

# Manta PU-1K

High-Performance Polyurethane Liquid Membrane

## Description

Manta PU-1K is a ready-to-use, single-component (1K) polyurethane liquid waterproofing membrane. Engineered with advanced moisture-triggered curing technology, it reacts with ambient humidity to form a highly elastic, seamless, and incredibly tough rubber-like waterproof barrier. Unlike conventional systems, Manta PU-1K is exceptionally damp-tolerant during application and exhibits outstanding resistance to continuous standing water (ponding water) once fully cured, making it the ultimate solution for demanding architectural waterproofing.

## Typical Physical Properties

|                      |   |
|----------------------|---|
| Manta code:          | PU-1K   |
| Material Base:       | Moisture-Curing Polyurethane  |
| Appearance:          | Viscous liquid coating  |
| Elongation at Break: | Highly elastic (Accommodates severe structural movements)             |
| Estimated Coverage:  | 1.3 – 1.5 kg/m <sup>2</sup> (Yields approx. 1.0mm dry film thickness) |

Note: Actual coverage may vary depending on substrate porosity and application method

## Features

- Ready-to-Use 1K System: No mixing errors, no pot-life anxiety. Open the pail and apply directly, significantly reducing labor costs.
- Damp-Tolerant Application: Can be applied on both dry and slightly damp substrates (without standing water), offering excellent schedule flexibility even in humid conditions.
- Ponding Water Resistance: Delivers exceptional hydrostatic resistance. Will not re-emulsify, blister, or degrade even under permanent standing water.
- Superior Elasticity & Adhesion: Bridges dynamic shrinkage cracks flawlessly and bonds tenaciously to concrete, masonry, and most construction substrates without the need for extensive priming.
- Seamless & Anti-Corrosive: Forms a continuous monolithic membrane free of vulnerable joints, providing excellent resistance against soil chemicals, decay, and corrosion.

## Application

Manta PU-1K is engineered for heavy-duty, long-term waterproofing, especially in areas with complex geometries and numerous pipe penetrations:

1. Roofs & Decks: Exposed and concealed flat roofs, green roofs, and balconies.
2. Underground Structures: Basements, retaining walls, foundation slabs, and trenches.

3. Wet Areas: Bathrooms, kitchens, and commercial washrooms.
4. Water Containment: Non-potable water tanks and reflection pools.

### Application Guidelines (Standard Operating Procedure)

#### 1. Substrate Preparation

The substrate must be structurally sound, flat, and free of laitance, dust, oil, and sharp protrusions. Detailing: All internal corners (coves) should be chamfered to a radius of > 50mm, and external corners rounded to a radius of > 10mm.

#### 2. Application Method

Apply Manta PU-1K evenly using a rubber/plastic squeegee, premium roller, or airless spray equipment.

Crucial Thickness Control: To prevent outgassing bubbles (CO<sub>2</sub> release during curing), do not apply in one thick coat. The total required thickness (generally 1.5mm-2.0mm) must be built up in 3 to 4 successive thin coats.

Cross-Coating: Apply each subsequent coat in a perpendicular (cross) direction to the previous coat. Allow the previous coat to cure fully before applying the next.

#### 3. System Thickness Requirements (Based on standard designs)

Underground Projects: 1.5mm (Range: 1.2mm - 2.0mm).

Bathrooms & Wet Rooms: Minimum 1.5mm.

Exposed Roofs: Multi-layer system:  $\geq$  1.2mm per functional layer.

Single-layer system:  $\geq$  2.0mm total thickness.

#### 4. Reinforcement (For high-stress areas & Basements)

When incorporating a reinforcement fabric (matrix), apply a base coat of PU-1K (minimum 1.0mm thick), embed the fabric flat without wrinkles, and apply the top coat (minimum 0.5mm thick) ensuring full encapsulation.

#### 5. Protection Layer

Upon complete curing and successful inspection, apply a suitable isolation/protection layer (e.g., screed or protective board) as per architectural design before backfilling or subsequent construction.

### Packaging

Manta PU-1K is supplied in 20kg (or 25kg) heavy-duty, airtight metal pails or 200kg metal drums.

### Safety and Storage

Storage Conditions (Strictly Dry): Store in a clean, strictly dry, and well-ventilated indoor environment. Keep containers tightly sealed and elevated off the ground. Keep away from direct sunlight, heat sources, and ignition sources. Maintain storage temperatures strictly between 5°C and 35°C.

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Shelf Life: 6 to 9 months from the date of manufacture when stored properly in original, unopened, and undamaged metal containers. (Note: Polyurethane products naturally have a shorter shelf life than acrylics due to their reactive nature).

Moisture & Anti-Skinning Warning: As a moisture-triggered reactive membrane, any exposure to ambient air will cause the liquid to cure and form a thick skin inside the pail. Once a container is opened, the entire contents must be consumed promptly. Partial use and resealing are not recommended, as the trapped humid air will cause the remaining material to cure.

Occupational Health & Fire Safety: Contains specific polymers and potentially combustible components. Applicators must wear chemical-resistant gloves, protective clothing, and safety goggles. Keep away from open flames during application. Ensure adequate mechanical ventilation if applying in confined, unventilated spaces (e.g., deep basements or enclosed tanks).

### Contact Information

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