

## DATA SHEET FOR eGRAF® SPREADERSHIELD™-FLX PRODUCTS

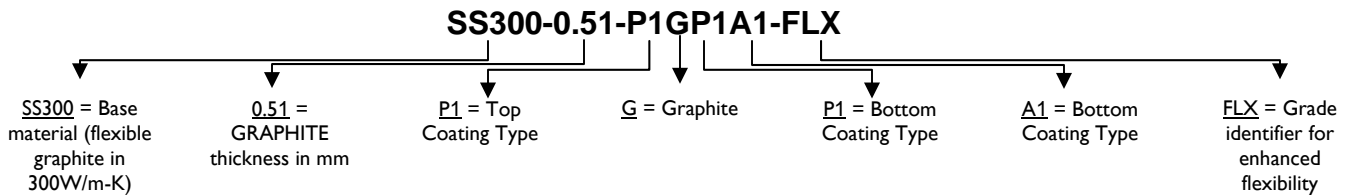
Made from flexible graphite, eGRAF SPREADERSHIELD-FLX (SS-FLX) products provide high thermal conductivity and enhanced formability. The superior thermal performance of SS-FLX materials delivers dramatic benefits, such as:

- Thermally activated part surfaces
- Design freedom allowing curved shapes from various materials
- More efficient, lighter weight systems
- Enabling familiar and established manufacturing methods

Available in sheets or die-cut parts, with plastic and/or adhesive laminate.

### Part Designation

Every SS-FLX part is identified by a specific grade, named for its characteristics. For example, **SS300-0.51-P1GP1A1-FLX** represents a **SS** part in **300 W/m-K**, with **0.51 mm** thick **GRAPHITE**, with **P1** Plastic coating on one side, **P1** Plastic, **A1** Adhesive coating on the other side and **FLX** unique grade identifier. For information on coating properties refer to Technical Bulletin 321.

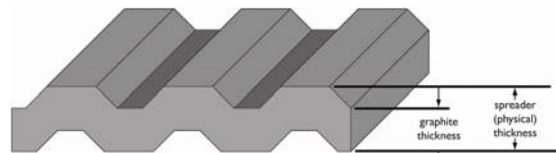


### Typical<sup>1</sup> Properties

Characteristic	SS300-0.51-PIGP1A1-FLX	SS300-0.94-PIGP1A1-FLX
Graphite Thickness (mm)	0.51	0.94
Spreader Thickness (mm)	0.71	1.25
Maximum Width (mm)	419	419
Standard Sheet Dimensions <i>Non-standard lengths available upon request.</i>	419 X 762	419 X 762
Nominal Thermal Conductivity <sup>2</sup> : In-Plane (W/m-K)	300	300
Nominal Thermal Conductivity <sup>3</sup> : Through-Plane (W/m-K)	3.4	4.2
UL Flammability Rating	94V-0	94V-0
UL RTI Rating <sup>4</sup>	105°C	105°C
Recommended Operating Temperature	-40° to + 150°C	-40° to + 150°C
Specific Heat (J/kg•°C)	700	700
Thermal Contact Impedance – Per Side (°C•cm <sup>2</sup> /W)	8.1	7.0
Coating Dielectric Breakdown Voltage (V) <sup>5</sup>	2500	3500
Minimum Bend Radius (mm)	6.4	6.4
RoHS Compliance	Yes	Yes

### Application Guidelines

- Graphite thickness is to be used as the input to any thermal model. Spreader thickness is to be used as the input to any mechanical model.
- Adhesive is for facilitating assembly only, not for long-term mechanical security of part. Securing the spreader by mechanical methods (e.g. screws) is recommended. When UL RTI rating is required, full coverage of SS-FLX by a separate part is required. For more information regarding these requirements, please contact the application engineering team at GrafTech.
- Plastic coating is utilized for mechanical protection and to prevent an electrical path from being established, as the graphite is electrically conductive.



<sup>1</sup> Properties listed are typical and cannot be used as accept/reject specifications.  
<sup>2</sup> Angstrom's Method, data is for graphite only  
<sup>3</sup> ASTM D5470 Modified Method, data is for spreader including coatings  
<sup>4</sup> All SPREADERSHIELD grades with P1, A1 coatings are also rated UL RTI to 105° C  
<sup>5</sup> ASTM D149-09 Method A

For additional information, contact the GrafTech Sales Office: +1 (800) 253-8003 (Toll-Free in USA), +1 (216) 529-3777 (International), +1 (216) 529-3922 (Fax)

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