Technical Data Sheet

Thermally Conductive Silicone Sponge

SILEX SILICONES LTD
SILICONE EXPERTS SINCE 1985

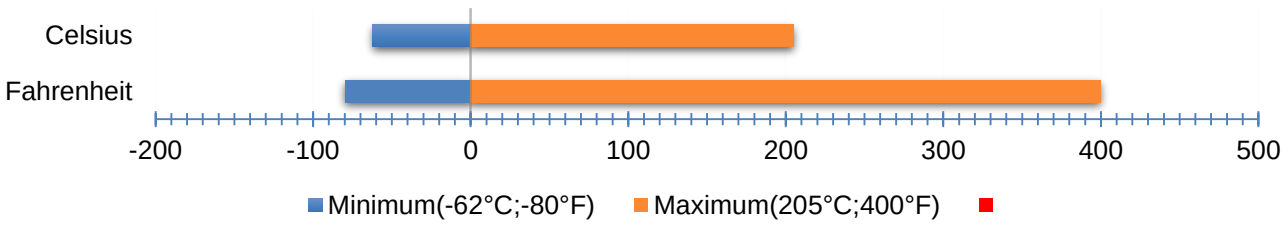
Material

Thermally Conductive Sponge

Available Grades

SIL X 600 FFF

Temperature Range



General Information

SILEX Sil – X – 600 FFF series is a thermally conductive closed-cell silicone sponge rubber. This material offers thermal conductivity, electrical isolation and compression set resistance (vibration absorption). SIL-X-600 FFF is the superior choice for battery pack gap filling, optimizing the efficiency and extending the service life of the individual battery cells. Its unique features make it an ideal gap filler for vibration-sensitive heat transfer application.

Features

- Silicone based, for long life and temperature stability
- Closed-cell sponge structure provides compression set resistance, critical for vibration control
- Thermally conductive• Electrically isolative
- Conforms to irregular (cylindrical and other) surfaces
- Meets FDA 21 CFR 177.2600

SILEX SILICONES LTD
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Mechanical Properties

Property	Typical Value	Test Method
Thickness: inch/mm	1/32, 1/16, 3/32, 1/8, 3/16, 1/4 (0.8, 1.6, 2.4, 3.2, 4.8, 6.4)	ASTM D374
Thermal Conductivity W/mK	See chart below	ASTM E1530
Thermal Impedance @ 10 psi (°C in2/W)	See chart below	ASTM E1530
Tensile Strength PSI (kPa)	120 (828)	ASTM D412
Elongation %	150	ASTM D412
Hardness Shore A	13	ASTM E1530
Dielecric Strength (volts/mil)	100	ASTM D2240
Compression Deflection @ 25%, psi (kPa)	18 (125)	ASTM 149
Compression Set %	15	ASTM 1056
Density lbs./ft.3 (kg/m3)	69 (1105)	ASTM 297
Operating Temperature Range °F (C°)	-80° F to 400° F (-62° C to 205° C)	

	Thermal Conductivity W/mK		Thermal Impedance°C in2/W (°C cm2/W)	
Compression: %	SILX600@ 1/8"	SILX600@ 1/16"	SILX600@ 1/8"	SILX600 @ 1/16
10	0.36	0.36	13 (86)	5.5 (36)
30	0.52	0.46	9 (57)	3.5 (23)
50	0.86	0.57	5 (34)	2 (13)

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Availability Format

- Widths of 914mm * 914mm as standard

Typical Applications

- Lithium ion battery pack for electric vehicles
- Computers
- Telecommunications
- Electrical Insulation.
- Press pads
- Military
- Medical
- Heat pipe assemblies
- Vibration Mounts.
- Decal transfer

Options

- Options (subject to minimum order requirements) Adhesive base: Low tack silicone pressure-sensitive adhesive and solvent-resistant acrylic pressure-sensitive adhesive on one side. (PSA increases thermal resistance by 0.05 C/W.)

Important Instructions

- Because Silex cannot anticipate or control every potential application, we strongly recommend testing of this product under individual application conditions prior to commercial use. For PSA options, surfaces must be clean and free of oil, grease, moisture, dust and dirt. Isopropyl alcohol is good for cleaning the surface. Recommended service temperature of base fabric is -80°F to 400°F (-62°C to 205°C).

Shelf Life

- Life10 years after the date of manufacture when stored in original packaging at temperatures up to 95°F (35°C) and 70% relative humidity (see applicable data sheets for pressure-sensitive adhesive option).

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