



PORON® Urethane Foams

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*Typical Product Properties*

**PORON 4701-50 Firm**

PROPERTY	TEST METHOD	VALUE		
<b>PHYSICAL</b>				
Density, lb. / ft <sup>3</sup> (kg / m <sup>3</sup> )	ASTM D 3574-95, Test A	15 (240)	20 (320)	30 (480)
Tolerance, %		± 10		
Thickness, inches (mm)		0.188 - 0.500 (4,78 - 12,70)	0.062 - 0.125 (1,57 - 3,18)	0.031 - 0.045 (0,79 - 1,14)
Tolerance, %		± 10		± 20
Standard Color (Code)		Black (04)		
Compression Force Deflection, psi (kPa)	0.2" / min. Strain Rate Force Measured @ 25% Deflection	8 - 14 (55 - 97)	13 - 23 (90 - 159)	30 - 60 (207 - 415)
Typical psi (kPa)		<b>10 (69)</b>	<b>17 (117)</b>	<b>39 (269)</b>
Hardness, Durometer, Shore "O", Shore "A"	ASTM D 2240-97	18 <b>13</b>	24 <b>18</b>	55 <b>42</b>
Compression Set, % max.	ASTM D 1667-90 Test D @ 73°F (23°C) ASTM D 3574-95 Test D @ 158°F (70°C) ASTM D 3574-95 Test J/Test D autoclaved 5 hrs @ 250°F (121°C)	5  10  5		
Dimensional Stability, % max. change	22 hrs @ 176°F (80°C) in a forced-air oven	± 1		
Tensile Strength, Min. psi (kPa), Typical psi (kPa)	ASTM D 3574-75 Test E	80 (553) <b>95 (657)</b>	120 (829) <b>145 (1003)</b>	200 (1382) <b>250 (1729)</b>
Tensile Elongation, % min., Typical	ASTM D 3574-75 Test E	100 <b>140</b>	100 <b>135</b>	90 <b>130</b>
Tear Strength, Min. pli (kN/m), Typical pli (kN/m)	ASTM D 264-91 Die C	6 (1.1) <b>12 (2.1)</b>	10 (1.8) <b>16 (2.8)</b>	13 (2.3) <b>24 (4.2)</b>
<b>ELECTRICAL AND THERMAL</b>				
Dielectric Constant, K' ("DK")	ASTM D 150 measurements at 72°F (22°C) 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 <sup>12</sup>		
Surface Resistivity, ohm/sq.	ASTM D 257-99	7 x 10 <sup>12</sup>		
Thermal Conductivity, W/m-C (BTU-in./hr/ft <sup>2</sup> -F)	ASTM C 518-98	-	0.090 (0.63)	-
Coefficient of Thermal Expansion		2.3 - 3.1 x 10 <sup>-4</sup> in./in./°C		

Please see reverse side for additional data.

The world runs better with Rogers.

## PORON 4701-50 Firm Continued

PROPERTY	TEST METHOD	VALUE		
Density, lb. / ft <sup>3</sup> (kg /m <sup>3</sup> )	ASTM D 3574-95, Test A	15 (240)	20 (320)	30 (480)
<b>TEMPERATURE RESISTANCE</b>				
Recommended Constant Use, max.	SAE J-2236	194°F (90°C)		
Recommended Intermittent Use, max.	ASTM D 746-98	250°F (121°C)		
Embrittlement	ASTM D 746-98	-40°F (-40°C)		
Cold Flexibility	MIL-P-12420D 1991 @ -40°F (40°C)	Pass		
<b>FLAMMABILITY AND OUTGASSING</b>				
Flammability	UL 94HBF (File E20305) (Pass ≥)	0.188"	0.062"	-
	MVSS 302 (Pass ≥)	0.188"	0.062"	0.045"
	CSA Comp HBF (File 188149) (Pass ≥)	0.188"	0.062"	-
Fogging	SAE J-1756 3 hrs @ 212°F (100°C)	Pass		
Outgassing, Total Mass Loss (TML) %	ASTM E 595-93 24 hrs @ 257°F (125°C) @ <7x10 <sup>3</sup> Pa	0.6	0.8	0.9
Outgassing, Collected Volatile Condensable Materials (CVCM) %		0.04	0.05	0.06
Outgassing, Water Vapor Regain (WVR) %		0.1	0.3	0.4
<b>ENVIRONMENTAL</b>				
Gasketing and Sealing	UL JMST2 (Consisting of UL50 and UL508) CAN/CSA – C22.2 No. 94-M91	File MH15464 File 188149		
Water Absorption, High Humidity Exposure, % weight gain, typical	AMS 3568-95	2		
Water Absorption, Immersion Testing, % weight gain, typical	ASTM D 570-95	13	8	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 information contained in this data sheet is intended to assist you in designing with Rogers PORON Urethane. It is not intended to and does not create any warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose or that the results shown on the data sheet will be achieved by a user for a particular purpose. The user should determine the suitability of Rogers PORON Urethane for each application.

Notes:

1. All metric conversions are approximate.
2. Additional technical information is available.

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