

## Ideal CFD Curves for Battery Pad Applications: PORON® 4790-92 Extra Soft

PROPERTY	TEST METHOD	VALUE	
<b>PHYSICAL</b>			
Density, kg /m <sup>3</sup> (lb. / ft <sup>3</sup> )	ASTM D3574-95, Test A	192 (12)	240 (15)
Tolerance, %		± 10	
Thickness, mm (inches)		0.5 – 3.0 (0.020 - 0.118)	0.5 – 3.0 (0.020 - 0.118)
Tolerance, %		± 10	
Standard Color (Code)		Black (04)	
Compression Force Deflection, Range kPa (psi)	0.51 cm/min (0.2" / min). Strain Rate Force Measured @ 25% Deflection	1.7 - 17 (0.25 - 2.5)	2 - 24 (0.3 - 3.5)
Typical kPa (psi)	Force Measured @ 20% Deflection	7.7 (1.1)	11.3 (1.6)
	Force Measured @ 25% Deflection	8.3 (1.2)	12.3 (1.8)
	Force Measured @ 30% Deflection	9.1 (1.3)	13.4 (1.9)
	Force Measured @ 40% Deflection	11.2 (1.6)	16.5 (2.4)
	Force Measured @ 50% Deflection	15.3 (2.2)	21.9 (3.2)
	Force Measured @ 60% Deflection	26.1 (3.8)	34.5 (5.0)
	Force Measured @ 70% Deflection	64.4 (9.3)	77.2 (11.2)
Hardness, Durometer, Shore O	ASTM D2240-97	< 3	<5
Compression Set, % max.	ASTM D3574-95 Test D @ 23°C (73°F)	2	
	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	
Resilience by Verticle Rebound, %	ASTM D2632-96	4	
Dimensional Stability, % max. change	22 hrs @ 80°C (176°F) in a Forced-Air Oven	± 3	± 5
Tensile Strength, min. kPa, (psi)	ASTM D3574-75 Test E	-	103 (15)
Tensile Elongation, % min.	ASTM D3574-75 Test E	-	120
Tear Strength, kN/m (pli) min	ASTM D264-91 Die C	-	0.53 (3)
<b>ELECTRICAL AND THERMAL</b>			
Dielectric Constant, K' ("DK")	ASTM D150 Measurements at 22°C (72°F) Relative Humidity 50% for 24 hrs.	-	1.48

PROPERTY	TEST METHOD	VALUE	
<b>ELECTRICAL AND THERMAL</b>		192 (12)	240 (15)
Dielectric Strength, kN/m (volts/mil)	ASTM D149-97A	42	50
Dissipation Factor, tan D ("DF")	ASTM D150-98	-	.04
Volume Resistivity, ohm-cm (ohm-in)	ASTM D257-99	-	8 x 10 <sup>11</sup>
Surface Resistivity, ohm/sq.	ASTM D257-99	-	10 x 10 <sup>11</sup>
Thermal Conductivity, W/m-C (BTU-in./hr/ft <sup>2</sup> -F)	ASTM C518-98	-	0.083 (0.53)
Coefficient of Thermal Expansion		2.3 - 3.1 x 10 <sup>-4</sup> in./in./°C (1.3-1.7 x10 <sup>-4</sup> in/in/°F)	
<b>TEMPERATURE RESISTANCE</b>			
Recommended Constant Use, max.	SAE J-2236	90°C (194°F)	
Recommended Intermittent Use, max.		121°C (250°F)	
Embrittlement	ASTM D746-98	-20°C (-4°F)	
Cold Flexibility	MIL-P-12420D 1991 @ -40°C (-40°F)	-	
<b>FLAMMABILITY AND OUTGASSING</b>			
Flammability, mm (inches) [Without PET Carrier]	UL 94HBF <sup>†</sup> (File E20305) (Pass ≥)	-	3.0 (0.118)
	FMVSS 302 (Pass ≥)	-	2.5 (0.098)
	CSA Comp HBF (File 188149) (Pass ≥)	-	3.0 (0.118)
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 (1.02psi)	0.76	1.73
Outgassing, Collected Volatile Condensable Materials (CVCM) %		0.04	0.14
Outgassing, Water Vapor Regain (WVR) %		0.6	0.71
<b>ENVIRONMENTAL</b>			
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 D570-95	38	34
Mildew/Bacteria Resistance	ASTM G21	Good	
Staining	ASTM D925	No Stain	

\*\*Products available as unsupported, PET supported, or tacky surface.

\*\*Thickness availability may vary by construction type – contact your local sales or customer service representative

- Notes:
- †Designed to meet UL 94 HBF based upon 2022 test criteria. As of 2023 items with nominal density ≥ 15.6lb/ft<sup>3</sup> (250kg/m<sup>3</sup>) 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

For more information and to request a sample, please contact our team of experts at [solutions@rogerscorp.com](mailto:solutions@rogerscorp.com)