

EXSHIELD | Conductive Silicone E Shielding

Our E Shielding gaskets are constructed from silicone containing metal powder fillers which combine to produce high levels of attenuation with excellent environmental shielding and a high level of conductivity. Many types of filler, from nickel graphite to pure silver, are available to suit a wide range of applications. There are also Fluorosilicone variants for use in the presence of hydrocarbon contamination.

Applications:

The Conductive Silicone Range was originally developed for high performance shielding mainly for military applications. However, the introduction of lower cost fillers has now made them accessible to the commercial sector. They are used where environmental and EMI screening is required but space constraints or stringent environmental protection necessitates a small cross section profile, often fitted into a groove or channel.

Conductively loaded silicone is best used where mating surfaces are smooth and well machined. They should be mounted to provide adequate volume for the material to deflect under pressure and should be compressed by between 8 and 20% of their relaxed height for solid sections and between 20 and 100% of the height of the hollow centre for tubular sections. Moulded 'O' rings, gasket profiles and sheet materials all have their own compression characteristics according to how they are mounted and do not comply with the guidelines above.

Specifications:

| SERIES | EC-C | EC-Q | EC-J | EC-H | EC-S | EC-N | ECF-Q | ECF-J | ECF-H | ECF-N |
|-------------------------------------|------------------------------|-----------------|-----------------------|---------------|-------------|-------------|-----------------------------|-------------------------|----------------------|---------------|
| CONDUCTIVE FILLER | Carbon | Nickel Graphite | Silver Aluminium (65) | Silver Copper | Silver | Nickel | Fluoro Nickel Graphite (70) | Fluoro Silver Aluminium | Fluoro Silver Copper | Fluoro Nickel |
| SHIELDING PERFORMANCE | STD 285 /MIL-DTL 83528C (db) | | | | | | | | | |
| 10 MHz | 30 | 115 | 111 | 115 | 117 | 114 | 116 | 114 | 116 | 110 |
| 100 MHz | 65 | 121 | 120 | 122 | 126 | 115 | 122 | 122 | 125 | 116 |
| 400 MHz | 60 | 119 | 120 | 119 | 121 | 121 | 119 | 118 | 118 | 124 |
| 1 GHz | N/A | 122 | 121 | 123 | 130 | 114 | 122 | 121 | 124 | 117 |
| 2 GHz | 40 | 122 | 119 | 122 | 129 | 122 | 122 | 123 | 121 | 112 |
| 6 GHz | N/A | 115 | 115 | 116 | 121 | 117 | 114 | 109 | 117 | 111 |
| 10 GHz | 30 | 114 | 112 | 115 | 118 | 114 | 107 | 114 | 115 | 113 |
| 18 Ghz | N/A | 106 | 105 | 104 | 115 | 105 | 105 | 103 | 104 | 103 |
| Operating Temp Range (°C) | +160 -50 | +160 -55 | +160 -55 | +125 -55 | +160 -55 | +160 -55 | +160 -55 | +160 -55 | +125 -55 | +160 -55 |
| Colour | Black | Dark Grey | Beige | Dark Tan | Beige | Grey | Green | Light Green | Green | Dark Green |
| Shore Hardness (A +/-5) ASTM D2240 | 60 | 60 | 65 | 65 | 75 | 65 | 65 | 70 | 65 | 70 |
| Volume Resistivity (ohms) ASTM D991 | 2.2 | 0.04 | 0.008 | 0.005 | 0.002 | 0.1 | 0.05 | 0.01 | 0.005 | 0.1 |
| Specific Gravity (+/- 0.25) | 2.0 | 2.0 | 2.0 | 3.5 | 3.2 | 4.5 | 2.2 | 2.0 | 4.0 | 4.8 |

* the results and procedures provides data applicable only to the test enclosure & cover panel design, but which is useful for the making comparisons between gasket materials as stated in the MIL-DTL-83528C spec



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EXSHIELD | Conductive Silicone EC Shielding

EC Shielding:

For conductively loaded silicone extrusions, a round or D section profile, fitted into a correctly dimensioned groove or channel will provide the most effective sealing and shielding performance. Fixing with any form of conductive adhesive is not recommended as this is likely to have an adverse effect on the environmental sealing.

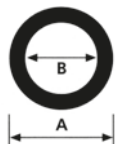
How to order:

Standard sizes can be specified from the table below.
Alternatively please provide a drawing of the profile required indicating series and filler.

| SERIES | FILLER CODE | STYLE / SHAPE | SIZE |
|-----------------------|--------------------|-----------------------|---------------------|
| EC=Silicone | Q=Nickel Graphite | 60=Solid Round | xxxx |
| ECF=Fluorosilicone | G=Silver Glass | 61=Hollow Round | xxxx-xxxx |
| ECR=Flame Retardant* | J=Silver Aluminium | 11=Solid 'D' | xxxx-xxxx-xxxx |
| | H=Silver Copper | 12=Hollow 'D' | xxxx-xxxx-xxxx-xxxx |
| | S=Silver | 13='U' Channel | xxxx-xxxx-xxxx-xxxx |
| *Nickel Graphite Only | C=Carbon | 70=Rectangular | xxxx-xxxx |
| | N=Nickel | 81=Solid 'P' Section | xxxx-xxxx-xxxx-xxxx |
| | | 82=Hollow 'P' Section | xxxx-xxxx-xxxx-xxxx |

Example:

EC-J-61-0032-0016 is extruded tubular Silicone with Silver plated Aluminium filler of 3.2 mm o.d. and 1.6 mm i.d.



HOLLOW ROUND

| DIM A (mm) | DIM B (mm) | PART NUMBER |
|------------|------------|--------------|
| 2.40 | 0.80 | 61-0024-0008 |
| 3.18 | 1.14 | 61-0032-0011 |
| 3.96 | 1.27 | 61-0040-0013 |
| 6.35 | 3.18 | 61-0064-0032 |
| 7.92 | 4.88 | 61-0080-0048 |
| 9.53 | 6.35 | 61-0095-0064 |



SOLID ROUND

| DIM A (mm) | PART NUMBER |
|------------|-------------|
| 1.02 | 60-0010 |
| 1.35 | 60-0014 |
| 1.57 | 60-0016 |
| 1.78 | 60-0018 |
| 2.03 | 60-0020 |
| 2.36 | 60-0024 |
| 2.62 | 60-0026 |
| 2.84 | 60-0028 |
| 3.02 | 60-0030 |
| 3.18 | 60-0032 |
| 3.30 | 60-0033 |
| 3.53 | 60-0035 |
| 3.81 | 60-0038 |
| 4.06 | 60-0040 |
| 4.78 | 60-0048 |
| 5.49 | 60-0055 |
| 6.35 | 60-0064 |



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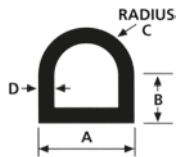


EXSHIELD | Conductive Silicone EC Shielding



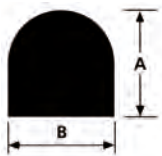
HOLLOW 'P'

| DIM A (mm) | DIM B (mm) | DIM C (mm) | DIM D (mm) | PART NUMBER |
|------------|------------|------------|------------|------------------------|
| 5.08 | 2.03 | 1.57 | 12.70 | 82-0051-0020-0016-0127 |
| 5.08 | 2.03 | 1.57 | 21.59 | 82-0051-0020-0016-0216 |
| 6.35 | 3.18 | 1.57 | 12.70 | 82-0064-0032-0016-0127 |
| 6.35 | 3.18 | 1.57 | 15.88 | 82-0064-0032-0016-0160 |
| 6.35 | 3.18 | 1.57 | 22.22 | 82-0064-0032-0016-0222 |
| 7.92 | 4.75 | 1.57 | 22.22 | 82-0080-0048-0016-0222 |
| 9.14 | 6.48 | 1.79 | 19.81 | 82-0091-0065-0018-0198 |



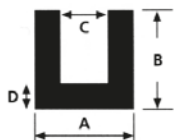
HOLLOW 'D'

| DIM A (mm) | DIM B (mm) | DIM C (mm) | RAD R (mm) | PART NUMBER |
|------------|------------|------------|------------|------------------------|
| 3.96 | 3.96 | 1.14 | 1.98 | 12-0040-0040-0011-0020 |
| 4.75 | 4.72 | 1.27 | 2.36 | 12-0048-0047-0013-0024 |
| 6.35 | 6.35 | 1.65 | 3.18 | 12-0064-0064-0017-0032 |
| 7.92 | 7.92 | 1.27 | 3.96 | 12-0080-0080-0013-0040 |
| 7.92 | 7.92 | 1.57 | 3.96 | 12-0080-0080-0016-0040 |
| 12.37 | 8.23 | 2.03 | 6.20 | 12-0124-0082-0020-0062 |



SOLID 'D'

| DIM A (mm) | DIM B (mm) | PART NUMBER |
|------------|------------|--------------|
| 1.63 | 1.40 | 11-0016-0014 |
| 1.73 | 1.57 | 11-0017-0016 |
| 1.98 | 2.39 | 11-0020-0024 |
| 2.26 | 1.98 | 11-0023-0020 |
| 2.54 | 1.57 | 11-0025-0016 |
| 2.79 | 3.81 | 11-0028-0038 |
| 3.43 | 3.10 | 11-0034-0031 |
| 3.96 | 3.00 | 11-0040-0030 |
| 4.45 | 4.52 | 11-0045-0045 |
| 4.78 | 4.78 | 11-0048-0048 |
| 6.35 | 6.35 | 11-0064-0064 |



U CHANNEL

| DIM A (mm) | DIM B (mm) | DIM C (mm) | DIM D (mm) | PART NUMBER |
|------------|------------|------------|------------|------------------------|
| 2.54 | 2.54 | 0.86 | 0.84 | 13-0025-0025-0009-0008 |
| 3.20 | 2.79 | 0.66 | 1.27 | 13-0032-0028-0007-0013 |
| 3.20 | 5.72 | 0.51 | 1.91 | 13-0032-0057-0005-0020 |
| 3.96 | 3.94 | 1.57 | 1.19 | 13-0040-0040-0016-0012 |
| 4.45 | 3.96 | 1.19 | 1.91 | 13-0044-0040-0012-0020 |
| 8.31 | 5.94 | 1.57 | 2.92 | 13-0083-0060-0016-0029 |



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EXSHIELD | Conductive Silicone ES Shielding

ES Shielding:

ES Shielding is conductively loaded silicone which is produced in sheet form or as die-cut flat gaskets.

How to order:

Specify: *Series - Filler code - and Drawing Number or Size*

| SERIES | FILLER CODE | P/N | SHEET SIZE |
|------------------------------|--------------------|-----|---------------|
| ES=Silicone | Q=Nickel Graphite | -1 | 50mm x 50mm |
| ESF=Fluorosilicone | G=Silver Glass | -2 | 100mm x 100mm |
| ESR=Flame Retardant Silicone | J=Silver Aluminium | -3 | 150mm x 150mm |
| | H=Silver Copper | -4 | 250mm x 250mm |
| | S=Silver | -5 | 300mm x 300mm |
| | C=Carbon | -6 | 400mm x 400mm |
| | N=Nickel | -7 | 430mm x 450mm |

Example:

ES-J-0008-5 = Silver Aluminium 0.8mm x 300mm x 300mm



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