# Product Technical Manual

Revision Date: 2025-03-03 TDS Number: WHS_001

Product Name: Spray Polyurea Waterproof Coating Version: V3.1

## Product Introduction

Spray polyurea waterproof coating is a next-generation polyurethane elastomer material formed by on-site spray curing of semi-prepolymer, resin, amine chain extender, additives, pigments, and other raw materials. This solvent-free, pollution-free material offers convenient construction, continuous dense film formation without joints, and excellent physical and chemical performance and stability.

## Performance Features

1. Mechanized Construction: Eliminates quality risks associated with manual operations.

2. Rapid Curing: Gelation in 8 seconds; load-bearing capability achieved within 30 minutes post-application, minimizing cross-construction delays.

3. Vertical/Complex Surface Application: No sagging on vertical or curved surfaces, suitable for all irregular structures.

4. Seamless Film: Prevents leakage risks through complete impermeability.

5. Corrosion Resistance: Dense coating blocks corrosive media infiltration, extending structure lifespan.

6. Eco-Friendly: Zero VOC emissions, no heavy metals, compliant with global green standards.

7. Compliance: Meets or exceeds GB/T 23446-2009 requirements for spray polyurea waterproof coatings.

## Product Applications

1. Roof waterproofing renovation for existing buildings.

2. Integrated waterproofing/insulation systems for industrial/governmental/ residential roofs.

3. Waterproofing/corrosion protection for metal structures, steel frameworks, and color-coated plates.

4. Large-span roof projects (museums, libraries, factories).

5. Waterproofing/anti-seepage for stadiums, urban pipelines, underground spaces, and water features.

6. Flood control (artificial lakes, rivers), landfill liners, sewage ponds, and landscape pools.

## Physical and Chemical Properties

| Item | | Technical Index | Test Standard |
|---|---|---|---|
| Color & Appearance | | Gray viscous liquid | GB/T 23446--2009 《Spray Polyurea Waterproof Coating》 |
| Drying Time | Surface Drying Time，s | ≤120 | |
| | Gel Time，s | ≤10 | |
| Tensile Strength，MPa | | ≥16 | |
| Elongation at Break，% | | ≥450 | |
| Tear Strength，N/mm | | ≥65 | |
| Bond Strength，MPa | | ≥2.5 | |
| Hardness (Shore A) | | ≥90 | |

Note: Values are typical test results; environmental variations may occur. Legal liability for data is disclaimed.

## Surface Preparation Before Application

1.Steel Structures:

• Sandblast to Sa2.5 grade or manually grind to St3.0 standard.

• Ensure oil-free, dry, salt-free surfaces; apply primer within 4 hours post-surface treatment.

2. Existing Coated Surfaces:

• Remove loose coatings via sandblasting/shot blasting; polish to expose solid concrete.

3. Oil-Contaminated Surfaces:

• Thoroughly clean and polish to eliminate oil residues.

4. New Concrete:

• Cure concrete until moisture content ≤6%; level uneven surfaces with grinders.

• Apply 1–2 coats of matching primer (interval ≥4 hours).

5. Repair Mortar:

• Fill holes/pinholes with specialized filler to avoid air bubbles/poor adhesion.

Spray Construction:

• Use dedicated polyurea equipment for single/multiple coatings (thickness: 1-2 mm, material usage: 1.2-2.5 kg/m ²).

## Construction Conditions

• Temperature: 5–35 ℃ (substrate temperature ≥ dew point +3°C).

• Humidity: 30–80% RH.

• Ventilation: Dust-free environment; avoid strong airflow disrupting film formation.

• Limitations: Not suitable for UV-exposed or high-UV areas.

## form of construction work

Spraying; use a special polyurea spraying equipment.

## Application Parameters

| | |
|---|---|
| Spraying Parameters | Mix Ratio (Weight): A:B = 1.1:1 (dedicated equipment required). |
| Material Temperature | 50-80 ℃ |
| Thinner | Diluent/Thinner Not Permitted in Coating |
| Cleaning Agent | Equipment Cleaning with Cleaning Agent |
| Drying Time | Surface dry ≤120 s; full cure ≤10 s |

Note: The drying time is measured under standard conditions (25 ℃, 60% humidity) and is for reference only. Drying speed may vary significantly under different temperatures and humidity levels, and is also affected by factors such as film thickness, ventilation conditions, and underlying coatings.Spraying Parameters:

Before the formal construction of the project, the Buyer must do the test in the environment consistent with the construction conditions to ensure the reliability of the combined material system in this specific project. During the formal construction, the Buyer shall be deemed to have accepted the performance inspection of the product. If not as described above, all responsibilities shall be borne by the Buyer.

## Packing Details

• A Component (Isocyanate): 220 kg iron drum.

• B Component (Amino Polyether): 200 kg iron drum.

• Usage: Mix components strictly according to factory packaging ratios.

## Storage, Transportation, and Expiration Date

• Storage: Seal containers in dry, cool (5–35 ℃), ventilated areas; avoid heat/fire sources.

• Transportation: Ensure dry, enclosed compartments; secure cargo during transit.

• Shelf Life: 12 months from production date (unopened, stored properly).

## Safety Precautions

• Handling: Wear protective gear (masks, gloves, goggles) to avoid skin/contact lens exposure. Rinse eyes immediately with water if splashed.

• Fire Safety: Non-hazardous under transport/storage regulations. Use $CO_2$, foam, or dry powder extinguishers.

• Disposal: Follow local environmental regulations for waste cleanup.

## Fire and Explosion Hazards

This product is not classified as a flammable liquid, explosive, oxidizer, corrosive, toxic, or radioactive substance under transportation/storage regulations.

Extinguishing Media: $CO_2$, foam, dry chemical powder, or large volumes of mist water.

## Spill and Leakage Handling

•Small Spills: Rinse with water.

• Large Spills: Contain, recover, and clean with water/detergent. Dispose of waste per local environmental regulations.

**For more information, please refer to the Safety Data Sheet (SDS) of our products or contact our Customer Service Center.**

The indicators and data provided in this document are based on our current level of technical knowledge and practical experience, and are for reference only. Specific guaranteed indicators are subject to the quality assurance certificate or supply contract. The user is responsible for testing the products purchased from our company to verify their suitability for their intended processes and applications, and to achieve the desired objectives. Further application and processing of our products are beyond our control. Therefore, our liability for the products provided is limited to the portion delivered by us and used by you. We do not assume responsibility for indirect losses incurred during the production process using our products as raw materials. Our technical support and customer service center are available to provide consultation and technical services related to our products. We welcome your inquiries and communication via mail or phone.

Address: Wanhua Energy-Saving Technology (Yantai) Co., Ltd.
No. 56 Taiyuan Road, Yantai City, Shandong Province, China
Email: mouwen@126.com