ROGERS CORPORATION

PORON® Polyurethanes

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Typical Product Properties

PORON® 4701-50 Firm – Thin as Cast – 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)		0.43 – 0.50 (0.017 - 0.020) 0.08 (± 0.003)
Standard Color (Code)		Black (04)
Compression Force Deflection Range kPa (psi) Typical kPa (psi)	 0.51cm/min (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 1667-90 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 5
Dimensional Stability, % max. change	22 hrs @ 80°C (176°F) in a forced-air oven	± 1
Tensile Strength, kPa (psi), min	ASTM D 3574-75 Test E	1106 (160)
Tensile Elongation, % min.,	ASTM D 3574-75 Test E	90
Tear Strength, kN/m (pli) min Typical kN/m (pli)	ASTM D 264-91 Die C	1.6 (9) 4.4 (25)
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, kV/m (volts/mil)	ASTM D 149-97a	1969 (50)
Dissipation Factor, tan D ("DF")	ASTM D 150-98	0.05
Volume Resistivity, ohm-cm (ohm-in)	ASTM D 257-99	2 x 10^{12} (7.87 x 10^{11})
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	-
Coefficient of Thermal Expansion		2.3 - 3.1 x 10^{-4} in/in/°C (1.3-1.7 x10^{-4} in/in/°F)

PORON® 4701-50 Firm – Thin as Cast, Continued

PROPERTY	TEST METHOD	VALUE
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˚C (-40˚F)
Cold Flexibility	MIL-P-12420D 1991 @ -40˚C (-40˚F)	Pass
FLAMMABILITY AND OUTGASSING		
Flammability, mm (inches)	UL 94HBF (File E20305) (Pass ≥) MVSS 302 (Pass ≥) CSA Comp HBF (File 188149) (Pass ≥)	- 1.1 (0.045) -
Fogging	SAE J-1756 3 hrs @ 100˚C (212˚F)	-
Outgassing, Total Mass Loss (TML) %	ASTM E 595-93 24 hrs @ 125˚C (257˚F) @ <7kPa (1.02psi)	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
Water 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

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.