



GORE-SHIELD GS5200 EMI GASKETS

W. L. GORE & ASSOCIATES, INC. • ELECTRONIC PRODUCTS DIVISION

Technical Summary

GORE-SHIELD GS5200 EMI gasket material consists of a polytetrafluoroethylene (PTFE) matrix that has been filled with a highly conductive nickel-based particle. This material is intended for use as a gasketing interface to suppress unwanted electromagnetic or radio frequency interference, particularly in applications where inter-cavity shielding is important or compliance is required with international EMC specifications. It is most widely used in the wireless communication/mobile telecommunication industry.

Features & Benefits

- Cost-effective
- Fast installation options for assembly
- High shielding effectiveness
- Consistent shielding effectiveness through Accelerated Life Test (ALT)
- Integral conductive adhesive (pressure sensitive)
- High dimensional repeatability
- Consistent, extremely flat gasket
- Flame retardant
- No outgassing impurities
- Available in strip form or custom die-cut shapes

Cost Reducing Automation

To further reduce assembly costs, manual, semi-automatic and fully automated, high speed installation systems are available from Gore.

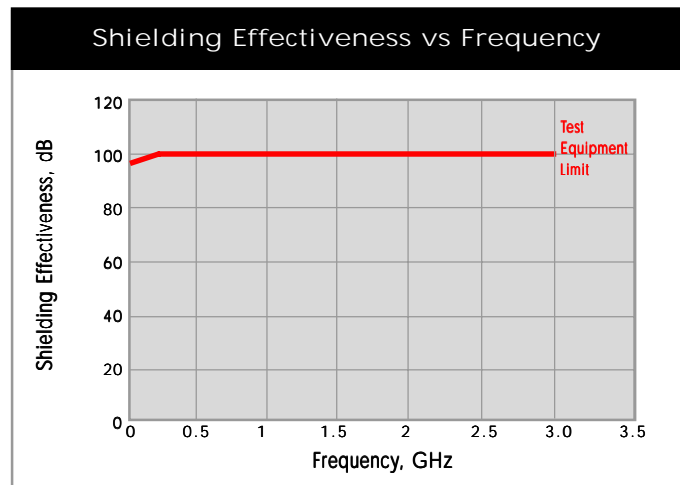
- Rapid installation
- No curing required
- Accurate gasket placement
- Direct application to cover
- Reduced labor costs

Ask for more details on our STACCATO Plus II, ALLEGRO and CRESCENDO vacuum fixture installation systems.



Nominal Material Properties	
Shore A	60
Density, g/cc	1.95
Shielding Effectiveness (with adhesive)	>75 dB, 0.3–3 GHz ¹
Volume Resistivity (excluding adhesive)	0.04 ohm-cm ²
Operating Temp. Range (with adhesive)	-55°C to +125°C
Standard available thickness mil	15, 24
mm	0.38, 0.61
Other thicknesses available	

¹ Tested on a 2mm wide gasket, 25% compression, using ARP 1705 modified.
² Measured at 250 psi, Ag electrodes.



Tested in accordance with ARP 1705 (mod).



Design Data

EMI gasket performance is crucial for many designs. The key factors to look for in a gasket include how it performs after Accelerated Life Testing (ALT) and how it performs after opening and closing the gasketed seal (some gaskets only work once). It is important to note that only relying measuring a low DC resistance value for an EMI gasket will not *guarantee* a high RF shielding value. This is because several other factors have to be taken into account when designing for a good EMI shield. Good design needs to focus both on gasket performance and on enclosure performance. Factors affecting the gasket performance include: gasket thickness, flatness, conformability, contact area and conductive particle distribution. The enclosure performance will rely strongly upon good mechanical design. More information about the risks of relying solely on DC resistance measurements can be found in SAE AIR 1404 and in IEEE Std 1302-1998. Applications engineers at WL Gore & Associates, Inc. will be pleased to give you expert gasket design advice. Please request our data sheet on how to send CAD files to us.

Integral Adhesive

The integral conductive adhesive is an acrylic which is filled with conductive particles to achieve a conductivity level similar to that for the GS5200 gasket material itself. It is approximately 0.02mm (.001") thick.

The adhesive is guaranteed for installation for 6 months from the date of shipment of the gasket. After this period of time installation may be affected but conductivity will remain unimpaired. However, once installed and compressed, the adhesion will increase with time. Peel strength is nominally 30 oz./in. (335 g/cm). If required, the adhesive can be easily removed from metal surfaces using standard cleaning solvents.

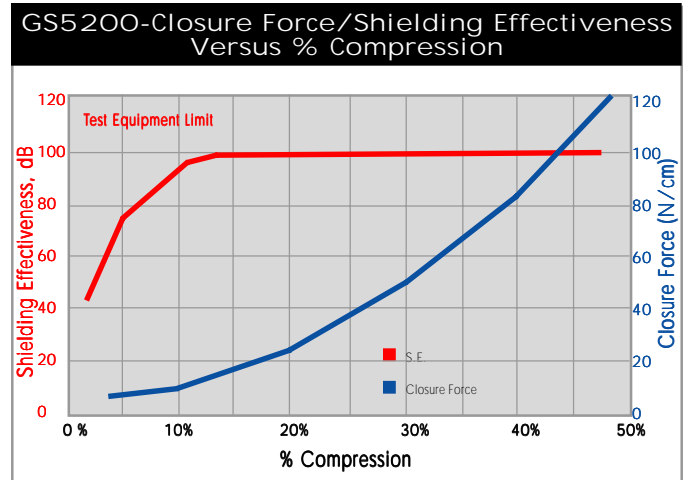
Accelerated Life Testing (ALT) data shows the adhesive retains its bond even after 1,000 hours at +85°C and it still maintains very high EMI shielding properties.

Applicable Standards

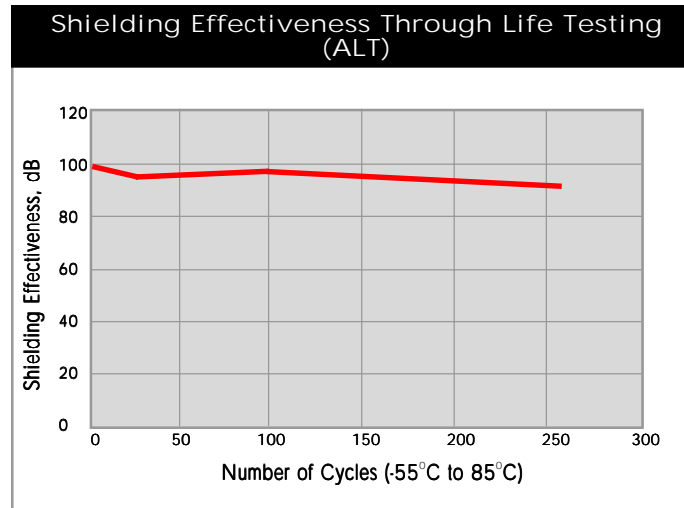
The following specifications & standards have been used:

ASTM F36-88:	Compressibility of Gasket Material
ARP 1705 (modified):	Shielding Effectiveness Technique for Measurement of EMI Gasket Materials
MIL-G-83528:	Shielding Effectiveness Measurement of EMI Gasket Material

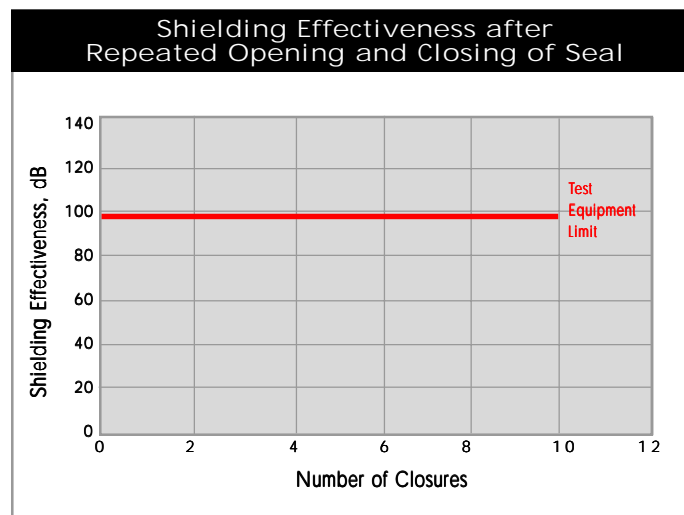
Copyright ©1999 W. L. Gore & Associates, Inc.



Performed in accordance with ARP 1705 (modified as a transfer impedance test) Closure force based upon 0.8mm wide gasket trace.



Tested in accordance with ARP 1705 (mod) at 1 GHz.



Tested in accordance with ARP 1705 (mod) at 1 GHz.