



# KLB-SYSTEM EPOXID

## EP 158

Low-emission 2-component epoxy resin binding agent for decorative coloured sand and industrial mortar coatings – AgBB-tested and DIBt®-accredited

### Packaging units



Article no.	Packaging	Inhalt	Units/pallet
AK2119-92	Combo can	1.00 kg	240
AK2119-50	Bucket combo	10.00 kg	30
AK2119-30	Hobbock combo	30.00 kg	12
AK2119-06	Drum combo	600.00 kg	0,5

### Product characteristics

Mixing ratio parts by weight	A : B = 2 : 1
Mixing ratio parts by volume	A : B = 100 : 54
Processing time	10 °C / 50 °F : 70 - 90 min. 20 °C / 68 °F : 40 - 50 min. 30 °C / 86 °F : 20 - 30 min.
Processing temperature	Minimum 10 °C / 50 °F (room and floor temperature)
Curing time (accessibility)	10 °C / 50 °F : 24 - 28 hrs. 20 °C / 68 °F : 14 - 18 hrs. 30 °C / 86 °F : 10 - 14 hrs.
Curing	2 - 3 days until mechanical load at 20 °C / 68 °F Approx. 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 or "fresh-in-fresh"
Consumption	Base coat: approx. 0.300 - 0.400 kg/m <sup>2</sup> Mortar coating: mixture 1 : 8 resin approx. 1.35 kg/m <sup>2</sup> for a 6 mm layer thickness Moortar coating: mixture 1 : 10 resin approx. 1.10 kg/m <sup>2</sup> for a 6 mm layer thickness Mortar coating: mixture 1 : 12 resin approx. 1.00 kg/m <sup>2</sup> for a 6 mm layer thickness
Shelf life	12 months (originally sealed)

### Product description

**KLB-SYSTEM EPOXID EP 158** is a low-viscosity and low-emission 2-component epoxy resin which is mainly used to install epoxy resin mortar coatings in coloured and natural sand.

The epoxy resin binding agent is slow hardening, easy to process and gives a sufficient installation time and smoothness for the mortar works.

**KLB-SYSTEM EPOXID EP 158** can be usually mixed with quartz and coloured sands in a mixing ratio of 1 : 8 to 1 : 12 and applied easily by hand or mechanically.

**KLB-SYSTEM EPOXID EP 158** is based on the proven resin mortar **KLB-SYSTEM EPOXID EP 150**; it corresponds to the new generation of low-emission epoxy resins, and is free of benzyl alcohol, solvents or alkyl phenol. **KLB-SYSTEM EPOXID EP 158** was tested in combination with **KLB-SYSTEM EPOXID EP 172** and **KLB-SYSTEM POLYURETHAN PU 805 E** according to AgBB and the DIBt® (German Institute for Structural Engineering), having been accredited for the use in inner areas and recreation rooms.

**KLB-SYSTEM EPOXID EP 158** is certified according to the „Indoor Air Comfort Gold“, and meets the emissions criteria for the building certification according to DGNB (Germany), LEED (United States) or BREEAM (Great Britain). „Indoor Air Comfort Gold“ sets the highest requirements for the emission of volatile organic compounds, and it does not only fulfill the German standards of AgBB or ABG, but also the emission standards of many other European Countries.

**KLB-SYSTEM EPOXID EP 158** coatings are characterized by a high mechanical and a good wear resistance. The resin also offers a good colour stability, but is not completely color-stable like all epoxy resins.

The resin offers a good resistance to chemicals, especially saline solutions, diluted inorganic acids and alkalis, as well as solvents. Conditionally resistant to organic acids and strongly oxidizing agents.

The temperature resistance of terrazzo and industrial mortar coverings in layer thicknesses of 6 mm and more can be briefly exposed to humid heat up to approx. 80 °C / 176 °F and to dry heat up to approx. 120 °C / 248 °F. For a longer exposure or a more intense heating of the floor, seek advice.

The smooth surface must be filled with **EP 172** in several steps in order to obtain a closed surface. Use **EP 705** or **PU 805 E** for the final matt finish of the floor coating.

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#### Area of application

- Terrazzo coatings with AgBB requirements.
- Mortar coatings made of natural and decorative sand.
- Preferably, for predominantly dry productions in different industries (pharmaceuticals, food, machinery, automotive and many more), decorative exhibition areas, and museums. For wet and chemically contaminated surfaces seek advice!
- Manually and mechanically applied levelled mortar coatings in a thickness range of 5 - 25 mm.
- Levelling layers, underlay mortar and primers before epoxy mortar installation.

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#### Product features

- tested, low-emission quality
- Total Solid according to GISCODE (Test method "Deutsche Bauchemie")
- proven quality
- for smoothed mortar coatings 5 - 25 mm
- for Terrazzo coatings with coloured sand
- especially suitable for manual application
- low-grade yellowing

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#### Technical data

Viscosity - Component A+B	450	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Density - Component A+B	1.08	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)
Weight loss	0.3	weight-%	after 28 days
Water absorption	< 0.2	weight-%	DIN 53495
Bending tensile strength	30	N/mm <sup>2</sup>	DIN EN 196/1
Compressive strength	70	N/mm <sup>2</sup>	DIN EN 196/1
Adhesive tensile strength	> 1.5	N/mm <sup>2</sup>	DIN EN 1542
Shore-hardness D	75	-	DIN 53505 (after 7 days)

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

#### Included in systems

- System C4KLB LOW-VOC PHARMA EP Screed

Please visit our website to get more information about our KLB systems: [www.klb-koetztal.com](http://www.klb-koetztal.com)

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#### Tests

External test certificates are available:

- Certified low emission according to „Eurofins Indoor Air Comfort Gold“. Compliant with AgBB and with DIBt®-accreditation for recreation rooms.
- Classification of the fire behavior in combination as **System C4** according to DIN EN 13501-01:2010-01: B<sub>f1</sub>-s1.

**Note:**

Please ask for the tested system build-up!

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#### Build-up of coats

**EP 158** can be used as a mortar when mixed with coloured or natural sand in a mixing ratio of 1 : 8 to 1 : 12. The mixtures must be adapted to the particular application and laying method chosen. The installation of surface-ready decorative coatings can be carried out following the procedure below:

- Prepare substrates like concrete or cement screed mechanically, e.g. by shot blasting.
- For the subsequent installation of the decorative mortar, the primer can be applied with the resin **EP 158**. As an alternative, it is possible to use the recommended KLB primers, e.g. **EP 53 Spezialgrund-AgBB**, **EP 57**, or **EP 58**. The consumption is of approx. 0.3 - 0.4 kg/m<sup>2</sup>. Scatter the wet primer openly with quartz sand 0.7/1.2; consumption approx. 0.8 - 1.2 kg/m<sup>2</sup>.
- Optional: a levelling coat is not necessary for common roughness. Larger unevenness can be pre-filled with mortar if necessary.
- Mortar processing: the processing of the freshly made mortar mix with **EP 158** with an appropriate coloured or natural sand mix takes place when fresh, immediately after the production.
- **When applied by hand, the mortar can be laid with the help of levelling gauges in a uniform layer thickness, then smoothed with a trowel and finally compacted.**
- **EP 158** mortar mixtures can also be applied mechanically with a screed applicator and smoothed with a power float. It is recommended to conduct a trial before the application.
- The pore sealing takes place by laying multiple layers of **EP 172** with a surface spatula, consumption approx. 0.8 - 1.2 kg/m<sup>2</sup>.
- Matt sealing with **PU 805 E** using a velour roller, consumption approx. 0.150 - 0.180 kg/m<sup>2</sup>.

The laying of mortar coatings requires special experience. The installer must verify the suitability of the resin for the respective installation.

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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 base coats. The surface strength must then be at least 1,5 N/mm<sup>2</sup>. 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 0.7/1.2 mm. The substrates to be coated should be

prepared mechanically, preferably by shot-blasting. The prepared area must be saturated, pore-free and primed carefully. 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 a monitoring of the result, e.g. by conducting a tensile bonding test.

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### Mixing

If the components are packed individually, they must 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.

**Producing mortars:** mixing synthetic resin mortars in order to achieve a consistent mortar quality should generally be carried out with a compulsory mixer. For this purpose, pre-mix the additives briefly, add the mixed resin whilst the mixer is running, then pour the resin/hardener mixture into the running mixer.

**Important:** the mixing times must always be the same. Then process the complete mixture immediately and at a constant working rhythm.

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### Processing

The mortar mixture should always be processed immediately in order to keep the change in consistency due to the reaction progress to a minimum. This gives the most even surfaces; partially reacted material is more difficult to work with and can lead to altered surface structures and visible working transitions. Apply the material in portions on the substrate and distribute evenly, e.g. with a gauge. Compact and smooth manually or mechanically. Always work "fresh-in-fresh" to avoid any shoulders. Working areas must be separated in accordance with the installation process. The mortar installation requires an experienced and trained staff. Mortar coatings should generally be sealed. The number of coats and choice of material depends on the finish requirements and the mortar system. The optimal processing temperature is between 15 - 25 °C / 59 - 77 °F.

Floor and air temperature must not fall below 10 °C / 50 °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. Exposure to water should be avoided during the first 7 days. The specified curing times are dependent on the ambient temperature (see table); 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.

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### Cleaning

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

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### Storage

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

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### Special remarks

The product is regulated by the German Ordinance on Hazardous Substances (GefStoffV), the German Ordinance on Industrial Safety and Health (BetrSichV), and

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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**

	
KLB Kötztal Lacke + Beschichtungen GmbH Günztalstraße 25 FRG-89335 Ichenhausen	
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EP158-V1-122015	
<b>DIN EN 13813:2003-01</b>	
Synthetic resin screed mortar DIN EN 13813: SR-B1.5-AR0.5-IR4	
Fire behaviour	E <sub>n</sub> -s1
Emission of corrosive substances	SR
Wear resistance BCA	AR 0.5
Adhesive tensile strength	B 1.5
Impact resistance	IR 4

### VOC content

The product complies with the high requirements to low VOC contents, as required for sustainable construction. Therefore, these values exceed by far the European Union directive 2004/42/EG (decopaint directive).

	Limit value	Actual content	
Decopaint Directive 2004/42/EG - Component A	< 500	0	g/l
Decopaint Directive 2004/42/EG - Component B	< 500	0	g/l
DGNB - Components A + B	< 3	0	%
Klima:aktiv - Components A + B	< 3	0	%
Minergie ECO® - Components A + B	< 1 (< 2)	0	%

(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](http://www.klb-koetzal.com). In addition, our "General Terms and Conditions" apply.