



PORON® Polyurethanes



Authorized Distributor,
Converter, and Fabricator
www.jbc-tech.com

Elastomeric Material Solutions
www.rogerscorp.com

Typical Product Properties

PORON® 4701-50 Firm – Supported – Data Sheet

| PROPERTY | TEST METHOD | VALUE |
|--|---|---|
| PHYSICAL | | |
| Density, kg /m ³ (lb. / ft ³) Tolerance, % | ASTM D 3574-95, Test A | 480 (30) ± 10 |
| Thickness, mm (inches) Tolerance, mm (inches) | | 0.30 (0.012) 0.08 (± 0.003) |
| Standard Color (Code) | | Black (04) |
| Compression Force Deflection Range kPa (psi) Typical kPa (psi) | 0.51 cm/in (0.2" / min) Strain Rate Force Measured @ 25% Deflection | 103-310 (15-45) 221 (32) |
| Hardness, Durometer, Shore "O" | ASTM D 2240-97 | 55 |
| Compression Set, % max. | ASTM D 3574-95 Test D @ 23°C (73°F) ASTM D 3574-95 Test D @ 70°C (158°F) ASTM D 3574-95 Test J/Test D autoclaved 5 hrs @ 121°C (250°F) | 5 10 - |
| Dimensional Stability, % max. change | 22 hrs @ 80°C (176°F) in a forced-air oven | - |
| Tensile Strength, Min. kPa (psi) | ASTM D 3574-75 Test E | - |
| Tensile Elongation, % min. | ASTM D 3574-75 Test E | - |
| Tear Strength, Min. kN/m (pli), Typical kN/m (pli) | ASTM D 264-91 Die C | - |
| ELECTRICAL AND THERMAL | | |
| Dielectric Constant, K' ("DK") | ASTM D 150 measurements at 22°C (72°F) relative humidity 50% for 24 hrs. | 1.63 |
| Dielectric Strength, volts/mil | ASTM D 149-97a | 50 |
| Dissipation Factor, tan D ("DF") | ASTM D 150-98 | 0.05 |
| Volume Resistivity, ohm-cm | ASTM D 257-99 | 2 x 10 ¹² |
| Surface Resistivity, ohm/sq. | ASTM D 257-99 | 7 x 10 ¹² |
| Thermal Conductivity, W/m-C (BTU-in./hr/ft ² -F) | ASTM C 518-98 | 0.090 (0.63) |
| Coefficient of Thermal Expansion | | 2.3 - 3.1 x 10 ⁻⁴ in/in/°C (1.3-1.7 x 10 ⁻⁴ in/in/°F) |
| TEMPERATURE RESISTANCE | | |
| Recommended Constant Use, max. | SAE J-2236 | 90°C (194°F) |
| Recommended Intermittent Use, max. | | 121°C (250°F) |
| Embrittlement | ASTM D 746-98 | -40°F (-40°C) |
| Cold Flexibility | MIL-P-12420D 1991 @ -40°C (-40°F) | Pass |

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PORON® 4701-50 Firm – Supported, Continued

| PROPERTY | TEST METHOD | VALUE |
|---|---|-------------------|
| FLAMMABILITY AND OUTGASSING | | |
| Flammability | UL 94HBF (File E20305) (Pass ≥) MVSS 302 (Pass ≥) CSA Comp HBF (File 188149) (Pass ≥) | - - - |
| Fogging | SAE J-1756 3 hrs @ 100°C (212°F) | Pass |
| Outgassing, Total Mass Loss (TML) % | ASTM E 595-93 24 hrs @ 125°C (257°F) @ <7x10 ³ Pa | 0.9 |
| Outgassing, Collected Volatile Condensable Materials (CVCM) % | | 0.06 |
| Outgassing, Water Vapor Regain (WVR) % | | 0.43 |
| ENVIRONMENTAL | | |
| Gasketing and Sealing | UL JMST2 (Consisting of UL50 and UL508) CAN/CSA – C22.2 No. 94-M91 | File MH15464 - |
| Moisture Absorption, High Humidity Exposure, % weight gain, typical | AMS 3568-95 | 2 |
| Water Absorption, Immersion Testing, % weight gain, typical | ASTM D 570-95 | 5 |
| UV Resistance | ASTM G 53-96 | Good |
| Ozone Resistance | GM 4486P-95 | Pass |
| Corrosion Resistance | AMS 3568-91 | Pass |
| Mildew/Bacteria Resistance | ASTM G 21 | Good |
| Staining | ASTM D 925 | No Stain |
| Skin Contact Irritation | Primary Skin Irritation Test (FHSA) | Pass |

The data mentioned above represents results of testing the PORON polyurethane foam only. PORON cellular polyurethane material is supported by being directly cast onto 2 mil polyester film. By casting directly onto the film, a permanent bond is created. Please see physical property data for the film as represented by manufacturer below.

Supporting Material - Clear Polyester Film (PET)

| PROPERTY | TEST METHOD | VALUE |
|--|---------------------------|---------------------------------|
| Coefficient of Friction A/B, (Kinetic) | ASTM D 1894 | 0.40 |
| Density, kg /m ³ (lb. / ft ³) | ASTM D 1505 | 1.395 (87.1) |
| Modules, MD, kPa (psi) | ASTM D 882 | 3.5 x 10 ⁶ (500,000) |
| Shrinkage, MD, %, (TD) | 39 min. at 150°C (302 °F) | 1.2 (0.0) |
| Tensile Strength, MD, kPa (psi) | ASTM D 882 | 2.1 x 10 ⁵ (30,000) |
| Ultimate Elongation | ASTM D 882 | 150 |
| Yield Strength (F5), kPa (psi) | ASTM D 882 | 1.0 x 10 ⁵ (15,000) |

Notes:

- - Represents testing not available at this time.
- All metric conversions are approximate.
- Additional technical information is available.
- Typical values should not be used for specification limits.

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