

GAP PAD®, SIL PAD®, & HI-FLOW Ordering Information

Special Shapes:

For applications requiring non-standard or custom configurations, contact your Henkel 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 (1) Dimension | Length and Width Tolerance | Rule Defined Features (2) | Hole Location and Diameter |
| < 6 in. | ± 0.010 in. (0.25 mm) | ± 0.010 in. (0.25 mm) | ± 0.005 in. (0.13 mm) |
| 6 in. - 12 in. | ± 0.015 in. (0.38 mm) | ± 0.015 in. (0.38 mm) | ± 0.010 in. (0.25 mm) |
| > 12 in. | ± 0.020 in. (0.51 mm) | ± 0.020 in. (0.51 mm) | ± 0.020 in. (0.51 mm) |
| TYPICAL GAP PAD® TOLERANCES (3) | | | |
| Material Thickness | Length and Width Tolerance | Hole Location and Diameter | |
| 10 mils | ± 0.015 in. (0.38 mm) | ± 0.015 in. (0.38 mm) | |
| 15 mils | ± 0.015 in. (0.38 mm) | ± 0.015 in. (0.38 mm) | |
| 20 mils | ± 0.020 in. (0.51 mm) | ± 0.020 in. (0.51 mm) | |
| 30 mils | ± 0.030 in. (0.76 mm) | ± 0.030 in. (0.76 mm) | |
| 40 mils | ± 0.035 in. (0.89 mm) | ± 0.035 in. (0.89 mm) | |
| 50 mils | ± 0.040 in. (1.02 mm) | ± 0.040 in. (1.02 mm) | |
| 60 mils | ± 0.050 in. (1.27 mm) | ± 0.050 in. (1.27 mm) | |
| 70 mils | ± 0.050 in. (1.27 mm) | ± 0.050 in. (1.27 mm) | |
| 80 mils | ± 0.050 in. (1.27 mm) | ± 0.050 in. (1.27 mm) | |
| 100 mils | ± 0.060 in. (1.52 mm) | ± 0.060 in. (1.52 mm) | |
| 125 mils | ± 0.075 in. (1.91 mm) | ± 0.075 in. (1.91 mm) | |
| 140 mils | ± 0.100 in. (2.54 mm) | ± 0.100 in. (2.54 mm) | |
| 160 mils | ± 0.100 in. (2.54 mm) | ± 0.100 in. (2.54 mm) | |
| 200 mils | ± 0.125 in. (3.17 mm) | ± 0.125 in. (3.17 mm) | |
| 225 mils | ± 0.160 in. (4.06 mm) | ± 0.160 in. (4.06 mm) | |
| 250 mils | ± 0.160 in. (4.06 mm) | ± 0.160 in. (4.06 mm) | |

1) Material thicknesses: < 6 in. (152.4 mm), 6 – 12 in. (152.4 – 304.8 mm), > 12 in. (304.8 mm).
 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) BERGQUIST® GAP PAD® TGP 800VO materials have a SIL PAD® side / cutline tolerance of parts on the liner to within ± 0.020 in. (0.51 mm) 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 Henkel Sales for these requests and additional information regarding tolerances.

Typical Configuration Tolerances:

- Roll width: ±0.06 in. (1.6 mm) for standard widths (2 in., 4 in., 6 in., etc.)
- SIL PAD® sheet: -0.06 in. / +0.25 in. (-1.6 mm / +6.4 mm)
- GAP PAD® sheet: -0.0 in. / +0.40 in. (-0.0 mm / +10.0 mm)
- Typical SIL PAD® roll length: 250-foot to 300-foot
- Typical number of splices per roll: 3
- Typical butt splice: 2-sided colored tape
- Material thickness tolerances: SIL PAD® ±0.001 in. (0.0254 mm)
BERGQUIST® GAP PAD® TGP 800VO ±5%
GAP PAD® S-Class ±10%

Note: Tighter tolerances are available per factory review.

Sheets:

Standard sheet size for most materials is 12 in. x 12 in., with or without adhesive. When ordering sheets, please specify material type, thickness and include all dimensions. Contact Henkel Sales if other sizes are required.

Note: BERGQUIST® SIL PAD® TSP A3000 maximum sheet size is 10 in. x 12 in. GAP PAD® standard sheet size is 8 in. x 16 in.

Rolls:

SIL PAD® materials are available in roll form, with or without adhesive, with the exception of BERGQUIST® SIL PAD® TSP 2200 and BERGQUIST® SIL PAD® TSP 3500. HI-FLOW materials are available in roll form. Certain GAP PAD® materials are available in roll form. Please contact Henkel Sales for more information.

Color Matching:

We identify 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. We continue 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 Henkel Sales.



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 in. – 0.001 in., (12 – 25 µm)
 (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 Henkel Sales for more information.

PSA Characteristics:

Standard pressure sensitive adhesive coated on one side of a SIL PAD® will increase the thermal resistance (per ASTM D5470) by 0.2°C-in.²/W. Standard pressure sensitive adhesive on two sides increases the thermal impedance by 0.4°C-in.²/W.

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

The effect of an adhesive layer 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.

UL Recognition:

For information regarding the UL (Underwriters Laboratories, Inc.) recognition status of Henkel (BERGQUIST®) SIL PAD®, GAP PAD® and HI-FLOW materials, the UL 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.

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