Product Technical Manual

Revision Date： 2025-02-03 TDS Number：

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

Version： V 3.1

Product Introduction

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

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

Product Applications

The product is designed for spray insulation applications including cold storage facilities, food processing plants, chemical plants, industrial buildings, and civil construction roofs. Roofing Spray Polyurethane Rigid Foam Compound (Type III) features a rapid-cure system capable of immediate load-bearing, meeting construction requirements for most spray insulation applications.

Chemical Properties

Item	Specifications
Viscosity25°C, mPa•s	50-600
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	10-17
Free-Rise Density，kg/m^3	45-50

Physical Properties of Product

Item	Specifications
Viscosity，kg/m^3	≥55
Thermal Conductivity，W/(m ƙ)	≤0.024
Compressive Strength (at 10% Deformation)，kPa	≥300
Water Impermeability (Non-Skinned)0.2Mpa,30min	Waterproof
Dimensional Stability（70℃，48h）(%)	≤1.0
Closed-Cell(%)	≥95
Closed-Cell(%)	≤1
Combustion Rating	B2

(1) Foaming Requirements:

Material temperature: 25 ℃

Mixing ratio: 1:1 by volume

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

(2) Product Performance:

When processed according to the operational guidelines using high-pressure spraying equipment, the resulting foam product achieves a bulk density >55 kg/m ³

(3) Technical Disclaimer:

All values provided are typical laboratory test results under standard conditions (23±2 ℃, 50±5% RH). Actual performance may vary with environmental factors. No legal liability shall be attached to these specifications for product compliance.

Usage Precautions

The construction equipment for Roofing Spray Polyurethane Rigid Foam Compound (Type III) is high-pressure spraying equipment. Before construction, check and calibrate the feeding ratio of Component A and B as well as the mixing pressure of the equipment. The recommended ambient temperature for spraying is 10-40℃, with wind speed not exceeding 5m/s (Beaufort Scale 3), relative humidity below 75%, and no construction during rainy weather. When the ambient temperature is below 10℃ during construction, reliable technical measures must be taken to ensure spraying quality.

During spraying operations, control the temperature of Components A and B entering the spray gun to be above 30℃, and ensure the substrate is dry and clean. Control the foam thickness per spray pass within 1-1.5cm range (excluding base coat). During construction, the next layer can only be applied after the previously sprayed polyurethane foam surface becomes tack-free.

Other relevant standards shall comply with national standards. Spraying operations shall comply with GB 50404-2017 "Technical Code for Polyurethane Rigid Foam Insulation and Waterproofing Engineering". If the above conditions are not met, all responsibilities shall be borne by the buyer.

The construction site shall be a no-flame zone with good ventilation, kept away from ignition sources, and smoking is strictly prohibited. When hot work is required nearby, the hot work permit system must be strictly implemented 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. During storage and transportation, ensure containers remain dry and properly sealed.

Store the product at room temperature (5-35 ℃) in a cool, ventilated area, protected from direct sunlight. Prolonged storage above 40 ℃ is strictly prohibited to avoid excessive blowing agent volatilization, which would compromise both storage stability and product performance.

Shelf Life

Under proper storage conditions (5-35 ℃ in dry, sealed containers), the product maintains a 6-month shelf life. Usage beyond this period is permitted only after passing quality verification tests that confirm.

Safety Precautions

Direct contact with Roofing Spray Polyurethane Rigid Foam Compound (Type Ⅲ) 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