KLB-SYSTEM EPOXID
EP 216 RAPID

Rapid setting, pigmented 2-component epoxy resin coating for smooth and slip-resistant floor coatings with quick reusability.

Packaging units

Article no.	Packaging	Inhalt	Units/pallet
AK2010-50	Bucket combo	10.00 kg	30
AL1281-30	Hobbock combo	30.00 kg	12

Product characteristics

Mixing ratio parts by weight	A : B = 4 : 1
Mixing ratio parts by volume	A : B = 100 : 38
Processing time	10 °C / 50 °F : 30 - 40 min. 20 °C / 68 °F : 15 - 20 min. 30 °C / 86 °F : 10 - 15 min.
Processing temperature	Minimum 5 °C / 41 °F (room and floor temperature)
Curing time (accessibility)	10 °C / 50 °F : 8 - 10 hrs. 20 °C / 68 °F : 4 - 5 hrs. 30 °C / 86 °F : 2 - 3 hrs.
Curing	4 - 10 hours until mechanical load at 20 °C / 68 °F 24 - 28 hours until chemical load at 20 °C / 68 °F
Further coatings	After 3 - 4 hours, but after 24 hours at the latest at 20 °C / 68 °F
Consumption	Top coat: approx. 0.550 - 0.900 kg/m² Thin coat: approx. 0.8 - 1.5 kg/m² Standard coat: approx. 1.3 - 1.5 kg/m² per mm of layer thickness Approx. 2.6 - 3.0 kg/m² for a 2 mm coating
Layer thickness	(self-levelling coat) 1.0 - 3.0 mm
Addition of quartz sand	Only recommended starting from a 2 mm coating thickness, max. 50 to 70%, grain size 0.1/0.3 mm
Colours	KLB standard colours – see chart. Other colours upon request!
Shelf life	12 months (originally sealed)

Product description

KLB-SYSTEM EPOXID EP 216 RAPID is a rapid-setting, all-purpose epoxy resin coating for renovation and coating work where only short time windows are available for processing. With normal room temperatures, in combination with the primer **KLB-SYSTEM EPOXID EP 51 RAPID S**, the coatings can be laid and utilized within 8 to 24 hours.

The coating has a solvent-free formulation and shows good processing properties with a sufficient pot-life. **KLB-SYSTEM EPOXID EP 216 RAPID** has sufficient, low viscosity and high covering power. This means that the coating can be used for self-levelling coverings, flow coatings and as a top sealer for scattered coverings.

Combined with the primer **KLB-SYSTEM EPOXID EP 51 RAPID S**, **KLB-SYSTEM EPOXID EP 216 RAPID** is ideal for a rapid production of coatings. It is possible to lay 2 or 3 layers in one day.

The hardened coating is resistant to water, salt, saline solutions, alkalis, and bases, and has a good resistance to many solvents like benzin, fuel, grease and oil. For chemical resistance requirements, please ask for a separate consultation.

KLB-SYSTEM EPOXID EP 216 RAPID can be delivered in different colours. Slight colour alterations may be possible due to technical reasons. Epoxy resin coatings are subject to a minor colour alteration, which could be visible in light colour tones.

Area of application

- Thin coatings of 0.6 - 1.5 mm for light mechanical load.
- Medium mechanical load with a layer thickness of approx. 2 mm, for commercial areas like e.g. storage areas.
- Suitable for heavily loaded surfaces in a layer thickness from 3 - 4 mm, e.g. Production areas in many industrial sectors.
- Scattered coatings – as base coat and as a slip-resistant top sealer.

Product features

- Total Solid according to GISCODE (Test method "Deutsche Bauchemie")
- rapid-setting
- quickly accessible
- all-purpose use
- can be filled with fire-dried quartz sand
- good resistance to water and chemicals
- very good levelling
- resistant to abrasion and wear

Technical data

Viscosity - Component A+B	2000 - 2500	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Density - Component A+B	1.41	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)
Bending tensile strength	60	N/mm²	DIN EN 196/1
Compressive strength	58	N/mm²	DIN EN 196/1
Shore-hardness D	80	-	DIN 53505 (after 7 days)
Abrasion (Taber Abraser)	65	mg	ASTM D4060 (CS10/1000)

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

Included in systems

- System A2KLB INDUSTRIAL EP Rapid

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

Tests

External test certificates are available:

- Classification of the fire behavior according to DIN EN 13501-01:2010-01: C_{fl}-s1.
- Scattered coatings with slip resistance grade R11/V4, R11/V6, R11/V8, R12/V4, R12/V6, R13/V8 possible, 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).
- Ease of decontamination according to DIN 25415-1: excellent.
- Product is compliant with DIN EN 13813: 2003-01 and DIN EN 1504-2:2004.

Note:

Please ask for the tested system build-up!

Build-up of coats

Smooth coating

- Check substrate! Prepare the substrate preferably by shot blasting.
- Prime with **EP 51 RAPID S**, consumption approx. 0.3 - 0.4 kg/m², depending on the substrate. The application is carried with a spatula, rubber squeegee or a roller.
- Apply a scratch coat for an even substrate with **EP 51 RAPID S** and mixed sand **KLB-Mischsand 2/1**. Mixing ratio approx. 1 : 0.5 - 0.8 parts by weight, consumption approx. 0,6 - 1,0 kg/m².
- Apply the coating **EP 216 RAPID** with a notched trowel (**Toothed blade RS4** or Pajarito 48), consumption approx. 2.5 - 3.0 kg/m² for 2 mm layer thickness.

Plain-coloured, slip-resistant coating R11/12

- Check substrate! Prepare the substrate preferably by shot blasting.
- Prime with the recommended KLB base coats, like **EP 51 RAPID S** or **EP 52 RAPID**, consumption approx. 0.350 kg/m², depending on the substrate.
- Apply a scratch coat for an even substrate with **EP 51 RAPID S** and mixed sand **KLB-Mischsand 2/1**. Mixing ratio approx. 1 : 0.8 parts by weight, consumption approx. 0,8 - 1,3 kg/m².
- Apply the base coat with **EP 216 RAPID** in layers of 1.5 - 2.0 mm (**Toothed blade S3** or Pajarito 95) and scatter the whole surface with quartz sand 0.3/0.8 mm or 0.7/1.2 mm.
- After curing, sweep off excess sand, chip off and vacuum thoroughly until no more grain or sand is being released and the entire surface is free of loose sand.
- Apply **EP 216 RAPID** as top sealant with a rubber squeegee, then distribute evenly using a velours roller in a crosswise motion. Consumption 0.550 - 0.900 kg/m².
- It is mandatory to adhere to the consumption quantities for obtaining the required degree of slip-resistance.
- Optional: additional matt sealers can be applied to improve the surface quality or chemical resistance.

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 base coats, like **EP 51 RAPID S**. 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. Base coats may not be left open for more than 48 hours or must be scattered with quartz sand. 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.

Old surfaces must be cleaned and mechanically prepared before any mechanical preparation. If old synthetic resin substrates 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 a monitoring of the result, e.g. by conducting a tensile bonding test.

Mixing

The resin and hardener components should be adjusted to the corresponding processing temperatures. If the components are packed individually, they should be weighed out exactly in the specified mixing ratio. 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.

Addition of quartz sand: add the additives only after the components have been pre-mixed. Suitable is fire-dried quartz sand with a grain size of 0.1/0.3 mm. Do not use quartz flour or sand blends. The added quantities depend on layer thickness, temperature, and type of sand. **EP 216 RAPID** can usually be mixed with up to 0.7 kg of quartz sand per 1 kg of coating material. For thin coats, the addition of sand is not recommended as the self-levelling properties might deteriorate in the process.

Adding suspending agent: for coating concave moldings, **KLB-Stellmittel 3 Super** has to be added for a stable adjustment. After mixing components A and B, add 3 - 5 % of the suspending agent for a material that is free of streaks and adequately stable. When coating ground surfaces with slopes, adding 0.1 - 1.0 % of thixotropic agent **KLB-Stellmittel 3 Super** may be necessary to keep the material in place. It is advantageous to work with sand scattering in these areas.

Processing

Coatings: after mixing, process the material immediately with a squeegee or toothed trowel (e.g. **Toothed blade RS4** / Pajarito 48 for approx. 2 mm, or **Toothed blade S6** / Pajarito TKB-S2 for approx. 1 mm) by pulling out an even layer on the prepared substrate. 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 minutes. In order to work seamlessly, always work “fresh-in-fresh” and define work areas before starting.

The optimum time for scattering is after 10 minutes at 20 °C / 68 °F. Scatter with sand until the area is completely covered. Scattering too late may cause an uneven surface with bald spots to appear later on.

Top sealer for scattered coatings: with scattered coatings, once the base layer has hardened, remove excess grains from the the surface by sweeping or vacuuming until no more quartz grains come loose. If the surface is supposed to have only minimal slip resistance or roughness, the existing sand can be ground slightly to blunt the tips of the grains. Then pour the fresh mixture in portions onto the floor. The compound is evenly distributed and pulled over the surface with a smooth rubber squeegee, a Kaupp trowel or a steel trowel depending on the desired material quantity. Ensure even application and avoid ponding. Rigid scrapers create smoother surfaces, while soft trowels result in a coarser structure. For a uniform surface and to avoid the formation of bald spots, re-roll with a velour roller. Using a roller for application results in a rougher surface. Process the work areas “fresh-in-fresh”.

During hardening, floor and air temperature must not fall below 5 °C / 41 °F and humidity must not exceed 75 %. The difference in floor and room temperature must remain less than 3 °C / 3 K / 5.4 °F so as not to impede the curing process. If a dew-point situation arises, regular curing will not be possible with hardening problems and spotting to occur. Exposure to water should be avoided during the first 3 days. The specified hardening times apply for 20 °C / 68 °F; temperatures below this require longer processing and curing times, while higher temperatures require shorter times.

If working conditions are not complied with, the technical properties of the end product may deviate from those specified.

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: RE55 **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 FRG-89335 Ichenhausen
17
EP216RAPID-V1-012017
DIN EN 13813:2003-01
Synthetic resin screed mortar DIN EN 13813: SR-B1.5-AR0.5-IR10

Fire behaviour	C_fl-s1
Emission of corrosive substances	SR
Wear resistance BCA	AR 0.5
Adhesive tensile strength	B 1.5
Impact resistance	IR 10

CE
1119
KLB Kötztal Lacke + Beschichtungen GmbH Günztalstraße 25 FRG-89335 Ichenhausen
18
EP216RAPID-V1-012018
DIN EN 1504-2:2004
Surface protection products-coating DIN EN 1504-2: ZA.1d,ZA.1f,ZA.1g

Abrasion resistance	complied with
CO_2-permeability	SD > 50 m
Water vapour permeability	Class III
Capillary water absorbtion and water permeability	< 0.1 kg/m²*h0.5
Resistance to increased chemical excavation	complied with
Resistance to impact	Class II
Tear-test for adhesive strength evaluation	> 1.5 N/mm²
Fire behaviour	C_fl-s1

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

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