Product technical specification

Revision Date： 2021-06-01 TDS Number：WHF_204

Oduct name：B1-grade polyurethane rigid foam spray composite material for building exterior walls

Version： V 3.2

Product Introduction

B1-grade polyurethane rigid foam spray composite material for building exterior walls uses an ultra-low thermal conductivity environmentally friendly blowing agent. When combined with WANNATE® 2208, it produces foam products with excellent flame-retardant performance, achieving a B1-grade combustion performance (GB 8624-2012).

This B1-grade polyurethane rigid foam spray composite material for building exterior walls can be applied on various substrates, including concrete, brick, wood, and other surfaces, offering strong adhesion and excellent dimensional stability.

Product Use

The product is applied in spray insulation fields such as cold storage, food factories, chemical plants, industrial buildings, civil structures, various pipelines, and storage tanks. The B1-grade rigid polyurethane foam spray composite material for building exteriors is a fast-curing system capable of immediate load-bearing, meeting the construction requirements of most spray insulation applications. Before using the B1-grade rigid polyurethane foam spray composite material for building exteriors, tests must be conducted to ensure the reliability of the composite system in the specific project.

(Note: "B1" refers to the flame-retardant grade according to Chinese standards, commonly

retained as "B1-grade" in technical translations with the understanding that it signifies a specific fire performance classification.)

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	9-10
Tack-free Time，s	11-18
Free-Rise Density，kg/m^3	32-45

Physical Properties

Item	Primary Technical
Mechanically Foamed Density，kg/m^3	≥45
Thermal Conductivity，W/(m·k)	≤0.024
Compression Properties（Deformation10%），kPa	≥200
Dimensional Stability（70℃，48h），%	≤1.5
Tensile Bond Strength（With cement mortar, at ambient temperature），Mpa	≥0.10
Water Absorption Rate，%	≤3

(1) Requirements for B1-grade rigid polyurethane foam spraying composite material used for building exterior walls:

Material temperature: 25 ℃

Material volume ratio: 1:1

Manual mixing using electric stirring (2500r/min).

(2) When operated according to the precautions in this document, the high-pressure spraying machine will produce foam products with an overall density greater than 45kg/m ³

(3) The values provided in this document are typical test values. Actual data may vary

slightly depending on environmental conditions. For our company's products, the listed data does not have any legally binding effect.

Precautions for Use

The construction of B1-grade rigid polyurethane foam spraying composite material for building exterior walls requires the use of high-pressure spraying equipment. Prior to construction, verify and adjust the delivery ratio of Component A and Component B as well as the mixing pressure of the high-pressure spraying machine.

The recommended ambient temperature for spraying operations is 10-40 ℃, with wind speed not exceeding 5m/s (Beaufort scale level 3), relative humidity below 75%, and construction prohibited during rainy conditions. When ambient temperature falls below 10 ℃ during construction, appropriate technical measures must be implemented to ensure spraying quality.

During spraying operations, maintain the temperature of Components A and B at the spray gun inlet above 30 ℃ and ensure the substrate is completely dry and clean. Apply foam in layers of 1-1.5cm thickness (excluding the base coat), allowing each layer to become tack-free before applying the next. All construction must comply with GB 50404-2017 "Technical specification for thermal insulation and waterproofing engineering of rigid polyurethane foam", with any non-conformance resulting in buyer assuming full responsibility.

The construction site must be designated as a no-flame zone with adequate ventilation, kept away from all ignition sources, and smoking is strictly prohibited. When hot work operations occur nearby, strictly implement the hot work permit system with corresponding safety measures and dedicated supervision in place.

Prior to formal construction, the buyer must conduct field tests under actual job site conditions to verify the reliability of the composite material system for the specific

project. The commencement of formal construction shall be deemed as the buyer's acceptance of the product's performance qualification. If the above procedures are not followed, all responsibilities shall be borne solely by the buyer.

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.

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