PARKHAUS-Oberflächenschutzsystem KLB-SYSTEM POLYURETHAN
PU 5560

2-component polyurethane wearing layer for OS 8, OS 11a and OS 14 surface protection system in accordance with TR maintenance directive

Packaging units

Article no.	Packaging	Content (kg)	Units/pallet
AK6142-47	Hobbock combo	12.00 kg	30
AK6142-30	Hobbock combo	30.00 kg	12
AK6142-01	Drum combo	1200.00 kg	0,33

Product characteristics

Mixing ratio parts by weight	A : B = 5 : 1
Mixing ratio parts by volume	A : B = 100 : 25
Processing time	10 °C / 50 °F : 45 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 : 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
Further coatings	After 18 – 24 hours, but after 48 hours at the latest at 20°C / 68 °F
Consumption	OS 8 Flex PU: approx. 1.9 - 2.1 kg/m² / + 30% by weight of quartz sand 0.1/0.3mm OS 11a: approx. 1.8 - 2.1 kg/m² / + 20% by weight of quartz sand 0.1/0.3mm OS 14: approx. 2.5 - 2.7 kg/m² / + 20% by weight of quartz sand 0.1/0.3mm
Packaging	Bucket combo 12 kg, Hobbock combo 30 kg
Colours	Grey
Shelf life	12 months (originally sealed)

Product description

KLB-SYSTEM POLYURETHAN PU 5560 is an elastic 2-component polyurethane coating used as a wearing layer for crack-bridging surface protection systems in accordance with TR maintenance directive in OS 8, OS 11a and OS 14 for underground and multi-storey car park coatings.

KLB-SYSTEM POLYURETHAN PU 5560 is used to form the system's wear-resistant top coat (wearing layer). To achieve this, **KLB-SYSTEM POLYURETHAN PU 5560** is pre-filled with natural quartz sand with grain size 0.1/0.3 mm and the entire surface scattered with natural quartz sand grain size 0.3/0.8 mm.

In accordance with the RiLi SIB (DAfStb) or the TR maintenance directive, the product is suitable for the production of certified OS 11a or OS 14 car park coatings with increased dynamic crack-bridging capability for surfaces that are accessible to foot and vehicle traffic. **KLB-SYSTEM POLYURETHAN PU 5560** can also be used

for surface protection systems OS 8 with static crack-bridging (**System K6 KLB PARKING PU OS 8 FLEX**).

KLB-SYSTEM POLYURETHAN PU 5560 is resistant to frost and de-icing salt, thus permanently protecting the building fabric against the penetration of water or de-icing salt.

KLB-SYSTEM POLYURETHAN PU 5560 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 sealer, coloured, light and weather-resistant“

The top coat is applied with the flexibilised epoxy resin top seal **KLB-SYSTEM EPOXID EP 5570** or the light and weather-resistant 2-component polyurea top seal **KLB-SYSTEM POLYUREA PU 5580**.

Area of application

- As a resistant wearing and / or scattered layer for the OS 11a and OS 14 surface protection system.
- As statically crack-bridging wearing and / or scattered layer for the OS 8 surface protection system.

Product features

- solvent-free
- very good levelling
- elastic and deformable
- easily wear-resistant

Technical data

Viscosity - Component A+B	Approx. 4600	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Solid content	> 99	%	KLB method
Density - Component A+B	1.50	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)
Shore-hardness D	55 - 60	-	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
- System K6 - KLB PARKING PU OS 8 Flex

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 following DIN EN 1.5.2004-2“ and in accordance with the DAfStb guidelines „Protection and maintenance of concrete components“ and the TR maintenance directive.
- Static crack-bridging of class A3 (according to DIN EN 1062-7) at -10 °C / 14 °F: > 0.5 mm
- 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
- Slip-resistance according to DIN 51130 and BGR 181 for OS 11a available in R10 V4, R11/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 trowel **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 trowel **Toothed Blade RS4** or Pajarito 48, consumption of the mixture approx. 2.2 - 2.5 kg/m².
- Scatter the entire surface 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.
- Alternatively, the flexibilised **EP 5570** top sealer with a consumption of approx. 0.5 - 0.8 kg/m² can be applied.

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 according to DIN EN 1062-7 at -20 °C/-4 °F.
- 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.
- Only the OS 11a system may 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 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, consumption approx. 0.5 - 1.0 kg/m².
- Apply the floating coat **PU 5550** with the toothed trowel **Toothed blade RS4** or Pajarito 48. Consumption 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 trowel **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 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 hardening, sharply apply **PU 5550** while adding approx. 1.5 - 2.5% of suspending agent **Stellmittel 5FT** 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.

Surface protection system OS 8 Flex (System K6 KLB PARKING PU OS8 FLEX)

Surface protection system in accordance with TR maintenance directive, statically crack-bridging

- 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.
- Fill the **PU 5560** wearing layer with approx. 30% of quartz sand of grain size 0.1/0.3 mm and mix until homogeneous.
- Apply the **PU 5560** wearing layer using the toothed trowel **Toothed Blade RS4** or Pajarito 48, consumption approx. 2.5 - 2.7 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.

- Scatter the entire surface using quartz sand with a grain size of 0.3/0.8 mm, consumption approx. 5 - 7 kg/m². Remove excess sand after curing, brush off loose grains and thoroughly vacuum off the entire surface.
- Apply the **EP 5570** top sealer, consumption approx. 0.5 - 0.8 kg/m² using a foam rubber wiper and uniformly distributed in crosswise motion with a velour roller.

Important notes:

- The maintenance directive TR requires compliance with the layer thicknesses for attaining the certified properties.
- As a result from production processes and according to the test certificate, a minimum layer thickness of 4 mm plus the current roughness depth layer thickness aggregate dz is required for **system K6**.
- According to the TR maintenance directive, the total layer thickness including primer and top coat can be reduced to a minimum of 1.5 mm for pure protective measures in the sense of DIN EN 13813.
- According to TR maintenance directive, the standard build-up OS 8 requires a priming layer.
- 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 (or alternative), 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 5560** while adding approx. 1.5 - 2.5% of suspending agent **Stellmittel 5 FT** or **Stellmittel 3 Super** 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** as top sealant while adding 0.5 - 1.0% of suspending agent **Stellmittel 5 FT** using a velours roller, consumption approx. 0.5 - 0.8 kg/m².
- Alternatively, it is possible to seal the surface trowelled with **EP 5520** with the smooth **EP 5570** while adding 0.5 - 1% of suspending agent **Stellmittel 5 FT** using a velours roller.

Substrate

The substrate to be coated with the floating layer **PU 5550** must be dry, free of dust and dirt as well as from weakly bonded components impairing adhesion.

The suitability of the product combination must be checked/applicable. If in doubt, please seek advice. Should **PU 5560** be applied onto the floating layer **PU 5550**, this must happen within 48 hours.

The following applies in general:

Materials impairing adhesion such as grease, oil, and paint residues should be removed with suitable measures. Observe the information issued by RiLi SIB and the TR maintenance directive as well as 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 in the product information of the recommended KLB primers **EP 5520** and/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. The possibility of moisture ingress from the rear must be permanently excluded. Primers must not be left open for longer 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 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 further substrate testing, e.g. by conducting a tensile bonding test.

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 component B and mix immediately. 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. Should quartz sand be added, this must be done immediately after mixing by stirring in.

Processing

Processing is carried out immediately after mixing using the trowel or toothed trowel by applying an even layer on the prepared substrate. The layer thicknesses must be checked.

The coating 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. 15 - 20 minutes. To work seamlessly, always work “fresh-in-fresh” and define work areas before starting.

Do not scatter too early because of the deaeration, the optimum time is at 20 °C / 68 °F after 20 - 30 minutes. 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 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 (surface and load-bearing capacity).

Special remarks:

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 impurities and for cleaning tools, use thinner **VR 28** or **VR 33** immediately after use. Hardened material can only be removed mechanically.

Storage

Store in dry and at frost-free conditions. Ideal storage temperature is between 10 °C - 20 °C / 50 °F - 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: PU40

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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DIN EN 13813:2003-01

Synthetic resin screed mortar
DIN EN 13813: SR-B2,0-AR0,5-IR11

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 11

CE

1119

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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	w <0,1 kg/m²*h0,5
Compatibility to temperature change	complied with
Resistance to increased chemical excavation	Loss of durability < 50%
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.