



KLB-SYSTEM EPOXID EP 54 RAPID U

Rapid-setting, low-emission 2-component epoxy resin for primers, scratch coats and repair mortars within fast renovation. Suitable for recreation rooms.

Packaging units



Article no.	Packaging	Content (kg)	Units/pallet
AK1010-92	Bucket combo	1.00 kg	240
AK1010-51	Bucket combo	10.00 kg	30
AK1010-31	Hobbock combo	30.00 kg	12
AK1010-02	Drum combo	588.00 kg	0,5

Product characteristics

Mixing ratio parts by weight	A : B = 100 : 47
Mixing ratio parts by volume	A : B = 100 : 50
Processing time	10 °C / 50 °F : 20 - 25 min. 20 °C / 68 °F : 10 - 15 min. 30 °C / 86 °F : 5 - 10 min.
Processing temperature	Minimum 0 °C / 32 °F - Maximum 30 °C / 86 °F (room and floor temperature)
Curing time (accessibility)	10 °C / 50 °F : 3 - 6 hrs. 20 °C / 68 °F : 2 - 2.5 hrs. 30 °C / 86 °F : 1 - 2 hrs.
Curing	10 - 20 hours until mechanical load from 20 °C / 68 °F 48 hours until chemical load from 20 °C / 68 °F
Further coatings	After curing, but after 24 hours at the latest at 20 °C / 68 °F
Consumption	Primer: approx. 0.3 - 0.4 kg/m ² Scratch coat: approx. 0.4 - 0.6 kg/m ²
Shelf life	12 months (originally sealed)

Product description

KLB-SYSTEM EPOXID EP 54 RAPID U is a low-emission, rapid-setting 2-component epoxy resin for primers or scratch coats as well as for producing repair mortars. Depending on the requirements, it can be combined with epoxy or polyurethane coatings, even in emission-controlled recreation rooms. As fast-curing and quickly recoatable epoxy resin, it is suitable for any coating works, e.g. renovations that require a rapid recoatability and usability. The pot life is short, which is why a well-coordinated installation team is recommended for processing.

KLB-SYSTEM EPOXID EP 54 RAPID U is certified by EUROFINS and EMICODE EC1 Plus; thus meets the requirements for a sustainable building certification according to DGNB, LEED or BREEAM; not only the German requirements of AgBB or ABG, but also the emissions regulations of many other European countries.

KLB-SYSTEM EPOXID EP 54 RAPID U can be used down to 0 °C / 32 °F and cures even at such low temperatures. When applied in combination with rapid-setting coatings like **KLB-SYSTEM EPOXID EP 216 RAPID** or **KLB-SYSTEM EPOXID EP 296 RAPID**, it is possible to carry out renovations within 48 hours until usability.

With 5 - 10 minutes, the working time is already very short at 25 °C / 77 °F; then a very fast application is required. The material is not recommended to be applied above 30 °C / 86 °F because of the extremely short processing times in these cases.

KLB-SYSTEM EPOXID EP 54 RAPID U combines very fast reaction with excellent wettability and adhesion properties, thus allowing it to be used together with epoxy or polyurethane resin coatings.

KLB-SYSTEM EPOXID EP 54 RAPID U cures very fast to form a hard basis which offers a good chemical resistance.

Area of application

- Rapid-setting epoxy resin for base and scratch coats before subsequent coating work.
- Cures at low temperatures down to 0 °C / 32 °F.
- When used in combination with **KLB-SYSTEM EPOXID EP 216 RAPID** or **KLB-SYSTEM EP 296 RAPID** for fast renovations.
- For renovations where rapid usability is required.

Product features

- tested, low-emission quality
- EMICODE EC 1 plus certified
- quickly reworkable
- good interlayer adhesion
- highly reactive
- consistent to hydrolysis and saponification
- short curing times
- good resistance to water and chemicals
- Total Solid according to GISCODE (Test method "Deutsche Bauchemie")

Technical data

Viscosity - Component A+B	approx. 800 - 1000	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Solid content	> 99.9	%	EN 29073-1
Density - Component A+B	1.09	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)
Weight loss	0.3	% w/w	after 28 days
Water absorption	0.2	% w/w	DIN 53495
Adhesive tensile strength	> 1.5	N/mm ²	DIN EN 1542
Shore-hardness D	80	-	DIN 53505 (after 7 days)

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

Tests

The following external test certificates are available:

- Certified as low-emission according to EMICODE with the EC1 Plus label. Compliant with AgBB for recreation rooms.

Build-up of coats

Smooth coatings

- Check and prepare the substrate, e.g. by shot-blasting, then thoroughly vacuum off.
- Prime with **EP 54 RAPID U**, consumption approx. 0.3 - 0.4 kg/m² (depending on the substrate) using a nylon roller, rubber squeegee or trowel.
- Apply a scratch coat for an even substrate with **EP 54 RAPID U** and mixed sand **KLB-Mischsand 2/1**. Mixing ratio approx. 1 : 0.5 - 0.8 parts by weight, consumption approx. 0.5 - 1.0 kg/m².
- Apply the coating **EP 216 RAPID** with the notched trowel (**Toothed blade RS4** or **Pajarito 48**), consumption approx. 2.5 - 3.0 kg/m² for a layer thickness of 2 mm.

Rapid-setting coating with slip-resistance grade R 11/12

- Check and prepare the substrate, e.g. by shot-blasting, then thoroughly vacuum off.
- Prime with **EP 54 RAPID U**, consumption approx. 0.3 - 0.4 kg/m² (depending on the substrate) using a nylon roller, rubber squeegee or trowel. If necessary, openly sand the surface with quartz sand 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m².
- If necessary: apply a scratch coat for an even substrate with **EP 54 RAPID U** and mixed sand **KLB-Mischsand 2/1**. Mixing ratio approx. 1 : 0.6 parts by weight, consumption approx. 1.0 kg/m². If necessary, openly sand the surface with quartz sand 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m².
- Apply the base coat with **EP 216 RAPID** in layers of 1.5 - 2.0 mm (**Toothed blade S3** or Pajarito 95), consumption approx. 1.8 - 2.2 kg/m².
- 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 grains are being released.
- Apply **EP 216 RAPID** as top sealant with a rubber squeegee, then distribute evenly in crosswise motion using a velours roller. Consumption approx. 0.55 - 0.90 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.

Note: the coats can be applied within 1.5 to 12 hours, depending on the temperature. At temperatures below 10 °C / 50 °F the times may be longer. At higher temperatures, up to 3 coats can be applied in one working day. Coatings can be used again after 36 to 48 hours after the start of renovation. In case of extended times and when applying polyurethane coatings, it is necessary to carry out an open/intermediate scattering (with quartz sand 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m²).

When fast-curing coatings are applied, they can be used again after 6-8 hours at higher temperatures; and after 12-16 hours at lower temperatures, depending on the temperature. However, optimum curing is only achieved after 24-48 hours (depending on temperature).

If the time window for overcoating cannot be observed with polyurethane coatings or epoxy resins, an open/intermediate scattering (with quartz sand 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m²) is required in any case.

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 traces of paint should be removed with suitable measures. Surfaces suitable are concrete C20/25, cement screed CT-C35-F5 (ZE 30), as well as other sufficiently solid substrates. The substrate has to have adequately high strength for the intended occupational use. Coating of mastic asphalt with epoxy resin is not recommended. The substrates to be coated should be prepared mechanically, preferably by shot-blasting. 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. Observe the information issued by the trade associations, e.g. the most recent versions of BEB worksheets KH-0/U and KH-0/S.

Old substrates must be cleaned before any mechanical preparation. If old synthetic resin surfaces need to be sealed, it must be ensured that sufficient adhesion is achieved. In case of doubt, we recommend testing on a trial surface. Reconstruction beyond the regular requirements demands a monitoring of the result, e.g. by conducting a tensile bonding test.

Mixing

The resin and hardener compounds should be adapted 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 container A. 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.

Producing scratch coats and mortars:

Scratch coat:

1.0 kg **EP 54 RAPID U**
0.5 - 0.8 kg mixed sand **KLB-Mischsand 2/1**

Epoxy resin mortar:

1.0 kg **EP 54 RAPID U**
8.0 - 12.0 kg mixed sand **KLB-Mischsand 1**

Before adding any additives, the binding agent must be premixed, only then is added the supplement. The amount of mixed sand depends on the necessary consistency and stability.

Note: processing rapid-setting mortars is quite difficult. Our recommendation is for small area repairs only.

Processing

Base coat: process the material as a base coat immediately after mixing with a squeegee, trowel, or nylon roller. Apply an evenly sealed coat on the substrate. To achieve a compact surface, apply a second layer or a saturated scratch coat if the substrate is highly absorbent. Scatter the fresh coating with quartz sand (grain size 0.3/0.8 mm) for optimum adhesion. This is mandatory if the subsequent coating will be applied later than 12 hours after the primer.

Scratch coat: apply a scratch coat before any further coatings to level the substrate - but also for pore-sealing. Use a trowel, metal or rubber squeegee. The consistency of the filling compound has to be adjusted according to the substrate absorbency, for a material that runs true.

Special remarks: we advise against the "resinification" of screed/flat joints and break-outs in the screed or concrete with pure epoxy resin or set with suspending agent. For the application, always use the KLB primer resin in combination with quartz sand e.g. **KLB-Mischsand 1** or **KLB-Mischsand 2/1**. For this, we recommend adding at least 1 - 3 parts by weight of filler to 1 parts by weight of primer; if necessary, 0.2 - 2 % of suspending agent can be added to adjust the consistency. Intermediate grinding should be carried out to improve adhesion to subsequent coats.

Floor and air temperature must not fall below 0 °C / 32 °F and humidity should 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. 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. 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 thinner **VR 24** or **VR 33** immediately. Hardened material can only be removed mechanically.

Storage

Store in dry and if possible, at 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

	
KLB Kötztal Lacke + Beschichtungen GmbH Günztalstraße 25 FRG-89335 Ichenhausen	
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EP54RAPIDU-V1-112018	
DIN EN 13813:2003-01	
Synthetic resin screed mortar DIN EN 13813: SR-B2,0-AR0,5-IR6	
Fire behaviour	E _f -s1
Emission of corrosive substances	SR
Wear resistance BCA	AR 0.5
Adhesive tensile strength	B 2.0
Impact resistance	IR 6

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	0,56	g/l
DGNB - Components A + B	< 3	0,038	%
Klima:aktiv - Components A + B	< 3	0,038	%
LEED - Components A + B	< 100	0,4	g/l
Minergie ECO ® - Components A + B	< 1 (< 2)	0,038	%

(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.