

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

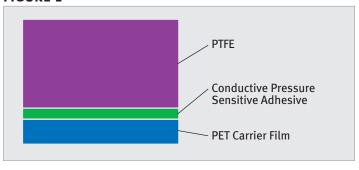
When optimizing a gasket shielding solution, consider the housing design as well as the EMI gasket performance.

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)

mm
0.25
0.51
1.02
1.52
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

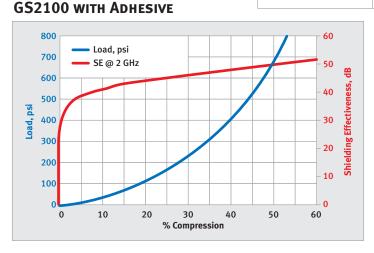
Hardness	(Shore A) 45
Density (gm/cc)	0.34
Fire Safety Rating (UL-94)	V-0

ELECTRICAL PROPERTIES

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

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

LOAD AND SHIELDING **EFFECTIVENESS VS. % COMPRESSION**



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

European Space Agency Specifications and Standards	
ESA PSS-01-702	Total Mass Loss and
NASA ASTM-E-595	Collected Volatile Condensable Materials from Outgassing in a Vacuum
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 MIL-G-83528	"E" field – 100dB 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 (EMI	P) Survivability	
DEF STAN 59-103	Pass	
Reusability for EMI Seal		
MIL-G-83528	Pass (>80db after 10 closings)	
Temperature Operating Ran	ge	
Without Adhesive	-200°C - +200°C	
With Adhesive	-40°C - +95C	
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	g)	
MIL-G-83528 and DEF STAN 59-103 - Part 3/1	Pass	
Mold Growth		
BS 2011 - Part 2-1J	None	

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