



# Gore-Shield®

GS2100 EMI GASKETS

*Spaceflight and  
Military Approved*

## Summary

GORE-SHIELD® GS2100 EMI Gasket is a conductive, adhesive backed, EMI gasketing material that is moderately soft and is approved for spaceflight and military applications.

GORE-SHIELD® GS2100 EMI Gaskets can be supplied in die-cut part forms or in slit width rolls. Slit width material is ideal for manual “peel and stick” EMI gasketing applications.

GORE-SHIELD® GS2100 EMI Gaskets consist of a carbon-filled cellular PTFE matrix, a conductive pressure sensitive adhesive, and a PET carrier film (see Figure 1).

### APPLICATIONS

EMI shielding for wireless infrastructure and microwave equipment, high frequency cable connectors, and telecommunications equipment in addition to high frequency portable electronic devices.

### DESIGN CONSIDERATIONS

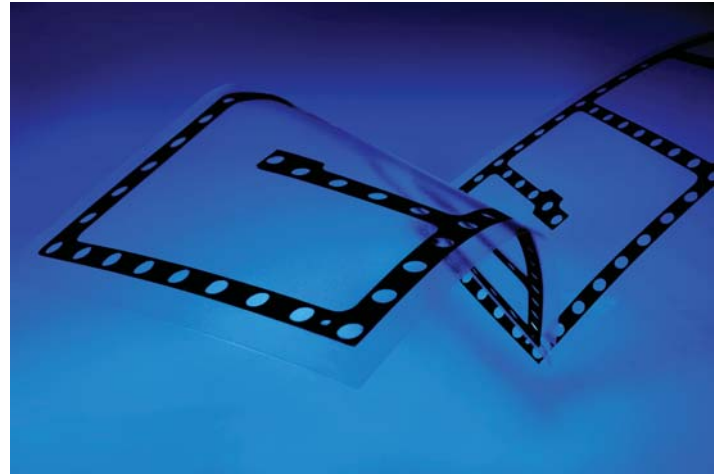
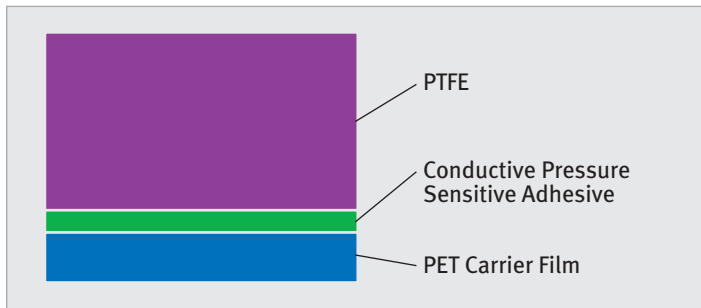
When optimizing a gasket shielding solution, consider the housing design as well as the EMI gasket performance.

Important considerations in the housing design include flatness, surface roughness, material type, rigidity, contact area, tolerance take-up, conductivity, fastener type, and fastener locations.

Key factors in an EMI gasket include softness, tolerance take-up, conductivity (DC resistance), and shielding effectiveness both before and after Accelerated Life Testing (ALT).

Gore application engineers can provide expert design assistance and rapid prototyping for your EMI shielding needs. Contact Gore for additional information.

**FIGURE 1**



### FEATURES AND BENEFITS

- Global spaceflight and military approvals
- Proven shielding effectiveness
- Excellent reliability through Accelerated Life Testing (ALT)
- Flame retardant (UL-94 V-0)
- Broad temperature range (–45°C – 120°C)
- Maintains environmental seal

### THICKNESS OPTIONS (NOMINAL)

Inch	mm
0.010	0.25
0.020	0.51
0.040	1.02
0.060	1.52
0.080	2.03

### RoHS STATUS

RoHS Material*	Pass/Fail
Lead (Pb) Content	Pass
Cadmium (Cd) Content	Pass
Hexavalent Chromium (Cr6) Content	Pass
Mercury (Hg) Content	Pass
Bromine Compounds	Pass

\*W. L. Gore & Associates declares that we do not intentionally add substances listed in Directive 2002/95/EU to GORE-SHIELD® GS2100 EMI Gasket Material. Independent lab tests have been performed and results are available upon request.



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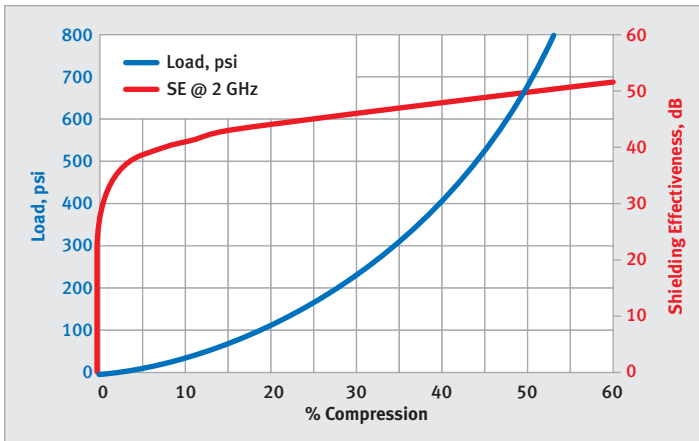
### NOMINAL MATERIAL PROPERTIES

Hardness	(Shore A) 45
Density (gm/cc)	0.34
Fire Safety Rating (UL-94)	V-0

### ELECTRICAL PROPERTIES

Volume Resistivity	1.5 ohm-cm @ 500psi, Ag electrodes
Shielding Effectiveness (with adhesive)	>45dB @ 1GHz (ARP 1705 Method)

### LOAD AND SHIELDING EFFECTIVENESS VS. % COMPRESSION GS2100 WITH ADHESIVE



### APPLICABLE SPECIFICATIONS AND STANDARDS

ASTM Standard Test Methods	
F38 - Method B	Creep Relaxation
F37	Sealability of Gasket Materials
D1622	Specific Gravity
F104	Contaminant Resistance
D395	Compression Set
F36	Compressibility and Recovery Gasket Materials
D2240	Durometer Hardness
E595	Outgassing in a Vacuum

Military Specifications and Standards	
DEF STAN 59-103	EMI/EMP Gasket Components
DESC 92017	Gaskets, EMI/RFI Shielding, Expanded PTFE
MIL-G-83528	Gasketing Material, Conductive Elastomer, Shielding Gasket, EMI/RFI
MIL-STD-810	Environmental Test Methods and Engineering Guidelines
MIL-STD-285	Attenuation Measurements for Enclosures
Underwriter's Laboratory Inc. Test Methods	
UL-94 V-0	Flammability Test for Materials

European Space Agency Specifications and Standards	
ESA PSS-01-702	Total Mass Loss and Collected Volatile Condensable Materials from Outgassing in a Vacuum
NASA ASTM-E-595	
British Standard Specifications	
BS 903	Methods of Testing Vulcanized Rubber
BS 2011	Environmental Testing
BS 3G 100	General Requirements for Part 2, Section 3 Equipment for Use in Sub-Section 3.12 Aircraft, Environmental Conditions, Fluid Contamination
BS 5713	UV Resistance Part 106.4, Method 3

### PERFORMANCE AGAINST STANDARDS

#### General

Shipped material shall be capable of meeting the performance characteristics specified herein when tested against the following methods.

Volume Resistivity	
DESC 92017	<1.5 ohm-cm (0.25mm thick)
MIL-G-83528	3.45 MPa (500 psi) load
Shielding Effectiveness	
DESC 92017	"E" field – 100dB
MIL-G-83528	200MHz to 18GHz
Electromagnetic Discharge	
Charge <150 volts 25°C, 45% R.H. loss less than 100 volts within 0.5 sec	Pass
Electromagnetic Pulse (EMP) Survivability	
DEF STAN 59-103	Pass
Reusability for EMI Seal	
MIL-G-83528	Pass (>80db after 10 closings)
Temperature Operating Range	
Without Adhesive	-200°C – +200°C
With Adhesive	-40°C – +95°C
Density/Specific Gravity	
ASTM-D-1622-88	0.34g/cc
Corrosion Resistance	
DEF STAN 59-103	Pass
Outgassing	
ASTM-E-595 and ESA PSS-01-702	Pass (<1% mass loss)
Contaminant Resistance	
DESC 92017, MIL-G-83528, BS 3G 100-Part 2, and DEF STAN 59-103- Part 3/1	Pass
Vibration Resistance	
DESC 92017 and MIL-G-83528	Pass
Water Seal	
DEF STAN 59-103/Part 3 and IP 65	Pass
Accelerated Life (Heat Aging)	
MIL-G-83528 and DEF STAN 59-103 - Part 3/1	Pass
Mold Growth	
BS 2011 - Part 2-1J	None



**Part Number Information for GORE® EMI Shielding Materials—Strip Gaskets**

<b>Part Number</b>	<b>Material Configuration*</b>	<b>Width</b>
EDR-21-020-1000-SC	GS2100-020	1.000"
EDR-21-020-0750-SC	GS2100-020	0.750"
EDR-21-020-0500-SC	GS2100-020	0.500"
EDR-21-020-0375-SC	GS2100-020	0.375"
EDR-21-020-0250-SC	GS2100-020	0.250"
EDR-21-020-0125-SC	GS2100-020	0.125"