + additives |
| Layer thickness | 1.7 - 5.0 mm |
| Addition of quartz sand | Recommended starting at layers of above 2 mm thickness, with up to 1.5 kg additive for each 1.0 kg resin (see "Mixing“) |
| Colours | KLB standard colours – see colour chart. Other colours on request! For scattered coatings with coloured sand KLB-Colorsand CQS-46xx, please refer to the colour chart of the coloured sand! |
| Shelf life | 12 months (originally sealed) |

**Product description**

**KLB-SYSTEM EPOXID EP 99** is a pre-formulated 2-component epoxy resin binding agent used in combination with additives to produce economical coatings for industrial and commercial floors.

Mixed sand **KLB-Mischsand 2/1** will be added on site to the unfilled coating depending on the particular application and thickness of layers. The unfilled binding agent combination is economically fillable. The mixture is easy to process and may be applied with a coating knife and results in coatings of a technically very good quality.

The cured coating offers a high durability and is resistant to a wide range of chemicals.

**KLB-SYSTEM EPOXID EP 99** is resistant to water, salts, saline solutions, alkalis and bases, greases, oils as well as diluted mineral acids like salt and sulfuric acid. Also to solvents such as petrol, fuels, greases, oils, etc. Conditional stability exists for concentrated mineral acids, for organic acids such as formic acid, acetic acid, lactic acid, etc. Not permanently resistant to chlorinated

hydrocarbons, esters, concentrated nitric acid. For chemical resistance requirements, please ask for a separate consultation.

The coating resin can be supplied non-pigmented or pigmented. Refer to the special notes on colours!

## Area of application

- Commercially used areas with medium mechanical load, e.g. production and storage areas for many economic areas (2 mm coating).
- Commercially used areas with high mechanical load, e.g. production and storage areas for many economic areas (3 - 5 mm coating).
- Areas with increased exposure to chemicals and water.
- Base coats for scattered coatings in layers of 3 - 5 mm (top coat finish possible with different products, depending on the requirements, like e.g. with **EP 296 Kopfsiege**l or **EP 175 Spezial** or others).
- Pigmented wear coats for decorative, colour-sand scattered coatings and subsequent sealing coats, e.g. with **EP 175 Spezial**, **EP 174**, **EP 860**.

## Product features

- Total Solid according to GISCODE (Test method "Deutsche Bauchemie")
- very economical
- good filling capacity
- good resistance range
- consistent to hydrolysis and saponification
- proven quality
- resistant to abrasion and wear

## Technical data

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|---|---|---|---|
| Viscosity - Component A+B | 750 | mPas | DIN EN ISO 3219 (23 °C / 73.4 °F) |
| Solid content | 100 | % | KLB method |
| Density - Component A+B | 1.10 | kg/l | DIN EN ISO 2811-2 (20 °C / 68 °F) |
| Weight loss | 0.25 | weight-% | after 28 days |
| Water absorption | < 0.2 | weight-% | DIN 53495 |
| Bending tensile strength | 35 | N/mm² | DIN EN 196/1 |
| Compressive strength | 80 | N/mm² | DIN EN 196/1 |
| Shore-hardness D | 78 | - | DIN 53505 (after 7 days) |
| Abrasion (Taber Abraser) | 55 | mg | ASTM D4060 (CS10/1000) |

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

## Included in systems

- System A5KLB INDUSTRIAL EP RX Robust
- System A8 KLB INDUSTRIAL EP Structured

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

## Tests

External test certificates are available:

- Scattered coating with slip resistance grade R11/V4, R11/V6, R11/V8, R12/V4, R12/V6, R13/V8 producible, according to DIN 51130 and BGR 181.
- Slip resistance grade R9 and R10 possible, according to DIN 51130 and BGR 181.

- Suitable for use in foodstuffs according § 31 para. 1, German Food and Feed Code (German law LFGB).
- Classification of the fire behaviour according DIN EN 13501-01:2010-01: $B_{fl}$-s1.
- Product is compliant with DIN EN 13813: 2003-01.

**Note:**

Please ask for the tested system build-up!

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**Build-up of coats**

Smooth coating

- Prime with one of the recommended KLB base coats, like **EP 50, EP 51 RAPID S, EP 52 Spezialgrund,** or **EP 52 RAPID**, consumption approx. 0.3 - 0.4 kg/m², depending on the substrate.
- Apply a scratch coat for an even substrate, e.g. with **EP 50, EP 51 RAPID S,** and mixed sand **KLB-Mischsand 2/1**. Mixing ratio approx. 1 : 0.8 parts by weight, consumption approx. 0.8 to 1.0 kg/m².
- Apply EP 99 filled with mixed sand **KLB-Mischsand 2/1** using a notched trowel (**Toothed blade RS4** or Pajarito 48), consumption approx. 2.7 - 2.9 kg/m² for 2 mm layer thickness.
- Optional: scatter with silicum carbide, delustering agent, or decorative chips (flakes).
- Seal the surface with a suitable silk or matt sealer, such as **EP 705 E, PU 805 E, PU 880,** or **PU 882.**

Slip resistant coating R11/12

- Prime with the recommended KLB base coats, like **EP 50, EP 51 RAPID S, EP 52 Spezialgrund,** or **EP 52 RAPID**, consumption approx. 0.3 - 0.4 kg/m², depending on the substrate.
- If required: apply a scratch coat for an even substrate, e.g. with **EP 50, EP 51 RAPID S,** and mixed sand **KLB-Mischsand 2/1.** Mixing ratio approx. 1 : 0.8 parts by weight, consumption approx. 0.8 to 1.0 kg/m².
- Apply the filled **EP 99** coating in layers of 1.5 - 2.0 mm and scatter the whole surface with quartz sand 0.3/0.8 mm or 0.7/1.2 mm.
- After curing, sweep off the excess sand and vacuum thoroughly until no more grain or sand are being released.
- Apply **EP 296 Kopfsiegel** or **EP 296 RAPID** with a rubber squeegee, then distribute evenly using a velours roller in a crosswise motion. Consumption 0.6 - 0.6 kg/m². It is mandatory to adhere to the consumption quantities for obtaining the required degree of slip-resistance.
- Optional: additional mat sealers can be applied to improve the surface quality or chemical resistance.

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**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. Observe the information issued by the trade associations, e.g. the most recent versions of BEB worksheets KH-0/U and KH-0/S as well as the notes provided in the product information for the recommended KLB base coats **EP 50, EP 51 RAPID S** and **EP 52 Spezialgrund**. The substrates to be coated should be prepared mechanically, preferably by shot-blasting. The prepared area must be saturated, pore-free and primed carefully. 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. If in doubt, we recommend processing a sample area. To improve adhesion, scatter the surface completely with 0.5 - 1.0 kg/m² quartz sand, grain size 0.3/0.8 mm.

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**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. Additives should be stirred in with a compulsory mixer. Stir up the single components for partial withdrawals and weigh in the exact mixing ratio.

**Addition of additives:** depending on the thickness of layers, different sand types may be added. Use a compulsory mixer.

Outline formula for self-levelling smooth coatings 2 - 3 mm

1.0 parts by weight **KLB-SYSTEM EPOXID EP 99 (A+B)**
1.2 - 1.5 parts by weight of mixed sand **KLB-Mischsand 2/1**

Consumption for 2 mm: 3.0 - 3.5 kg/m² mixture
Consumption of **EP 99** for 2 mm: 1.3 - 1.5 kg/m²

Outline formula for scattered coatings 2 - 3 mm

1.0 parts by weight **KLB-SYSTEM EPOXID EP 99** (A+B)
1,5 parts by weight of mixed sand **KLB-Mischsand 3/1**

Consumption for 2 mm: approx. 1.5 kg/m² mixture +
Consumption scattering material 0,3/0,8 or 0,7/1,2 mm: 3.5 - 4.0 kg/m²

The added quantities depend on layer thickness, temperature, and type of sand. For thin layers, use more quartz powder and add less aggregate overall. In case of doubt, carry out preliminary tests and seek advice.

**Processing**

Process the material immediately after mixing with a squeegee or notched trowel (e.g. **Toothed Blade RS4** or Pajarito 48) by pulling out an even layer on the prepared substrate. Compared to ready-to-use coatings, the material has to be processed more rapidly to avoid any deposits on the bottom. The product is adjusted for optimum deaeration, however, rolling with a spiked roller is recommended to improve the wetting of the substrate, to optimise levelling and to remove remaining air bubbles. This should be carried out time-delayed after approx. 10 - 20 minutes. To work seamlessly, always work “fresh-in-fresh” and define work areas before starting. For reasons of deaeration, do not scatter too early; the optimum time is at 20 °C / 68 °F after 20 - 30 minutes.

Floor and air temperature must not fall below 10 °C / 50 °F and humidity must not exceed 75 %. The specified curing times apply for 20 °C / 68 °F; temperatures below this require longer processing and curing times, while higher temperatures require shorter times.

**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.

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**CE marking**

CE

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| **KLB Kötztal Lacke + Beschichtungen GmbH<br>Günztalstraße 25<br>FRG-89335 Ichenhausen** | |
| **13** | |
| EP99-V1-022013 | |
| **DIN EN 13813:2003-01** | |
| Synthetic resin screed mortar<br>DIN EN 13813: SR-B1.5-AR0.5-IR5 | |
| Fire behaviour | $B_{fl}$-s1 |
| Emission of corrosive substances | SR |
| Wear resistance BCA | AR 0.5 |
| Adhesive tensile strength | B 1.5 |
| Impact resistance | IR 5 |

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

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KLB KÖTZTAL Lacke+Beschichtungen GmbH
Günztalstraße 25
89335 Ichenhausen, GERMANY
Phone +49 (0) 8223-96 92-0
Fax +49 (0) 8223-96 92-100
www.klb-koetztal.com
info@klb-koetztal.com