

ThermaCool® TF400 Series

Thermally Conductive Silicone Coated Fabric

ThermaCool® TF400 Series silicone coated fabrics offer high temperature capability and conformability in a low cost heat sink gasket. Fibreglass fabric supports the thermally conductive silicone rubber impregnation and adds dimensional stability and cut-through resistance. The thin cross-section keeps thermal resistance low and saves space while providing electrical isolation.

Features/Benefits

- Assembly time reduced by 70% or more over mica and grease method
- Optional pressure sensitive adhesive available for added ease of fabrication
- UL listing simplifies completed electronic system approval (94 V-0)
- Non-toxic for increased safety and reliability
- Electrically isolates power sources from heat sink devices
- Newly revised to provide competitive thermal and dielectric strength values
- Formulated for high value thermal performances
- MIL Spec 49456A, Type 1 (Grade) is 3

Typical Properties

Property	TF407	TF409	Test Method
Colour	Grey	Grey	—
Thickness mm (in.)	0.178 (0.007)	0.229 (0.009)	ASTM D374
Thermal Conductivity W/m ⁻¹ K ⁻¹	0.9	0.9	ASTM E1530
Thermal Impedance °C in. ² /W	0.45	0.50	ASTM E1530
Break Strength MPa (psi)	0.69 (100)	0.69 (100)	ASTM D412
Elongation %	<5	<5	ASTM D412
Volume Resistivity ohm-cm	1 x 10 ¹⁴	1 x 10 ¹⁴	ASTM D257
Dielectric Strength volts/mil	3500	4500	ASTM D149
Operating Temperature °C	-62 to +204	-62 to +204	—
UL Listing Recognition	V-0	V-0	UL94

Applications—TF400 Series are thermally conductive coated fabric materials designed to provide a thermal path between a power device and a metallic heat sink. This material also offers electrical isolation to protect the device from surges or short circuits. Typical end-uses include computer hardware, automotive control systems, power supplies, defence electronics, electronic components in business machines and consumer electronics. Replaces rigid ceramic insulators with flexible fabric. TF400 Series is also used for:

- Electronic modules for power devices or power supplies
- Telecommunications, military and medical applications
- Electrical insulation
- Heat pipe assemblies
- CD-ROM cooling

Availability—TF407 and TF409 are available in 914mm wide continuous rolls. Other thicknesses can be manufactured as custom products. Contact Saint-Gobain for minimum quantities, lead times and pricing. TF400 Series can be supplied with a low-tack silicone or solvent-resistant acrylic pressure sensitive adhesive on one side. Pressure sensitive adhesive increases thermal resistance by 0.1°C in.²/W per side.

Saint-Gobain Performance Plastics sales, fabrication and distribution facilities are situated at the following locations:

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