

TECHNICAL DATA SHEET

Product Document: Pebble_Stone_Polyurethane_Binder_Resin_TDS_EN.pdf

System Name: Pebble Stone Polyurethane Binder Resin

Product Category: 1. Epoxy & Polyurethane Flooring & Paving Systems

Pebble Stone Polyurethane Binder Resin is a two-component, solvent-free, 100% aliphatic polyurethane binder formulated specifically for bound natural gravel and decorative aggregate paving. It provides high tensile bonding strength, flexibility, excellent water permeability, and outstanding resistance to solar UV degradation.

Features:

100% Aliphatic non-yellowing / High flexibility & toughness / Permeable & SUDS compliant / Low VOC & odorless / Moisture tolerant.

Properties:

Physical Properties			
Property	Test Method	Units	Typical Value
Binder Type	Chemical Basis	—	Two-component Aliphatic Polyurethane
Mix Ratio (Part A : Part B)	By Weight	—	1 : 1 (or 100 : 50 system-specific)
Solids Content	ASTM D2369	%	≥ 98
Density (Mixed)	ISO 2811-1	g/cm³	1.05 ~ 1.10
Viscosity (Mixed, 25°C)	Brookfield	mPa·s	600 ~ 900
Pot Life (25°C, 200g)	Internal Standard	min	35 ~ 50
Mechanical Properties			
Tensile Strength	ISO 527 / ASTM D638	MPa	18 ~ 24
Elongation at Break	ISO 527 / ASTM D638	%	35 ~ 60
Shore D Hardness	ISO 868 / ASTM D2240	—	70 ~ 75
Adhesion to Dry Washed Gravel	Internal Pull-off	MPa	≥ 3.5 (Aggregate substrate failure)
Water Permeability (Bound System)	EN 12697-19	mm/s	> 3.0 (Highly permeable)

Weathering Properties			
QUV Weathering Resistance (3000h)	ASTM G154	ΔE	≤ 1.2 (No yellowing / gloss loss)

Recommended Mixing & Laying Conditions:

Parameter	Specification / Recommended Value
Binder-to-Stone Ratio	6.0% ~ 7.5% by weight (e.g., 6.5 kg binder per 100 kg stone)
Recommended Pebble Aggregate Size	2–4 mm, 3–6 mm, or 4–8 mm (Dry, washed, rounded/angular)
Installation Substrate	Open-graded asphalt, porous concrete, sound concrete slab
Installed Layer Thickness	15 ~ 18 mm (Pedestrian) / 18 ~ 22 mm (Driveways)
Cure Time - Pedestrian (25°C)	12 ~ 16 hours
Cure Time - Vehicular Traffic (25°C)	48 ~ 72 hours

Cautions:

Stone aggregates must be 100% dry and free of clay or dirt before blending with the polyurethane binder. Water presence during mixing will cause foaming and pinholes. Do not install when rainfall is expected within 8 hours of laying.

Disclaimer:

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