

## UNIPU 030 1K Polyurethane Binder for SBR/EPDM Crumbs

### Description

This product is a one-component liquid aromatic polyurethane formulation, expertly designed for binding recycled rubber crumb. It yields a compact and economical elastomeric binder suitable for a diverse array of applications, including running tracks, children's playgrounds, and more. It is particularly well-suited for on-site application.

### Advantages

- Exhibits low viscosity with excellent wetting characteristics.
- Maintains a subtle coloration.
- Demonstrates impressive mechanical and elastic properties, along with notable tear resistance.

### Usage Areas

- Running track fields
- Decorative flooring
- Gardens
- Terraces
- Safety flooring
- Playgrounds
- Recreational areas

### Technical Data (25°C and %50 RH)

Chemical description	Single-component aromatic polyurethane
Physical state	Liquid
Packaging	Metal containers, 220 kg
Non-volatile content	(%) 100%
Flash point	>122°C (ASTM D 93)
Colour	Light yellow
Density	1,05 g/cm <sup>3</sup> (25°C) ASTM D 891-09
Hardness (shore)	82A
Elongation	180%
Stress (mPa)	6.0 MPa
Tear strength	6,0 N/mm
Viscosity	1300±200 mPa.s ASTM D 4878-15
Pot life	9,5±0,5 h (1 kg, 25°C, 50% rh)
NCO content %	12,0±0,5 ASTM D 2572-97

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### Storage

Keep at a temperature below 35°C, away from moisture

### Use before

Product may be used up to 6 months after manufacture in its sealed original container.

### UV resistance

Colour change is expected due to its aromatic polyurethane composition. This discolouration does not affect its mechanical properties.

### Chemical resistance

Chemical	Test conditions	Result
Water	24h, 25°C	5
Salt water	24h, 90°C	5
Hydrochloric acid solutions	200 g/l, 24h,25°C	4
	200 g/l, 2h,80°C	4
	3 g/l, 24h,25°C	5
	3 g/l, 24h,80°C	4
Sodium hydroxide	40 g/l, 24h,25°C	5
Acetone	24h,25°C	1
Ethyl acetate	24h,25°C	3
Xylene	24h,25°C	5
Motor oil	24h,25°C	5
Brake Fluid	24h,25°C	2

(0=worst, 5=best)

Thermal resistance

Stable up to 80°C

### Mixing Ratios

For optimal performance, consider utilizing the UNIPU 045/060 1K Primer as an optional preparatory layer, at a dosage of 0.200-0.250 kg/m<sup>2</sup>, when necessary. SBR layer, ideally between 10 to 40 mm in thickness, can be created using UNIPU 030 1K mixed with recycled SBR rubber crumb (with particle sizes ranging from 1 to 4 mm). For a 10-mm layer, the mixing ratio should be as follows: for every 100 parts of SBR rubber, incorporate 15-18 parts of UNIPU 030 1K, using approximately 7.5-8 kg/m<sup>2</sup> of the mixture. The specific thickness should always be tailored to meet the unique requirements of the project. Following a waiting period of 12-24 hours after the installation of the SBR layer, you can proceed with an EPDM layer, recommending a thickness of 10 to 20 mm. The mix for this layer consists of EPDM rubber (1-3,5 mm particle size) in the ratio of 100 parts EPDM to 20-22 parts of UNIPU 030 1K; for a 10-mm layer, approximately 8-9,5 kg/m<sup>2</sup> of this mixture should be used.

**Important note: for light-colored EPDM rubber, it is advised to use the UNIPU 035 1K Aliphatic Binder to ensure long-lasting color stability.**

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### Support Requirements

To achieve robust bonding, the supporting surface needs to meet the following criteria:

1. Exude flatness and be level.
2. Exhibit compactness and cohesion, demonstrated by a pull-off test that shows a minimum resistance of 1.5 N/mm<sup>2</sup>.
3. Present an even and consistent surface texture.
4. Be free of any cracks or fissures; any existing damages must be repaired beforehand.
5. Maintain cleanliness and dryness, devoid of dust, loose particles, oils, organic residues, or laitance.

### Ambiental Conditions

The support temperature should be maintained between 10°C and 30°C. In cases of elevated temperatures, specific precautionary measures should be adhered to as advised by the manufacturer. The air temperature should also fall within the 10°C to 30°C range. Furthermore, the moisture content of the support should remain below 4%, with ambient air humidity not exceeding 85%. Be mindful that high temperature and moisture conditions may lead to bubbling or foaming issues.

### Application Guidelines

To ensure optimal adhesion, it is essential to prepare the concrete supports through an abrasive treatment followed by priming. Begin by adding the designated amount of rubber crumb to the product, then mix thoroughly for several minutes until achieving complete homogeneity and uniform wetting. Once the mixture reaches the desired consistency, pour it onto the surface and use appropriate spreaders to carefully distribute and level it.

### Curing Time

The curing duration is influenced by environmental conditions, with higher temperatures and increased humidity accelerating the curing process. The table below offers a general estimation of the curing time required for a 1 mm coat across various conditions.

Temperature (°C)	RH (%)	Dry to touch (h)
20	50	11
20	70	6
20	15	42
5	60	22
5	85	8

### Return To Service

Under normal conditions, the rubber flooring achieves resistance to light foot traffic within 48 hours. However, for optimal performance and durability, it is advisable to allow a period of 6 to 7 days before permitting general use.

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#### Tool Cleaning

The UNIPU 030 1K Binder can be effectively cleaned using UP-003 Special Thinner. Please note that once the binder has cured, it becomes insoluble.

#### Safety

The UNIPU 030 1K Binder contains isocyanates. It is imperative to adhere to the guidelines outlined in the Material Safety Data Sheet (MSDS) and observe the recommended precautions. Always ensure adequate ventilation and avoid any skin contact. This product is designed exclusively for the applications described herein and should only be utilized by industrial or professional users.

#### Environmental Precautions

Empty containers should be treated with the same care as if they were full. These containers must be categorized as hazardous waste and transferred to an authorized waste management facility. In cases where there is residual product in the containers, refrain from mixing it with other substances until potential hazardous reactions have been thoroughly evaluated.

#### Note

The explanations provided in this technical sheet are based on test evaluations and results according to relevant standards to guide applicators. Due to variables such as workmanship, weather conditions, construction, equipment used, and other factors that can influence outcomes beyond our control, UNICA does not provide any explicit or implied warranty regarding this material. UNICA only guarantees that the material conforms to product specifications and its sole responsibility towards the buyer or user is limited to the replacement value of the product in case of manufacturing defects. Under no circumstances is UNICA liable for any direct or incidental, special, or consequential injury, loss, or damage arising from the material or its application. The manufacturer assumes no responsibility for any defects, alterations, or changes in the substrate where the products are applied.