KLB-SYSTEM POLYURETHAN
PU 420

Universal, low-emission and elastic 2-component polyurethane coating with certification of Eurofins "Indoor Air Comfort Gold".

Packaging units

Article no.	Packaging	Content (kg)	Units/pallet
AK6065-47	Bucket combo	12.00	30
AK6065-30	Hobbock combo	30.00	12

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 min. 20 °C / 68 °F : 25 min. 30 °C / 86 °F : 15 min.
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 : 14 - 18 hrs.
Curing	2 - 3 days for mechanical load at 20 °C / 68 °F 7 days for chemical resistance at 20 °C / 68 °F
Further coatings	After 18 - 24 hours, but not longer than 48 hours at 20 °C / 68 °F
Consumption	2.2 - 3.3 kg/m²
Layer thickness	1.5 - 2.5 mm
Addition of quartz sand	Starting at layers of 2 mm up to 30 % depending on usage and temperature
Colours	KLB-Standard Colours – see chart. Other colours upon request!
Shelf life	12 months (originally sealed)

Product description

KLB-SYSTEM POLYURETHAN PU 420 is a low-emission, self-levelling 2-component polyurethane coating which is particularly suitable for smooth, energy-elastic coatings, as well as for slip-resistant scattered floors.

The coating has good flow and smoothing properties and cures with almost no shrinkage. The cured surface is hard and tough, but also flexible and very resistant to mechanical load.

KLB-SYSTEM POLYURETHAN PU 420 is certified according to the “Indoor Air Comfort Gold” and meets the requirements for a sustainable building certification according to DGNB, LEED or BREEAM. The “Indoor Air Comfort” product certification sets the highest requirements for the emission of volatile organic compounds and meets not only the German requirements of AgBB or ABG, but also the emissions regulations of many other European countries. This coating is DIBt®-accredited for recreation rooms.

KLB-SYSTEM POLYURETHAN PU 420 offers special advantages where increased flexibility is necessary due to, e.g. substrates susceptible to deformation, like mastic asphalt, flake boards, metallic and reconstruction surfaces.

The resistance to chemicals like water, saline solutions, diluted acids and alkalis, mineral oil, and diesel fuel is sufficient. For organic acids, polyurethane coatings offer particular advantages.

Note: **KLB-SYSTEM POLYURETHAN PU 420** is available in different colours. It is, however, not resistant to yellowing due to its chemical structure. Slight colour deviations of the coating are possible for technical reasons. Please note our information on colour/colouring. Light colours in decorative areas can be additionally sealed with **KLB-SYSTEM POLYURETHAN PU 806 E** to ensure colour stability.

Attention: sealers are suitable only to a limited extent for forklift-traffic. Please seek advice. Indentions cannot be excluded for concentrated point load.

Area of application

- Low-emission coating for recreation rooms according to AgBB.
- Suitable for commercially used areas with average mechanical load, e.g. production and storage areas in many economic sectors (2 mm coating).
- Base and top coats for slip resistant scattered coatings in layers of 3 - 5 mm.
- Commercially used areas with mechanical load, minor exposure to chemicals and water.
- Smooth and slightly scattered wear layers (scattered with delustering agent or silicium carbide).
- Preferably for use on substrates susceptible to deformation like mastic asphalt, metallic, wooden, and mixed substrate.

Product features

- tested, low-emission quality
- smooth, coloured surface
- for scatterings with SIC/delustering agent
- elastic and deformable
- ready to use
- free of deleterious substances against varnish

Technical data

Viscosity - Component A+B	3700	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Solid content	100	%	KLB method
Density - Component A+B	1.45	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 53515
Bending tensile strength	40	N/mm²	DIN EN 196/1
Compressive strength	45	N/mm²	DIN EN 196/1
Tensile strength	25	N/mm²	DIN EN ISO 527
max. tear resistance	76	kN/m	DIN ISO 347-1
Breaking strain	52	%	DIN EN ISO 527-3
Shore-hardness D	65	-	DIN 53505 (after 7 days)
Abrasion (Taber Abraser)	55	mg	ASTM D4060 (CS10/1000)

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

Included in systems

- System G1 KLB INDUSTRIAL LOW-VOC PU Standard
- System G2 KLB INDUSTRIAL LOW-VOC PU Sealed
- System H2 KLB KITCHEN LOW-VOC PU

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

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Tests

External test certificates are available:

- Classification of the fire behaviour according to DIN EN 13501-01:2010-01: B_{fl}-s1
- Slip resistance according to DIN 51130 and BGR 181 possible in R9 and R10.
- Suitability with foodstuffs according to § 31 Abs. 1 of the Food and Feed Code (LFGB).
- Certified as low-emission according to „Eurofins Indoor Air Comfort Gold“. Compliant with AgBB and DIBt®-accredited for recreation rooms.
- Paint wetting disorders according to PV 3.10.7. (VW test)
- Product is compliant with DIN EN 13813: 2003-01

Note:

Please ask for the tested system build-up!

Build-up of coats

Preparation of mineral substrates

- Prepare the substrate like concrete, cement screed, etc. mechanically, preferably by shot-blasting.

System structure **without intermediate sanding**

- Prime with one of the recommended KLB priming resins, like **EP 50, EP 55, EP 51 RAPID S**, consumption approx. 0.3 - 0.4 kg/m². For low-emission coatings, use the recommended base coat, e.g. **EP 57, EP 58** or **EP 53 Spezialgrund AgBB**.
- If required: apply a scratch coat with **EP 50, EP 55, EP 51 RAPID S** or low-emission primers and mixed sand **KLB-Mischsand 2/1.** Mixing ratio 1 : 0.8 parts by weight, consumption approx. 0.8 - 1.2 kg/m² (mixture).
- Alternatively, already after priming, a scratch coat with **PU 420** or **PU 421** can be applied without sanding by adding approx. 20 - 30 % of quartz sand 0.1/0.3 mm, consumption approx. 0.8 - 1.0 kg/m².

Important: it's only with the primers **EP 50** or **EP 55,** that **PU 420** can be applied directly without sanding after a curing time of at least 14 to max. 48 hours (at 20 °C / 68 °F). Using **EP 51 RAPID S**, the application of **PU 420** can take place without sanding after at least 4 to max. 24 hours (at 20 °C / 68 °F), provided the surface is pore-free. In the case of other primers or changed time sequences, intermediate sanding must be carried out.

- Apply **PU 420**, e.g. with a toothed trowel **Toothed Blade RS4** or Pajarito 48, consumption 2.3 - 2.6 kg/m². After 10 to 20 minutes, roll out with a pinch roller.

Substrate preparation of mastic asphalt

- Prepare the substrate mechanically, preferably by shot-blasting.
- This is followed directly by the application of a scratch coat with **PU 421** or **PU 420** and approx. 20 - 30 % of quartz sand 0.1/0.3 mm, consumption approx. 0.8 - 1.0 kg/m². The surface must be pore-less for any subsequent coating.
- Apply **PU 420**, e.g. with a toothed trowel **Toothed Blade RS4** or Pajarito 48, consumption 2.3 - 2.6 kg/m². After 10 to 20 minutes, roll out with a spiked roller.

Decorative, low-emission top sealing

- For decorative floors, apply an opaque top sealer with **PU 806 E** which is low-emission when used in the system, consumption 0.150 - 0.180 kg/m². By mixing with structuring agent **Strukturmittel RHX,** the slip resistance can be adjusted up to grade R11.

System structure **with intermediate sanding**

- Prime with the low-emission primers **EP 57, EP 58** or **EP 53 Spezialgrund AgBB**. Consumption approx. 0.3 - 0.4 kg/m².
- If required: apply a scratch coat with **EP 57, EP 58** or **EP 53 Spezialgrund AgBB** and mixed sand **KLB-Mischsand 2/1.** Mixing ratio 1 : 0.8 parts by weight, consumption approx. 0.8 - 1.2 kg/m² (mixture).
- Openly sanding the fresh surface with quartz sand 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m².
- Alternatively, a scratch coat with **PU 421** or **PU 420** can be applied onto the sanded primer by adding approx. 20 - 30 % of quartz sand 0.1/0.3 mm, consumption approx. 0.8 - 1.0 kg/m². The surface must be pore-less for any subsequent coating.
- Apply **PU 420**, e.g. with a toothed trowel **Toothed Blade RS4** or Pajarito 48, consumption 2.3 - 2.6 kg/m². After 10 to 20 minutes, roll out with a spiked roller.
- If necessary, it is possible to apply an opaque sealing layer with **PU 806 E** or **PU 806 E R10**, consumption approx. 0.150 - 0.180 kg/m². By adding structuring agent **Strukturmittel RHX** into **PU 806 E**, the slip resistance can be adjusted up to grade R11.

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, like **EP 57, EP 58** or **EP 53 Spezialgrund AgBB**. The substrates to be coated should be prepared mechanically. 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. In case of doubt, we recommend testing on a trial surface. The surface can be scattered openly with approx. 0.5 - 1.0 kg/m² of quartz sand 0.3/0.8 mm in order to improve adhesion.

Mastic asphalt: a scratch coat with **PU 420** may be applied straight on top. Prime the steel substrate with **EP 52 Spezialgrund;** flake boards with **EP 50** and scatter with quartz sand, grain size 0.3/0.8 mm.

Mixing

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. To prevent mixing errors, empty ("repot") the resin/hardener mixture into a clean container and mix it once again briefly. Partial quantities need to be weighed out in the right mixing ratio after having stirred up the single components.

Processing

Process the material immediately after mixing with a coating knife or trowel by applying an even layer on the prepared surface. 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 - 15 minutes. To work seamlessly, always work “fresh-in-fresh” and define work areas before starting. Do not scatter too early, the optimum time is at 20 °C / 68 °F after 15 - 30 minutes.

Floor and air temperature must not fall below 10 °C / 50 °F and humidity must not exceed 75 %. The material to be processed must have room temperature. Within the recommended processing conditions, the floor temperature may be a maximum of 3 °C / 3K / 5.4 °F colder than the ambient room air temperature in order to exclude a dew point on the surface to be coated and the fresh coating. If a dew-point situation arises, regular curing will not be possible with hardening poblems and foaming to occur.

Do not work in strong sunlight or on strongly heated surfaces, as the working time will be greatly reduced and bubble formation is possible. Polyurethane coatings are sensitive to moisture when fresh, so the humidity specifications must be strictly observed.

The coating of dew-damp substrates and the use of damp sand as well as sweat lead to foaming of the material and must be avoided.

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 28** and **VR 33**. 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 at frost-free conditions. Ideal storage temperature is 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: 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

KLB Kötztal Lacke + Beschichtungen GmbH Günztalstraße 25 FRG-89335 Ichenhausen
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PU420-V1-022013
DIN EN 13813:2003-01
Synthetic resin screed mortar DIN EN 13813: SR-B1.5-AR0.5-IR5

Fire behaviour	B_{fl}-s1
Emission of corrosive substances	SR
Wear resistance BCA	AR 0.5
Adhesive tensile strength	B 1.5
Impact resistance	IR 5

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	4	g/l
Decopaint Directive 2004/42/EG - Component B	< 500	0	g/l
DGNB - Components A + B	< 3	0,16	%
Klima:aktiv - Components A + B	< 3	0,16	%
LEED - Components A + B	< 100	3,2	g/l
Minergie ECO(R) - Components A + B	< 1 (< 2)	0,16	%

(According to the decopaint directive, single components are used for the calculation. For the quality rating systems for sustainable construction, 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.