



**BEST SOLUTIONS**  
FOR POLYURETHANE PANELS

# BS PANEL<sup>®</sup>

Pre-Insulated Polyurethane (PU) HVAC Duct Panel

## ENGINEERING COMPLIANCE SERIES

# QCS 2014 Compliance Statement

Section 22 – Air Conditioning, Refrigeration & Ventilation  
Pre-Insulated Polyurethane (PU) HVAC Duct Panel

**Prepared by:** Best Solutions for Polyurethane Panels  
**Origin:** Doha, State of Qatar

**Document No:** EC-002  
**Revision:** 1.0 | **Date:** July 2026

## 1. Document Status & Control

|                           |                                              |
|---------------------------|----------------------------------------------|
| Product Brand             | BS PANEL®                                    |
| Document Type             | QCS 2014 Compliance Statement                |
| Applicable Authority Code | Qatar Construction Specifications (QCS 2014) |
| Engineering Series No.    | EC-002                                       |
| Revision Control          | 1.0                                          |
| Issue Date                | July 2026                                    |
| Manufacturer              | Best Solutions for Polyurethane Panels       |
| Country of Origin         | Doha, State of Qatar                         |

## 2. Purpose

This Compliance Statement has been prepared to demonstrate the conformity of **BS PANEL®** Pre-Insulated Polyurethane HVAC Duct Panel with the applicable requirements of Qatar Construction Specifications (**QCS 2014**), **Section 22 – Air Conditioning, Refrigeration and Ventilation**.

The document summarizes the product's technical compliance based on independently verified testing performed by accredited laboratories, internationally recognised ASTM standards, the manufacturer's quality management system, and applicable HVAC engineering practices. It is intended to facilitate the technical evaluation process by consultants, project owners, and contractors during material submittals and product approval procedures.

## 3. Scope

This Compliance Statement covers the following critical aspects of BS PANEL®:

- Product Performance:** Thermal, Mechanical, Physical, and Core Fire Performance.
- Quality Management System:** Factory-controlled manufacturing compliance and QA/QC protocols (ISO 9001, 14001, 45001 Certified).
- Installation Framework:** Applicable installation rules and supporting international engineering standards.
- Applicable QCS Clauses:** Cross-referenced evaluation parameters matching regional legal code parameters.
- Supporting Technical Evidence:** Validation indices via third-party official reports and certified appendices data.

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## 4. Compliance Methodology

The technical compliance assessment presented within this document has been established using a structured engineering compliance framework:

- Comprehensive evaluation of the active clauses within the Qatar Construction Specifications (QCS 2014).
- Independent accredited laboratory testing conducted under strictly controlled international ASTM standards.
- Verification of continuous manufacturing quality through standard ISO auditing frameworks.
- Alignment with recognized international HVAC design manuals, including DW/144 and ASHRAE guidance.

## 5. Applicable Standards

| Standard                   | Engineering Purpose                                                      |
|----------------------------|--------------------------------------------------------------------------|
| <b>QCS 2014 Section 22</b> | Qatar Construction Specifications                                        |
| <b>DW/144</b>              | Duct Construction Standard                                               |
| <b>ASHRAE Handbook</b>     | HVAC Engineering Practice                                                |
| <b>ASTM C518</b>           | Thermal Conductivity                                                     |
| <b>ASTM D1622</b>          | Density                                                                  |
| <b>ASTM D1621</b>          | Compressive Strength                                                     |
| <b>ASTM C203</b>           | Flexural Strength                                                        |
| <b>ASTM D2126</b>          | Dimensional Stability                                                    |
| <b>ASTM D2842</b>          | Water Absorption                                                         |
| <b>ASTM E84</b>            | Surface Burning Characteristics                                          |
| <b>ISO 9001:2015</b>       | Quality Management                                                       |
| <b>ISO 14001:2015</b>      | Environmental Management                                                 |
| <b>ISO 45001:2018</b>      | Occupational Health & Safety                                             |
| <b>QCDD Requirements</b>   | Qatar Civil Defence Department Fire Safety Guidelines (Where applicable) |

## 6. QCS Compliance Matrix

| QCS Ref       | Requirement                          | Compliance Type | BS PANEL Compliance                                                                    | Supporting Evidence                      | Status      |
|---------------|--------------------------------------|-----------------|----------------------------------------------------------------------------------------|------------------------------------------|-------------|
| Sec 22.3.1.2  | Pre-insulated duct suitable for HVAC | Product         | BS PANEL is engineered for fabrication of pre-insulated rectangular HVAC duct systems. | Design Guide EC-001                      | ✓ Compliant |
| Sec 22.3.1.4  | Thermal insulation performance       | Product         | Thermal conductivity verified at 0.0227 W/m-K.                                         | ASTM C518 Report No. BS-2026-T01         | ✓ Verified  |
| Sec 22.3.1.5  | Core Density                         | Product         | High-density rigid PU core 53.6 kg/m <sup>3</sup> .                                    | ASTM D1622 Report No. QIL-2026-D02       | ✓ Verified  |
| Sec 22.3.1.7  | Mechanical strength                  | Product         | Compressive Strength 66.19 kPa.                                                        | ASTM D1621 Report No. METS-26-S05        | ✓ Verified  |
| Sec 22.3.1.8  | Flexural strength                    | Product         | Flexural Strength 1132 kPa.                                                            | ASTM C203 Report No. METS-26-F06         | ✓ Verified  |
| Sec 22.3.1.9  | Dimensional Stability                | Product         | Maximum dimensional change 0.18%.                                                      | ASTM D2126 Report No. QIL-2026-ST04      | ✓ Verified  |
| Sec 22.3.1.11 | Moisture resistance                  | Product         | Water absorption 0.5%.                                                                 | ASTM D2842 Report No. QIL-2026-W08       | ✓ Verified  |
| Sec 22.3.2.1  | Fire Performance                     | Product         | Classified as ASTM E84 Class B (FSI=35 / SDI=140).                                     | ASTM E84 Report No. METS-26-FR09         | ✓ Verified  |
| Sec 22.1.4.2  | Quality Management                   | System          | Manufactured under ISO certified management systems.                                   | ISO Certificates 9001/14001/45001        | ✓ Verified  |
| Sec 22.1.5.1  | Local Manufacturing                  | System          | Manufactured in Doha, State of Qatar.                                                  | Manufacturer Declaration Ref: MD-2026-01 | ✓ Verified  |
| Sec 22.3.4.2  | Duct Fabrication                     | System          | Fabricated according to DW/144 parameters.                                             | Installation Manual EC-003               | ✓ Compliant |
| Sec 22.4.1.3  | On-site Installation                 | Installation    | Execution of supports, hangers and joining systems.                                    | Method Statement EC-005 (By Contractor)  | ✓ Compliant |

**Engineering Note:** Compliance with installation-related clauses of QCS is achieved when BS PANEL® duct systems are fabricated and installed in accordance with DW/144 and the manufacturer's Installation Manual.

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## **7. Responsibility Framework**

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To optimize execution on site, compliance is systematically split into three distinct operational layers:

- 1. Product Compliance:** Parameters proven via laboratory testing or direct factory certification.
- 2. System Compliance:** Features achieved once the panels are fully fabricated into complete structural duct runs.
- 3. Installation Compliance:** Aspects depending completely on site workmanship, remaining the explicit responsibility of the installing MEP Contractor.

## **8. Product Technical Description**

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**BS PANEL®** is a high-performance pre-insulated rigid polyurethane (PU) duct panel engineered and manufactured in the State of Qatar for commercial, industrial and institutional HVAC air distribution systems. The product consists of a high-density, closed-cell polyurethane insulation core factory laminated between symmetrical embossed structural aluminium facings. This configuration provides high thermal efficiency, high rigidity, low water absorption and moisture resistance, and excellent dimensional stability under high static pressures.

## **9. Product Compliance Philosophy**

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- **Thermal Performance:** Outstanding thermal conductivity contributes to energy-efficient HVAC operation while minimizing heat transfer through the duct envelope.
- **Mechanical Performance:** High-density rigid polyurethane core provides structural rigidity, dimensional stability and reliable fabrication performance.
- **Fire Performance:** Fire performance has been independently verified in accordance with ASTM E84 and classified as Class B.
- **Moisture Resistance:** Very low water absorption contributes to maintaining long-term insulation performance.
- **Quality Assurance:** Manufactured under ISO-certified quality management systems with continuous production quality control.
- **Local Manufacturing:** Engineered and manufactured in the State of Qatar, providing rapid availability, local engineering support and reliable supply.

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## 10. Supporting Technical Documentation

The Engineering Compliance Series provides a fully integrated operational suite. The active reference hierarchy is defined as follows:

| Document                        | Reference                     |
|---------------------------------|-------------------------------|
| Engineering Design Guide        | EC-001                        |
| <b>QCS Compliance Statement</b> | <b>EC-002 (This Document)</b> |
| MITS Laboratory Reports         | Appendix A                    |
| QIL Reports                     | Appendix B                    |
| ISO Certificates                | Appendix C                    |
| MSDS                            | Appendix D                    |
|                                 |                               |

**Document Framework Notice:** The unified numbering scheme listed above establishes structural traceability for contractors and consultants during comprehensive submittal, field audit, and project verification tasks.

## **11. Engineering Declaration**

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Best Solutions for Polyurethane Panels hereby declares that the information contained within this Compliance Statement is accurate to the best of our knowledge and is supported by independently verified testing performed by accredited laboratories, internationally recognised engineering standards and the Company's certified quality management system.

This document is intended to support technical evaluation of BS PANEL® during engineering review and material approval processes. Compliance with installation-related requirements shall be achieved through fabrication and installation in accordance with DW/144 and the manufacturer's published installation procedures.

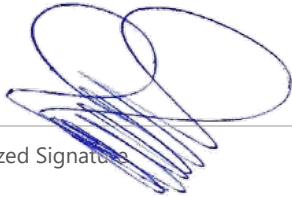
### **Prepared by:**

Technical Department

**Best Solutions for Polyurethane Panels**

State of Qatar

Authorized Signature



### **Approved by:**

Technical Director

Quality Manager



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