



KLB-SYSTEM POLYURETHAN

PU 9016

Low-emission, non-pigmented, light and weather-resistant 1-component PU binder for indoor and outdoor stone carpets

Packaging units

Article no.	Packaging	Content (kg)	Units/pallet
PU0022-01	Can	1.20 kg	240
PU0022-06	Bucket	6.00 kg	75

Product characteristics

Mixing ratio parts by weight	Ready for processing!
Processing time	One-component, self-crosslinking. Approx. 45 - 60 minutes after mixing (at 20 °C / 68 °F depending on the air humidity)
Processing temperature	Minimum 10 °C / 50 °F (room and floor temperature)
Curing time (accessibility)	18 - 24 hours at 20 °C / 68 °F
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	Decorative pebbles coating: 1.2 kg per 25 kg of decorative pebbles; 1.7 - 2 kg/m ² per each mm of layer (mixture)
Layer thickness	6 - 12 (decorative pebbles coating) mm
Colours	Non-pigmented
Shelf life	6 months (originally sealed). Protect from frost.

Product description

KLB-SYSTEM POLYURETHAN PU 9016 is a low-emission, light-stable and weather-resistant, single component and non-pigmented polyurethane resin, which is preferably used as binding agent for stone carpets in the interior and exterior.

KLB-SYSTEM POLYURETHAN PU 9016 is ready-to-use and cures due to air humidity. The low-emission formulation makes it suitable for use in indoor stone carpets, such as in winter gardens, living spaces, presentation and exhibition areas, and many more – but also on exterior surfaces, like balconies or terraces, patios, etc. The cured, transparent coating offers a bright gloss, good resistance to weathering, light, and chalking. The material offers sufficient resistance to chemicals like water, saline solutions (de-icing salts), diluted acids and bases, mineral oils or diesel.

KLB-SYSTEM POLYURETHAN PU 9016 is certified by EUROFINS and EMICODE® EC 1^{PLUS}; thus meets the requirements for a sustainable building certification according to DGNB, LEED or BREEAM; not only the German requirements of AgBB or ABG, but also the emissions regulations of many other European countries.

Note: slip-resistant coatings are principally recommended for weathered exterior areas. When coating balconies and terraces, observe the details like connections, water drainage, declines and more. Especially with light colour tones, long-term exposure to vehicle tyres can lead to discolouration of the flooring.

Area of application

- For binding stone carpets.

Product features

- one-component
- tested, low-emission quality
- EMICODE® EC 1PLUS certified
- ready-to-use
- transparent
- light-stable
- resistant to weather
- for interior and exterior areas

Technical data

Viscosity	approx. 1250	mPas	DIN EN ISO 3219 (23 °C / 73.4 °F)
Solid content	> 99	%	KLB method
Density	1.15 - 1.2	kg/l	DIN EN ISO 2811-2 (20 °C / 68 °F)

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

Tests

The following external test certificates are available:

- Certified as low-emission according to EMICODE with the EC 1^{PLUS} label. Compliant with AgBB for recreation rooms.

Build-up of coats

Decorative sand coating 5 - 10 mm

- Prepare the substrate mechanically, by shot-blasting or grinding.
- Apply one of the recommended KLB priming resins, like **EP 52 Spezialgrund** (exterior areas) or **EP 53 Spezialgrund AgBB**, **EP 57**, **EP 58** or **EP 54 RAPID U** (interior areas), consumption approx. 0.4 - 0.5 kg/m² and scatter openly with quartz sand 0.7/1.2 mm or 1 - 2 mm grain size, consumption approx. 1 - 2 kg/m². The substrate must be pore-free and primed carefully.
- Apply the mixed stone carpet material made of decorative sand and **PU 9016**. Mixing ratio: 1.2 kg of **PU 9016** for 25 kg of sand with a consumption of approx. 10 - 12 kg/m² mortar mixture. After distribution to a uniform layer thickness, the coating must be compacted and smoothed under light pressure. Intermediate cleaning of the sword type smoothing blade is done with **VR 36**. Wipe the blade with the thinner, but do not allow it to drop or get into the coating material.
- **Important note:** stone carpets are installed in layer thicknesses from 5 mm to 10 mm. Suitable are dry decorative and quartz pebbles with minimum 2 mm size. Usually, grains of 1 to 2 mm, 2 to 3 mm, 3 to 4 mm and 4 to 6 mm are used. The layer thickness should be at least twice the layer thickness of the largest grain, and at least three times the layer thickness for 2 mm grain sizes.
- Optional: to stabilise the surface, apply a varnish layer with **PU 9039**, consumption approx. 0.200 - 0.250 kg/m².
- Optional: application of a composite waterproofing: if necessary, **CW 510** can be applied after priming. Please observe the product information sheet of **CW 510**. Seek advice if necessary.

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. 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. The substrates to be coated should be prepared mechanically by grinding or blasting. The prepared area must be saturated, pore-free and primed carefully.

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 KLB base coats (see "Build-up of coats").

Mixing

Only use dry pebbles that have been tempered to the ambient temperature. Briefly shake or stir the binding agent in the closed can before application. For the production of decorative sand coverings, mix sand and binder in a compulsory mixer; free-fall mixers with low shear forces are also suitable in order to prevent the decorative sand from changing colour. It is recommended to add approx. 4.8 % of binder (4.5 up to a maximum of 5.5%). The binder's packaging unit is adapted to it: per 25 kg of decorative pebbles, add 1.20 kg of **PU 9016**.

Ensure complete mixing, especially to avoid binder nests!

Processing

In order to exclude differences in colour, the binder and decorative sands must be processed in the same batch. Apply the mixed material in small quantities onto the prepared substrate and spread evenly with a smoothing trowel or sword type smoothing blade in a uniform layer. Subsequently smooth and compact with light pressure. For levelling and cleaning tools, small amounts of **VR 36** or if necessary, also **VR 28** may be used. Use the thinner only for cleaning tools. For low-emission requirements, **VR 36** should be used. Do not apply or spray any thinner on the surface, otherwise this may lead to texture disturbances. For thickening purposes, **KLB-Stellmittel 5 FT** can be added in a dosage of 2 - 4.

Note: single component polyurethane binding agents can become slightly thick during storage, especially after opening. Therefore, use up immediately.

Floor and air temperature must not fall below 10 °C / 50 °F and humidity should not exceed 75 %. The floor temperature has to be 3 °C / 3 K / 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 with hardening problems to occur. The coating of dew-damp substrates and the use of damp sand as well as sweat lead to foaming of the material or adhesion problems and must be avoided. Exposure to water must be avoided within the first 5 - 10 hours due to the temperature. Exposure to chemicals should be avoided within 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.

Cleaning

To remove fresh contamination and to clean tools use thinner **VR 36** immediately. Hardened material can only be removed mechanically.

Storage

Store in dry and if possible, at frost-free conditions. Ideal storage temperature is between 10 - 20 °C / 50 - 68 °F. Temper the material before processing. Re-seal any opened containers tightly and use 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: PU10

Indication of VOC-content:

(EG-Regulation 2004/42) Maximum Permissible Value 500 g/l (2010,II,i/lb): Ready-for-use product contains < 500 g/l VOC.

VOC content

The product complies with the high requirements to low VOC contents, as required for sustainable construction. Therefore, these values are well below the limits set by the European Union directive 2004/42/EG (Decopaint Directive).

	Limit value	Actual content	
Decopaint Directive 2004/42/EG - Component A	< 500	< 2,9	g/l
DGNB - Components A + B	< 0,5	PU10	%
klima:aktiv – Components A + B	< 3	< 0.25	%
LEED - Components A + B	< 100	< 2.9	g/l
Minergie ECO ® - Components A + B	< 1(< 2)	<0.25	%

(According to the Decopaint directive, single components are used for calculation. In the sustainable building rating systems, the mixture of both components in the correct mixing ratio is the determining factor.)



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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 in individual cases. With the publication of this new KLB product information, all prior information loses validity. The latest version is available electronically on our website www.klb-koetzal.com. In addition, our "General Terms and Conditions" apply.