EMERSON & CUMING MICROWAVE PRODUCTS

ISO 9001 REGISTERED

ECCOSHIELD® LSV

Conductive Vinyl Sheet

Material Characteristics

- ECCOSHIELD® LSV is a highly conductive silver filled sheet material based on a vinyl rubber
- ECCOSHIELD® LSV is resistant to JP-4 jet fuel and commonly used hydraulic fluids

Applications

- ECCOSHIELD® LSV Gaskets can be adhered to one surface of a door or lid and squeezed upon closure to produce the hermetic and RF seal
- ECCOSHIELD® LSV has been used as an electrical conductor at 60 Hz with a current density of 400 amperes/in^2 (62 amperes/cm^2) in still air for an extended period of time with no detrimental effect

Compression Testing

- Compression testing was performed on ECCOSHIELD® LSV sheet stock at 25°C. Maximum compression was 14.5% at 650 psi (45.7 kg/cm^2). Loading was increased to 2600 psi (183 kg/cm^2) without further measurable compression (cold flow). Sheet recovered completely, almost immediately

Shipping & Availability

- ECCOSHIELD® LSV is available in two standard sheet sizes of 6" x 12" (15.25 cm x 30.5 cm) and 12" x 12" (30.5 cm x 30.5 cm)
- Sheets are available in thicknesses of .020", .030", .040", .050" & .060" (0.51, 0.76, 1.02, 1.27 & 1.52mm)
- For pre-form die cut gaskets, please consult our Applications Engineering Group
- The recommended adhesive for ECCOSHIELD® LSV is ECCOSHIELD® VCA
- A non-conductive Pressure Sensitive Adhesive (PSA) may also be supplied upon special request. However, this non-conductive PSA may slightly effect performance

Typical Properties

Service Temperature, °F (°C)	-85 to 257 (-65 to 125)
Density	1.7 g/cc
Volume Resistivity	1 x 10^{-3} ohm-cm
Elongation at Rupture	100%
Tensile Strength at Rupture	369 psi, (26 kg/cm^2)
Hardness, Shore A	65

Insertion Loss, dB

Insertion loss of ECCOSHIELD® LSV was measured by using sheet stock as a gasket, 0.5" (1.3 cm) wide and 0.030" (0.76 mm) thick, to seal 15" x 15" (38 x 38 cm) solid metal panels in a shielded room structure. Tests were conducted in accordance with MIL-STD-285. ECCOSHIELD® LSV was compared to solid metal to metal seals and was found to be comparable in performance. Typical data is given below. Caution is advised in applying this data to other configurations.

200 kHz		1 MHz	400 MHz	10 GHz
Magnetic	Electric	Electric	Plane	Plane
70	100	100	100	100

Insertion loss of various thicknesses of ECCOSHIELD® LSV sheet stock was measured at 10 GHz by clamping squares of the sheet stock between mating cover flanges of WR90 rectangular waveguide, 1" x 0.5" (2.5 cm x 1.3 cm), and measuring the reduction of signal strength in the guide beyond the sheet. The flange joint was sufficiently tight to result in moderate compression of the ECCOSHIELD® LSV sheets. No special cleaning or other preparation of the flanges or the ECCOSHIELD® LSV surface was involved. The insertion loss of ECCOSHIELD® LSV thus measured was greater than 100 dB at 10 GHz in thicknesses of 0.020" (0.5 mm) or greater

Leakage through waveguide-flange gaskets of ECCOSHIELD® LSV was measured in somewhat similar fashion at 10 GHz by noting the difference between energy levels within a waveguide and that around the periphery of the gasketed waveguide flange joint. Reduction in field intensity of 100 dB or more was observed through the gasketed joint