ROGERS CORPORATION

PORON® Polyurethanes

PORON® 4701-60 Very Firm – Data Sheet

PROPERTY	TEST METHOD	VALUE		
PHYSICAL				
Density, kg /m^3 (lb./ft^3) Tolerance, %	ASTM D 3574-95, Test A	240 (15) ± 10	320 (20)	400 (25)
Thickness, mm (inches) Tolerance, %		3.18 – 6.35 (0.125 - 0.250) ± 10	0.79 – 4.78 (0.031 -0.188)	0.79 – 2.36 (0.031 - 0.093) ± 15
Standard Color (Code)		Black (04)		
Compression Force Deflection Range kPa (psi) Typical kPa (psi)	0.51 cm/min (0.2" / min) Strain Rate Force Measured @ 25% Deflection	124-345 (18-50) 249 (36)	172–586 (25-85) 428 (62)	345-896 (50-130) 643 (93)
Hardness, Durometer, Shore "O", Shore "A"	ASTM D 2240-97	42 30	55 42	63 53
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 10		
Dimensional Stability, % max. change	22 hrs @ 80°C (176°F) in a forced-air oven	± 5		
Tensile Strength, Min. kPa (psi)	ASTM D 3574-75 Test E	931 (135)	1382 (200)	1724 (250)
Tensile Elongation, % min.	ASTM D 3574-75 Test E	50	45	50
Tear Strength, Min. kN/m (pli), Typical kN/m (pli)	ASTM D 264-91 Die C	2.1 (12) 3.3 (19)	3.0 (17) 4.4 (25)	3.3 (19) 5.3 (30)
ELECTRICAL AND THERMAL				
Dielectric Constant, K' ("DK")	ASTM D 150 measurements at 22°C (72°F) relative humidity 50% for 24 hrs.	1.60		
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	7 x 10^{12}		
Surface Resistivity, ohm/sq.	ASTM D 257-99	3 x 10^{12}		
Thermal Conductivity, W/m-C (BTU-in./hr/ft^2-F)	ASTM C 518-98	-	0.088 (0.61)	-
Coefficient of Thermal Expansion		2.3 - 3.1 x 10^{-4} in/in/°C (1.3-1.7 x 10^{-4} in/in/°F)		

PORON® 4701-60 Very Firm, Continued

PROPERTY	TEST METHOD	VALUE		
TEMPERATURE RESISTANCE				
Recommended Constant Use, max.	SAE J-2236	90°C (194°F)		
Recommended Intermittent Use, max.	UL JMST2 (UL50 and UL508)	121°C (250°F)		
Brittleness Temperature	ASTM D 746-98	-16°C (3°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 ≥)	3.175 (0.125) 3.175 (0.125) 3.175 (0.125)	1.6 (0.062) 1.6 (0.062) 1.6 (0.062)	- 1.6 (0.062) -
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	0.6	0.7	0.7
Outgassing, Collected Volatile Condensable Materials (CVCM) %		0.05	0.02	0.03
Outgassing, Water Vapor Regain (WVR) %		0.5	0.5	0.6
ENVIRONMENTAL				
Gasketing and Sealing	UL JMST2 (UL50 and UL508) CAN/CSA – C22.2 No. 94-M91	File MH15464 File 188149		
Moisture Absorption, High Humidity Exposure, % weight gain, typical	AMS 3568-95	2		
Water Absorption, Immersion Testing, % weight gain, typical	ASTM D 570-95	19	20	6
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		

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