# Sil-Pad® 400

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**

| PROPERTY | IMPERIAL VALUE | METRIC VALUE | TEST METHOD |
|---|---|---|---|
| Color | Gray | Gray | Visual |
| Reinforcement Carrier | Fiberglass | Fiberglass | — |
| Thickness (inch) / (mm) | 0.007, 0.009 | 0.178, 0.229 | ASTM D374 |
| Hardness (Shore A) | 85 | 85 | ASTM D2240 |
| Breaking Strength (lbs/inch) / (kN/m) | 30 | 5 | ASTM D1458 |
| Elongation (%45° to Warp and Fill) | 54 | 54 | ASTM D412 |
| Tensile Strength (psi) / (MPa) | 3000 | 20 | ASTM D412 |
| Continuous Use Temp (°F) / (°C) | -76 to 356 | -60 to 180 | — |
| **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) | $10^{11}$ | $10^{11}$ | ASTM D257 |
| Flame Rating | V-O | V-O | U.L. 94 |
| **THERMAL** | | | |
| Thermal Conductivity (W/m-K) | 0.9 | 0.9 | ASTM D5470 |

**THERMAL PERFORMANCE vs PRESSURE**

| Pressure (psi) | 10 | 25 | 50 | 100 | 200 |
|---|---|---|---|---|---|
| TO-220 Thermal Performance (°C/W) 0.007" | 6.62 | 5.93 | 5.14 | 4.38 | 3.61 |
| TO-220 Thermal Performance (°C/W) 0.009" | 8.51 | 7.62 | 6.61 | 5.63 | 4.64 |
| Thermal Impedance (°C-in²/W) 0.007" (1) | 1.82 | 1.42 | 1.13 | 0.82 | 0.54 |
| Thermal Impedance (°C-in²/W) 0.009" (1) | 2.34 | 1.83 | 1.45 | 1.05 | 0.69 |

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
- Military Specifications:
  - MIL-M-38527/8A
  - MIL-M-38527C
  - MIL-I-49456
  - MIL-M-87111
- Automotive electronics
- U.L. File Number E59150
- Motor controls
- FSCM Number 55285

## Configurations Available:

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

## Building a Part Number

SP400 – 0.007 – AC – 12/250 – NA

- Section A: SP400 = Sil-Pad 400 Material
- Section B: Standard thicknesses available: 0.007", 0.009"
- Section C: AC = Adhesive, one side; AC2 = Adhesive, two sides; or 00 = no adhesive
- Section D: ____ = Standard configuration dash number, 1212 = 12" x 12" sheets, 12/250 = 12" x 250' rolls, or 00 = custom configuration
- Section E: NA = Selected standard option. If not selecting a standard option, insert company name, drawing number, and revision level.

## Standard Options

◀◀ *example*

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


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