

Product Technical Manual

Revision Date:

TDS Number:

Product Name: Rigid Polyurethane Foam Composite Panel for Roofing

Version: V 3.1

Product Introduction

Rigid Polyurethane Foam Composite Panel for Roofing is a functional insulation board manufactured by professionally combining polyurethane insulation core material with cement-based interface reinforcement membrane through an industrialized continuous production line. (Abbreviation: PIR Panel)

Standard Size: 1200mm × 600mm (Custom sizes available)

Insulation Layer Thickness: 20mm-120mm

Product Features

1. Multi-functional Material - Combines waterproofing, thermal insulation, and heat shielding properties.

The rigid polyurethane foam is a high-density closed-cell foam compound with low water absorption, excellent energy efficiency, and outstanding thermal insulation performance. With the lowest thermal conductivity and highest R-value, it represents the optimal choice for integrated waterproofing and insulation materials.

2. Superior Anti-Permeability and Strong Adhesion

The polyurethane foam possesses exceptional fluidity and penetrability, allowing it to expand into substrate voids. Its bond strength exceeds the material's own tear strength, creating a monolithic system with the roof substrate that resists delamination, wind uplift, and negative wind pressure.

3. Lightweight with High Compressive Strength

A mere 40mm thickness meets 65% energy efficiency requirements. With compressive strength ≥ 300 kPa (adjustable to ≥ 600 kPa as needed), it accommodates diverse engineering specifications.

4. Excellent Aging Resistance Across Extreme Temperatures

Performs reliably from -50°C (no cracking) to $+150^{\circ}\text{C}$ (no melting/adhesion), while resisting weak acid/alkali corrosion.

5. Environmentally Friendly Fluorine-Free Foaming Technology

Our advanced water-blown (non-CFC) foaming process eliminates ozone-depleting substances, certified by China's 3-Star Green Building Materials rating for eco-friendly performance.

6. Simplified Installation Process

Ideal for roof renovations - can be directly applied over existing intact substrates (without blistering/delamination), significantly reducing labor intensity, project duration, and overall costs.

Production Process

The roofing rigid polyurethane foam composite panel adopts China's advanced continuous production process. Compared with traditional mold or adhesive bonding methods, this continuous process enables more effective cavity-free bonding between the rock wool layer and interface layer.

The entire production process features real-time dynamic monitoring, ensuring stable and controllable product quality. With productivity 10 times higher than conventional production methods, it significantly enhances manufacturing efficiency.

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
