THERMACOOL®

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R10404 SERIES

Thermally Conductive Silicone Sponge

Saint-Gobain® ThermaCool® R10404 Series is manufactured by **Saint-Gobain** Performance Plastics Corporation, Tape Solutions business, and comes with a thermally conductive closed-cell silicone sponge rubber. This material offers thermal conductivity, electrical isolation and compression set resistance (vibration absorption). R10404 is the superior choice for battery pack gap filling, intended to optimize the efficiency and extend the service life of the individual battery cells. Its unique features make it an ideal gap filler for vibration-sensitive heat transfer applications.

The **ThermaCool** R10404 Series viscoelastic core is specially intended to provide the following 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
- Has been tested using FDA 21 CFR 177.2600. Test reports are available upon request

Available Sizes

Thickness in. (mm)	.031 (.79)	.063 (1.59)	.094 (2.38)	.125 (3.18)	.188 (4.76)	.250 (6.35)
Continuous Roll 36 in. (914 mm)	•	•	•	•	•	
Sheets 36 in. × 36 in. (914 mm × 914 mm)	•	•	•	•	•	•

APPLICATIONS

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

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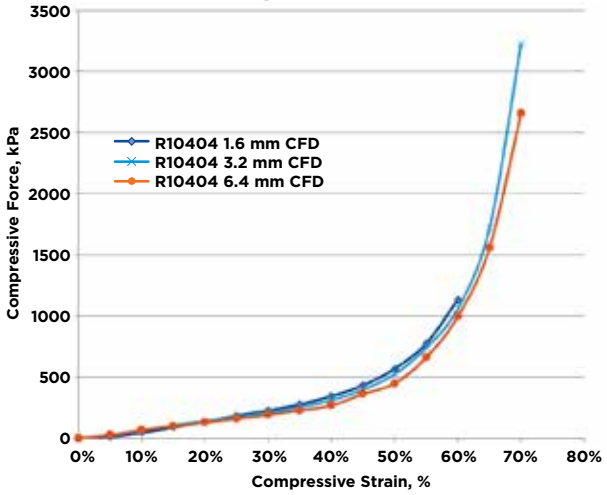
ThermaCool R10404 Series — Properties

Performance tests are run using standard test procedures. The values presented are typical values and should not be used for specification purposes.

Property	Test Method	Value
Color	Visual	Light green
Thickness: inch (mm)	ASTM D374	1/32, 1/16, 3/32, 1/8, 3/16, 1/4 (0.8, 1.6, 2.4, 3.2, 4.8, 6.4)
Thermal Conductivity: W/mK	ASTM E1530	See chart below
Thermal Impedance: @ 10 psi (°C in²/W)	ASTM D1530	See chart below
Tensile Strength: psi (kPa)	ASTM D412	120 (828)
Elongation: %	ASTM D412	150
Hardness: Shore A	ASTM D2240	13
Dielectric Strength: (volts/mil)	ASTM D149	100
Compression Deflection: @ 25%, psi (kPa)	ASTM D1056	18 (125)
Compression Set: %	ASTM D1056	15
Density: lbs./ft.³ (kg/m³)	ASTM D297	69 (1105)
Operating Temperature Range: °F (C°)	—	-80 to 400 (-62 to 205)

	Thermal Conductivity W/mK		Thermal Impedance °C in²/W (°C cm²/W)	
Compression: %	R10404 @ 1/8"	R10404 @ 1/16"	R10404 @ 1/8"	R10404 @ 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)

CFD per ASTM D1667



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 **Saint-Gobain** 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

120 months from date of shipment for base material when stored in original packaging at temperatures up to 70°F (21°C), < 50% relative humidity, and away from direct sources of heat and direct sunlight. (See the applicable data sheets for pressure sensitive adhesive options).

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