Product Data Sheet

PORON® 4701-50 Firm

PROPERTY	TEST METHOD	VALUE		
PHYSICAL				
Density, kg/m³ (lb./ft³)	ASTM D3574-95, Test A	240 (15)	320 (20)	480 (30)
Tolerance, %			± 10	
Thickness, mm (inches)		4.78- 12.70 (0.188- 0.500)	1.57 - 3.18 (0.062 - 0.125)	0.79 - 1.14 (0.031 - 0.045)
Tolerance, %		± 10	± 10	± 20
Standard Color (Code)			Black (04)	
Compression Force Deflection, kPa (psi)				
Range kPa (psi)	0.51 cm/min (0.2"/min) Strain Rate Force Measured @ 25% Deflection	55 - 97 (8 -14)	90 - 159 (13 - 23)	207 - 415 (30 - 60)
Typical kPa (psi)		69 (10)	117 (17)	269 (39)
Hardness, Durometer Shore O	ASTM D2240-97	18	24	55
Shore A		13	18	42
Compression Set, % max	ASTM D3574-95 Test D @ 23°C (73°F)		5	
	ASTM D3574-95 Test D @ 70°C (158°F)		10	
	ASTM D3574-95 Test J/Test D Autoclaved 5 hrs @ 121°C (250°F)		5	
Dimensional Stability, % max change	22 hrs @ 80°C (176°F) in a Forced-Air Oven		± 1	
Tensile Strength, min. kPa (psi)	ASTM D3574-75 Test E	482 (70)	829 (120)	1382 (200)
Tensile Elongation, % min.	ASTM D3574-75 Test E	100	100	90
Tear Strength , min. kN/m, (pli)	ASTM D264-91 Die C	1.1 (6)	1.8 (10)	2.3 (13)
Typical kNm, (pli)		2.1 (12)	2.8 (16)	4.2 (24)

PROPERTY	TEST METHOD	VALUE		
ELECTRICAL & THERMAL		240 (15)	320 (20)	480 (30)
Dielectric Constant, K' ("DK")	ASTM D150 @ 22°C (72°F) Relative Humidity 50% for 24 hrs		1.63	
Dielectric Strength, kV/m (volts/mil)	ASTM D149-97a		1969 (50)	
Dissipation Factor, tan D ("DF")	ASTM D150-98		0.05	
Volume Resistivity, ohm-cm (ohm-in)	ASTM D257-99		2×10^{12} (7.87×10^{11})	
Surface Resistivity, ohm/sq.	ASTM D257-99		7×10^{12}	
Thermal Conductivity, W/m-C (BTU-in./hr/ft^2-F)	ASTM C518-98	-	0.090 (0.063)	-
Coefficient of Thermal Expansion			$2.3 - 3.1 \times 10^{-4}$ in/in/°C ($1.3 - 1.7 \times 10^{-4}$ 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 D746-98		-40°C (-40°F)	
Cold Flexibility	MIL-P-12420D 1991 @ -40°C (-40°F)		Pass	
FLAMMABILITY & OUTGASSING				
Flammability, mm (inches)	UL 94HBF‡ (File E20305) (Pass ≥)	4.8 (0.188)	1.6 (0.062)	-
	FMVSS 302 (Pass ≥)	4.8 (0.188)	1.6 (0.062)	1.1 (0.045)
	CSA Comp HBF (File 188149) (Pass≥)	4.8 (0.188)	1.6 (0.062)	-
Fogging	SAE J-1756 3 hrs @ 100°C (212°F)		Pass	
Outgassing, Total Mass Loss (TML) %	ASTM E595-93 24 hrs @ 125°C (257°F) @ <7 kPa (1.02 psi)	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

PROPERTY	TEST METHOD	VALUE		
ENVIRONMENTAL		240 (15)	320 (20)	480 (30)
Gasketing and Sealing	UL JMST2 (Consisting of UL50 & 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 D570-95	13	8	5
UV Resistance	ASTM G53-96		Good	
Ozone Resistance	GM 4486P-95		Pass	
Corrosion Resistance	AMS 3568-91		Pass	
Mildew/Bacteria Resistance	ASTM G21		Good	
Staining	ASTM D925		No Stain	

Notes:

‡Designed to meet UL 94 HBF based upon 2022 test criteria. As of 2023 items with nominal density ≥ 15.6lb/ft^3 (250kg/m^3) are no longer eligible to be tested for UL 94 HBF but remain equivalent.

- - 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.