ROGERS CORPORATION

PORON® Polyurethanes

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

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.