KLB KÖTZTAL
Lacke+Beschichtungen GmbH

PARKHAUS-Oberflächenschutzsystem KLB-SYSTEM EPOXID
EP 5590

Flexibilised, statically crack-bridging (class A3) and vapour-permeable (class II) 2-component epoxy resin coating for slip-resistant scattered coverings

Packaging units

Article no.	Packaging	Content (kg)	Units/pallet
AK1469-50	Bucket Combo	12.00 kg	30
AK1469-30	Hobbock combo	30.00 kg	12

Product characteristics

Mixing ratio parts by weight	A : B = 100 : 19
Mixing ratio parts by volume	A : B = 100 : 37
Processing time	10 °C / 50 °F : 70 - 90 minutes 20 °C / 68 °F : 30 - 40 minutes 30 °C / 86 °F : 15 - 20 minutes
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 : 12 - 16 hrs.
Curing	2 - 3 days until mechanical load at 20 °C / 68 °F 7 days until chemical load at 20 °C / 68 °F
Consumption	2.4 - 2.6 kg/m²
Colours	grey
Shelf life	12 months (originally sealed)

Product description

KLB-SYSTEM EPOXID EP 5590 is a coloured, elastified, water vapour-permeable and low-solvent 2-component epoxy resin coating for scattered, slip-resistant coverings in car parks, underground parking garages as well as industrially or commercially used areas. Within a system with **EP 5520** and **EP 5570**, it is tested as surface protection system OS 8 as "Chemically-resistant coating for drivable, heavily loaded surfaces", according to TR maintenance directive and the DAfStb guideline"Protection and maintenance of concrete components".

KLB-SYSTEM EPOXID EP 5590 is used as scattered coating with a static crack-bridging of class A3 (according to DIN EN 1062-7) at - 10 °C / 14 °F (0.6 mm) and is permeable due to its special formulation (class II). Within **System K7**, a dynamic crack-bridging of class B1 (according to DIN EN 1062-7) has been tested at 0 °C / 32 °F.

The hardened coatings are very resistant to mechanical stresses and are therefore suitable for areas subject to medium to high loads.

Particularly when compared to conventional OS 8 systems, the system's increased crack bridging is more advantageous for the protection of concrete elements, e.g. in parking areas, underground garages, etc. The higher permeability even enables the coating of substrates with slightly increased moisture.

The coating system can be used both indoors and outdoors. Colour changes, however, may occur with certain weather influences.

System K7 KLB-PARKING EP OS 8 Flex has a good resistance to many chemicals, particularly to aqueous solutions, diluted acids, bases, petrol, motor and heating oil. We can advise you in case of any special requirement.

Due to its formulation, the material is convenient to work with as well as physiologically and ecologically harmless after hardening.

Area of application

- Slip-resistant coating for accessible and mechanically loaded surfaces based on OS 8, like those in car parks, parking garages, with static crack-bridging.
- Flexibilised, water vapour-permeable coating for accessible floors in industrial or commercial areas that are subject to medium to high mechanical loads.
- On concrete substrates with increased moisture, both in the interior and exterior.

Product features

- flexibilised
- crack-bridging
- water vapour-permeable
- Total Solid according to GISCODE (Test method "Deutsche Bauchemie")
- free of deleterious substances against varnish
- for exterior use
- for interior use

Technical data

Viscosity - Component A+B	approx. 2000 - 2500	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Solid content	> 99	%	KLB method
Density - Component A+B	approx. 1.66	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)
Shore-hardness D	ca. 55	-	DIN 53505 (after 7 days)

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

Included in systems

- System K7 - KLB PARKING EP OS8 Flex

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

Tests

The following external and internal test certificates are available:

- Tested according to DIN EN 1504-2 in consideration of DIN V 18026 “Surface protection systems for concrete from products according to DIN EN 1504-2”, according to the test class OS 8 “Chemically-resistant coatings for drivable, heavily loaded surfaces”.
- Static crack-bridging of class A3 (according to DIN EN 1062-7) at - 10 °C / 14 °F: 0.6 mm
- Water vapour permeability of class II based on DIN EN 1504-2
- Scattered coating with slip resistance grade R11 V4 possible, according to DIN EN 16165 and DIN 51130.
- Classification of the fire behaviour within System K7 according to DIN EN 13501-01:2010-01: B_{fl}-s1.
- Dynamic crack-bridging of class B1 within System K7 (according to DIN EN 1062-7) at 0 °C / 32 °F
- Product is compliant with DIN EN 13813: 2003-01 and DIN EN 1504-2:2004

Note:
To receive the test results, reports and statements of performance of the relevant system please contact your KLB adviser.

Build-up of coats

Plain-coloured scattered coating in accordance with TR maintenance OS 8

Coating with increased static crack-bridging capability for surfaces that are accessible to vehicle traffic and mechanically load-bearing

- Prepare the substrate preferably through shot-blasting and thoroughly vacuum off.
- Prime with **EP 5520**, consumption approx. 0.3 - 0.4 kg/m². Open scattering with quartz sand, grain size 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m².
- Alternatively, **EP 5530** can be used as pre-filled primer, consumption approx. 0.3 - 0.6 kg/m². Open scattering with quartz sand, grain size 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m².
- Apply the wearing layer **EP 5590** with the toothed trowel **Toothed blade S3** or Pajarito 95 respectively **Toothed blade S5** or Pajarito 25 (depending on temperature and angle), consumption of the mixture approx. 2.4 - 2.6 kg/m². Control consumptions.
- Roughness depth surcharge:

  Roughness depth surcharge 0.5 mm dz of > 0.8 kg/m²

  Roughness depth surcharge 1.0 mm dz of > 1.6 kg/m²

  In accordance with the maintenance directive TR for concrete structures, corresponding layer thickness surcharges are required when there is roughness. The control of the layer thicknesses and, if necessary, the adjustment of the resulting consumption quantities must be carried out by the processor.

- Scatter completely with quartz sand 0.3/0.8 mm, consumption approx. 5.0 - 7.0 kg/m².
- After curing, sweep off excess sand, chip off or vacuum thoroughly until no more grain or sand is being released.
- Apply **EP 5570** as a top sealeant with a rubber squeegee to obtain the desired slip-resistance, then distribute with a velour roller in crosswise motion and roll off evenly. Consumption approx. 0.5 - 0.8 kg/m².

Important notes:

The TR maintenance directive requires compliance with the layer thicknesses. For OS 8, a minimum layer thickness of 2.5 mm is required. For higher levels of roughness, it might be necessary to add a layer thickness aggregate to achieve the total layer thickness.

Application on walls and pedestal areas for parking areas

- Prepare the substrate, e.g. by milling, grinding or blasting.
- Apply the **EP 5520** primer, consumption approx. 0.25 - 0.35 kg/m². In order to avoid the primer to run off, 0.5 - 2% of suspending agent **Stellmittel 5FT** or **Stellmittel 3 Super** can be added.
- Alternatively, in case of larger pores and shrinkage cavities: smooth the surface with **EP 5520** while adding 3 - 5% of suspending agent **Stellmittel 5FT** or **Stellmittel 3 Super** so that all pores are filled, consumption variable and depending on pore size.
- After curing, sharply apply **EP 5590** with the addition of approx. 0.5 - 1.0% of suspending agent **Stellmittel 5 FT.**
- Scatter the fresh coating entirely with quartz sand 0.3/0.8 mm, consumption approx. 1.5 - 2.5 kg/m².
- Apply **EP 5570** as a top sealant while adding 0.5 - 1% of suspending agent **Stellmittel 5 FT** with a velour roller, consumption approx. 0.5 - 0.7 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. Observe the DAfStb guideline **"Protection and maintenance of concrete components"**, the information issued by the trade associations, e.g. the current version of the KH-0/U and KH-0/S BEB worksheets as well as the notes in the product information of the recommended primers **EP 5520** or **EP 5530**. 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. 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.

Mixing

The material will be supplied in coordinated quantities in combo-packaging. With such, the factory-weighed material is available in exactly the right mixing ratio. The package of Component A has sufficient volume for the entire packaging unit. Empty all of the hardener compound B into the resin package. 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 entire resin/ hardener mixture into a clean container and mix it once again briefly.

Addition of suspending agent: for coating concave covings, **KLB-Stellmittel 5 FT** 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 floor 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

After mixing, process the material immediately with a squeegee or toothed trowel 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 - 20 minutes. In order to work seamlessly, always work “fresh-in-fresh” and define work areas before starting.

We recommend scattering the coating approx. 10 - 30 minutes after application. This ensures that **EP 5590** can deaerate optimally, the surface appearance is uniform and the grain is fully bedded into the material.

Floor and air temperature must not fall below 10 °C / 50 °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 7 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 the recommended working and climatic conditions are complied with, the technical and visual properties of the end product can be assured.

Special remarks for parking areas:

High-rising components must be protected by applying the coating at a height of 15 - 50 cm away from the floor, depending on the frequency and risk of splashing. In order to do so, a concave or triangular coving with a minimum side length of 30 x 30 mm must be placed onto the wall or pedestals within a dense structure. The products to be used and the build-up proposal can be found in the section "Build-up of coats", subsection "Application on walls and pedestal areas".

Depending on the construction, we recommend carrying out maintenance visits twice a year, thus at least once a year at the beginning of winter as well as a repair work of possibly damaged areas.

Cleaning

Tools: to remove fresh contamination and to clean the equipment, use **VR 24** or **VR 33** immediately. Hardened material can only be removed mechanically.

Floor coating: separate cleaning and care recommendations are available for cleaning floors produced with KLB coatings and sealers, at www.klb-koetztal.com.

Storage

Store in dry and, if possible, 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

Always process coloured coatings in the same batch, observe the legal information on the colour chart, which is available at www.klb-koetztal.com/downloads. 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

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EP5590-V1-082023

DIN EN 13813:2003-01

Synthetic resin screed mortar
DIN EN 13813: SR-B2,0-AR0,5-IR10

Fire behaviour	B_{fl}-s1
Emission of corrosive substances	SR
Wear resistance BCA	AR 0,5
Adhesive tensile strength	B 2,0
Impact resistance	IR 10

CE

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DIN EN 1504-2:2004

Surface protection products-coating
DIN EN 1504-2: ZA.1d,ZA.1f,ZA.1g

Linear shrinkage	erfüllt
Abrasion resistance	Mass loss < 3000 mg
CO_2-permeability	S_D > 50m
Water vapour permeability	Class II
Capillary water absorbtion and water permeability	w < 0,1 kg/m²*h0,5
Compatibility to temperature change	complied with
Resistance to impact	Class I
Tear-test for adhesive strength evaluation	≥ 2,0 (1,5) N/mm²
Fire behaviour	B_{fl}-s1
Grip	Class III

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-koetztal.com. In addition, our "General Terms and Conditions“ apply.

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