

Waveseal Conductive Elastomers are designed for applications which require both EMI shielding and environmental sealing. The compound formulations are developed by combining elastomeric polymers with highly conductive fillers, providing excellent EMI shielding and sealing across a wide temperature range. All formulations are compounded to be compatible with common fluids and to resist compression set resulting in years of continuous service. Waveseal Conductive Elastomers are available in standard and custom configurations including Extruded Profiles, Sheet Stock, Custom Molded, and Die-Cut gaskets.

Waveseal Material Specification

Material Type		S1610	S1620	F1630	F1640	S1650	S1660	F1670	S1680	F1690
Elastomer Type - Silicone (SIL) or Fluorosilicone (F.SIL)		SIL	SIL	F.SIL	F.SIL	SIL	SIL	F.Sil	SIL	F.SIL
Filler Material*		Ag/Cu	Ag/Al	Ag/Cu	Ag/Al	Ag/G	Ni/C	Ni/C	Ni/Al	Ni/Al
MIL-DTL-83528D Material Type		A	B	C	D	M	-	-	-	-
Physical Properties	Test Method	S1610	S1620	F1630	F1640	S1650	S1660	F1670	S1680	F1690
Operating Temp – °C (max)	ASTM D1328	125	160	125	160	160	160	160	125	125
Operating Temp – °C (min)	ASTM D1329	-55	-55	-55	-55	-55	-55	-55	-55	-55
Hardness – Shore A (±7)	ASTM D2240	65	65	75	70	65	60	65	70	70
Compression Set – % (max)	ASTM D395	32	32	35	30	30	25	30	30	30
Specific Gravity – SG (±0.25)	ASTM D792	3.5	2.0	3.8	2.0	1.9	2.0	2.0	1.9	2.0
Tensile Strength – PSI (min)	ASTM D412	200	200	180	180	200	200	200	160	160
Elongation – % (min/max)	ASTM D412	100/300	100/300	100/300	60/260	100/300	100/300	100/300	50/200	50/200
Tear Strength – PPI (min)	ASTM D624 (DIE C)	25	30	35	35	30	30	30	35	35
Electrical Properties and Stability	Test Method	S1610	S1620	F1630	F1640	S1650	S1660	F1670	S1680	F1690
Volume Resistivity - Ohm-cm (max)	MIL-DTL-83528	0.004	0.008	0.010	0.012	0.006	0.100	0.100	0.100	0.150
Shielding Effectiveness – dB (min) @ 20 MHz –10GHz	MIL-DTL-83528	110	100	110	90	100	100	100	115	115
During vibration – Ohm-cm (max)	MIL-DTL-83528	0.006	0.012	0.015	0.015	0.009	0.100	0.150	0.200	0.200
After vibration – Ohm-cm (max)	MIL-DTL-83528	0.004	0.008	0.010	0.012	0.006	0.100	0.100	0.100	0.150
After Heat Aging – Ohm-cm (max)	MIL-DTL-83528	0.010	0.010	0.015	0.015	0.015	0.100	0.100	0.200	0.200
After Break – Ohm-cm (max)	MIL-DTL-83528	0.008	0.015	0.015	0.015	0.009	0.100	0.125	0.200	0.200
After Exposure to EMP – Ohm-cm (max)	MIL-DTL-83528	0.010	0.010	0.015	0.015	0.015	0.100	0.100	0.150	0.200
Compression / Deflection – % (min)	MIL-DTL-83528	3.5	3.5	3.5	3.5	3.5	5.0	5.0	5.0	5.0

* Ag/Cu – Silver-plated Copper, Ag/Al – Silver-plated Aluminum, Ag/G – Silver-plated Glass, Ni/C – Nickel-coated Graphite, Ni/Al – Nickel-plated Aluminum

Sheet Stock

Thickness	10x10 (in)	10x15 (in)	10x20 (in)
0.020	WS-1801-01	WS-1801-02	WS-1801-03
0.032	WS-1802-01	WS-1802-02	WS-1802-03
0.062	WS-1803-01	WS-1803-02	WS-1803-03
0.093	WS-1804-01	WS-1804-02	WS-1804-03
0.125	WS-1805-01	WS-1805-02	WS-1805-03

Part Number Examples

WS-1802-03-S1620	10x20x.032	Sheet Stock – Ag/Al Silicone
WS-1803-02-F1670	10x15x.062	Sheet Stock – Ni/C Fluorosilicone
WS-1105-F1640	.080 Dia.	Solid Round – Ag/Al Fluorosilicone
WS-1605-S1610	.175x.156	U-Channel – Ag/Cu Silicone



Round

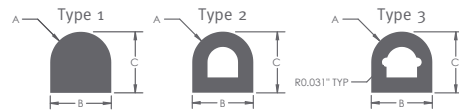
Part	A	B	Groove W*	Groove H*
WS-1101	.040 (1.02)	—	.050 (1.27)	.030 (0.76)
WS-1102	.053 (1.35)	—	.062 (1.57)	.040 (1.02)
WS-1103	.062 (1.57)	—	.070 (1.78)	.047 (1.19)
WS-1104	.070 (1.78)	—	.083 (2.11)	.050 (1.27)
WS-1105	.080 (2.03)	—	.090 (2.29)	.060 (1.52)
WS-1106	.093 (2.36)	—	.103 (2.62)	.070 (1.78)
WS-1107	.103 (2.62)	—	.118 (3.0)	.074 (1.88)
WS-1108	.119 (3.02)	—	.130 (3.3)	.090 (2.29)
WS-1109	.125 (3.18)	—	.139 (3.53)	.093 (2.36)
WS-1110	.139 (3.53)	—	.157 (3.99)	.101 (2.56)
WS-1111	.188 (4.78)	—	.210 (5.33)	.141 (3.58)
WS-1112	.216 (5.49)	—	.241 (6.12)	.160 (4.06)
WS-1113	.250 (6.35)	—	.275 (6.98)	.187 (4.75)
WS-1201	.125 (3.18)	.045 (1.14)	.130 (3.3)	.088 (2.23)
WS-1202	.156 (3.96)	.050 (1.27)	.160 (4.06)	.109 (2.76)
WS-1203	.250 (6.35)	.125 (3.18)	.255 (5.71)	.150 (3.81)
WS-1204	.312 (7.92)	.192 (4.88)	.317 (8.05)	.156 (3.96)
WS-1205	.375 (9.53)	.250 (6.35)	.380 (9.65)	.177 (4.49)
WS-1206	.125 (3.18)	.062 (1.57)	.130 (3.3)	.077 (1.95)
WS-1207	.103 (2.62)	.040 (1.02)	.107 (2.72)	.073 (1.85)
WS-1208	.177 (4.5)	.079 (2.01)	.182 (4.62)	.120 (3.05)

* Recommended Groove Dimension



Rectangle

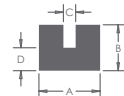
Part	A	B
WS-1701	0.063 (1.6)	0.042 (1.07)
WS-1702	0.095 (2.41)	0.062 (1.57)
WS-1703	0.120 (3.05)	0.075 (1.91)
WS-1704	0.125 (3.18)	0.062 (1.57)
WS-1705	0.156 (3.96)	0.062 (1.57)
WS-1706	0.250 (6.35)	0.062 (1.57)
WS-1707	0.500 (12.7)	0.075 (1.91)
WS-1708	0.500 (12.7)	0.125 (3.18)
WS-1709	0.500 (12.7)	0.188 (4.78)
WS-1710	0.750 (19.05)	0.062 (1.57)
WS-1711	0.880 (22.35)	0.062 (1.57)
WS-1712	1.000 (25.4)	0.250 (6.35)
WS-1713	1.180 (29.97)	0.062 (1.57)



D-Shape

Part	A	B	C	Type	Groove W*	Groove H*
WS-1301	.031 (0.78)	.062 (1.57)	.068 (1.73)	1	.065 (1.65)	.051 (1.29)
WS-1302	.047 (1.19)	.094 (2.39)	.078 (1.98)	1	.097 (2.46)	.059 (1.5)
WS-1303	.039 (0.99)	.078 (1.98)	.089 (2.26)	1	.080 (2.03)	.066 (1.67)
WS-1304	.047 (1.19)	.094 (2.39)	.094 (2.39)	1	.097 (2.46)	.070 (1.78)
WS-1305	.031 (0.78)	.062 (1.57)	.100 (2.54)	1	.065 (1.65)	.075 (1.9)
WS-1306	.075 (1.91)	.150 (3.81)	.110 (2.79)	1	.155 (3.93)	.083 (2.1)
WS-1307	.061 (1.55)	.122 (3.10)	.135 (3.43)	1	.125 (3.17)	.101 (2.56)
WS-1308	.059 (1.49)	.118 (3.00)	.156 (3.96)	1	.120 (3.04)	.117 (2.97)
WS-1309	.078 (1.98)	.156 (3.96)	.156 (3.96)	1	.160 (4.06)	.117 (2.97)
WS-1310	.089 (2.26)	.178 (4.52)	.175 (4.45)	1	.181 (4.6)	.131 (3.32)
WS-1311	.094 (2.39)	.188 (4.78)	.188 (4.78)	1	.193 (4.9)	.141 (3.58)
WS-1312	.125 (3.18)	.250 (6.35)	.250 (6.35)	1	.255 (6.47)	.187 (4.75)
WS-1401	.078 (1.98)	.156 (3.96)	.156 (3.96)	2	.160 (4.06)	.093 (2.36)
WS-1402	.093 (2.36)	.187 (4.75)	.186 (4.72)	2	.193 (4.9)	.107 (2.71)
WS-1403	.156 (3.96)	.312 (7.92)	.312 (7.92)	2	.320 (8.12)	.187 (4.75)
WS-1404	.156 (3.96)	.312 (7.92)	.312 (7.92)	3	.320 (8.12)	.187 (4.75)
WS-1405	.112 (2.84)	.312 (7.92)	.312 (7.92)	2	.320 (8.12)	.177 (4.49)
WS-1406	.244 (6.20)	.487 (12.37)	.324 (8.23)	2	.500 (12.7)	.250 (6.35)
WS-1407	.125 (3.18)	.250 (6.35)	.250 (6.35)	2	.255 (6.47)	.150 (3.81)

* Recommended Groove Dimension



U Channel

Part	A	B	C	D
WS-1601	.100 (2.54)	.100 (2.54)	.034 (0.86)	.033 (0.84)
WS-1602	.126 (3.2)	.110 (2.79)	.025 (0.64)	.050 (1.27)
WS-1603	.126 (3.2)	.225 (5.72)	.020 (0.51)	.075 (1.91)
WS-1604	.156 (3.96)	.156 (3.96)	.062 (1.57)	.047 (1.19)
WS-1605	.175 (4.45)	.156 (3.96)	.047 (1.19)	.075 (1.91)
WS-1606	.327 (8.31)	.235 (5.97)	.062 (1.57)	.115 (2.92)



Hollow P-Shape

Part	A	B	C	D
WS-1501	.200 (5.08)	.080 (2.03)	.650 (16.51)	.062 (1.57)
WS-1502	.250 (6.35)	.125 (3.18)	.250 (6.35)	.062 (1.57)
WS-1503	.250 (6.35)	.125 (3.18)	.375 (9.53)	.062 (1.57)
WS-1504	.250 (6.35)	.150 (3.96)	.375 (9.53)	.062 (1.57)
WS-1505	.312 (7.92)	.187 (4.75)	.563 (14.3)	.062 (1.57)
WS-1506	.360 (9.14)	.255 (6.48)	.420 (10.67)	.070 (1.79)
WS-1507	.200 (5.08)	.080 (2.03)	.275 (6.99)	.062 (1.57)
WS-1508	.250 (6.35)	.125 (3.18)	.625 (15.88)	.062 (1.57)