PARKHAUS-Oberflächenschutzsystem KLB-SYSTEM POLYUREA
PU 5580

Light and weather-resistant, flexibilised 2-component polyurea top sealer

Packaging units

Article no.	Packaging	Content (kg)	Units/pallet
AK6146-40	Bucket combo	10.00 kg	30
AK6146-25	Hobbock combo	25.00 kg	12

Product characteristics

Mixing ratio parts by weight	A : B = 4 : 1
Mixing ratio parts by volume	A : B = 100 : 34
Processing time	10 °C / 50 °F : 35 minutes 20 °C / 68 °F : 25 minutes 30 °C / 86 °F : 15 minutes
Processing temperature	Minimum 10 °C / 50 °F (room and floor temperature)
Curing time (accessibility)	10 °C / 50 °F : 8 - 10 hrs. 20 °C / 68 °F : 6 - 8 hrs. 30 °C / 86 °F : 4 - 6 hrs.
Curing	24 hours until mechanical load at 20 °C / 68 °F 3 days until chemical load at 20 °C / 68 °F
Further coatings	After curing, but after 24 hours at the latest at 20 °C / 68 °F
Consumption	Approx. 0.5 - 0.8 kg/m²
Colours	Standard colours according to KLB colour chart, other colours available upon request!
Shelf life	12 months (originally sealed)

Product description

KLB SYSTEM POLYUREA PU 5580 is a coloured, solvent-free 2-component polyurea top sealer for the production of light and weather-resistant scattered coatings.

KLB SYSTEM POLYUREA PU 5580 is used in multi-storey car parks, on weather-exposed areas and as a top sealer for slip-resistant surfaces, especially when a light-resistant top coat is required.

KLB SYSTEM POLYUREA PU 5580 is a component of a complete car park system for surfaces which are subject to different requirements.

System components are:

- **KLB SYSTEM EPOXID EP 5520** “2-component epoxy resin primer”
- **KLB SYSTEM EPOXID EP 5530** “2-component epoxy resin primer”
- **KLB-SYSTEM POLYURETHAN PU 5550** “2-component polyurethane floating layer, flexible at low temperatures”
- **KLB-SYSTEM POLYURETHAN PU 5560** “2-component polyurethane wearing layer”
- **KLB-SYSTEM EPOXID EP 5570** “2-component epoxy resin top sealer, flexibilised”

- **KLB-SYSTEM POLYUREA PU 5580** “2-component polyurea top sealer, light and weather-resistant”

The top sealer has a good processability and opacity. The material is rapid-setting and quickly becomes rainproof on exterior surfaces.

KLB-SYSTEM POLYUREA PU 5580 has a very good plasticiser and chemical resistance, especially to petrol, anti-freezing agents, oil, battery acid, de-icing salt and other chemicals.

Area of application

- Top sealer for surface protection systems OS 11 a/b and OS 14.
- For indoor and outdoor parking surfaces, garages, etc.
- Low-yellowing and weather-resistant coating for exterior use, e.g. stadiums, open spaces, etc.

Product features

- solvent-free
- rapid-setting
- viscoplastic
- resistant to abrasion and wear
- resistant to de-icing salt
- good resistance to water and chemicals
- resistant to glycol, oil and battery acid
- good plasticiser resistance
- quickly becomes rainproof
- resistant to weather
- colour-stable
- light-stable

Technical data

Viscosity - Component A+B	Approx. 1400 - 1800	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Solid content	> 99	%	KLB method
Density - Component A+B	1.45	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)
Shore-hardness D	Ca. 70 - 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 K2 - KLB PARKING PU OS 11a
- System K4 - KLB PARKING PU OS 14

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

Tests

- Test report (system test): Performance characteristics test, for the use as a surface protection system/product following DIN EN 1504-2 “Products and systems for the protection and maintenance of concrete supporting structures, part 2: surface protection systems for concrete; German version EN 1504-2:2004”, in consideration of DIN V 18026, “Surface protection systems for concrete from products according to DIN EN 1.5.2004-2” and in accordance with the DAfStb guidelines “Protection and maintenance of concrete components” and the TR maintenance directive.
- Declaration of performance in accordance with Appendix III of (EU) Regulation n. 305/2011 (construction product regulation), for the single products
- Fire behaviour classification according to DIN EN 13501-01:2010-01: B_{fl}-s1

- Slip-resistance according to DIN 51130 and BGR 181 for OS 11a/b available in R10 V4 and R11/V6.

Build-up of coats

Surface protection system OS 11a

Coating with increased dynamic crack-bridging capability for surfaces that are accessible to foot and vehicle traffic as well as for open parking decks

- 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 or 0.7/1.2 mm, consumption approx. 0.5 - 1.0 kg/m².
- Apply the floating coat **PU 5550** with the toothed scraper **Toothed blade RS4** or Pajarito 48, consumption approx. 2.0 - 2.2 kg/m².
- Roughness depth surcharge:

  Roughness depth surcharge 0.5 mm dz of > 0.7 kg/m²

  Roughness depth surcharge 1.0 mm dz of > 1.3 kg/m²

In accordance with the maintenance directive TR or RiLi SIB (DAfStb), 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.

- Fill the **PU 5560** wearing layer with approx. 20% of quartz sand of grain size 0.1/0.3 mm and mix until homogeneous.
- Apply the **PU 5560** wearing layer using the toothed scraper **Toothed Blade RS4** or Pajarito 48, consumption of the mixture approx. 2.2 - 2.5 kg/m².
- Scatter the fresh surface entirely using quartz sand with a grain size of 0.3/0.8 mm, consumption approx. 4 - 6 kg/m².
- Remove excess sand after curing, brush off loose grains and thoroughly vacuum off the entire surface.
- For weather-exposed surfaces, the non-yellowing **PU 5580** top sealer, consumption approx. 0.5 - 0.8 kg/m², is applied using a foam rubber wiper and uniformly distributed in crosswise motion with a velour roller.

Important notes:

- The RiLi SIB or maintenance directive TR require compliance with the layer thicknesses for attaining the certified properties, such as dynamic crack-bridging in class B 3.2.
- For OS 11a, a minimum layer thickness of 1.5 mm for the elastic surface protection (floating layer) and 3.0 mm plus the current roughness depth layer thickness surcharge d_z for the wearing surface is required.
- Please observe the TR maintenance directive for further requirements.

Surface protection system OS 11b

Coating with increased dynamic crack-bridging capability for surfaces that are accessible to foot and vehicle traffic

- 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.
- Fill the floating/wearing coat **PU 5550** with approx. 30% of quartz sand with grain size 0.1/0.3 mm and mix until homogeneous.

- Apply the floating/wearing coat **PU 5550** with the toothed scraper **Toothed blade RS4** or Pajarito 48. Consumption of the mixture approx. 2.6 - 2.8 kg/m².
- Roughness depth surcharge:

  Roughness depth surcharge 0.5 mm dz of > 0.4 kg/m² plus 30 weight-% of quartz sand 0.1/0.3 mm

  Roughness depth surcharge 1.0 mm dz of > 0.8 kg/m² plus 30 weight-% of quartz sand 0.1/0.3 mm

In accordance with the maintenance directive TR or RiLi SIB (DAfStb), 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 the fresh surface entirely using quartz sand with a grain size of 0.3/0.8 mm, consumption approx. 4 - 6 kg/m². Remove excess sand after curing, brush off loose grains and thoroughly vacuum off the entire surface.
- Apply the coloured, flexibilised top coat **PU 5580** with a rubber squeegee/foam rubber wiper or a Kaupp spatula and evenly distribute in crosswise motion with a velour roller, consumption approx. 0.5 - 0.8 kg/m².
- Alternatively, the flexibilised 2-component epoxy resin sealer **EP 5570** can be used for interior surfaces, provided that the requirements for light stability are lower.

Important notes:

- The RiLi SIB or maintenance directive TR require compliance with the layer thicknesses for attaining the certified properties, such as crack-bridging in class B 3.2 according to DIN EN 1062-7 at -20 °C/-4 °F.
- For OS 11b, a minimum layer thickness of 4.0 mm plus the current roughness depth layer thickness surcharge d_z is required.
- The OS 11b system is not allowed to be used on weather-exposed parking decks.
- Please observe the TR maintenance directive for further requirements.

Surface protection system OS 14

Coating with increased dynamic crack-bridging capability for surfaces that are accessible to foot and vehicle traffic

- 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 floating coat **PU 5550** with the toothed scraper **Toothed blade RS4** or Pajarito 48. Consumption of the mixture approx. 2.6 - 2.8 kg/m².
- Roughness depth surcharge: see OS 11a build-up
- Fill the **PU 5560** wearing layer with approx. 20% of quartz sand of grain size 0.1/0.3 mm and mix until homogeneous.
- Apply the **PU 5560** wearing layer using the toothed scraper **Toothed Blade S2** or Pajarito 78 respectively **Toothed Blade S1** or Pajarito 92, consumption of the mixture approx. 3.0 - 3.2 kg/m².
- Scatter the entire surface using quartz sand with a grain size of 0.3/0.8 mm, consumption approx. 6 - 8 kg/m². Remove excess sand after curing, brush off loose grains and thoroughly vacuum off the entire surface.
- For weather-exposed surfaces, the non-yellowing **PU 5580** top sealer, consumption approx. 0.5 - 0.8 kg/m², is applied using a foam rubber wiper and uniformly distributed in crosswise motion with a velour roller.
- Alternatively, the flexibilised **EP 5570** top sealer with a consumption of approx. 0.5 - 0.8 kg/m² can be applied.

Important notes:

- The maintenance directive TR requires compliance with the layer thicknesses for attaining the certified properties, such as crack-bridging in class B 4.2 according to DIN EN 1062-7 at -20 °C/-4 °F.
- For OS 14, a minimum layer thickness of 2.0 mm for the elastic surface protection (floating layer) and 4.0 mm plus the current roughness depth layer thickness surcharge d_z for the wearing surface is required.
- Please observe the TR maintenance directive for further requirements.

Application of the coating on walls and plinths

- 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 5 FT** 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 5 FT** or **Stellmittel 3 Super** so that all pores are filled, consumption variable and depending on pore size.
- After hardening, sharply apply **PU 5550** while adding 1.5 - 2.5% of suspending agent **Stellmittel 5 FT** and 10 - 15 % of quartz sand **Quarzsand 0.3/0.8 mm**.
- Scatter the fresh coating entirely with quartz sand **Quarzsand 0.3/0.8 mm**, consumption approx. 1.5 - 2.5 kg/m².
- Apply **EP 5570** or **PU 5580** as top sealant while adding 0.5 - 1.0% of suspending agent **Stellmittel 5 FT** using a velours roller, consumption approx. 0.5 - 0.7 kg/m².

Substrate

The substrate to be sealed must be free from all kinds of soiling. The product is usually used on surfaces scattered with quartz sand. Excess quartz sand must be swept off, brushed off or vacuumed up so that no loose grains are left.

The following generally applies for coating systems:

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 current version of the KH-0/U, KH-0/S BEB worksheets and RiLi-SIB or TR maintenance directive as well as the notes in the product information of the recommended primers **EP 5520** or **EP 5530**. The substrates to be coated should be prepared mechanically, preferably by shot blasting. The prepared area must be saturated, pore-free and primed carefully. 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. In case of doubt, we recommend testing on a trial surface. The surface can be scattered with approx. 0.5 - 1.0 kg/m² of quartz sand 0.3/0.8 mm in order to improve adhesion.

Mixing

Combo-packaging will be supplied in the correctly measured 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 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 entire resin/hardener mixture into a clean container and mix it once again briefly.

Processing must take place immediately after mixing!

Processing

For scattered coatings, after the base coat has cured, remove any excess sand from the surface by sweeping and vacuuming until no more quartz grains loosen. The top sealer is applied as soon as all preliminary works have been completed and the working areas divided.

The sealer is applied immediately after mixing. Watch out for rapid hardening, especially at higher relative humidities, and adapt your working method accordingly. Depending on the desired material quantity, the compound is then distributed with a smooth rubber squeegee, a foam rubber wiper, a surface or steel scraper by evenly pulling it over the sanded surface. Ensure uniform application and avoid ponding. Rigid scrapers create smoother surfaces, while soft trowels create rougher surfaces. Slip resistance requirements must comply with the recommended consumption levels for the respective R class. Please seek advice if required.

To ensure an even distribution on the surface and to avoid balding or traces of material, the area must be gone over with a roller immediately after application, and the sealer must be distributed evenly. To avoid early-stage hardening, always work "fresh-in-fresh" and change rollers after 20 - 30 minutes.

Floor and air temperature must not fall below 10 °C / 50 °F and humidity should not exceed 75 %. The floor temperature must be 3 °C / 5.4 °F above the dew point so as not to impede the curing process. If a dew-point situation arises, regular curing will not be possible. Hardening problems or discolorations may also occur (whitening, etc.). Do not work in strong sunlight or on strongly heated surfaces as this considerably shortens the processing time and possibly creates bubbling. When fresh, polyurethane coatings are sensitive to moisture, so it is essential to comply with the humidity specifications. Coating dew-damp substrates, using damp sand as well as perspiration lead to material foaming or hardening problems and must be avoided. Water loading should be avoided during the first 5-10 hours. 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. Exposure to water and chemicals should be avoided during the first 7 days.

Special remarks: coloured products should always belong to the same batch and be used on the same surface, as slight colour deviations in different batches cannot be excluded due to the raw material. The batch number is indicated on the container labels. For certain colour shades - especially white, yellow and orange or pastel light shades - the recommended layer thicknesses must be observed to ensure opacity. Surface changes and loss of gloss may occur with prolonged and intensive use or exposure to chemicals.

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 as well as 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 works of possibly damaged areas.

Cleaning

To remove fresh contamination and to clean tools, use **VR 28** 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 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. Material can only be stored for a limited period. Opened containers harden within a few days.

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! VOC content labelling: (EU Regulation 2004/42) Maximum Permissible Value 500 g/l (2010,II,j/lb): Ready-for-use product contains < 500 g/l VOC.

GISCODE: PU10

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
1119
KLB Kötztal Lacke + Beschichtungen GmbH Günztalstraße 25 FRG-89335 Ichenhausen
19
PU5580-V1-052019
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	S_D > 50m
Water vapour permeability	Class III
Capillary water absorbtion and water permeability	< 0.1 kg/m²*h0.5
Resistance to increased chemical excavation	complied with
Impact resistance	Class I
Tear-test for adhesive strength evaluation	> 1.5 Nmm²
Fire behaviour	C_{fl}-s1
Compatibility to temperature Change	complied with
Crack bridging ability	B 3.2 (-20 °C)
Grip	Class III

CE
KLB Kötztal Lacke + Beschichtungen GmbH Günztalstraße 25 FRG-89335 Ichenhausen
19
PU5580-V1-052019
DIN EN 13813:2003-01
Synthetic resin screed mortar DIN EN 13813: SR-B2.50-AR0.5-IR11

Fire behaviour	C_{fl}-s1
Emission of corrosive substances	SR
Wear resistance BCA	AR 0.5
Adhesive tensile strength	B 2.0
Impact resistance	IR 11

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

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