

KLB-SYSTEM POLYURETHAN PU 420

AgBB-tested, low-emission, flexible, 2-component polyurethane coating with DIBt®-accreditation



Mixing ratio	Parts by weight	A : B	=	5 : 1
	Parts by volume	A : B	=	100 : 25
Processing time	Temperature	10 °C / 50 °F	20 °C / 68 °F	30 °C / 86 °F
	Time	45 minutes	25 minutes	15 minutes
Processing temperature		Minimum 10 °C / 50 °F (room- and floor-temperature)		
Curing time (Accessibility)	Temperature	10 °C / 50 °F	20 °C / 68 °F	30 °C / 86 °F
	Time	24 - 36 hrs.	18 - 24 hrs.	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/m ²		
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		
Packaging		Bucket-Combi 12 kg, Hobbock-Combi 30 kg		
Colours		KLB-Standard Colours – see chart. Other colours upon request!		
Shelf life		12 months (originally sealed)		

Usage and Properties

KLB-SYSTEM POLYURETHAN PU 420 is a low-emission, AgBB-tested coating with DIBt®-accreditation. The free-flow, 2-component polyurethane coating is suitable for smooth, energy-elastic coatings, as well as for slip resistant scattered coatings.

The coating has good flow- and smoothing properties and cures with almost no shrinkage. The cured coating is hard and tough but also flexible and 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 construction certification according to DGNB (Germany), LEED (United States) or BREEAM (Great Britain). "Indoor Comfort Gold" fulfills the highest requirements in regards to the emission of Volatile Organic Compounds and respects not only the German limits of AgBB or ABG, but also of 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. substrate susceptible to deformation, like mastic asphalt, flake boards, metallic and reconstruction substrate.

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

The product has been tested according to the AgBB testing principles of the DIBt® and has been classified as low-emission.

Note: **KLB-SYSTEM POLYURETHAN PU 420** is available in different colours. Even though due to its chemical structure the material is not resistant to yellowing. Slight colour tone alteration is possible. Please note our general recommendation on colour / colour tones. Pale colours should be additionally sealed with colour stable **KLB-SYSTEM POLYURETHAN PU 806 E**.

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

Product Features

- solvent-free
- tested, low-emission quality
- DIBt®-accredited
- smooth, pigmented surfaces
- suitable for scattering with silicium carbide/delustering agent
- elastic deformation
- resistant to hydrolysis and saponification
- ready-to-use
- for reconstruction work
- free of deleterious substances against varnish

Testing

External test certificates are available:

- Classification of the fire behaviour according DIN EN 13501-01:2010-01: B_{f1-s1}
- Slip resistance producible according to DIN 51130 and BGR 181 in R9 and R10.
- Suitability with foodstuffs according to § 31 Abs. 1 of the Food and Feed Code (LFGB).
- Certified low-emission according to „Eurofins Indoor Air Comfort Gold“. Compliant with AgBB and DIBt®-accredited for recreation rooms.

Note: Please ask for the tested system structure!

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).
- Used on substrates susceptible to deformation like mastic asphalt, metallic, wooden, and mixed substrate.

Build-up of Coats

Substrate preparation – mineral substrate

- Prepare the substrate, like e.g. concrete, cement screed or other mechanically, e.g. by shot-blasting.

Substrate preparation **without in-between sanding**

- Prime with the recommended KLB-Base Coats: **EP 50**, **EP 55**, **EP 51 RAPID S**, consumption: 0.3 - 0.4 kg/m². For low-emission coatings use the recommended base coat **EP 55**.
- Optional: Scratch coat application with **EP 50**, **EP 55**, **EP 51 RAPID S**, and **KLB-Mischsand 2/1**, mixing ratio 1 : 0.8 parts by weight, consumption approx. 0.8 - 1.2 kg/m² of the mixture.
- Alternatively a scratch coat with **PU 420** or **PU 421** in addition of approx. 20 - 30 % quartz sand 0.1/0.3 mm, consumption approx. 0.8 - 1.0 kg/m² may be applied right after the base coat application without scattering.
Important note: Only when using the base coats **EP 50** or **EP 55**, **PU 420** may be applied after a curing time of at least 14 up to 48 hours at the max. (at 20 °C / 68 °F) without any in-between sanding. When using **EP 51 RAPID S**, **PU 420** may be applied on the nonporous surface after a curing time of 4 to 24 hours at the max (at 20 °C / 68 °F). In-between sanding **is mandatory** when using other base coats or time cycles.
- Apply **PU 420** with a toothed trowel **KLB-RS4** or Pajarito 48, consumption 2.3 - 2.6 kg/m². Vent after 10 to 20 minutes with a spiked roller.

Substrate preparation – mastic asphalt

- Prepare substrate mechanically by shot blasting.
- Apply a scratch coat using **PU 421** or **PU 420** in addition of 20 - 30 % quartz sand, grain size 0.1/0.3 mm, consumption approx. 0.8 - 1.0 kg/m². Subsequent coatings may be applied when the surface is free of pores.
- Apply **PU 420** with a toothed trowel **KLB-RS4** or Pajarito 48, consumption 2.3 - 2.6 kg/m². Vent after 10 - 20 minutes with a spiked roller.

Decorative, low-emission top sealer

- For decorative coatings seal with the covering sealer **PU 806 E**. **Low-emission when used within the system**, consumption 0.150 - 0.180 kg/m². By adding **Strukturmittel RHX** the slip resistance grade can be adjusted up to R11.

Substrate preparation **with in-between sanding**

- Prime with one of the other epoxy resin base coats: consumption 0.3 - 0.4 kg/m².
- Scatter the fresh surface with quartz sand 0.3/0.8 mm, consumption approx. 0.5 - 1.0 kg/m².
- Apply a scratch coat using **PU 421** or **PU 420** right on top. Add approx. 20 - 30 % quartz sand 0.1/0.3 mm, consumption approx. 0.8 - 1.0 kg/m². For subsequent coatings the surface has to be free of pores.
- Apply **PU 420** with a toothed trowel **KLB-RS4** or Pajarito 48, consumption 2.3 - 2.6 kg/m². Vent after 10 - 20 minutes with a spiked roller.

Substrate

The substrate to be coated has to be levelled, dry, free of dust, has to have adequate tensile and compressive strength, and be free from weakly-bonded components or surfaces. Materials impairing adhesion, such as grease, oil, and paint residues must be removed using suitable methods. Please refer to the advice issued by the trade associations, e.g. the current edition of the BEB-work-sheets KH-0/U and KH-0/S, as well as the product information of the recommended KLB-Base Coats, like e.g. **EP 50**, **EP 52 Spezialgrund**, **EP 55**, or **EP 57**. The surface to be coated should be prepared mechanically, preferably by shot-blasting. The prepared area has to be primed accurately, saturated, and free of pores. Estimating the substrate according to the necessary sealed state may be difficult, so a scratch coat is recommended for smoothing the surface. If the substrate hasn't been sealed completely bubbles and pores may appear because of rising air. Conduct a trial if in doubt. To improve adhesion scatter the surface with approx. 0.5 - 1.0 kg/m² quartz sand, grain size 0.3/0.8 mm.

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

Mixing

Combi-trading units will be supplied in the correctly measured mixing ratio. Component A has sufficient volume for the entire trading unit. Decant the hardener compound B into the resin. Blend with a slow speed mixer (200 - 400 r/pm) for at least 2 - 3 minutes, for a material that is homogeneous and free of streaks. To avoid mixing errors it is recommended to empty the resin/hardener-mixture into a clean container and mix briefly once again ("to repot"). Stir up the single components for partial withdrawals and weigh for the exact mixing ratio.

Processing / Handling

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 with an optimum of air venting. To upgrade the moistening of the substrate, optimizing the flow-properties, and removing any air blows, it is recommended to roll with a spiked roller. Roll time-delayed after 10 - 15 minutes with the spiked roller. Divide working areas before starting work and always work "fresh-in-fresh" to avoid any shoulders. Do not scatter too early because of air venting, optimum point of time is after 15 - 30 minutes at 20 °C / 68 °F.

Floor- and air-temperature must not fall below 10 °C / 50 °F and humidity must not exceed 75 %. The material to be processed has to be tempered according to the room-temperature. **The floor temperature may be 3 °C / 37.4 °F at the max. less than the surrounding temperature to exclude a dew-point situation on the surface and on the fresh coating.** If a dew-point situation occurs curing may be disturbed and foaming may occur.

Do not process at increased insolation or on strongly heated surfaces because processing time will decrease and blisters may appear. Fresh polyurethane coatings are susceptible to humidity. Keep within the recommendations for humidity.

Coating dewy substrate, using moist sand, as well as sweat will lead to foaming of the material and have to be avoided.

Curing time applies to 20 °C / 68 °F. Lower temperature may increase, higher temperature may decrease the curing and processing time. Ensure of recommended processing conditions during curing. If working conditions are not complied with, deviations in the described technical properties may occur in the end product.

Cleaning

To clean tools, use thinner **VR 28** and **VR 33**. Hardened material can only be removed mechanically.

Storage

Store in dry and at 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.

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. With appearance of this new KLB product information all prior information loses validity. The updated version is available on our website www.klb-koetzal.com. In addition, our „General Terms and Conditions“ apply.

Special Remarks

The product is subject to the hazardous material-, operational safety-, and transport-regulations for hazardous goods. Refer to the DIN-Safety Data Sheet and the information on the labelled containers!

GISCODE: PU 40

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.

	
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 _f -s1
Emission of corrosive substances	SR
Wear resistance BCA	AR 0.5
Adhesive tensile strength	B 1.5
Impact resistance	IR 5

Technical Data*

Viscosity	Components A + B	3700	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Solid content		100	%	KLB-Method
Density	Components 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/mm ²	DIN EN 196/1
Tensile strength		25	N/mm ²	DIN EN ISO 527
Max. tear growth resistance		76	kN/m	DIN ISO 34-1
Compressive strength		45	N/mm ²	DIN EN 196/1
Breaking elongation		52	%	DIN EN ISO 527-3
Shore-hardness D		65	-	DIN 53505 (7 days)
Abrasion (Taber Abraser)		55	mg	ASTM D4060

(* Values achieved in sampling are average values. Variation in product specification is possible.)