## HIGH PERFORMANCE

# Sil-Pad 1000<sup>®</sup>, Sil-Pad 1500<sup>®</sup> and Sil-Pad 2000<sup>®</sup>

#### **SIL-PAD 1000**

Sil-Pad 1000 has the same excellent mechanical and physical characteristics of our Sil-Pad 400 material while offering a 35% reduction in thermal resistance.

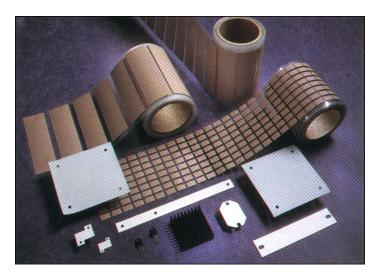
Sil-Pad 1000 is a composite of silicone rubber and fiberglass. It is specially filled and offers low thermal resistance. Sil-Pad 1000 is non-toxic and resists damage from cleaning agents. It is flame retardant and specially formulated for use as a thermally conductive insulator.

#### **SIL-PAD 1500**

Sil-Pad 1500 is an economical, high performance insulator with a thickness between that of Sil-Pad 1000 and Sil-Pad 2000.

#### **SIL-PAD 2000**

Sil-Pad 2000 is Bergquist's high performance, high reliability thermally conductive insulator. Sil-Pad 2000 is designed for demanding military / aerospace and commercial applications. In these applications, Sil-Pad 2000 complies with military standards. This silicone elastomer is specially filled to maximize the thermal and dielectric performance of the filler / binder matrix. The result is a "grease-free", conformable material capable of meeting or exceeding the thermal and electrical requirements of high reliability electronic packaging applications. Sil-Pad 2000 is also available in thicknesses from .010" to .060".



### Die-Cut parts, Rolls and Sheets

Sil-Pad 1000, 1500 and 2000 are available in die-cut parts and sheets (6" x 6" min., 6" x 12", 8" x 8", 10" x 10" and 12" x 12"). Only Sil-Pad 1000 and 1500 are available in roll form.

SIL-PAD 2000 Outgassing Data for Spacecraft Materials						
Post Cure	%TML (1.0% Max	%CVLM (0.1% Max				
Conditions	Acceptable)	Acceptable)				
24 hrs. @ 175°C No Post Cure	.07 .26	.03 .10				

MIL SPEC. MIL-M-38527/08 MIL-I-49456 MIL-I-49466/02 MIL-M-87111 U.L. FILE NUMBER E59150 FSCM NUMBER 55285

Physical Properties	Sil-Pad 1000	Sil-Pad 1500	Sil-Pad 2000	Test Method
Color	Pink	Green	White	Visual
Thickness Inches	.009 ± .001"	0.010 ± .001"	.015 ±.002"	
_(mm)	(.23 ± .025)	(.25 ± .025)	(.38 ± .025)	ASTM D 374
Elongation, % 45° to warp and fill	45	20	20	ASTM D 412
Hardness, Shore A ± 5	85	80	90	ASTM D 2240
Breaking Strength Lbs/inch (kN/m)	100 (18)	65 (12)	65(12)	ASTM D 1458
Tensile Strength, kPsi (MPa)	4 (30)			ASTM D 412
Thermal Vacuum Weight Loss				NASA
% (TML) as manufactured	.22		see	SP-R-0022A
Volatile Condensable Material				NASA
% (CVCM) as manufactured	.08		see	SP-R-0022A
Specific Gravity	1.5	1.5	1.5	ASTM D 792
Continuous Use Temp., °C	-60 to +180	-60 to + 200	-60 to +200	
Construction	Silicone/Fiberglass	Silicone/Fiberglass	Silicone/Fiberglass	
Thermal Properties	Sil-Pad 1000	Sil-Pad 1500	Sil-Pad 2000	Test Method
Thermal Resistance, °C/-in²/W	0.35	0.23	0.2	ASTM D 5470
Thermal Conductivity, W/m-K	1.2	2.0	3.5	ASTM D 5470
Electrical Properties	Sil-Pad 1000	Sil-Pad 1500	Sil-Pad 2000	Test Method
Breakdown Voltage, Volts a-c Min.	4500	4000	4000	ASTM D 149
Dielectric Constant, 1000 Cps (Hz)	4.5	4	4.0	ASTM D 150
Volume Resistivity, Ohm Metre	1.0x10 <sup>11</sup>	1.0 x 10 <sup>11</sup>	1.0x10 <sup>11</sup>	ASTM D 257