

Thin Silicone Foam, Silicone Sponge and Solid Silicone Gaskets for Environmental Sealing and Vibration Damping In Rugged Environments

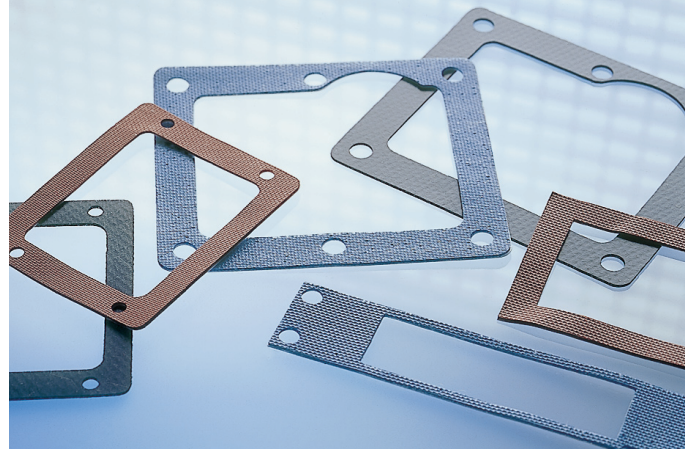
Stockwell Elastomerics now offers 0.032" (.81mm) and 0.062" (1.57mm) thick die cut silicone foam and silicone sponge gaskets and .020" (.51mm) solid silicone with optional pressure sensitive adhesive backings, used for sealing out dust and moisture, and providing vibration damping in applications where saving space is an important design consideration.

LCD Displays, Touch Screens and Battery Compartments can be the weak links in ruggedized portable devices. The materials listed are frequently specified for these applications – specified for compressibility and long term performance.

The use of black silicone foam and sponge is of particular interest to designers of rugged outdoor LCD Displays and Touch Screens where light blocking is needed along with the environmental sealing characteristics. Closed cell silicone sponge generally seals out moisture better than Silicone Foams of similar densities due to the cell structure.

For gasket applications on devices requiring IP67 water immersion, a solid silicone may perform better pending adequate closure force and fastening hardware. The solid silicones listed are cast liquid silicone rubber. Cast LSR is free of talc and other release agents often provided on calendered gum base or traditional silicone. Cast LSR has very tight thickness control - .020±.003 and .032±.004"

Material Samples and Water Jet Cut Prototypes are readily available for your evaluation.



Silicone Foam and Sponge Materials .032" and .062" Thick

Silicone Material	Force Deflection*	Compression Set, % Max**	Density Lb./Inch ³	Color	Comments / Features
R10470-M	6 - 14 (Medium)	15	.017	Black, Orange Or Gray	Closed Cell Sponge, Textured Surface
R10490-M	9 - 15 (Medium)	25	.020	Blue	Fluorosilicone Sponge for Solvent and Fuel Resistant
HT-800	7 - 11 (Medium)	5	.013	Black or Gray	Modified Closed Cell Foam, UL94
HT-820	14 -18 (Firm)	5	.014	Gray	Closed Cell Foam, UL94

* Force/Deflection, PSI (Compressed 25% at 73°F) per ASTM D 1056.

** Compression Set, %, (Compressed 50% for 22 hours at 212°F) per ASTM D1056
The Listed materials are normally available from inventory



Solid Silicone Rubber Materials in 0.010", 0.020", and 0.032" Thicknesses

Silicone Material	Durometer Shore A*	Compression Set, % Max**	Tensile Strength (psi)	Color	Comments / Features
HT-6210	10 (softest)	30	250	Grey	Cast LSR, smooth surface, compliant
HT-6220	20	30	800	Black	Cast LSR, smooth surface, compliant
HT-6135	35	15	800	Cream	Cast LSR, smooth surface, compliant
HT-6240	40 (hardest)	30	800	Transparent	Cast LSR, smooth surface, compliant

* Durometer Hardness per ASTM D2240

** Compression Set % for Solid Silicone (Compressed 25% for 22 hours at 212°F) per ASTM D395(B)

Pressure Sensitive Adhesive Backings for Thin Silicone Materials

Responding to the need for thin silicone gasketing to seal Ruggedized Portable Devices, Stockwell Elastomerics developed capabilities to laminate pressure sensitive adhesives to these thin gauge silicone sponge materials.

Available pressure sensitive adhesives include PET film supported acrylic pressure sensitive, and unsupported acrylic transfer pressure sensitive for applications within -40°F to 300°F.

An amber polyimide film supported silicone polymer adhesive is available for applications exposed to more severe temperature extremes from -100° to 450°F.

Supported adhesives help to prevent distortion and stretching of the silicone rubber gasket during liner removal and assembly, providing dimensional stability in the part's final application.

The following is a selection of adhesives that are most compatible with our thin gauge silicone sponge gasketing materials.

Pressure Sensitive Adhesive Backings for Thin Silicone Materials

Adhesive Product Code	Polymer Family	Thickness	Temperature Range	Design Features
256M	Acrylic	.0045"	-40° to 225°F	High Tack Acrylic Adhesive – total thickness includes a .0005" thick PET film for dimensional support
9795B	Acrylic	.0056"	-40° to 250°F	The black PET film carrier makes this adhesive backing a good choice for light seals on displays.
467	Acrylic	.002"	-40° to 300°F	Unsupported transfer film, low tack / high bond strength for narrow gaskets with potential shear forces
DP-1001	Silicone	.004"	-100° to 450°F	Amber polyimide film supported silicone polymer adhesive for temperature extremes. Specially treated 91# white paper backed liner releases readily from the adhesive surface.

