



PU Tile Binder

Product Description

A high-performance binder designed to bond recycled SBR granules into durable, safe, and long-lasting rubber flooring systems. It provides superior adhesion, elasticity, and resistance to environmental factors.

Technical Specifications

- Chemical Type: Polyurethane Binder
- Appearance: Transparent to slightly yellow liquid
- Viscosity: 500–1500 mPa·s at 25°C
- Density: 1.05–1.15 g/cm³
- Mix Ratio: Typically 10–15% resin to 85–90% SBR granules
- Curing Time: 30–60 minutes at 80–100°C (hot press)
- Hardness: Shore A 65–75 (depending on formulation)
- Tensile Strength: 3–5 MPa
- Elongation at Break: 200–400%

Performance Properties

- Adhesion: Excellent bonding to rubber particles
- UV Resistance: High with aliphatic PU grades
- Abrasion Resistance: Superior compared to plain SBR systems
- Chemical Resistance: Resistant to water, mild acids, and alkalis
- Flexibility: Maintains elasticity under heavy loads

Applications

- Rubber playground tiles.
- Sports flooring systems.
- Poolside non-slip tiles.
- Gym flooring.

Advantages

- Strong, durable binder for recycled rubber
- Enhances safety and longevity of flooring
- Customizable curing and hardness profiles
- Eco-friendly solution for sustainable flooring systems



Production Process

1. Raw Material Preparation

- SBR granules: Recycled tire rubber is shredded and sieved into uniform particle sizes.
- Polyurethane resin: Prepared as a liquid binder, sometimes with pigments for color.

2. Mixing

- Granules are blended with PU resin in a mixer.
- Ratio depends on tile type: usually 85–90% rubber particles + 10–15% PU binder.
- Pigments or EPDM granules may be added for colored surfaces.

3. Molding

- The mixture is poured into steel molds shaped as tiles.
- Thickness ranges from 15 mm (gyms) to 60 mm (playgrounds).
- Interlocking edges or flat edges are formed at this stage.

4. Pressing & Curing

- Hydraulic presses compress the mixture under heat and pressure.
- PU resin cures (cross-links), binding the SBR particles into a solid tile.
- Curing time: typically 30–60 minutes per batch.

5. Cooling & Demolding

- Tiles are cooled to stabilize shape and hardness.
- Removed from molds and inspected for defects.

6. Finishing

- Surface texturing or sealing for slip resistance.
- Optional **EPDM top layer** for UV stability and vibrant colors.
- Quality checks: fall height compliance, abrasion resistance, density.

Handling & Safety

- Storage: Keep in sealed containers at 10–30°C
- Shelf Life: 12 months
- Precautions: Use gloves and goggles; avoid direct skin contact
- Disposal: Follow local regulations for chemical waste