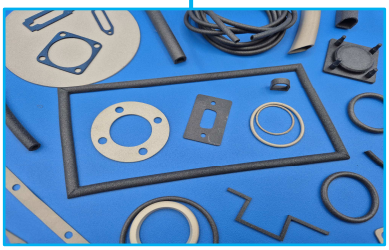
Loaded Silicone Seals



AB2E offers high performance loaded silicone seals combining sealing and electrical continuity in all applications of: enclosures, enclosures, hatches of all sizes. These gaskets can reach an IP68 if they are mounted in grooves and if the assembly rules are respected. For applications in contact with chemical compounds, solvents, hydrocarbons and other aggressive fluids, the use of fluorinated silicone is required. The different conductive charge materials are chosen to maximize galvanic torques while offering a low contact resistance between the 2 surfaces to be joined. These elastomers are available in cut plates, extruded profiles, and molded.

The different conductive load materials are chosen to ensure the best galvanic compatibility while offering the lowest contact resistance between the surfaces to be joined via the Gasket.

Technical characteristics

Features	Units	Values						Remarks
Material								
Nature of the elastomer	/	Silicone						
Nature of the charge	/	Ni/Gr*	F Ni/Gr	Ag/Al	F Ag/Al	Ag/Cu	F Ag/Cu	
Colors	/	Black	Black	Beige or Blue		Beige	Beige	
Physical properties								
Hardness +/-5	Shores A	60	65	60/65	65-70	65	65	ASTM D2240
Density +/-10%	g / cm^3	2.0	2.4	2.0	2.1	3.5	3.8	ASTM D792-A
Elongation	% min	110	110	110	110	110	110	
Traction resistance	Mpa	2.0	1.5	1.8	1.9	2.0	1.9	ASTM D412-A
	N-m	33.9	23.7	19.2/30.5	26.3	32.7	23.7	
Elongation at break +/-10	%	450	270	350/390	310	480	220	ASTM D412
Tear strength +/-0.5	N-m	7.9	6.8	7.9/6.2	5.1	5.6	5.6	ASTM D624-C
Use Temperature (min)	°C	-55	-55	-55	-55	-55	-55	
Use Temperature (max)	°C	+ 160	+ 155	+ 160	+ 160	+ 125	+ 125	
Electric properties								
Volume Resistivity	Ω.cm	0.050	0.050	0.008	0.008	0.004	0.004	MIL-DTL-82528
Shielding efficiency Emc according to standard MIL-G-83528:								
à 200 kHz	dB	76	74	79	78	75	75	Champ H
à 20 MHz	dB	106	105	107	105	106	90	Champ E
à 100 MHz	dB	110	107	108	108	107	105	Champ E
à 500 MHz	dB	115	112	118	118	108	111	Champ E
à 1 GHz	dB	116	107	115	110	111	110	Champ E
à 2 GHz	dB	110	100	103	100	104	103	Ondes planes
à 4 GHz	dB	102	104	106	105	112	102	Ondes planes
à 10 GHz	dB	110	105	108	114	106	111	Ondes planes

The attenuation varies according to the compression, especially in H-field and in plane wave. These values are given as an indication.
The compression varies according to the hardness of the elastomers, we can nevertheless be based on these values.

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Guide Help choice of materials according to Type Applications

Sil. Ni/Gr	Fluro Sil. Ni/Gr	Sil. Ag/Al	Fluro Sil. Ag/Al	Ag/Cu	Fluro Sil. Ag/Cu
Copper nickel often used in civil applications, telecom, industrial and now military. Excellent EMC performance. The Ni/Gr at the best cost/ performance ratio and works easily.	Applications ditto to Sil.Ni/Gr but used in corrosive media. Good resistance to salt spray. Does not lose any its Cem properties compared to Ni/Gr. Good performance in low frequencies.	Silver plated aluminum, widely used mainly for military or aeronautical applications but also civil for its excellent shielding in very high frequencies. It is the lightest of the charged silicones with its low density. Compatible with the majority of all alloys.	Applications same to Sil.Ag/Al but used in corrosive environments. Good resistance to salt spray. Does not lose any of its properties compared to Ag/Al. Compatible with most alloys. Low density and therefore low weight.	Silver plated copper with the lowest electrical resistance across the spectrum / Ni/Gr and Ag/Al. but also more expensive and denser. Good resistance EMP. Low degassing rate. Very high stability over time. High mechanical strength. Best thermal conductor among these 3 materials. Often used in space.	Applications ditto to Sil.Ag/Cu but used in corrosive media Good resitance to salt spray. Does not lose any of its Cem properties compared to Ag/Cu. Very low resistivity.

General Manufacturing Tolerances

Tolerances on extruded hole	
Ø Ext.	**Tolerances**
1.0 à 2.5	+/ - 0.10
2.0 à 5.0	+/ - 0.15
5.0 >	+/ - 0.25

Tolerances on extruded hole	
Ø Int.	**Tolérances**
0.5 à 1.2	+/ - 15%
> 1.2	+/ - 10%

Data in mm or %.

Tolerances on flat parts	
Epaisseurs	**Tolérances**
0.5 à 0.7	+/ - 0.15
0.8 à 2.0	+/ - 0.20
> 2.0	+/ - 15%

For cutting flat workpieces, the cutting tolerances are +/- 0.25mm, or according to the plan.

Codification de Produits

These joints are rarely used in the "raw" state, most often special lengths are requested by customers and as in 95% of cases we close these joints by vulcanization, coding is done only by AB2E.

AB2E Certifications

Products compliant with NF L00-015C & EN ISO/IEC 17050-1 and RoHs and Reach in force at the time of the preparation of this document.

The results were obtained under laboratory conditions and should be considered only as an indication. As AB2E has no control over its customers' equipment and many other factors, it is the user's responsibility to carry out its own tests to ensure that the product corresponds to its needs.