

# Ordering Information

## Ordering Procedure:

The last 2 or 3 digits define the part number selected. The "foot print" and dimensions are shown on pages 87-95.

## Special Shapes:

For applications requiring non-standard or custom Sil-Pad configurations, contact your Bergquist Sales Representative. We produce thousands of custom die shapes and designs.

## Tolerances:

Typical converting tolerances are held on length (L), width (W), hole diameter and hole location for most materials as noted below:

TYPICAL SIL-PAD / HI-FLOW TOLERANCES			
Part <sup>(1)</sup> Dimension	Length and Width Tolerance	Rule Defined Features <sup>(2)</sup>	Hole Location & Diameter
<6"	± 0.010" (0.25mm)	± 0.010" (0.25mm)	± 0.005" (0.13mm)
6" - 12"	± 0.015" (0.38mm)	± 0.015" (0.38mm)	± 0.010" (0.25mm)
>12"	± 0.020" (0.51mm)	± 0.020" (0.51mm)	± 0.020" (0.51mm)
TYPICAL GAP PAD TOLERANCES <sup>(3)</sup>			
Material Thickness	Length and Width Tolerance	Hole Location & Diameter	
10 mil	± 0.015" (0.38mm)	± 0.015" (0.38mm)	
15 mil	± 0.015" (0.38mm)	± 0.015" (0.38mm)	
20 mil	± 0.020" (0.51mm)	± 0.020" (0.51mm)	
30 mil	± 0.030" (0.76mm)	± 0.030" (0.76mm)	
40 mil	± 0.035" (0.89mm)	± 0.035" (0.89mm)	
50 mil	± 0.040" (1.02mm)	± 0.040" (1.02mm)	
60 mil	± 0.050" (1.27mm)	± 0.050" (1.27mm)	
70 mil	± 0.050" (1.27mm)	± 0.050" (1.27mm)	
80 mil	± 0.050" (1.27mm)	± 0.050" (1.27mm)	
100 mil	± 0.060" (1.52mm)	± 0.060" (1.52mm)	
125 mil	± 0.075" (1.91mm)	± 0.075" (1.91mm)	
140 mil	± 0.100" (2.54mm)	± 0.100" (2.54mm)	
160 mil	± 0.100" (2.54mm)	± 0.100" (2.54mm)	
200 mil	± 0.125" (3.17mm)	± 0.125" (3.17mm)	
225 mil	± 0.160" (4.06mm)	± 0.160" (4.06mm)	
250 mil	± 0.160" (4.06mm)	± 0.160" (4.06mm)	

(1) Material thicknesses: <6" (152.4mm), 6-12" (152.4-304.8mm), >12" (304.8mm).  
 (2) Rule defined by geometry can be notches, internal shapes not created by a punch or cutouts that are created by a rule and not a punch.  
 (3) Gap Pad VO materials have a Sil-Pad Side / Cutline tolerance of parts on the liner to within ± 0.020" (0.51mm) typically. Gap Pad may deform to the standard tolerances when handled or removed from the liner.

Note: Dependent upon material and application requirements, tighter tolerances may be feasible and available. Please contact Bergquist Sales for these requests and additional information regarding tolerances.

## Typical Configuration Tolerances:

- Roll width: ±0.06" (1.6mm) for standard widths (2", 4", 6", etc.)
- Sil-Pad sheet: -0.06" / +0.25" (-1.6mm / +6.4mm)
- Gap Pad sheet: -0.0" / +0.40" (-0.0mm / +10.0mm)
- Typical Sil-Pad roll length: 250' - 300'
- Typical number of Splices per roll: 3
- Typical Butt Splice: 2-sided colored tape
- Material thickness tolerances: Sil-Pad ±0.001" (0.0254mm)  
 Gap Pad VO ±5%  
 Gap Pad S-Class ±10%

**Note:** Tighter tolerances are available per factory review.

## Sheets:

Standard sheet size for most materials is 12" x 12", with or without adhesive as specified on the individual data sheet. When ordering sheets, please specify material type, thickness and include all dimensions. Contact Bergquist Sales if other sizes are required.

**Note:** Sil-Pad A2000 maximum sheet size is 10" x 12". Gap Pad standard sheet size is 8" x 16".

## Rolls:

Sil-Pad materials are available in roll form, with or without adhesive, with the exception of Sil-Pad 1750 and Sil-Pad 2000. Hi-Flow materials are available in roll form. Certain Gap Pad materials are available in roll form. Please contact Bergquist Sales for more information.

## Color Matching:

Bergquist identifies product color as a reference product characteristic and/or specification for Sil-Pad and Gap Pad products. Slight color variation is normal across lot-to-lot splicing due to the different variations in natural colorants used to achieve the desired hue and shade in these products. Bergquist continues to monitor and control incoming raw material specifications and production processes to ensure the highest possible consistency of quality and product performance. If you have any questions regarding color matching, please contact Bergquist Product Management.

## Adhesives:

Bergquist adhesives include:

- SILICONE:** (AC) - Unloaded  
 (ACA) - Unloaded, Low Tack  
 (TAC) - Loaded (Thermally Enhanced)
- ACRYLIC:** (AAC) - Unloaded  
 (TAAC) - Thermally Loaded  
 (EAAC) - Thermally Enhanced

**THICKNESS:** 0.0005" - 0.001", (12-25µm) (adhesive only)

**Note:** For non-symmetrical parts, please indicate on print which side the adhesive is on.

### Peel Strength: See data below.

**POL** = Peel-Off Liner (force per unit width of the liner to the adhesive).

**QS** = Quick Stick (simulated force per unit width of the adhesive to the heat sink).

**g/in** = Grams per inch.

TYPICAL ADHESIVE PROPERTIES		
ADHESIVE	POL	QS
Silicone AC	50-150 g/in	50-150 g/in
Silicone ACA	5-70 g/in	5-150 g/in
Silicone TAC	50-150 g/in	50-150 g/in
Acrylic AAC	5-70 g/in	100-800 g/in
Acrylic TAAC	5-70 g/in	100-400 g/in
Acrylic EAAC	5-60 g/in	100-200 g/in

**Note:** These values are typical after the material has aged for 2-3 weeks and are significantly different immediately after coating. Upon completion of coating, QS is 250-500 g/in and POL is 3-20 g/in for all silicone adhesives.

### Shelf Life:

**Silicone Adhesives:** Six (6) months from date of manufacture when stored in original packaging at 70°F (21°C) and 50% relative humidity.

**Acrylic Adhesives:** One (1) year from date of manufacture when stored in original packaging at 70°F (21°C) and 50% relative humidity.

Peel adhesion data is available upon request. Please contact Bergquist Sales for more information.

## PSA Characteristics:

Standard pressure sensitive adhesive (AC) coated on one side of a Sil-Pad will increase the thermal resistance (per ASTM D5470) by 0.2°C-in<sup>2</sup>/W. Standard pressure sensitive adhesive on 2 sides increases the thermal impedance by 0.4°C-in<sup>2</sup>/W.

Thermally conductive pressure sensitive adhesive (TAC) on one side increases the thermal resistance by 0.05°C-in<sup>2</sup>/W and on two sides by 0.1°C-in<sup>2</sup>/W.

The effect of AC and TAC on the thermal impedance in an application will vary. In low-pressure applications, the pressure sensitive adhesive will wet-out the interface easier and eliminate the interfacial thermal resistance.

**Note:** Bergquist adhesives are designed for ease of application during assembly. If an automated dispensing method is preferred, Bergquist will recommend manufacturers of automated dispensing equipment upon request. Please contact Bergquist Sales for more information on this subject.

**Note:** Bergquist cannot be responsible for dispensing equipment selection and/or performance of specific materials on said equipment. It is the customer's responsibility to determine the suitability and compatibility of the specific Bergquist material with the selected equipment.

## U.L.<sup>®</sup> Recognition:

For information regarding the U.L. (Underwriters Laboratories, Inc.) recognition status of Bergquist Sil-Pad, Gap Pad and Hi-Flow materials, the U.L. web site provides the most current information.

Using the URL: <http://www.ul.com>, select "Online Certification Directory." You may then enter one of the following file numbers for the applicable Bergquist file:

**QMFZ2.E59150: Plastics – Component.** This category includes all Sil-Pad, Gap Pad and Hi-Flow materials.

**QOQW2.E81718: Polymeric Adhesive Systems, Electrical Equipment – Component.** This category includes Bond-Ply adhesive only.

In each group there is a "Guide Information" section which gives a detailed description of the categories listed and all recognized materials will be listed with supporting data.