MwPU-101

Low VOC Graphene Two-Component Polyurethane Waterproof Coating

High-solids, low-VOC two-component polyurethane waterproof coating for enclosed or poorly ventilated areas.

Product Introduction

MwPU-101 is a low VOC graphene two-component polyurethane waterproof coating. Component A is a prepolymer produced from polyether and isocyanate. Component B is blended with functional additives and fillers. After Component A and Component B are mixed evenly at the specified ratio and applied to the substrate, the coating cures into an integral, elastic waterproof membrane. The product features high solid content, low VOC and environmentally responsible performance, and is especially suitable for areas with poor ventilation.

Product Features

- Low odor: VOC below 100 g/L, meeting selected local limit requirements in key cities.
- Excellent adhesion to concrete, steel structures, wood, rigid polyurethane foam and other substrates.
- Strong mechanical performance, with resistance to water, corrosion and mildew, plus high elongation against substrate shrinkage and cracking.
- Good application performance after two components are mixed at the specified ratio; suitable for complex building details.

Product Specifications

Packaging	50 kg/set
Component A	10 kg
Component B	20 kg + 20 kg
Mixing ratio	A:B = 1:4 by weight
Color	Reddish brown

Application Scope

- Underground waterproofing works
- Interior and exterior walls
- Bathrooms, kitchens and balconies
- Non-potable water tanks
- Not for direct coating on drinking-water pipelines or domestic water supply equipment

Reference Dosage

For a 1 mm coating thickness, reference dosage is 1.5–1.7 kg/m². This value is calculated under standard laboratory conditions and is for reference only. Actual consumption should be calculated according to the site substrate condition.

Technical Indicators

No.	Item	Limit	Technical Indicator
1	Solid content / %	≥	Two-component 92.0
2	Surface dry time / h	≤	12
3	Leveling property		No obvious trowel marks after 20 min
4	Tensile strength / MPa	≥	2.00
5	Elongation at break / %	≥	500
6	Tear strength / (N/mm)	≥	15
7	Low-temperature bending		-35°C, no cracks
8	Water impermeability		0.6 MPa, 120 min, impermeable; national standard: 0.3 MPa, 120 min, impermeable
9	Heating expansion/shrinkage / %		-4.0 to +1.0
10	Bond strength / MPa	≥	1.0
11	Water absorption / %	≤	5.0
12	Aging under fixed elongation: heat aging		No cracking or deformation
13	Heat treatment: 80°C, 168 h — tensile strength retention / %		80–150
13	Heat treatment: 80°C, 168 h — elongation at break / %	≥	450
13	Heat treatment: 80°C, 168 h — low-temperature bending		-30°C, no cracks
14	Alkali treatment: 0.1% NaOH + saturated Ca(OH)2 solution, 168 h — tensile strength retention / %		80–150
14	Alkali treatment — elongation at break / %	≥	450
14	Alkali treatment — low-temperature bending		-30°C, no cracks
15	Acid treatment: 2% H2SO4 solution, 168 h — tensile strength retention / %		80–150
15	Acid treatment — elongation at break / %	≥	450
15	Acid treatment — low-temperature bending		-30°C, no cracks

Execution standard: GB/T 19250-2013 Polyurethane Waterproof Coating.

Construction Technology

- Substrate requirement: the substrate shall be dry, firm, flat, free from dust, oil stains and standing water.
- Coating preparation: mix Component A and Component B at A:B = 1:4 by weight. Stir fully until the color is uniform and glossy, approximately 2–3 minutes. Apply in layers to form a continuous waterproof membrane after curing.
- Scraping application: generally apply in two to three passes. Use a rubber scraper or bristle brush to apply evenly. Apply repeatedly in two perpendicular directions to ensure penetration and adhesion. Apply the next coat after the previous coat is fully cured.
- Mechanical application: use professional spraying equipment to spray the mixed coating evenly on the substrate. Apply the second spray pass after the first coat is fully cured. Each pass should not be too thick; generally two to three spray passes are required.
- Protective layer: before the final coat is fully cured, broadcast coarse sand on the surface to improve bonding between the protective layer and waterproof layer. Construct the protective layer after coating thickness meets design requirements and inspection is passed.

Transportation and Storage

- During transportation and storage, products of different classifications should be stacked separately.
- Keep away from flame, sunlight and rain. Prevent collision and maintain ventilation.
- Storage temperature: 5°C–40°C.
- Shelf life: 12 months from production date under normal storage and transportation conditions.

Points for Attention

- Maintain ventilation or necessary protective measures during application in enclosed spaces.
- During storage, keep pails inverted with the opening facing downward when practical.