The Bergquist Company
North American Headquarters
1870 West 78th Street
Chanhassen, MN 55317
Phone: 800-347-4572
Fax: 952-835-0430

The Bergquist Company - Europe
Bramberg 9a, 3755 BT Eemnes
Netherlands
Phone: 31-35-5380684
Fax: 31-35-5380298

The Bergquist Company - China
Rm. 7C, Ahe Mansion
No. 497 Ling Ling Road
Shanghai, China 200030
Ph: 86-21-6464-2206
Fax: 86-21-6464-2209

www.bergquistcompany.com

The Original Sil-Pad Material

Features and Benefits
- Thermal impedance: 1.13°C-in²/W (@50 psi)
- Original Sil-Pad material
- Excellent mechanical and physical characteristics
- Flame retardant

Sil-Pad 400 is a composite of silicone rubber and fiberglass. The material is flame retardant and is specially formulated for use as a thermally conductive insulator. The primary use for Sil-Pad 400 is to electrically isolate power sources from heat sinks.

Sil-Pad 400 has excellent mechanical and physical characteristics. Surfaces are pliable and allow complete surface contact with excellent heat dissipation. Sil-Pad 400 actually improves its thermal resistance with age. The reinforcing fiberglass provides excellent cut-through resistance. In addition, Sil-Pad 400 is non-toxic and resists damage from cleaning agents.

TYPICAL PROPERTIES OF SIL-PAD 400

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>IMPERIAL VALUE</th>
<th>METRIC VALUE</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Gray</td>
<td>Gray</td>
<td>Visual</td>
</tr>
<tr>
<td>Reinforcement Carrier</td>
<td>Fiberglass</td>
<td>Fiberglass</td>
<td>—</td>
</tr>
<tr>
<td>Thickness (inch) / (mm)</td>
<td>0.007, 0.009</td>
<td>0.178, 0.229</td>
<td>ASTM D374</td>
</tr>
<tr>
<td>Hardness (Shore A)</td>
<td>85</td>
<td>85</td>
<td>ASTM D2240</td>
</tr>
<tr>
<td>Breaking Strength (lbs/inch) / (kN/m)</td>
<td>30</td>
<td>5</td>
<td>ASTM D1458</td>
</tr>
<tr>
<td>Elongation (%45° to Warp and Fill)</td>
<td>54</td>
<td>54</td>
<td>ASTM D412</td>
</tr>
<tr>
<td>Tensile Strength (psi) / (MPa)</td>
<td>3000</td>
<td>20</td>
<td>ASTM D412</td>
</tr>
<tr>
<td>Continuous Use Temp (°F) / (°C)</td>
<td>-76 to 356</td>
<td>-60 to 180</td>
<td>—</td>
</tr>
</tbody>
</table>

ELECTRICAL

- Dielectric Breakdown Voltage (Vac) 3500, 4500 3500, 4500 ASTM D149
- Dielectric Constant (1000 Hz) 5.5 5.5 ASTM D150
- Volume Resistivity (Ohm-meter) 10¹ 10¹ ASTM D257
- Flame Rating V-O V-O UL 94

THERMAL

- Thermal Conductivity (W/m-K) 0.9 0.9 ASTM D5470

THERMAL PERFORMANCE vs PRESSURE

<table>
<thead>
<tr>
<th>Pressure (psi)</th>
<th>10</th>
<th>25</th>
<th>50</th>
<th>100</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO-220 Thermal Performance (°C/W)</td>
<td>6.62</td>
<td>5.93</td>
<td>5.14</td>
<td>4.38</td>
<td>3.61</td>
</tr>
<tr>
<td>TO-220 Thermal Performance (°C/W)</td>
<td>8.51</td>
<td>7.62</td>
<td>6.61</td>
<td>5.63</td>
<td>4.64</td>
</tr>
<tr>
<td>Thermal Impedance (°C-in²/W)</td>
<td>1.82</td>
<td>1.42</td>
<td>1.13</td>
<td>0.82</td>
<td>0.54</td>
</tr>
<tr>
<td>Thermal Impedance (°C-in²/W)</td>
<td>2.34</td>
<td>1.83</td>
<td>1.45</td>
<td>1.05</td>
<td>0.69</td>
</tr>
</tbody>
</table>

1) The ASTM D5470 (Bergquist modified) test fixture was used. The recorded value includes interfacial thermal resistance. These values are provided for reference only. Actual application performance is directly related to the surface roughness, flatness and pressure applied.

Typical Applications Include:
- Power supplies
- Power semiconductors
- Motion controls
- Automotive electronics
- U.L. File Number E59150
- FSCM Number 55285
- Military Specifications:
  - MIL-M-38527/8A
  - MIL-M-38527C
  - MIL-I-49456
  - MIL-M-87111

Configurations Available:
- Sheet form, die-cut parts, and roll form; with or without pressure sensitive adhesive

Building a Part Number

Standard Options

<table>
<thead>
<tr>
<th>Section A</th>
<th>Section B</th>
<th>Section C</th>
<th>Section D</th>
<th>Section E</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP400</td>
<td>0.007</td>
<td>AC</td>
<td>12/250</td>
<td>NA</td>
</tr>
</tbody>
</table>

NA = Selected standard option. If not selecting a standard option, insert company name, drawing number, and revision level.

Standard configuration dash number:
- Standard configuration dash number,
  - 1212 = 12" x 12" sheets, 12/250 = 12" x 250' rolls, or
  - 00 = custom configuration

AC = Adhesive on one side, 00 = no adhesive

Standard thicknesses available: 0.007”, 0.009”

SP400 = Sil-Pad 400 Material

Note: To build a part number, visit our website at www.bergquistcompany.com.

Sil-Pad® U.S. Patents 4,574,879; 4,602,125; 4,602,678; 4,685,987; 4,842,911 and others