Electrically conductive rubber profiles

Electrically conductive rubber profiles 5750-P

Electrically conductive rubber profiles in general are known for their excellent weather-, oxidation and ozone resistance

The rubber in these profiles is made conductive by means of small conductive metal particles, distributed throughout the rubber. It can provide an EMI-proof and a pressure watertight seal in narrow constructions.

Electrically conductive rubbers are typically used for EMI applications. Also used for EMP protection, wave-guide applications and against static electricity. The rubber can be filled with silver, nickel, silvered glass, silvered aluminium or graphite (only for ESD). Commercial EMI applications often call for **Nickel-Graphite Conductive Rubber (Part number 5760)** or **Graphite Conductive Rubber (Part number 5755)** due to costs, whereas military and aerospace applications often call for **Silver Aluminium Silicone Conductive Rubber (Part number 5750)** to meet Mil-G-83528C specifications. In military or aerospace, fluorosilicone versions may also be used for its chemical and fuel resistance.

As the material shields high frequencies, electrically conductive rubber shows a shielding effect of 60 dB at 30 MHz ~ 10 GHz. Due to its excellent conductivity, grounding and EMI shielding effect, it is well suited for military communication equipment. The rubber can be manufactured in various shapes such as sheets, molded parts, die-cut, strips, o-rings, etc.

The following questions need to be answered to pick the right material:

1. What is the approximate shielding effectiveness you need to achieve for your application?
2. What environment will this material be exposed to? Does the rubber need to be solvent or fuel resistant (Fluorosilicone)?
3. Are you looking for a semi-conductive/static dissipating material or is this a true EMI/RFI shielding application?

How is the conductive filler material in the rubber connected to costs and performance?

Part number	Conductive filler	Cost	Conductivity	Typical shielding effectiveness*
5750	Silver plated aluminum	$$$	Extremely conductive	120 dB
5760	Ni-Graphite	$$	Super conductive	100 dB
5755	Graphite	$	Very conductive	70 dB

Technical details and specifications

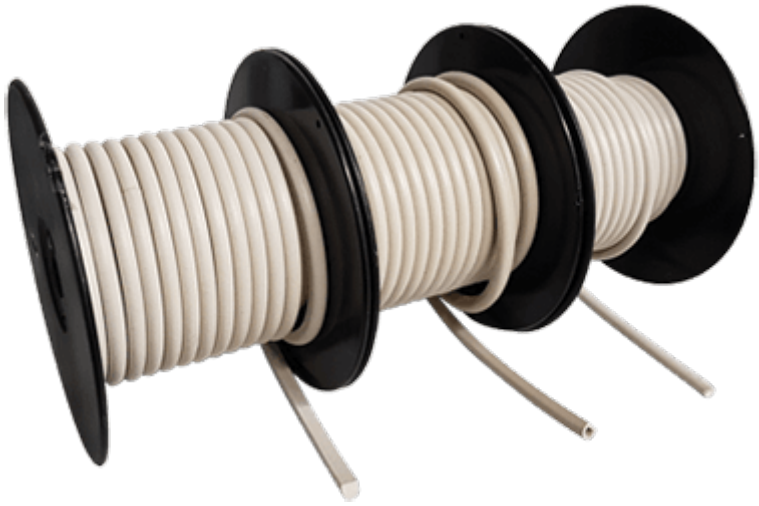
Electrically conductive rubber profiles

Conductive material	5750 Silver Aluminium Silicone	5755 Graphite	5760 Nickel Graphite
Filler	Ag/Al	Graphite	Ni-graphite
Base polymer	Silicone	Silicone	Silicone
Elongation, %, min.	90	50	50
Flame resistance, UL94 (horizontal)	HB	HB	HB
Flame resistance, UL94 (vertical)	V-0	V-0	V-0
Volume resistance, Ohm-cm (expression of conductivity)	0.0008	1.8	0.05
Operating Temp	+125	+160	+160
range (°C)	-55	-50	-55
Colour	Dark tan	Black	Dark grey
Shore Hardness (A +/-5) ASTM D2240	65	60	60
Volume Resistivity (ohms) ASTM D991	0.005	2.2	0.04
Specific Gravity (+/- 0.25)	3.5	2.0	2.0

Conductive adhesive information (Conductive PSA)

Property	Unit	Outcome	Test method
Surface resistance	Ω/sq	<0.10	MIL-DTL-83528C
Adhesive strength	g/25mm	850	ASTM D 3330
Conductive PSA	-	Acrylic + Ni	-
Liner	-	paper, Film	-

Electrically conductive rubber profiles



Benefits

- Excellent conductivity throughout the surface
- Excellent electromagnetic shielding effect
- Easy die-cutting, kiss-cutting and slitting
- Temperature range -60 to +185 °C (under certain circumstances, tolerance can be up to 220 °C)

Special material (on request)

These Conductive Rubber Profiles are also available in special materials for special applications, for example applications with chemicals. Below is a list of special materials. For availability and delivery please email info@hollandshielding.com.

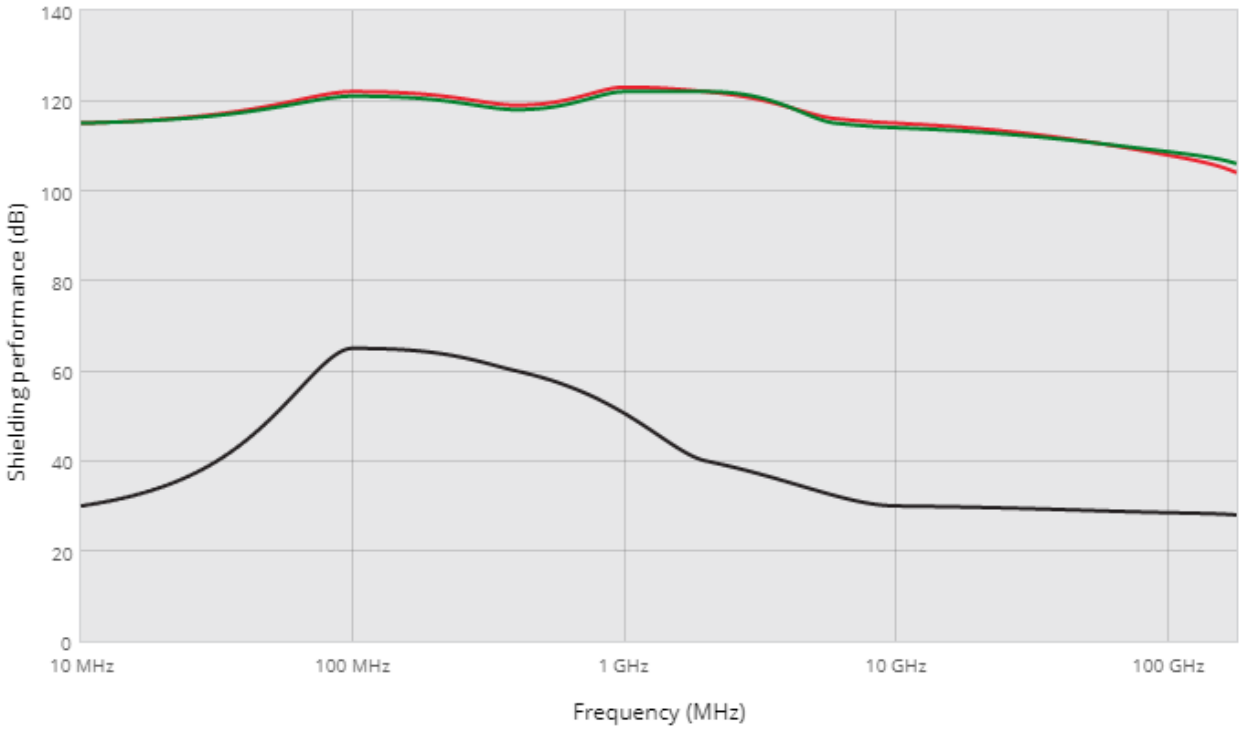
- Silicone Carbon
- Fluorosilicone Nickel Graphite
- Silicone Nickel Graphite Flame Retardant
- Silicone Silver Aluminium
- Fluorosilicone Silver Aluminium
- Fluorosilicone Nickel
- Silver Plated Nickel
- Silver Glass
- Silver copper silicone conductive rubber

Electrically conductive rubber is available as

- Sheets
- Molded parts
- Die-cut, or flash cut
- Strips

Shielding performance

Electrically conductive rubber profiles



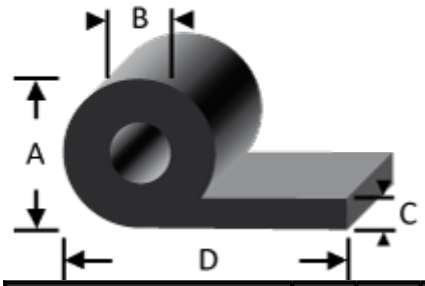
5750 - Silver plated aluminium

5755 - Graphite

5760 - Nickel Graphite

Please note : These values are measured under laboratory conditions. Results may vary in other situations; please read our Guarantee.

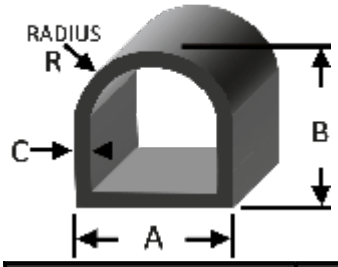
Conductive P profile (P)



Part number	A (mm)	B (mm)	C (mm) Material thickness	D (mm)
5760-P-5.0-2.0-1.6-12.7	5.0	2.0	1.6	12.7
5760-P-5.0-2.0-1.6-21.6	5.0	2.0	1.6	21.6
5760-P-6.4-3.2-1.6-12.7	6.4	3.2	1.6	12.7
5760-P-6.4-3.2-1.6-15.9	6.4	3.2	1.6	15.9
5760-P-6.4-3.2-1.6-22.2	6.4	3.2	1.6	22.2
5760-P-7.9-4.8-1.6-22.2	7.9	4.8	1.6	22.2
5760-P-9.1-6.5-1.8-19.8	9.1	6.5	1.8	19.8
5760 *can be replaced with* ***5750/5755*** *on request*				

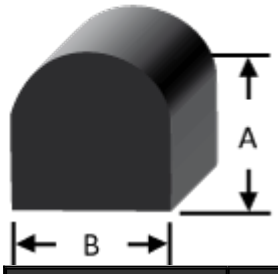
Electrically conductive rubber profiles

Conductive hollow D profile (D)



Part number	A (mm)	B (mm)	C (mm) Material thickness	R (mm)
5760-D-4.0-4.0-1.1-2.0	4.0	4.0	1.1	2.0
5760-D-4.8-4.7-1.3-2.4	4.8	4.7	1.3	2.4
5760-D-6.4-6.4-1.7-3.2	6.4	6.4	1.7	3.2
5760-D-7.9-7.9-1.3-4.0	7.9	7.9	1.3	4.0
5760-D-12.4-8.2-2.0-6.2	12.4	8.2	2.0	6.2
5760 *can be replaced with* ***5750/5755*** *on request*				

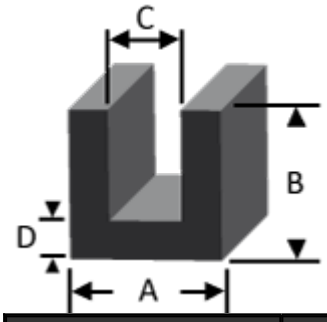
Conductive solid D profile: (SD)



Part number	A (mm)	B (mm)
5760-SD-1.6-1.4	1.6	1.4
5760-SD-1.7-1.6	1.7	1.6
5760-SD-2.0-2.4	2.0	2.4
5760-SD-2.3-2.0	2.3	2.0
5760-SD-2.5-1.6	2.5	1.6
5760-SD-2.8-3.2	2.8	3.2
5760-SD-3.4-3.1	3.4	3.1
5760-SD-4.0-3.0	4.0	3.0
5760-SD-4.0-4.0	4.0	4.0
5760-SD-4.5-4.5	4.5	4.5
5760-SD-4.8-4.8	4.8	4.8
5760 *can be replaced with* ***5750/5755*** *on request*		

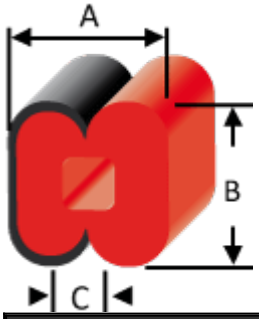
U channel profile (U)

Electrically conductive rubber profiles



Part number	A (mm)	B (mm)	C (mm)	D (mm) Material thickness
5760-U-2.4-2.5-0.9-0.8	2.4	2.5	0.9	0.8
5760-U-3.2-2.8-0.7-1.3	3.2	2.8	0.7	1.3
5760-U-3.2-5.7-0.5-2.0	3.2	5.7	0.5	2.0
5760-U-4.0-4.0-1.6-1.2	4.0	4.0	1.6	1.2
5760-U-4.5-4.0-1.2-1.9	4.5	4.0	1.2	1.9
5760-U-8.3-6.0-1.6-2.9	8.3	6.0	1.6	2.9
5760 *can be replaced with* ***5750/5755*** *on request*				

DD profile with waterseal (DD)



Part number	A (mm)	B (mm)	C (mm)
5760-DD-4.57-4.75-1.65	4.57	4.75	1.65
5760 *can be replaced with* ***5750/5755*** *on request*			

Benefits

- No reduction of the shielding properties in the splicing area
- Splicing rubber thin and conductive
- No flash, porosity or excess rubber at the joint after splicing
- Max increase of compression force in the splicing area 5%
- No excess splicing rubber inside hollow profiles
- Jointing point should stand for 10% stretch without mechanical damage
- Electrical resistance measure: Max 300 mΩ
- Available in rolls up to 1000 meters

Produkt anfragen

Electrically conductive rubber profiles

O-profiles

Our conductive rubber o-profiles are listed in a separate product series, the 7900 series. Are you looking for a conductive rubber o-profile, please refer to this page.

Series	Profile	Size number	Tape code
Select an option:	**Select an option:**		**Select an option:**
5750 : Silver plated aluminium	**P** : P Profile	See profile part numbers tables above	**02** : Without self-adhesive
5760 : Ni-graphite	**D** : Hollow D profile		**03** : With conductive self-adhesive (only recommended on small sizes)
5755 : Graphite	**SD** : Solid D profile		
	U : U channel profile		
	R : Rectangular profile		
	DD : DD profile with water seal		

* Note: The **red** blocks are required