

**Graphene Polyurethane Waterproof Coating
(root Puncture Resistant)**

VX Guardian PU Graphene has a high solid content, low VOC, environmentally friendly polyurethane waterproof coating made from isocyanate and polyether polyol as the main raw materials, mixed with imported chemical root-blocking agents, various additives, fillers, etc. After application, the product absorbs moisture from the air and cures into a seamless, strong bonding, and elastic film.

The product does not contain organic solvents, heavy metals, or harmful components to plant roots. It can prevent plant roots from penetrating and has excellent waterproof performance, making it particularly suitable for green areas.

PRODUCT FEATURES

- The coating film has good elongation and high tensile strength, with strong resistance to shrinkage cracking of the base layer.
- Does not contain any organic solvents, meets the requirements of Class A products in national standards
- Ready to use upon opening, low density, high solid content, high coverage rate.
- Excellent root barrier performance to prevent plant roots from penetrating.
- Corrosion resistance, mold resistance, high strength, and good elasticity, with excellent overall performance

WHERE TO USE

Suitable for greens roofs, terraces, municipal bridges, plaza floors, and basement planting ceilings

(Note: This product should not be directly applied to drinking water pipes and domestic water supply equipment.)

RECOMMENDED USAGE

The recommended usage of the waterproof coating with a film thickness of 1.0mm is approximately 1.3kg/m² to 1.5kg/m²

(Note: This data is calculated based on standard environmental conditions and is for reference only. The actual usage should be calculated according to the specific conditions of the site.)

SPECIFICATION

25kg/pail

SHELF LIFE & STORAGE

- Different types of products should be stacked separately in storage and transportation. It should be forbidden to approach the fire source, avoid sun and rain, prevent collision, and pay attention to ventilation. The storage temperature is 5~40°C.
- Under normal storage and transportation conditions, the shelf life is at least 6 months from the date of production.

APPLICATION PROCESS

Pre-applied preparation - Substrate treatment - Detail and Joint treatment - Large area application (scratching, rolling or spraying) - Inspection - Acceptance.

APPLICATION REQUIREMENTS

- **Substrate requirements:** The substrate should be dry, clean, flat, solid, and any defects should be repaired.
- **Substrate preparation:** Before application, the substrate should be cleaned. For substrates with honeycombs, rough surfaces, cracks, or defects, cement mortar should be used for repair and consolidation.
- The internal and external corners should be made into rounded or obtuse angles. Additional coating layers (reinforced with non-woven fabric) should be added at the corners and pipe roots. The width of the additional layers on the flat and vertical surfaces should not be less than 250mm.
- The coating should be applied in multiple thin layers, preferably 2 to 3 coats. The applying directions of the upper and lower coatings shall be perpendicular to each other. The first coating shall be thin to close the pores of the base layer. The next coating can be applied only after the last coating is hard dry. If the padding reinforced materials are required, the reinforced materials shall be laid while applying coating materials.
- When proceeding to the next process, care should be taken not to damage the waterproof coating with hard objects, so as not to affect the overall waterproof effect. If there is any damage, promptly notify the waterproof application personnel to repair it before continuing the application.

TECHNICAL DATA

NO	Item		Index
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1	Solid content/% \geq	One Component	85
2	Surface drying time/h \leq		12
3	Fully drying time/h \leq		24
4	Tensile strength/MPa \geq		2.00
5	Elongation at break /% \geq		500
6	Tear strength (kN/m) \geq		15
7	Low temperature bending		-35°C, no crack
8	Impermeability		0.6 MPa , 120min, Impermeable <small>(National standard: 0.3MPa, 120min, impermeable)</small>
9	Heating expansion rate/%		-4.0~+1.0
10	Bonding strength/MPa \geq		1.0
11	Absorption / % \leq		5.0
12	Aging at constant extension	Heat aging	No cracks and deformation
		Tensile strength retention/%	80~150
13	Heat treatment (80°C, 168h)	Elongation at break /% \geq	450
		Low temperature bending	-30°C, no cracks
14	Alkali treatment [0.1% NaOH + saturated Ca(OH) ₂ solution, 168h]	Tensile strength retention/%	80~150
		Elongation at break /% \geq	450
		Low temperature bending	-30°C, no cracks
		Tensile strength retention/%	80~150
15	Acid treatment [2% H ₂ SO ₄ solution, 168h]	Elongation at break /% \geq	450
		Low temperature bending	30°, no crack.

Application Properties Q/WDT C080-2020 "Test Method for Root Penetration Resistance of Waterproof Coatings for Green Roofs" passed the root penetration performance test.

NO	Fiber		Technical indicators
1	Resistance to fungal corrosion	Anti-mouldy grade	Grade 0