BEST SOLUTIONS
FOR POLYURETHANE PANELS

BS PANEL®

Pre-Insulated Polyurethane (PU) HVAC Duct Panel

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BS PANEL® Engineering Design Guide

Pre-Insulated Polyurethane (PU) HVAC Duct Panel

TECHNICAL PERFORMANCE & PRODUCT MANUAL

PROUDLY ENGINEERED & MANUFACTURED IN THE STATE OF QATAR

ENGINEERING PERFORMANCE YOU CAN TRUST

Designed for consultants. Verified for contractors. Trusted by project owners.

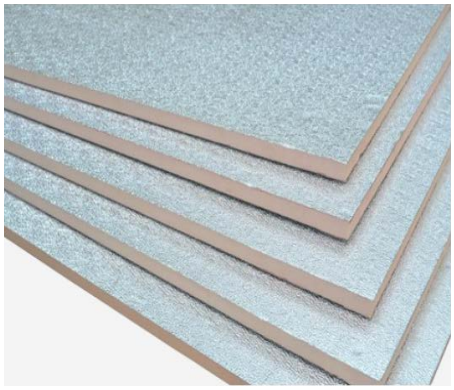
BS PANEL® is a high-performance pre-insulated polyurethane (PU) duct panel engineered and manufactured in the State of Qatar to satisfy the demanding requirements of modern HVAC systems. Manufactured using a high-density rigid polyurethane insulation core bonded to embossed aluminium facings, BS PANEL® combines outstanding thermal efficiency, structural rigidity, and long-term dimensional stability with the advantage of local manufacturing, rapid availability, and professional technical support. Every critical performance characteristic has been independently verified by accredited laboratories using internationally recognised ASTM test methods, providing consultants, contractors, and project owners with confidence in the product's quality and reliability.

Sustainability & Green Building Compliance (GSAS / LEED)

Reduced Transport Emissions	Local Manufacturing	Energy Saving	Long Service Life	Fibre Free

Product Dimensions & Technical Specifications

Technical Property / Dimension	Standard Specification
Panel Length	4000 mm
Panel Width	1200 mm
Nominal Thickness	20 mm
Panel Facing	Embossed Aluminium Foil (50 µm + 50 µm)



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TECHNICAL PERFORMANCE & PRODUCT MANUAL

THERMAL PERFORMANCE

Property	Standard	Result
Thermal Conductivity	ASTM C518	**0.0227 W/m·K**
Thermal Resistance	ASTM C518	**0.872 m^2K/W**
Thermal Transmittance	ASTM C518	**1.146 W/m^2K**

MECHANICAL PERFORMANCE

Property	Standard	Result
Density	ASTM D1622	**53.6 kg/m^3**
Compressive Strength	ASTM D1621	**66.19 kPa**
Flexural Strength	ASTM C203	**1132 kPa**
Dimensional Stability	ASTM D2126	**0.18%**

MOISTURE & FIRE PERFORMANCE

Property	Standard	Result
Water Absorption	ASTM D2842	**0.5%**
Fire Classification	ASTM E84	**Classified as Class B in accordance with ASTM E84**
Flame Spread Index (FSI)	ASTM E84	**35**
Smoke Developed Index (SDI)	ASTM E84	**140**

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WHY BS PANEL®? - DELIVERING MORE THAN JUST INSULATION

Choosing a duct panel is no longer only about thermal insulation. Modern HVAC projects require products that combine energy efficiency, mechanical reliability, fire performance, installation efficiency, and dependable local technical support. BS PANEL® has been engineered to meet these expectations through a balanced combination of technical excellence and local manufacturing.

KEY ADVANTAGES

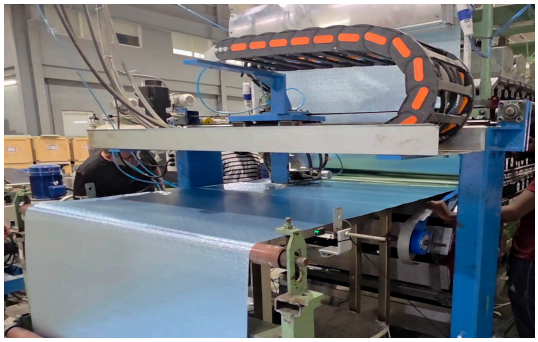
• QA **Manufactured in Qatar:** Rapid local availability and site support.

• ⚡ **Energy Efficient:** Excellent thermal conductivity contributes to energy efficiency.

• 🏗 **Structural Strength:** High-density rigid core ensures structural safety.

• 🔥 **Fire Performance:** Classified as Class B in accordance with ASTM E84.

• 🧼 **Hygienic Core:** Fibre-free insulation core suitable for clean rooms.



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QUALITY ASSURANCE & REGULATORY COMPLIANCE

MANUFACTURING MANAGEMENT STANDARDS

BS PANEL® is fabricated under strict compliance parameters managed by international operating systems:

ISO 9001	ISO 14001	ISO 45001
QMS	**EMS**	**OHSAS**
QUALITY MANAGEMENT	ENVIRONMENTAL MANAGEMENT	OCCUPATIONAL HEALTH & SAFETY

INDEPENDENT TESTING VALIDATION

Performance parameters are independently verified by accredited testing laboratories including **Qatar Industrial Laboratories (QIL)** and **METS Laboratory**, supporting compliance with the applicable requirements of QCS 2014, ASHRAE Guidelines and DW/144 where applicable.

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TYPICAL STRUCTURAL & PROJECT APPLICATIONS

BS PANEL® is engineered for high-performance rectangular HVAC ductwork serving critical infrastructure and commercial environments:

Healthcare Facilities
Hospitals, Labs & Operating Theatres

Data Centres
Mission Critical Control Infrastructure

Airlines & Airports
High-Traffic Transportation Hubs

Shopping Malls
Large-scale High CFM Air Distribution

Industrial & Food
Pharmaceutical & Production Areas

Special Projects
Indoor Swimming Pools & Sports Complexes

TECHNICAL SERVICES SUITE

We provide full engineering backup throughout the design and construction phase to optimize cost and air delivery performance:

TECHNICAL DOCUMENTATION AVAILABLE UPON REQUEST

- Test Reports
- Material Safety Data Sheet (MSDS)
- Compliance Statement

PROJECT CONSULTATION CONTACTS

Engineering Dept.	Best Solutions Commercial & Technical Hub
Phone	00974 7049 1441
Email	info@bestsolutionsqatar.com
Website	www.bestsolutionsqatar.com
Factory Address	Street No. 1, Factory No 24, New Industrial Area, Doha, State of Qatar

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CONSULTANT BENEFITS & ENGINEERING SUPPORT

ENGINEERING COMPARISON MATRIX

An engineering evaluation showing the system parameters of local pre-insulated core ducting compared with imported alternatives and sheet metal channels:

Feature / System Property	BS PANEL®	Typical Imported Products	Traditional GI Duct
Manufactured in Qatar	**✓ Yes**	✕ No	✓/✕ Varies
Factory Pre-Insulated	**✓ Yes**	✓ Yes	✕ No
Thermal Conductivity (λ)	**0.0227 W/m·K**	Typical Imported Range	Depends on External Jacket
Water Absorption	**0.5% Maximum**	Typical Imported Range	High Risk on Joint Failure
Fire Classification	**Classified under ASTM E84**	Varies by Product	Depends on Wrap Material
Independent Testing Matrix	**✓ Yes (QIL / METS)**	✕ No (Foreign Only)	Varies By Project
Local Technical Support	**✓ Immediate On-Site**	✕ Delayed Response	✓ Yes
Project Procurement Lead Time	**Short (Local Source)**	Long (Shipping/Customs)	Medium (Site Work)

Consultant Benefits Summary:
By specifying BS PANEL®, consultants mitigate site insulation alignment risks common with standard GI duct cladding, supports compliance with the applicable requirements of Qatar Construction Specifications (QCS 2014)[cite: 13], and may contribute toward applicable GSAS or LEED sustainability credits, subject to the project's certification requirements.