



MwPU-102

Graphene Polyurethane Waterproof Coating

Single-component graphene polyurethane waterproof coating with dense film formation and double impermeability performance.

Product Introduction

MwPU-102 graphene polyurethane waterproof coating is produced from diisocyanate, polyether polyol and functional modifiers as main raw materials, with multiple functional additives, pigments and fillers through specialized reaction and polymerization processing.

Product Features

- Dense coating film: process control and special functional additives provide good dispersion, strong defoaming effect and reduced pinholes or bubbles during application.
- Short surface dry time: national standard requires surface dry time ≤ 12 h under standard conditions; typical surface dry time is 2–4 h.
- Excellent mechanical properties: high tensile strength, good elongation and resilience, resisting substrate expansion, shrinkage, cracking and deformation.
- Double impermeability effect: the barrier effect of graphene improves coating density and extends the water penetration path, allowing impermeability at 0.6 MPa, twice the water pressure of common polyurethane waterproof coating films.
- Excellent environmental performance: meets JC1066-2008 Limit of Harmful Substances in Building Waterproof Coatings and contains no coal tar components.

Product Specifications

Packaging	25 kg/pail
Component	Single-component
Color	Dark green

Application Scope

- Underground works including basements, underground garages, open-cut metro works, passages and utility tunnels
- Floors and ground slabs
- Bathrooms and wet rooms
- Pools, balconies and terraces in non-exposed waterproofing and seepage-control works
- Not recommended for vertical or inclined surfaces unless an anti-sag grade is selected; not for direct coating on drinking-water pipelines or domestic water supply equipment

Reference Dosage

For a 1.0 mm coating thickness, reference dosage is 1.6–1.8 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 / %	≥	Single-component 85
2	Surface dry time / h	≤	12
3	Hard dry time / h	≤	24
4	Leveling property		No obvious trowel marks after 20 min
5	Tensile strength / MPa	≥	2.00
6	Elongation at break / %	≥	500
7	Tear strength / (N/mm)	≥	15
8	Low-temperature bending		-35°C, no cracks
9	Water impermeability		0.6 MPa, 120 min, impermeable; national standard: 0.3 MPa, 120 min, impermeable
10	Heating expansion/shrinkage / %		-4.0 to +1.0
11	Bond strength / MPa	≥	1.0
12	Water absorption / %	≤	5.0
13	Aging under fixed elongation: heat aging		No cracking or deformation
14	Heat treatment: 80°C, 168 h — tensile strength retention / %		80–150
14	Heat treatment: 80°C, 168 h — elongation at break / %	≥	450
14	Heat treatment: 80°C, 168 h — low-temperature bending		-30°C, no cracks
15	Alkali treatment: 0.1% NaOH + saturated Ca(OH) ₂ solution, 168 h — tensile strength retention / %		80–150
15	Alkali treatment — elongation at break / %	≥	450
15	Alkali treatment — low-temperature bending		-30°C, no cracks
16	Acid treatment: 2% H ₂ SO ₄ solution, 168 h — tensile strength retention / %		80–150
16	Acid treatment — elongation at break / %	≥	450
16	Acid treatment — low-temperature bending		-30°C, no cracks

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

Construction Technology

- Construction steps: preparation before application → substrate treatment → detail and node treatment → main-area application by scraping, rolling or spraying to design thickness → self-inspection → organized acceptance.
- Application methods: scraping, rolling and spraying.
- The substrate surface shall be firm, clean, flat and free from oil stains, cracks, holes, hollowing, looseness, sanding, peeling and other defects.
- Internal and external corners shall be rounded or chamfered. Additional coating layers shall be applied at corners and pipe roots, with non-woven fabric reinforcement using one-fabric-three-coat practice. The width on both horizontal and vertical surfaces shall be not less than 250 mm.
- Apply multiple thin coats, generally two to three passes. The brushing directions of adjacent coats shall be perpendicular. The first coat shall be thin to seal substrate pores; apply the next coat only after the previous coat is hard dry. If reinforcement material is required, lay it while applying the coating. Protect the membrane from hard-object damage before the next process; repair damaged areas before continuing.

Transportation and Storage

- During storage and transportation, 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: at least 6 months from production date under normal storage and transportation conditions.

Points for Attention

- Hazardous substance content meets national standard Class B requirements. If local standards are stricter, select the suitable product according to the applicable standard.
- During and after coating application, avoid direct contact between the coating film and water pipes.
- Maintain ventilation or necessary protective measures during application in enclosed spaces.
- During storage, keep pails inverted with the opening facing downward when practical.