

**AGBB-TESTED, LOW-EMISSION, FLEXIBLE, 2-COMPONENT POLYURETHANE
COATING WITH DIBT®-ACCREDITATION**

DESCRIPTION

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. 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. 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: PU 420 is available in different colors. Even though, due to its chemical structure, the material is not resistant to yellowing. Slight color tone alteration is possible. Please note our general recommendation on color / color tones. Pale colors should be additionally sealed with color stable 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.

RECOMMENDED FOR

Typical areas of application are:

- ▶ 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.

ADVANTAGES

- ▶ 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

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TECHNICAL CHARACTERISTICS

Characteristic	Test Result	Test Method
Viscosity (Components A+B)	3700 mPa s	EN ISO 3219 at 73.4 °F (23 °C)
Density (Components A+B)	1.45 kg/lit	EN ISO 2811-2 at 68 °F (20 °C)
Color	See relevant color chart	
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
Compressive strength	45 N/mm ²	DIN EN 196/1
Solid content	100 %	KLB-Method
Breaking elongation	52 %	DIN EN ISO 527-3
Abrasion (Taber Abraser)	55 mg	ASTM D4060
Max. tear growth resistance	76 kN/m	DIN ISO 34-1
Shore-hardness D	65	DIN 53505 (28 days)
Processing time at 50 °F (10 °C)	45 minutes	
Processing time at 68 °F (20 °C)	25 minutes	
Processing time at 86 °F (30 °C)	15 minutes	
Processing temperature	Minimum 50 °F (10 °C) room and floor temperature	
Curing time at 50 °F (10 °C)	24-36 hrs (Accessibility)	
Curing time at 68 °F (20 °C)	18-24 hrs (Accessibility)	
Curing time at 86 °F (30 °C)	14-18 hrs (Accessibility)	
Curing	2-3 days for mechanical load at 68 °F (20 °C), 7 days for chemical resistance at 68 °F (20 °C)	
Further coatings	After 18-24 hours, but not longer than 48 hours, at 68 °F (20 °C)	
Recommended thickness of layers	1.5 – 2.5 mm	
Addition of quartz sand	Starting at layers of 2 mm up to 30%, depending on usage and temperature	

The aforementioned results are related to average laboratory test results. In reality, the climate changes, such as temperature, moisture and surface porosity, may change these results.

DIRECTIONS FOR USE

Surface Preparation: 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 BEB-work-sheets KH-0/U and KH-0/S, as well as the product information of the recommended KLB-Base Coats like EP 50, EP 52 Spezialgrund, EP 55 or EP 57. The surface to be coated should be prepared mechanically. 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. Run a test, 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.

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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 component B into the resin completely. Blend with a slow speed mixer (200 - 400 r/pm) for at least 2-3 minutes, for a homogeneous mixture, free of streaks. To avoid mixing errors, it is recommended to principally empty the resin/hardener-mixture into a clean container and mix briefly once again. Stir up the single components for partial withdrawals and weigh for the exact mixing ratio.

Mixing ratios:

A:B = 5:1 parts by weight

A:B = 100:25 parts by volume

Processing/Handling:

Process the material immediately after mixing with a coating knife or trowel, by applying an even layer on the prepared substrate. 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. 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 68 °F (20 °C). Floor and air temperature must not fall below 50 °F (10 °C) 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 37.4 °F (3 °C) 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. Technical properties may be affected. 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 68 °F (20 °C). 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.

Build-up of Coats:Substrate preparation – mineral substrate

- Prepare the substrate, like e.g. concrete, cement screed or others 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. Use EP 55 for low emission coatings.
- Scratch coat application with EP 50, EP 55, EP 51 RAPID S and KLB-Mischsand 2/1 (alternatively QUARTZ SAND

MIX 0.10 – 0.45 MM), mixing ratio 1 : 0.8 parts by weight, consumption approx. 0.8 - 1.2 kg/m² of the mixture, if needed.

- Alternatively, a scratch coat with PU 420 or PU 421 in addition of approx. 20 - 30 % of 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 coat EP 50 or EP 55, PU 420 may be applied right away without any in-between sanding on a free of pore substrate. Note for a curing time of at least 14 hours up to a max. of 48 hours at 68 °F (20 °C). When using EP 51 RAPID S, PU 420 may be applied after at least 4 hours up to a max. of 24 hours at 68 °F (20 °C). For all other base coats or changed time cycles an in-between sanding is mandatory.

- Apply PU 420 with a rake, e.g. with a toothed trowel KLB-RS4 or Pajarito 48, consumption 2.3 - 2.6 kg/m². Vent with a spiked roller after 10 to 20 minutes.

Substrate preparation – mastic asphalt

- Prepare substrate mechanically by shot blasting.
- Apply a scratch coat with 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. For subsequent coatings, the surface has to be free of pores.
- Apply PU 420 with a coating knife, e.g. toothed trowel KLB-RS4 or Pajarito 48, consumption 2.3 - 2.6 kg/m². Vent after 10 to 20 minutes with a spiked roller.

Decorative, low-emission top sealer

- For decorative coatings, apply a covering sealer with PU 806 E, low- emission within the system, consumption 0.150 - 0.180 kg/m². By adding Strukturmittel RHX the slip resistance grade can be adjust up to R11.

Substrate preparation with in-between sanding for exterior areas

- 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. The surface has to be free of pores before applying any subsequent coatings.
- Apply PU 420 with a rake, e.g. with a toothed trowel KLB-RS4 or Pajarito 48, consumption 2.3 - 2.6 kg/m². Vent with a spiked roller after 10 to 20 minutes.

COVERAGE

Approx. 2.2 – 3.3 kg/m².

SPECIAL CONSIDERATIONS

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To remove fresh contamination and to clean tools, use thinner VR 28 and VR 33 immediately. Hardened material can only be removed mechanically.

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.

Contact PENETRON HELLAS S.A. for additional information, regarding your project.

PACKAGING

PU 420 is available in 10+2 kg and 25+5 kg. containers.

STORAGE / SHELF LIFE

Store in dry and frost-free conditions. Ideal storage temperature is between 50 - 68 °F (10 - 20 °C). Bring to a suitable working temperature before application. Tightly re-seal opened containers and use the content as soon as possible. When properly stored in a dry place in unopened and undamaged original packaging, shelf life is 12 months.

SAFE HANDLING INFORMATION

Avoid skin and eye contact. If contact is made, flush areas with lots of water and seek medical advice. Protective gloves, mask and goggles should be worn. For further information, please refer to Safety Data Sheet. PENETRON HELLAS S.A. has recently updated Safety Data Sheet on the safe use of PENETRON® products. Each Safety Data Sheet contains health and safety information for the protection of your employees and your customers. KEEP OUT OF REACH OF CHILDREN.

CERTIFICATION

Classification of the fire behavior according DIN EN 13501-01:2010-01: B_{fl}-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.

Please ask for the tested system structure.



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

WARRANTY – DISCLAIMER

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