Product Technical Manual

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Product Name：Roofing Spray Polyurethane Rigid Foam Compound (Type I)

Version： V 3.1

Product Introduction

Roofing Spray Polyurethane Rigid Foam Compound (Type I)

The foaming agent is an ultra-low thermal conductivity environmentally friendly blowing agent. When used in combination with WANNATE® 2208, it produces foam products with excellent flame retardant performance.

Roofing Spray Polyurethane Rigid Foam Compound (Type I) can be applied on cement surfaces, brick surfaces, wood surfaces and other substrates. It features strong adhesion, good dimensional stability and excellent flame retardant performance, with a combustion performance rating of B2 (GB 8624-2012).

Product Applications

The product is designed for roofing insulation spraying applications in cold storage facilities, food processing plants, chemical plants, industrial buildings, and civil architecture.

Roofing Spray Polyurethane Rigid Foam Compound (Type I) features a rapid-curing system capable of immediate load-bearing, meeting the construction requirements for most spray insulation applications.

Important Notice: Prior to using Roofing Spray Polyurethane Rigid Foam Compound (Type I), preliminary tests must be conducted to verify the system's reliability for the specific project application.

Chemical Properties

Item	Specifications
Viscosity25°C, mPa•s	40~450
Viscosity，g/cm^3	1.10±0.10
Color	Colorless or Pale Yellow

Free-Rise Foaming Parameters

Item	Specifications
Cream Time，s	2~3
Gel Time，s	9~10
Tack-Free Time，s	10~13
Free-Rise Density，kg/m^3	35~41

Physical Properties

Item	Specifications
Viscosity，kg/m^3	≥35
Thermal Conductivity，W/(m·k)	≤0.024
Compressive Strength (at 10% Deformation)，kPa	≥150
Dimensional Stability（70°C，48h）(%)	≤1.5
Closed-Cell Content(%)	≥90
Closed-Cell(%)	≤3

(1) Roofing Spray Polyurethane Rigid Foam Compound (Type I) Foaming Requirements

• Material temperature: 25°C

• Mixing ratio: 1:1 by volume

• Mixing method: Electric stirring at 2500 rpm (manual operation)

(2) Product Performance

When processed in accordance with the usage precautions specified in this document using high-pressure spraying equipment, the resulting foam products will have an overall density greater than 35 kg/m³.

(3) Technical Notes

The values provided in this document are typical test results. Actual data may vary slightly depending on environmental conditions. For our company's products, the listed

data are not legally binding in any way.

Usage Precautions

Construction Equipment

This product must be applied using high-pressure spraying equipment. Prior to construction, verify and calibrate the feeding ratio of Component A and B as well as the mixing pressure of the equipment.

Ambient Requirements

- Recommended ambient temperature: 10-40 ℃
- Maximum wind speed: ≤5m/s (Level 3 wind)
- Relative humidity: <75%
- Construction is prohibited during rainy weather

Note: When ambient temperature is below 10 ℃, appropriate technical measures must be taken to ensure spraying quality.

Process Control

- Maintain material temperature at spray gun above 30°C
- Ensure substrate is dry and clean
- Control foam thickness per spray pass within 1-1.5cm range (excluding base coat)
- Subsequent layers may only be applied after the previous polyurethane foam surface becomes tack-free

Standards & Liabilities

All construction must comply with GB 50404-2017 "Technical Code for Polyurethane Rigid Foam Insulation and Waterproofing Engineering". The buyer assumes all responsibilities for any non-compliance with the above conditions.

Safety Requirements

- The construction site must be designated as a no-flame zone

• Maintain proper ventilation and keep away from ignition sources

• Smoking is strictly prohibited

• When hot work is required nearby, strictly implement the hot work permit system with corresponding safety measures and dedicated supervision

The Buyer must conduct field tests under identical environmental conditions to the actual construction site prior to formal application, to verify system reliability for the specific project.Commencement of formal construction shall be deemed as the Buyer's acceptance of the product's qualified performance. All liabilities arising from non-compliance with these procedures shall be borne solely by the Buyer.

Packaging Specifications

200L Green Steel Drum

Storage (Usage) Precautions

The compound must be stored in tightly sealed containers to prevent moisture absorption, ensuring containers remain dry and properly sealed throughout storage and transportation. Store at room temperature (5-35 ℃) in a cool, ventilated area protected from direct sunlight.

Prolonged storage above 40 ℃ must be avoided as it may cause excessive blowing agent volatilization, adversely affecting both storage stability and product performance.

Shelf Life

When stored under proper conditions (5-35 ℃ in dry, sealed containers), the product maintains a 6-month shelf life. Post-expiration usage is permitted only after passing quality verification tests confirming.

Safety Precautions

Direct contact with Roofing Spray Polyurethane Rigid Foam Compound (Type I) may cause moderate eye irritation and mild skin irritation, and may lead to skin sensitization. Repeated inhalation of high-concentration vapors may cause respiratory allergies. Immediate medical attention should be sought, with anti-inflammatory and

anti-allergy symptomatic treatments administered.

During operation, exercise caution to prevent direct skin contact and splashing into eyes. Necessary protective equipment must be worn (gloves, safety goggles, work clothes, etc.).

In case of contact with skin or eyes, immediately rinse with clean water for at least 15 minutes. Wash skin with soap and water, and seek medical attention if necessary. If ingested, seek immediate medical treatment for symptomatic management.

Fire and Explosion Hazards

This product is not classified as a flammable liquid, explosive, oxidizer, corrosive, toxic or radioactive hazardous material during storage and transportation, and does not qualify as a dangerous good.

Acceptable extinguishing agents include carbon dioxide, foam, or dry chemical powder fire extinguishers. In the absence of other extinguishing agents, large amounts of water mist/spray may be used. Once the fire is extinguished, spilled material must be thoroughly cleaned (refer to Spill Response Procedures).

Firefighting Procedure: Standard Protection

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