Product technical specification

Revision Date：2021-06-01 TDS Number：WHF_203

Oduct name：B2 Grade Rigid Polyurethane Foam Spray Composite Material for Exterior Building Walls

Version： V 3.1

Product Introduction

This material utilizes an ultra-low thermal conductivity eco-friendly foaming agent and is designed for use with WANNATE® 2208. It can be applied on various substrates, including concrete, brick, wood, and other surfaces, offering strong adhesion, excellent dimensional stability, and outstanding flame-retardant performance.

Product Use

The product is applied in spray insulation applications including cold storage facilities, food processing plants, chemical plants, industrial and civil buildings, as well as various pipelines and storage tanks. The B2-grade rigid polyurethane foam spray composite material for exterior walls is a rapid-curing system capable of immediate load-bearing, meeting construction requirements for most spray insulation applications. Prior to using the B2-grade rigid polyurethane foam spray composite material for exterior walls, testing must be conducted to ensure the reliability of the composite material system for the specific engineering application.

Physical and Chemical Properties

Item	Primary Technical
Translation25°C, mPa•s	40~250
Density，g/cm^3	1.10±0.10
Color	Pale yellow to yellow

Free Foaming Parameters

Item	Primary Technical
Cream Time，s	2~3
Gel Time，s	8~10
Tack-free Time，s	10~13
Free-Rise Density，kg/m^3	27~33

Physical Properties

Item	Primary Technical
Mechanically Foamed Density，kg/m^3	≥35
Thermal Conductivity，W/(m·k)	≤0.024
Compression Properties（Deformation10%），kPa	≥150
Dimensional Stability（70℃，48h），%	≤1.5
Closed-cell Content，%	≥90
water absorption rate，%，	≤3

(1) For the B2-grade rigid polyurethane foam spray composite material for exterior walls, the foaming requirements are: material temperature at 25 ℃, 1:1 volume ratio of components, and manual mixing using electric stirring (2500 rpm).

(2) When operated according to the precautions in this document, high-pressure spray equipment will produce foam products with an overall density greater than 35 kg/m³.

(3) The values provided in this document are typical test results, and actual data may vary slightly depending on environmental conditions. For our company's products, the listed data are not legally binding.

Precautions for Use

The construction equipment for B2-grade rigid polyurethane foam spray composite material for exterior walls is high-pressure spraying machine. Before construction, please check and calibrate the component ratio and mixing pressure of the high-pressure spraying machine.

The recommended ambient temperature for spraying operation should be 10-40 ℃, wind speed should not exceed 5m/s (level 3 wind), relative humidity <75%, and no construction during rainy days. When the ambient temperature is below 10 ℃ during construction, reliable technical measures should be taken to ensure spraying quality.

During spraying operation, control the component temperature at spray gun inlet >30 ℃ and ensure the substrate is dry and clean. Control the foam thickness per spray within 1-1.5cm range (excluding primer coat). During construction, the next layer can only be sprayed after the previous polyurethane foam layer surface becomes non-tacky. Other relevant standards shall comply with national standards. If the above conditions are not met, all responsibilities shall be borne by the buyer.

Spraying operations shall comply with GB 50404-2017 "Technical Specification for Rigid Polyurethane Foam Thermal Insulation and Waterproofing Engineering".

The construction site shall be a fire-prohibited area with good ventilation, kept away from ignition sources, and smoking is strictly prohibited. When hot work is being performed nearby, the hot work permit system must be strictly implemented with corresponding safety measures and dedicated supervision.

The buyer must conduct preliminary testing under conditions identical to the actual construction environment prior to formal project commencement to verify the reliability of the composite material system for the specific engineering application. Upon proceeding with formal construction, the buyer shall be deemed to have approved the product's performance qualification. All responsibilities shall be borne by the buyer if failing to comply with the above requirements.

Packaging Specifications

200L green steel drum.

Storage (Usage) Precautions

The composite material must be stored in sealed containers to prevent moisture absorption, and the containers must remain dry and tightly sealed during storage and transportation.

For B1-grade rigid polyurethane foam spraying composite material used in building exterior walls, it should be stored in a sealed condition at room temperature between 5-35℃ in a cool, ventilated place away from direct sunlight, and must not be stored above 40℃ for extended periods to avoid excessive evaporation of foaming agents that would adversely affect both storage stability and product performance. All storage requirements must be strictly followed to maintain material quality.

Shelf Life

Under proper storage conditions, the B1-grade rigid polyurethane spray foam composite material for building exteriors has a shelf life of 3 months. After this period, the material may continue to be used if it passes quality inspection.

Safety Precautions

Direct contact with B1-grade rigid polyurethane spray foam composite material for building exteriors may cause moderate eye irritation, mild skin irritation, and potentially trigger skin allergies. Repeated inhalation of high-concentration vapors may lead to respiratory allergies. Immediate medical attention is required, with anti-inflammatory and anti-allergic symptomatic treatments to be administered.

Exercise caution during operation to prevent direct skin contact and eye splashes. Necessary protective equipment must be worn (gloves, safety goggles, work clothing, etc.).

In case of skin contact or eye exposure, immediately flush with clean water for at least 15 minutes. Wash affected skin with soap and water, and seek medical attention if

necessary. If ingested, seek immediate medical treatment for symptomatic care.

Fire and Explosion Hazards

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

Fire Extinguishing Media: Use carbon dioxide, foam, or dry chemical powder extinguishers. In the absence of other extinguishing agents, large amounts of water spray may be applied. Once the fire is extinguished, clean up any spilled material thoroughly (refer to "Spill Handling Procedures").

Emergency Procedure: Standard Protective Measures for Firefighting.

Spill and Leakage Handling

For small spills or leaked material, rinse with water. In case of large spills, contain and recover the material, then clean the contaminated surface with water or detergent. Waste composite materials must be disposed of in accordance with local environmental regulations.

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

The specifications and data provided in this document are based on our current technical knowledge and practical experience, and are for reference only. Guaranteed specifications shall be exclusively governed by the Quality Warranty Certificate or supply contract.

The customer is responsible for conducting tests to verify whether the purchased products are suitable for their intended processes and applications, and whether they achieve the desired objectives.

As further application and processing of our products are beyond our control, our liability is strictly limited to the products delivered to and accepted by the customer.

We shall not be liable for any indirect damages arising from the use of our products as raw materials in production processes.

Our Technical Support and Customer Service Center remains available to provide product-related consultation and application technical services. Please feel free to contact us by letter or phone.

Address: Wanhua Energy-Saving Technology (Yantai) Co., Ltd.

No. 56 Taiyuan Road, Yantai City, Shandong Province, China

Email: mouwen@126.com