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Electrically Conductive Elastomers

EMC and Thermal Management
Solutions



Fothershield

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ELECTRICALLY CONDUCTIVE ELASTOMERS

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Fothershield's range of fully cured silicones and fluorosilicones give high levels of electromagnetic interference (EMI) shielding together with good environmental protection. The gaskets are loaded with a range of conductive metal particle fillers compatible with your application, ensuring good galvanic compatibility within the joint.

We offer fabricated and moulded gaskets as well as sheet material. Non-standard sheet sizes may be available on request.

All O rings are vulcanized using a conductive filler compound with adhesive. Moulded O rings are available on request.

Optimum shielding effectiveness is obtained by ensuring good contact between the seal and joint surfaces with a maximum compression of 15-20% for solid sections and 50-60% for hollow extruded sections. As a general rule 10% is the normal minimum compression rate. To avoid over compression, limit collars or stops may be fitted to selected gaskets.

It is not advisable to stretch the gaskets beyond 5% as this will disrupt the filler matrix and performance is likely to be affected. Gasket interfaces should be flat, thoroughly cleaned before application and free from any insulating layers.

CONDUCTIVE ELASTOMERS

Specification

Carbon

Ideal for commercial applications such as electronics and flexible electrical contacts. Carbon offers a low cost semi conductive compound for low level shielding.

Nickel Graphite

Good broadband shielding effectiveness, particularly at low frequencies with good electromagnetic pulse (EMP) resistance. Used in salt spray environments where corrosion of aluminium flanges is to be avoided. Low cost with good electrical and thermal conductivity.

Silver Aluminium

Used where weight is critical, this is low density with high electrical and thermal conductivities.

Silver Copper

Exhibiting very good broadband shielding effectiveness, with excellent thermal and electrical conductivity.

Material Code	1	2	5	7	9	3	6	8	10
Conductive Filler	Carbon	Nickel Graphite	Silver Aluminium (65)	Silver Copper	Nickel	Fluoro Nickel Graphite (70)	Fluoro Silver Aluminium	Fluoro Silver Copper	Fluoro Nickel

Shielding Effectiveness STD 295/MIL-DTL 83528C (dB)

	1	2	5	7	9	3	6	8	10
10 MHz	30	115	111	115	114	116	114	116	110
100 MHz	65	121	120	122	115	122	122	125	116
400 MHz	60	119	120	119	121	119	118	118	124
1 GHz	N/A	122	121	123	114	122	121	124	117
2 GHz	40	122	119	122	122	122	123	121	112
6 GHz	N/A	115	115	116	117	114	109	117	111
10 GHz	30	114	112	115	114	107	114	115	113
18 GHz	N/A	106	105	104	105	105	103	104	103
Operating Temperature	+160	+160	+160	+125	+160	+160	+160	+125	+160
Range (°C)	-50	-55	-55	-55	-55	-55	-55	-55	-55
Colour	Black	Dark Grey	Beige	Dark Tan	Grey	Green	Light Green	Green	Dark Green
Shore Hardness (A ±5)	60	60	65	65	65	65	70	65	70
ASTM D2240									
Volume Resistivity (ohms)	2.2	0.04	0.008	0.005	0.1	0.05	0.01	0.005	0.1
ASTM D991									
Specific Gravity (± 0.25)	2.0	2.0	2.0	3.5	4.5	2.2	2.0	4.0	4.8

The results and procedures provide data applicable only to the test enclosure and cover panel design, which is useful for making comparisons between gasket materials as stated in the MIL-DTL-83528C specification.

How to Order

Profile Code	Material Code
1 Solid Cord Round	1 Silicone Carbon
2 Hollow Round	2 Silicone Nickel Graphite
3 Solid D	3 Fluorosilicone Nickel Graphite
4 Hollow D	4 Silicone Nickel Graphite Flame Retardant
5 U Channel	5 Silicone Silver Aluminium
6 Hollow P Section	6 Fluorosilicone Silver Aluminium
7 Flat Strip	7 Silicone Silver Copper
8 Sheet	8 Fluorosilicone Silver Copper
9 Hollow Square/Rectangle	9 Silicone Nickel
	10 Fluorosilicone Nickel

For example: FS-CE-8-5-0020-7 = FS-CE (Conductive Elastomer) 8 (Sheet) 5 (Silicone Silver Aluminium) 0020 (2.0mm thick) 7 (sheet size 420mm x 450mm)

SOLID CORD ROUND



Part Number	Material	Dim.A (mm)
FS-CE-1	1 – Silicone Carbon	0010 – 1.00
	2 – Silicone Nickel Graphite	0012 – 1.20
	3 – Fluorosilicone Nickel Graphite	0014 – 1.40
	4 – Silicone Nickel Graphite Flame Retardant	0016 – 1.60
	5 – Silicone Silver Aluminium	0018 – 1.80
	6 – Fluorosilicone Silver Aluminium	0020 – 2.00
	7 – Silicone Silver Copper	0024 – 2.40
	8 – Fluorosilicone Silver Copper	0026 – 2.60
	9 – Silicone Nickel	0028 – 2.80
	10 - Fluorosilicone Nickel	0030 – 3.00
		0032 – 3.20
		0035 – 3.50
		0040 – 4.00
		0045 – 4.50
		0048 – 4.80
		0050 – 5.00
		0055 – 5.50
		0060 – 6.00
		0064 – 6.40
		0070 – 7.00
		0075 – 7.50
		0080 – 8.00
		0085 – 8.50
		0090 – 9.00
		0095 – 9.50
		0100 – 10.00

HOLLOW ROUND



Part Number	Material	Dim.A (mm)	Dim.B (mm)
FS-CE-2	1 – Silicone Carbon	1.60	0.50
	2 – Silicone Nickel Graphite	1.80	0.50
	3 – Fluorosilicone Nickel Graphite	2.00	0.50
	4 – Silicone Nickel Graphite Flame Retardant	2.00	0.80
	5 – Silicone Silver Aluminium	2.40	0.80
	6 – Fluorosilicone Silver Aluminium	2.40	1.00
	7 – Silicone Silver Copper	3.00	0.50
	8 – Fluorosilicone Silver Copper	3.00	0.80
	9 – Silicone Nickel	3.00	1.00
	10 – Fluorosilicone Nickel	3.00	1.60
		3.20	0.80
		3.20	1.10
		3.50	1.10
		3.50	1.60
		4.00	1.10
		4.00	1.30
		4.00	1.60
		4.00	2.00
		4.50	1.60
		4.80	2.40
		5.00	1.60
		5.00	3.00
		5.50	1.60
		5.50	3.20
		6.00	1.60
		6.00	3.20
		6.40	1.60
		6.40	3.20
		8.00	5.00
		9.00	6.40
		9.50	6.40
		10.00	8.00

SOLID D



Part Number	Material	Dim.A (mm)	Dim.B (mm)
FS-CE-3	1 – Silicone Carbon	1.63	1.40
	2 – Silicone Nickel Graphite	1.73	1.57
	3 – Fluorosilicone Nickel Graphite	1.98	2.39
	4 – Silicone Nickel Graphite Flame Retardant	2.26	1.98
	5 – Silicone Silver Aluminium	2.54	1.57
	6 – Fluorosilicone Silver Aluminium	2.79	3.81
	7 – Silicone Silver Copper	3.43	3.10
	8 – Fluorosilicone Silver Copper	3.96	3.00
	9 – Silicone Nickel	3.96	3.96
	10 - Fluorosilicone Nickel	4.45	4.52
		4.78	4.78

HOLLOW D



Part Number	Material	Dim.A (mm)	Dim.B (mm)	Dim.C (mm)	Rad. (mm)
FS-CE-4	1 – Silicone Carbon	3.96	3.96	1.14	1.98
	2 – Silicone Nickel Graphite	4.75	4.72	1.27	2.36
	3 – Fluorosilicone Nickel Graphite	6.35	6.35	1.65	3.18
	4 – Silicone Nickel Graphite Flame Retardant	7.92	7.92	1.27	3.96
	5 – Silicone Silver Aluminium	12.37	8.23	2.03	6.20
	6 – Fluorosilicone Silver Aluminium				
	7 – Silicone Silver Copper				
	8 – Fluorosilicone Silver Copper				
	9 – Silicone Nickel				
	10 - Fluorosilicone Nickel				

U CHANNEL



Part Number	Material	Dim.A (mm)	Dim.B (mm)	Dim.C (mm)	Dim.D (mm)
FS-CE-5	1 – Silicone Carbon	2.54	2.54	0.86	0.84
	2 – Silicone Nickel Graphite	3.20	2.80	0.66	1.27
	3 – Fluorosilicone Nickel Graphite	3.20	5.72	0.51	1.91
	4 – Silicone Nickel Graphite Flame Retardant	3.96	3.94	1.57	1.19
	5 – Silicone Silver Aluminium	4.45	3.95	1.19	1.91
	6 – Fluorosilicone Silver Aluminium	8.30	5.90	1.57	2.92
	7 – Silicone Silver Copper				
	8 – Fluorosilicone Silver Copper				
	9 – Silicone Nickel				
	10 - Fluorosilicone Nickel				

HOLLOW P



Part Number	Material	Dim.A (mm)	Dim.B (mm)	Dim.C (mm)	Dim.D (mm)
FS-CE-6	1 – Silicone Carbon	5.08	2.03	1.57	12.7
	2 – Silicone Nickel Graphite	5.08	2.03	1.57	21.5
	3 – Fluorosilicone Nickel Graphite	6.35	3.20	1.57	12.7
	4 – Silicone Nickel Graphite Flame Retardant	6.35	3.20	1.57	16.0
	5 – Silicone Silver Aluminium	6.35	3.20	1.57	22.22
	6 – Fluorosilicone Silver Aluminium	7.92	4.80	1.57	22.22
	7 – Silicone Silver Copper	9.10	6.50	1.80	19.81
	8 – Fluorosilicone Silver Copper				
	9 – Silicone Nickel				
	10 - Fluorosilicone Nickel				

STRIP



Part Number	Material	Dim.A (mm)	Dim.B (mm)
FS-CE-7	1 – Silicone Carbon	1.00	1.60
	2 – Silicone Nickel Graphite	1.00	1.80
	3 – Fluorosilicone Nickel Graphite	1.00	2.00
	4 – Silicone Nickel Graphite Flame Retardant	1.60	1.60
	5 – Silicone Silver Aluminium	1.60	1.80
	6 – Fluorosilicone Silver Aluminium	1.60	2.00
	7 – Silicone Silver Copper	1.60	3.20
	8 – Fluorosilicone Silver Copper	1.60	12.70
	9 – Silicone Nickel	1.60	15.90
	10 - Fluorosilicone Nickel	1.60	22.35
		2.00	2.00
		2.00	2.40
		2.00	3.00
		2.00	12.70
		2.00	15.90
		2.00	19.00
		2.00	22.35
		3.00	2.00
		3.00	12.70
		4.80	12.70
		6.40	25.40

HOLLOW SQUARE/RECTANGLE



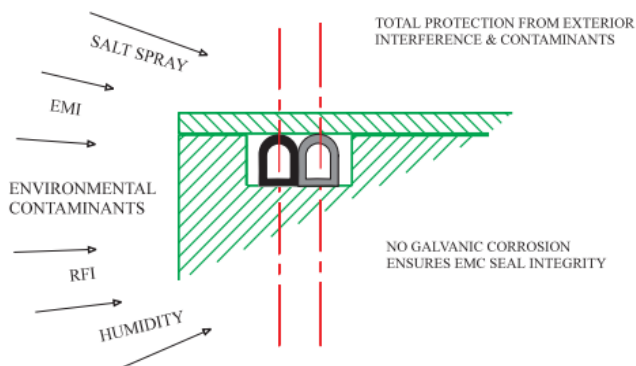
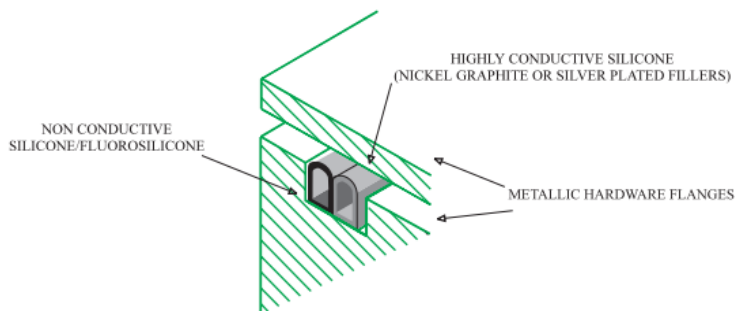
Part Number	Material	Dim.A (mm)	Dim.B (mm)	Dim.C (mm)
FS-CE-9	1 – Silicone Carbon	3.00	3.00	0.80
	2 – Silicone Nickel Graphite	6.00	6.00	2.00
	3 – Fluorosilicone Nickel Graphite	6.00	6.00	3.00
	4 – Silicone Nickel Graphite Flame Retardant	8.00	8.00	3.50
	5 – Silicone Silver Aluminium	9.50	9.50	4.80
	6 – Fluorosilicone Silver Aluminium			
	7 – Silicone Silver Copper			
	8 – Fluorosilicone Silver Copper			
	9 – Silicone Nickel			
	10 - Fluorosilicone Nickel			

SHEET

Part Number	Material	Thickness (mm)	Sheet Size (mm)
FS-CE-8	1 – Silicone Carbon	0003 – 0.30	1 – 50 x 50
	2 – Silicone Nickel Graphite	0005 – 0.50	2 – 100 x 100
	3 – Fluorosilicone Nickel Graphite	0008 – 0.80	3 – 150 x 150
	4 – Silicone Nickel Graphite Flame Retardant	0010 – 1.00	4 – 250 x 250
	5 – Silicone Silver Aluminium	0012 – 1.20	5 – 300 x 300
	6 – Fluorosilicone Silver Aluminium	0014 – 1.40	6 – 400 x 400
	7 – Silicone Silver Copper	0016 – 1.60	7 – 420 x 450
	8 – Fluorosilicone Silver Copper	0019 – 1.90	
	9 – Silicone Nickel	0020 – 2.00	
	10 - Fluorosilicone Nickel	0024 – 2.40	
		0026 – 2.60	
		0030 – 3.00	
		0032 – 3.20	
		0035 – 3.50	
		0040 – 4.00	
		0048 – 4.80	
		0050 – 5.00	
		0055 – 5.50	
		0060 – 6.00	
		0064 – 6.40	

DUOSEAL EMC GASKET

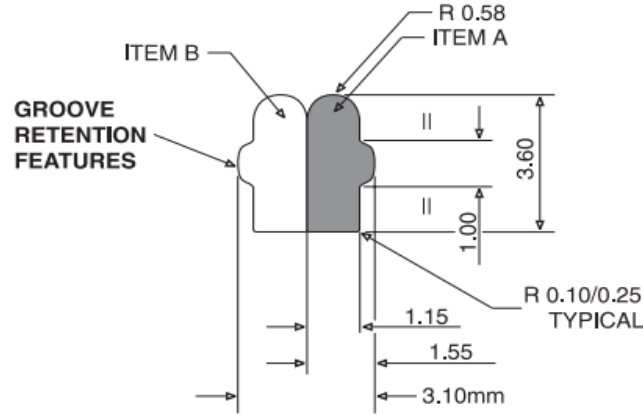
Fothershield's Duoseal emc gasket is an extrusion made from two materials with a vulcanised seamed joint. On one side is the conductive EMC gasket made from silicone loaded with nickel graphite, silver aluminium or silver copper, the other side gives environmental sealing in silicone or fluorosilicone. The environmental side of the gasket protects the EMC gasket from contaminants, including moisture and prevents galvanic corrosion.



Features

- Environmental sealing up to 5 bar possible
- Used in single rectangular groove
- Low clamping load
- Self-retaining
- Custom design available
- Choice of materials

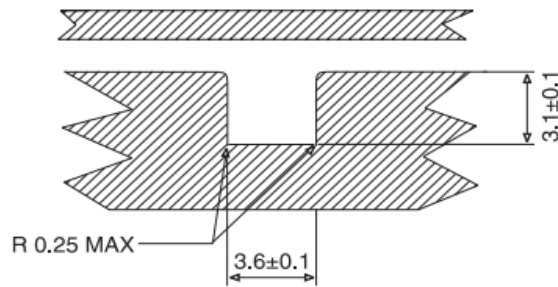
FOTHERSHIELD FS-DUO-SEAL-ES-XX-176



ITEM A : CONDUCTIVE R/F SEAL
ITEM B : NON-CONDUCTIVE SEAL

NOTES:
MAXIMUM SECTIONAL AREA = 5.13mm PER SECTION
ITEMS A AND B ARE CO-VULCANISED

RECOMMENDED GROOVE DETAIL

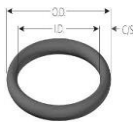


Maximum Compression 20%, Minimum Compression 7.2%
Groove Tolerance +/-0.10mm, Duo-seal Tolerance +/-0.15mm
Maximum Seal Section Area 10.26mm square
Seal Maximum/Minimum Height 7.75mm/3.45mm
Groove Maximum/Minimum Height 3.2mm/3.0mm
Minimum Groove Sectional Area 10.50mm square

MOULDED O RINGS

Our range of close tolerance conductive elastomer moulded O rings. When installed in a groove that allows 10-20% compression, the O rings will provide both an EMI and a moisture seal, and can be moulded to fit practically any application.

Available in a choice of materials to meet both price and performance, single prototype or full production runs can be catered for. Knitted wire may also be moulded into a silicone or fluorosilicone carrier to provide environmental as well as EMI shielding sealing gasket. These can be supplied as a complete O ring or as a continuous length. Please contact us to discuss your requirements.



How to Order

Part Number	Material	Inner Dia. (mm)	Cross Section (mm)	Inner Dia. (mm)	Cross Section (mm)
FS-CEO-11M	1 – Silicone Carbon	6.60	1.80	21.90	1.80
	2 – Silicone Nickel Graphite	6.90	1.80	23.40	3.50
	3 – Fluorosilicone Nickel Graphite	7.50	1.20	23.50	1.80
	4 – Silicone Nickel Graphite Flame Retardant	7.60	1.20	25.10	1.80
	5 – Silicone Silver Aluminium	9.20	1.80	25.40	6.40
	6 – Fluorosilicone Silver Aluminium	10.50	1.40	27.90	1.80
	7 – Silicone Silver Copper	10.80	1.80	28.30	1.80
	8 – Fluorosilicone Silver Copper	11.30	1.30	30.00	1.70
	9 – Silicone Nickel	12.40	1.80	31.50	1.80
	10 – Fluorosilicone Nickel	12.50	1.80	34.60	1.80
		12.70	2.50	34.60	2.60
		14.00	1.80	34.70	1.80
		15.50	1.80	37.20	2.00
		16.10	1.60	37.80	2.60
		17.20	1.80	40.90	2.60
		18.80	1.80	44.10	2.60
		19.20	2.50		
		20.30	1.80		

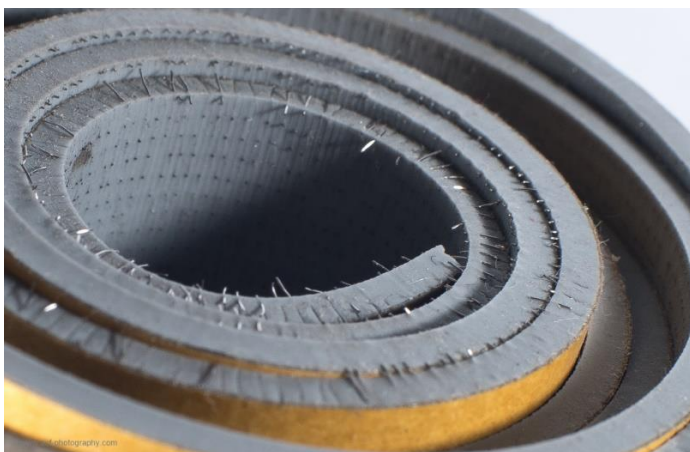
For example: FS-CEO-11M-2-9.20x1.80-100 = FS-CEO-11M (Conductive Elastomer O Ring Solid Moulded Core) 2 (Silicone Nickel Graphite) 9.20x1.80 (9.20mm inner dia. x 1.80mm cross section) 100 (100mm developed length)

ORIENTED WIRES IN SILICONE

Fothershield's range of oriented wires in silicone give full environmental and EMI shielding when clamped between two flat metal surfaces. Ideal for uneven surfaces the material has electromagnetic pulse (EMP) survivability.

The flat silicone gasket material is available in solid or sponge and is embedded with wires perpendicular to its surface. These gaskets are ideal for applications requiring a long service life and high performance. The solid silicone (140 wires/cm²) or silicone sponge (100 wires/cm²) are available in sheet or strip form, with or without self-adhesive backing (SAB). Fabricated gaskets can be produced to customers' specifications. Fluorosilicone is also available for use in environments where oils, fuels and other contaminants may be present.

A compression rate of 20-25% on silicone sponge material and 15-20% on solid silicone is recommended. Over compression could cause damage to the gasket and therefore affect performance. Compression stops can be fitted to ensure that the design compression is constantly maintained.



Specification

Material	Property Value
Solid Silicone Rubber	ZZ-R-765 2b 40
Sponge Silicone Rubber	AMS 3195
Fluorosilicone Rubber	MIL-R-25988 Gr 50
Monel Wire	BS3075- NA13 (0.11mm D)
Aluminium 5056	AMS 4182 (0.13mm D)
Phosphor Bronze	Cu Sn 6% (0.114 D)
Temperature Range	-55°C to +250°C
Tolerances	Linear ±0.8mm, Hole Centres ± 0.4mm, Thickness ± 0.2mm

Shielding Effectiveness (MIL STD 285)

Frequency	Performance
10 KHz	55 dB
100 KHz	83 dB
1 MHz	101 dB
10 MHz	120 dB
100 MHz	135 dB
400 MHz	102 dB
1 GHz	95 dB
10 GHz	85 dB
Temp Range	-30°C to +160°C
Wire Count	140±15% per cm
Compression	20% -25% max

How to Order

Profile Code	Wire Type	Self-Adhesive Backed
01 - Solid Silicone	1 - Monel Wire	1 - SAB
02 - Silicone Sponge (min. sheet thickness 1mm)	2 - Aluminium Wire	2 - Non SAB
03 - Solid Silicone Flame Retardant		
04 - Silicone Sponge Flame Retardant (min. sheet thickness 1mm)		
05 - Solid Fluorosilicone - FSS		

For example: Part No. FS-OWS-01-1-2-0008-0024 = FS-OWS (Oriented Wire Sheet) 01 (Solid Silicone) 1 (Monel Wire) 2 (Non SAB) 0080-0024 (0.8mm thick x 2.4mm wide)



Availability

- Sheets size 150mm or 228mm wide
- Sheet or strip form
- May be fabricated into gaskets or connector gaskets
- Solid silicone 140 wires/cm², silicone sponge 100 wires/cm²
- Fluorosilicone version available in both solid and sponge
- Minimum thickness 0.8mm for solid, 1.0mm for sponge

Standard Sizes

Part Number	Dim.A. (mm)	Dim.B. (mm)	Part Number	Dim.A. (mm)	Dim.B. (mm)
FS-OWS-XX-X-X-0008-0024	0.8	2.4	FS-OWS-XX-X-X-0012-0080	1.2	8.0
FS-OWS-XX-X-X-0008-0032	0.8	3.2	FS-OWS-XX-X-X-0012-0095	1.2	9.5
FS-OWS-XX-X-X-0008-0048	0.8	4.8	FS-OWS-XX-X-X-0012-0127	1.2	12.7
FS-OWS-XX-X-X-0008-0064	0.8	6.4	FS-OWS-XX-X-X-0012-1140	1.2	114.0
FS-OWS-XX-X-X-0008-0080	0.8	8.0	FS-OWS-XX-X-X-0012-1520	1.2	152.0
FS-OWS-XX-X-X-0008-0095	0.8	9.5	FS-OWS-XX-X-X-0012-2280	1.2	228.0
FS-OWS-XX-X-X-0008-0127	0.8	12.7	FS-OWS-XX-X-X-0014-0024	1.4	2.4
FS-OWS-XX-X-X-0008-1140	0.8	114.0	FS-OWS-XX-X-X-0014-0032	1.4	3.2
FS-OWS-XX-X-X-0008-1520	0.8	152.0	FS-OWS-XX-X-X-0014-0048	1.4	4.8
FS-OWS-XX-X-X-0008-2280	0.8	228.0	FS-OWS-XX-X-X-0014-0064	1.4	6.4
FS-OWS-XX-X-X-0010-0024	1.0	2.4	FS-OWS-XX-X-X-0014-0080	1.4	8.0
FS-OWS-XX-X-X-0010-0032	1.0	3.2	FS-OWS-XX-X-X-0014-0095	1.4	9.5
FS-OWS-XX-X-X-0010-0048	1.0	4.8	FS-OWS-XX-X-X-0014-0127	1.4	12.7
FS-OWS-XX-X-X-0010-0064	1.0	6.4	FS-OWS-XX-X-X-0014-1140	1.4	114.0
FS-OWS-XX-X-X-0010-0080	1.0	8.0	FS-OWS-XX-X-X-0014-1520	1.4	152.0
FS-OWS-XX-X-X-0010-0095	1.0	9.5	FS-OWS-XX-X-X-0014-2280	1.4	228.0
FS-OWS-XX-X-X-0010-0127	1.0	12.7	FS-OWS-XX-X-X-0016-0024	1.6	2.4
FS-OWS-XX-X-X-0010-1140	1.0	114.0	FS-OWS-XX-X-X-0016-0032	1.6	3.2
FS-OWS-XX-X-X-0010-1520	1.0	152.0	FS-OWS-XX-X-X-0016-0048	1.6	4.8
FS-OWS-XX-X-X-0010-2280	1.0	228.0	FS-OWS-XX-X-X-0016-0064	1.6	6.4
FS-OWS-XX-X-X-0012-0024	1.2	2.4	FS-OWS-XX-X-X-0016-0080	1.6	8.0
FS-OWS-XX-X-X-0012-0032	1.2	3.2	FS-OWS-XX-X-X-0016-0095	1.6	9.5
FS-OWS-XX-X-X-0012-0048	1.2	4.8	FS-OWS-XX-X-X-0016-0127	1.6	12.7
FS-OWS-XX-X-X-0012-0064	1.2	6.4	FS-OWS-XX-X-X-0016-1140	1.6	114.0

Standard Sizes

Part Number	Dim.A. (mm)	Dim.B. (mm)	Part Number	Dim.A. (mm)	Dim.B. (mm)
FS-OWS-XX-X-X-0016-1520	1.6	152.0	FS-OWS-XX-X-X-0024-0048	2.4	4.8
FS-OWS-XX-X-X-0016-2280	1.6	228.0	FS-OWS-XX-X-X-0024-0064	2.4	6.4
FS-OWS-XX-X-X-0018-0024	1.8	2.4	FS-OWS-XX-X-X-0024-0080	2.4	8.0
FS-OWS-XX-X-X-0018-0032	1.8	3.2	FS-OWS-XX-X-X-0024-0095	2.4	9.5
FS-OWS-XX-X-X-0018-0048	1.8	4.8	FS-OWS-XX-X-X-0024-0127	2.4	12.7
FS-OWS-XX-X-X-0018-0064	1.8	6.4	FS-OWS-XX-X-X-0024-1140	2.4	114.0
FS-OWS-XX-X-X-0018-0080	1.8	8.0	FS-OWS-XX-X-X-0024-1520	2.4	152.0
FS-OWS-XX-X-X-0018-0095	1.8	9.5	FS-OWS-XX-X-X-0024-2280	2.4	228.0
FS-OWS-XX-X-X-0018-0127	1.8	12.7	FS-OWS-XX-X-X-0032-0032	3.2	3.2
FS-OWS-XX-X-X-0018-1140	1.8	114.0	FS-OWS-XX-X-X-0032-0048	3.2	4.8
FS-OWS-XX-X-X-0018-1520	1.8	152.0	FS-OWS-XX-X-X-0032-0064	3.2	6.4
FS-OWS-XX-X-X-0018-2280	1.8	228.0	FS-OWS-XX-X-X-0032-0080	3.2	8.0
FS-OWS-XX-X-X-0020-0024	2.0	2.4	FS-OWS-XX-X-X-0032-0095	3.2	9.5
FS-OWS-XX-X-X-0020-0032	2.0	3.2	FS-OWS-XX-X-X-0032-0127	3.2	12.7
FS-OWS-XX-X-X-0020-0048	2.0	4.8	FS-OWS-XX-X-X-0032-1140	3.2	114.0
FS-OWS-XX-X-X-0020-0064	2.0	6.4	FS-OWS-XX-X-X-0032-1520	3.2	152.0
FS-OWS-XX-X-X-0020-0080	2.0	8.0	FS-OWS-XX-X-X-0032-2280	3.2	228.0
FS-OWS-XX-X-X-0020-0095	2.0	9.5	FS-OWS-XX-X-X-0048-0048	4.8	4.8
FS-OWS-XX-X-X-0020-0127	2.0	12.7	FS-OWS-XX-X-X-0048-0064	4.8	6.4
FS-OWS-XX-X-X-0020-1140	2.0	114.0	FS-OWS-XX-X-X-0048-0080	4.8	8.0
FS-OWS-XX-X-X-0020-1520	2.0	152.0	FS-OWS-XX-X-X-0048-0095	4.8	9.5
FS-OWS-XX-X-X-0020-2280	2.0	228.0	FS-OWS-XX-X-X-0048-0127	4.8	12.7
FS-OWS-XX-X-X-0024-0024	2.4	2.4	FS-OWS-XX-X-X-0048-1140	4.8	114.0
FS-OWS-XX-X-X-0024-0032	2.4	3.2	FS-OWS-XX-X-X-0048-1520	4.8	152.0

Part Number	Dim.A. (mm)	Dim.B. (mm)
FS-OWS-XX-X-X-0048-2280	4.8	228.0
FS-OWS-XX-X-X-0064-0064	6.4	6.4
FS-OWS-XX-X-X-0064-0080	6.4	8.0
FS-OWS-XX-X-X-0064-0095	6.4	9.5
FS-OWS-XX-X-X-0064-0127	6.4	12.7
FS-OWS-XX-X-X-0064-1140	6.4	114.0
FS-OWS-XX-X-X-0064-1520	6.4	152.0
FS-OWS-XX-X-X-0064-2280	6.4	228.0
FS-OWS-XX-X-X-0080-0080	8.0	8.0
FS-OWS-XX-X-X-0080-0095	8.0	9.5
FS-OWS-XX-X-X-0080-0127	8.0	12.7
FS-OWS-XX-X-X-0080-1140	8.0	114.0
FS-OWS-XX-X-X-0080-1520	8.0	152.0
FS-OWS-XX-X-X-0080-2280	8.0	228.0
FS-OWS-XX-X-X-0095-0095	9.5	9.5
FS-OWS-XX-X-X-0095-0127	9.5	12.7
FS-OWS-XX-X-X-0095-1140	9.5	114.0
FS-OWS-XX-X-X-0095-1520	9.5	152.0
FS-OWS-XX-X-X-0095-2280	9.5	228.0

EXPANDED WIRE GASKET

Ideal for environmental sealing and electromagnetic interference (EMI) shielding, expanded wire gaskets are used where a thin gasket is required. A good flat finish is needed on the mating surfaces and care should be taken when passing the gasket over a threaded connector body. Conductivity is achieved on contact due to exposed metal contact points. The use of conductive adhesives should be avoided as this will adversely affect the sealing characteristics.

Two thickness are available, 0.5mm and 0.8mm and the material can be supplied as continuous sheet or die cut gaskets to customer's requirements. This material also exhibits electromagnetic pulse (EMP) survivability.

Filler Options

Silicone (Spec ZZ-R-765 Class 2 CRE)
 Fluorosilicone (MIL-R-25988)
 Neoprene

Metal Content

Monel (Spec QQ-N-281B)
 Aluminium (Spec QQ-A-250)

Shielding Effectiveness

Material	10 KHz	200 KHz	100 MHz	1 GHz	EMP Survivability
Expanded Monel (unfilled)	52dB	60dB	90dB	70dB	Yes
Woven Aluminium (silicones)	45dB	60dB	90dB	70dB	Yes

How to Order

Metal Content	Filler	Sheet Size	Material Thickness
M - Monel	1 - Silicone	XXXX-XXXX	1 - 0.5mm
A - Aluminium	2 - Fluorosilicone		2 - 0.8mm
	3 - Neoprene		

For example: FS-EWG-M-1-0250-0250-2 = FS-EWG (Expanded Wire Gasket) M (Monel) 1 (Silicone) 0250-0250 (Sheet size 250mm x 250mm) 2 (0.8mm thick)

CONNECTOR GASKETS

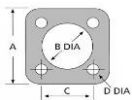
Fothershield's connector gaskets are precision die-cut gaskets made from a large range of both conductive and non-conductive materials.

To ensure that compression forces applied to the connector gaskets do not distort the product connector gaskets are typically cut from thin fortified materials such as silicone filled expanded monel foil or conductive filled aluminium mesh. However the specific properties of oriented wires in silicone or conductive silicone EMI shielding materials are more suitable for certain applications.

The majority of gaskets can be made with any of the standard materials, however the width of the area around the periphery of the connector gasket should be considered if conductive filled aluminium mesh or silicone filled expanded monel foil are chosen.

In some cases, where a gasket has fixing holes on each corner, the holes are extended outwards to slots which helps prevent damage to the gasket during production and fitting. Care should also be taken when passing the gasket over a threaded connector body. The use of conductive adhesives should be avoided as they can adversely affect the sealing performance of most types of gasket.

How to Order



Connector Gasket	Material Type	Shell Size	Thickness (mm)
FS-CG-5015	01 Silicone Filled Expanded Monel Wire	XX	0005 (0.5)
FS-CG-38999	02 Silicone Filled Expanded Aluminium Wire	XX	0008 (0.8)
	03 Fluorosilicone Filled Expanded Monel Wire	XX	0010 (1.0)
	04 Fluorosilicone Filled Expanded Aluminium Wire	XX	0016 (1.6)
	05 Neoprene Filled Aluminium Wire	XX	
	06 Neoprene Filled Monel Wire	XX	
	07 Monel Oriented Wire in Solid Silicone	XX	
	08 Aluminium Oriented Wire in Solid Silicone	XX	
	09 Monel Oriented Wire in Solid Fluorosilicone	XX	
	10 Aluminium Oriented Wire in Solid Fluorosilicone	XX	
	11 Silicone in Nickel Graphite	XX	
	12 Fluorosilicone Nickel Graphite	XX	
	13 Silicone Silver Aluminium	XX	
	14 Fluorosilicone Silver Aluminium	XX	
	15 Silicone Silver Copper	XX	
	16 Fluorosilicone Silver Copper	XX	

For example: FS-CG-5015-07-14-0016 = FS-CG (Connector Gasket) 5015 (Type MIL-C-5015/26482) 07 (Monel Oriented Wire in Solid Silicone) 14 (shell size 14) 0016 (1.6mm thickness)

MIL-C-5015/26482 Connector Gasket

Part No.	Shell Size	Dim.A (mm)	Dim.B (mm)	Dim.C (mm)	Dim.D (mm)
FS-CG-5015	08	22.23	12.70	15.09	4.5
	10	25.40	15.88	18.26	4.5
	12	27.79	19.05	20.65	4.5
	14	30.18	22.23	23.01	4.5
	16	32.54	25.40	24.61	4.5
	18	34.93	28.58	27.00	5.0
	20	38.10	31.75	29.36	5.0
	22	41.28	34.93	31.75	5.0
	24	44.45	38.10	34.93	5.5
	28	50.80	44.45	39.70	5.5
	32	57.15	50.80	44.45	6.0
	36	63.50	55.58	49.23	6.0
	40	69.85	61.93	55.58	6.0
	44	76.20	70.64	60.33	6.0

MIL-C-38999 Connector Gasket

Part No.	Shell Size	Dim.A (mm)	Dim.B (mm)	Dim.C (mm)	Dim.D (mm)
FS-CG-38999	08	15.09	16.25	21.34	4.0
	09	18.26	19.30	24.51	4.0
	10	18.26	19.30	24.51	4.0
	11	20.62	22.48	26.92	4.0
	12	20.62	22.48	26.92	4.0
	13	23.01	25.78	29.29	4.0
	14	23.01	25.78	29.29	4.0
	15	24.61	29.05	31.95	4.0
	16	24.61	29.05	31.95	4.0
	17	26.97	32.35	34.32	4.0
	18	26.97	32.35	34.32	4.0
	19	29.36	35.18	38.10	4.0
	20	29.36	35.18	38.10	4.0
	21	31.75	38.35	41.28	4.0
	22	31.75	38.35	41.28	4.0
	23	34.93	41.53	44.45	4.5
	24	34.93	41.53	44.45	4.5
	25	38.10	44.70	47.63	4.5

All technical data herein is accurate to the best of our knowledge based on our most up to date testing information and material specifications. This information is not presented as a warranty or guarantee and is not intended to be all inclusive as to conditions of use. The data herein represents typical properties and is not to be used as a basis for a specification.