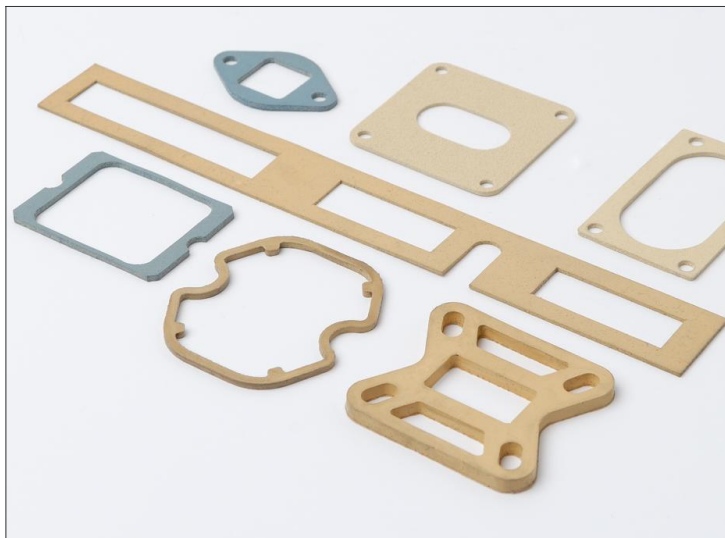


Electrically-Conductive Elastomer

Product Overview

Uvox conductive elastomers offer excellent shielding and environmental sealing. Conductive compounds can be extruded into various shapes and sizes. These electrically-conductive silicones can be formulated to meet your specific requirements and are designed to meet Mil-G-83528 revision B specifications.



Specification

Moulded Grades

General Properties						
ECE Product Code			M1	M2	M3	M4
Elastomer Type			Si	Si	Si	EPDM
Filler Material			Ag/Glass	Ag/Al	Ni/Gr	Ag
Colour			Tan	Blue	Black	Tan
Electrical Properties	Tolerance	Test Method				
Volume Resistivity (Ohm.cm)	Max	MIL-G-83528	0.001	0.001	0.08	0.05
Shielding Effectiveness (dB)						
200 kHz (H-Field)	-	MIL-G-83528	89	89	89	70
100 MHz (E-Field)	-	SAE-ARP-1705	108	108	108	105
600 MHz (E-Field)	-		102	102	102	100
2 GHz (Plane Wave)	-		109	109	109	85
10 GHz (Plane Wave)	-		90	90	90	85
Physical Properties						
Specific Gravity (g.cm-3)	± 5%	ASTM D-792	1.97	2.19	2.35	3.25
Hardness (Shore A)	± 5	ASTM D-2240	65 - 75	80 - 90	75 - 85	85
Max Operating Temperature (°C)	-		160	160	160	125
Min Operation Temperature (°C)	-	ASTM D-1329	-55	-55	-55	-45

Please note the hardnesses stated are for our standard range, ± 5 Shore A. Please consult us for other hardness requirements.

Uvox do not offer standard mouldings, therefore a product drawing or sketch must be supplied with all new quote requests.

Extruded Grades

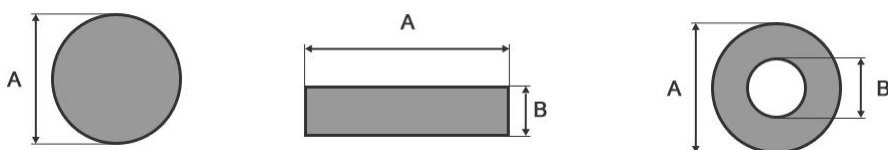
General Properties									
ECE Product Code			E1	E2	E3	E4	E5	E6	E7
Elastomer Type			Si	Si	Si	Si	Si	Si	Si
Filler Material			Ag/Ni	Ag/Cu	Ag/Cu	Ag/Al	Ag/Glass	Ag/Glass	Ag/Glass
Colour			Tan	Tan	Tan	Tan	Tan	Tan	Tan
Electrical Properties	Tolerance	Test Method							
Volume Resistivity (Ohm-cm)	Max		0.047	0.005	0.008	0.008	0.050	0.005	0.050 - 0.100
Shielding Effectiveness (dB)									
200 kHz (H-Field)	-	MIL-G-83528 MIL 285	70	70	70	70	50	55	55
100 MHz (E-Field)	-		105	115	115	110	65	95	95
500 MHz (E-Field)	-		105	115	115	105	70	95	90
2 GHz (Plane Wave)	-		100	115	115	100	70	95	90
10 GHz (Plane Wave)	-		100	115	115	100	65	95	90
Physical Properties									
Specific Gravity (g.cm-3)	± 5%	ASTM D-792	4.32	3.32	3.02	2.11	1.85	1.80	1.75
Hardness (Shore A)	± 5	ASTM D-2240	65	75	61	70	65	65	60
Tensile Strength (MPa)	Min	ASTM D-412	1.25	1.25	1	0.9	0.55	0.35	0.9
Elongation (%)	Min	ASTM D-412	100	100	100	100	60	75	80
Compression (%)	Max	ASTM D-395	30	30	30	30	30	30	30
Max Operating Temperature (°C)	-		160	125	125	160	160	160	160
Min Operation Temperature (°C)	-	ASTM D-1329	-50	-50	-50	-50	-50	-50	-50
ECE Product Code									
ECE Product Code			E8	E9	E10	E11	E12	E13	E14
Elastomer Type			Si	Si	Si	F/Si	F/Si	F/Si	F/Si
Filler Material			Ni/Gr	Ni/Gr	Ag/Al	Ag/Ni	Ag/Cu	Ag/Al	Ni/Gr
Colour			Grey	Grey	Tan	Tan	Tan	Lt. Grn	Dk. Grn
Electrical Properties	Tolerance	Test Method							
Volume Resistivity (Ohm-cm)	Max		0.050	0.100 - 0.500	0.008	0.005	0.005	0.010	0.050
Shielding Effectiveness (dB)									
200 kHz (H-Field)	-	MIL-G-83528 MIL 285	70	70	70	75	75	70	70
100 MHz (E-Field)	-		95	95	100	110	110	110	100
500 MHz (E-Field)	-		90	90	100	110	120	105	100
2 GHz (Plane Wave)	-		90	90	100	105	120	100	100
10 GHz (Plane Wave)	-		90	90	100	100	120	100	100
Physical Properties									
Specific Gravity (g.cm-3)	± 5%	ASTM D-792	2.45	1.99	2.00	4.60	5.00	2.70	3.25
Hardness (Shore A)	± 5	ASTM D-2240	80	60	65	80	75	70	80
Tensile Strength (MPa)	Min	ASTM D-412	2	100	1.9	1.25	1.25	0.55	0.75
Elongation (%)	Min	ASTM D-412	150	100	175	100	100	100	100
Compression (%)	Max	ASTM D-395	30	30	30	30	30	30	30
Max Operating Temperature (°C)	-		160	160	160	60	125	160	160
Min Operation Temperature (°C)	-	ASTM D-1329	-50	-50	-50	-50	-55	-55	-55

Features

- ▶ Specifically compounded for the extrusion process.
- ▶ Excellent physical and electrical properties over an effective temperature range of -50°C to +160°C.
- ▶ Good resistance to chemicals and weathering.
- ▶ Splash resistant to most mineral oils and greases. (Fluoro-silicone grades offer enhanced fuel oil resistance).
- ▶ Can achieve IP65 rating when installed correctly.

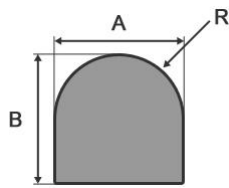
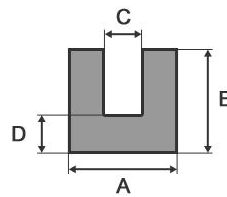
Profiles

The extrusion profiles shown below are standard, readily available sizes. Uvox also supply custom profiles for specialised applications. **All values are mm ± 0.15 mm.**

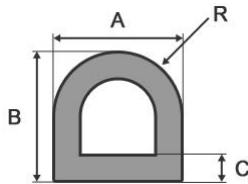
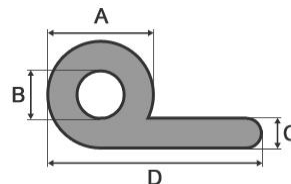


ROUND SECTION		FLAT SECTION			HOLLOW ROUND SECTION		
Code	A	Code	A	B	Code	A	B
1001	1.0	2001	1.60	1.1	3001	2.4	0.8
1002	1.4	2002	2.40	1.6	3002	3.2	1.2
1003	1.6	2003	3.05	1.9	3003	4.0	1.3
1004	1.8	2004	3.20	1.6	3004	6.4	3.2
1005	2.1	2005	3.95	1.6	3005	7.9	4.9
1006	2.4	2006	6.35	1.6	3006	9.6	6.4
1007	2.6	2007	12.70	1.9			
1008	2.9	2008	12.70	3.2			
1009	3.0	2009	12.70	4.8			
1010	3.2	2010	19.10	1.6			
1011	3.3	2011	22.40	1.6			
1012	3.6	2012	25.40	6.4			
1013	3.8						
1014	4.1						
1015	4.8						
1016	5.5						
1017	6.4						

Note: Sharp corners will have radii 0.15 mm - 0.30 mm.

Profiles Continued

'D' SECTION

CHANNEL SECTION

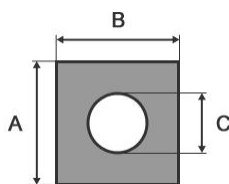
Code	A	B	Code	A	B	C	D
4001	1.4	1.7	5001	2.6	2.6	0.9	0.9
4002	1.6	1.8	5002	3.2	2.8	0.7	1.3
4003	2.4	2.0	5003	3.2	5.7	0.5	1.9
4004	2.0	2.3	5004	4.0	4.0	1.6	1.2
4005	1.6	2.6	5005	4.5	4.0	1.2	1.9
4006	3.8	2.8	5006	8.3	6.0	1.6	2.9
4007	3.0	4.0					
4008	4.5	4.5					
4009	4.0	4.0					


HOLLOW 'D' SECTION

HOLLOW 'P' SECTION

Code	A	B	C	Code	A	B	C	D
6001	3.95	3.95	1.15	7001	5.10	2.050	1.6	12.7
6002	4.75	7.7.0	1.25	7002	5.10	2.050	1.6	21.6
6003	7.9.0	7.9.0	1.25	7003	6.35	3.200	1.6	12.7
6004	7.9.0	7.9.0	1.55	7004	6.35	3.200	1.6	15.9
6005	12.35	6.25	2.00	7005	6.35	3.200	1.6	22.2
6006	6.35	6.35	1.65	7006	7.90	4.750	1.6	22.2
				7007	9.15	6.500	1.8	19.8

Note: Sharp corners will have radii 0.15 mm - 0.30 mm.

Profiles Continued



HOLLOW RECTANGULAR SECTION

Code	A	B	C
8001	7.75	6.40	3.2
8002	9.55	9.55	4.8

Note: Sharp corners will have radii 0.15 mm - 0.30 mm.

Product Selection Code

		<u>ECE</u> - <u>E11</u> - <u>3011</u>
Product Name	Electrically-Conductive Elastomer	
Material	Material Code (M1-4, E1-14)	
Extrusion Profile	Extrusion Code (Leave blank for M series.)	

Above example: Flat fluorosilicone, with Silver/Nickel particles: width 22.35mm, height 1.55mm.

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