Product Technical Manual

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Product name:Eco-Friendly Polyurethane Low-Temperature Spray Rigid Foam Composite

Version: V 3.2

Product Introduction

The eco-friendly polyurethane low-temperature spray rigid foam composite does not contain CFC-11 (Freon) and is suitable for use in environments with temperatures ranging from -5 ℃ to 15 ℃. When used in combination with WANNATE® 2208, the resulting foam product exhibits excellent flame-retardant properties, complying with the B1 and B2 fire performance classifications for building materials and products under GB 8624-2012.

This composite adheres strongly to cement, brick, wood, and other substrates, with excellent dimensional stability.

Product Usage

The product is widely used in industrial and civil buildings such as cold storage facilities, food processing plants, chemical plants, roofs, floors, pipelines, storage tanks, ship insulation layers, and other spray insulation applications. It is particularly suitable for low-temperature environments during autumn and winter.

The composite is a fast-curing system; however, foam surface strength may develop slowly at low temperatures. Full curing ensures normal foam strength. Prior to use, tests must be conducted to verify the reliability of the composite system for the specific project.

Physical and Chemical Properties

Item	Specification	Standard
Viscosity at 25 ℃, mPa s	50~150	GB/T 12008.8-1992

Density, g/cm³	1.10±0.10	GB/T 4472-1984
Color	Colorless or pale yellow	Visual inspection

Free Foaming Parameters

Cream Time，s	2~3
Gel Time，s	9~11
Tack-Free Time，s	12~14
Free Foam Density，kg/m3	28~30

（1）Material Temperature: 25 ℃

Mixing Ratio: 1:1 by volume

Mixing Method: Manual electric stirring （2500r/min）.

（2）When using a high-pressure spray machine under the guidelines of this manual, the overall foam density exceeds 40 kg/m³. Increasing free foam density allows for higher-density foam products during spray application.

（3）The values provided are typical test results and may vary slightly under different environmental conditions. These data are not legally binding.

Application Guidelines

Equipment: High-pressure spray machine. Prior to application, calibrate the material feed ratio (black/white components) and mixing pressure.

Ambient Conditions:

Temperature: -5 ℃ to 15 ℃

Wind speed: ≤5 m/s (Level 3 wind)

Humidity: <75%

Avoid rainy days. If temperatures fall below -5 ℃, implement technical measures to ensure quality.

Material Temperature at Spray Gun: >50 ℃. Ensure substrates are dry and clean.

Foam Thickness per Layer: 1–1.5 cm (excluding base layers). Subsequent layers may only be applied after the previous layer is tack-free.

Standards: Comply with GB 50404-2007 Technical Code for Rigid Polyurethane Foam Insulation and Waterproofing Engineering.

The buyer must conduct pre-application tests under conditions identical to the

actual project to verify product reliability. Formal application implies acceptance of product performance. Failure to comply with guidelines voids supplier liability.

Packing Details

Container: Green steel drum

Capacity: 200 kg/drum

Storage (Usage) Precautions

Store in sealed containers to prevent moisture absorption.

Keep in a cool, ventilated area away from direct sunlight. Avoid prolonged storage above 40 ℃.

Expiration Date

3 months under proper storage. Extendable post-inspection.

Safety Precautions

Hazards: Direct contact may cause moderate eye irritation, mild skin irritation, or allergic reactions. Prolonged inhalation of vapors may lead to respiratory sensitization.

PPE: Wear gloves, goggles, and protective clothing.

First Aid:Skin/Eye Contact: Rinse with water for ≥15 minutes. Seek medical attention if necessary.

Ingestion: Seek immediate medical care.

Fire and Explosion Hazards

This product is not classified as flammable liquids, explosives, oxidizers, corrosives, toxic substances, or radioactive hazardous materials during storage and transportation; it is not categorized as a hazardous material.

Fire Extinguishing Media: Carbon dioxide, foam, or dry chemical fire extinguishers may be used. If no other extinguishing agents are available, apply a large amount of fine water mist. Once the fire is extinguished, clean up spilled material promptly (refer to Spill and Leakage Handling).

Firefighting Procedures: Follow standard protective measures.

Spill and Leakage Handling

Minor spills or leaked materials can be flushed away with water. In the event of a large spill, contain and recover the material. Clean contaminated surfaces with water or detergent. Waste composite materials must be disposed of in strict compliance with local government environmental regulations.

For more information, please refer to the safety technical manual for 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.

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