

SHIELDING division

Quality Products, Competitive Pricing, On-Time Delivery

- EMI/EMP MIL-SPEC SHIELDING PRODUCTS
- MIL-I-45208, MIL-STD-45662
- QPL: Mil-DTL-83528
- IN HOUSE TESTING LABORATORY
- **RTV SILICONE RUBBER**
- SILICONE RUBBER (Molded/Extruded)
- SILICONE SPONGE (Molded/Extruded)
- SPECIALTY ELASTOMERS (Organic/Inorganic)
- CUSTOM COMPOUNDING
- APPLICATIONS ENGINEERING
- AEROSPACE, FDA, AUTOMOTIVE, & COMMERCIAL GRADES

COMPLETE PROVEN SOURCE

Ja-Bar has been a leading producer of silicone and EMI/RFI Shielding Materials since our origination in 1965. We supply sheet, tubing, strips, extrusions, molded products, both standard and specialty shapes, in a variety of elastomers, as well as a complete line of EMI/RFI/EMP and ESD products, to all facets of industry, including leading manufacturers of electronics, communications, automotive, food, pharmaceutical, aerospace, and military equipment.

Ja-Bar manufactures to Mil, Federal, AMS, SAE or customer specifications. Our quality control system is approved for Mil-I-45208. Our silicone products include sheets, seals, gaskets, hermetic seals, wipers, bellows, tubing, reinforced materials, flat cables, washers and bushings. Our EMI/RFI products range from Mil-DTL-83528 electrically conductive elastomers, molded, extruded, die cut and hand fabricated forms; to shielding ventilation panels and optical filtering devices for the commercial and military markets.

COMPLETE ON-PREMISES FACILITIES

Our modern plant is equipped with facilities, tool design and manufacturing, product design and engineering, extrusion, molding and other production equipment, as well as raw material and finished products testing facilities. Our inventory of substantial stocks of raw materials enables us to put most jobs into production quickly.

Our in-house capability to compound our own materials, design and produce our own dies and molds, and produce needed components ourselves, without depending on outside sources, enables us to maintain complete control of every job, assuring you, our customer, of Quality products, shorter lead times, and on time delivery...at very competitive prices.

EXPERIENCED PEOPLE

Just as important as our facilities are the specialized abilities of our people. Ja-Bar can compound formulations to meet specific property characteristics. Many times, our people use their extensive application experience to make alternate design suggestions that result in increased product reliability and/or significant cost savings.

Ja-Bar is fully experienced in development work and in assisting our customers with product design. We also have extensive experience in designing and manufacturing tooling and manufacturing processes to produce these designs. We maintain a thorough and careful program of quality control and inspection, and are fully qualified to test and certify that our products meet critical specifications. Ja-Bar is dedicated to providing service and products that give our customers complete satisfaction.

Our response to quotation requests is prompt. If we can't respond immediately, we'll respond on the same day or the following day. And our service doesn't stop after the sale is made. If you have problems, you will find us completely cooperative in helping to find a workable solution.

If you need EMI/RFI Shielding Materials, Silicone Materials, or other elastomers, do as the leaders do, call the Complete Proven Source, Call Ja-Bar.

Ja-Bar Silicone Corporaton P.O. Box 1249, 252 Brighton Road Andover, New Jersey 07821



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Description:

Optical filtering devices are most commonly produced, by incorporating a layer of woven mesh into a sheet of clear acrylic (Per L-P-391D Type 1 Grade C) and machined to fit your specifications. They can be supplied to you from .060 thick to .300 thick, and sizes can range from .25" to 24" in width and length. Variations can be produced depending upon your required needs.

Application:

Optical filtering devices are used in any application where the viewing port has to be optically clear and also shield against unwanted EMI/RFI interference. The mesh that is incorporated in it can provide the needed attenuation, while the gasket and method of termination can provide the desired electrical bond. Gaskets should inhibit moistureand supply conductivity throughout the window. Wire mesh bonded to (SERIES 400), or Oriented in (SERIES 600) either sponge or solid silicone can supply this termination. Other typical interfaces include Conductive Fabric over Foam (SERIES 577), and Particle Filled Elastomers (SERIES 800).

The first five digits of the Part Number, are determined by combining the Material / Construction choice above with the conductive media choice listed below. Keep in mind the Conductive Films are not available with mesh, except in a Post-Lamination process.

When choosing the conductive media, it is important to consider both, Shielding Performance capabilities, and the optical characteristics. In most instances, enhanced performance will lessen the light transmissions, which will result in slightly less visibility. Customers are recommended to discuss there application with our engineers to insure the optimum over-all performance



11XX-XXXX Conductive Films	Optical grade metalized polyester films, with 10-20 ohms/square coating.
12XX-XXXX Acrylic	Acrylic with wire as the conductive media, embedded into the body of the acrylic sheet. Meets UL94-HB requirements
13XX-XXXX Edge Bonded	Either acrylic, poly-carbonate, or a combination as the optical media with an interlayer of wire as the conductive media structurally bonded along the perimeter.
14XX-XXXX Laminations	Fully laminated glass, polycarbonate, glass/poly combinations, and acrylic are available with PVB interlayer. By properly terminating with a "Flying Lead" or Silver Bus Bar, achieving the highest level of Optical Shielding Performance available

TABLE 1.	1 -	OPTICAL	MEDIA
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Part No.	Wire	Count	% Open Area	Diameter
1X1a	Monel	10-15	92	.0022
1X2a	Monel	10-15	92	.0045
1X3a	SnCuFe	10-15	92	.0045
1X4a	Blk Cu	50	82	.0022
1X4b	Blk Cu	70	75	.0022
1X4c	Blk Cu	100	64	.0022
1X5a	Ag/Cu Blk	100	64	.0022
1X5b	Ag/Cu Blk	145	52	.0022
1X6a	Ag/SS Blk	50	88	.0015
1X6b	Ag/SS Blk	80	82	.0015
1X6c	Ag/SS Blk	100	77	.0015
1X6d	Ag/SS Blk	200	46	.0015
1X6e	Ag/SS Blk	230	47	.0015
1X6f	Ag/SS Blk	100	65	.0022
1X6g	Ag/SS Blk	165	46	.0022
1X7a	SS	50	88	.0015
1X7b	SS	80	77	.0022
1X7c	SS	100	64	.0022
1X7d	SS	230	47	.0015
1X8	Conductive Film	_	—	—

Sn Cu Fe - Tin Plated, Copper Steel Blk Cu - Blackened Copper Ag Cu Blk - Silver Plated Copper Blackened SS Ag Blk - Silver Plated Stainless Steel Blackened TABLE 1.1 - OPTICAL MEDIA

Optical Filtering Devices Series 100

Part No.	Surface Finish
XXX-XX1X	Smooth both sides
XXX-XX2X	Anti glare 1 side Coarse (limited availability)
XXXXX3X	Clear Hard coat finish
XXX-XX4X	Anti reflection hard coat finish (< .6% reflection)
XXX-XX5X	Anti glare 2 sides Coarse (limited availability)
XXX-XX6X	Anti glare 1 side Fine
XXX-XX7X	Anti glare 2 sides Fine

Part No.	Color	Roman Has #	% Light Transmission
XXX-1XXX	Clear	*	*
XXX-2XXX	Gray	2064	28%
XXX-3XXX	Bronze	2370	10%
XXX-4XXX	Red	2423	7%
XXX-5XXX	Amber	2451	53%
XXX-6XXX	Blue	2152	25%
XXX-7XXX	Red	2444	8%
XXX-8XXX	Gray	2074	12%

TABLE 1.2 - CONDUCTIVE MEDIA

TABLE 1.4 - TINTING: ACRYLIC

Part No.	Shielding Media	Openings/in.	% Open Area	1 MHz	10 MHz	100 MHz	400 MHz	1 GHz	10 GHz
1X1a	Monel	10-15	92	35	70	90	90	25	-
1X2a	Monel	10-15	92	40	100	105	95	40	-
1X3a	SnCuFe	10-15	92	40	105	110	98	40	-
1X4a	Blk Cu	50	82	95	105	86	60	48	30
1X4b	Blk Cu	70	75	107	112	100	65	60	35
1X4c	Blk Cu	100	64	108	110	89	70	60	40
1X5a	Ag/Cu Blk	100	64	108	110	88	75	65	42
1X5b	Ag/Cu Blk	145	52	120	112	105	85	80	62
1X6a	Ag/SS Blk	50	88	95	90	85	60	55	25
1X6b	Ag/SS Blk	80	82	105	90	85	65	60	35
1X6c	Ag/SS Blk	100	77	120	112	93	80	87	75
1X6d	Ag/SS Blk	200	46	120	110	98	85	86	65
1X6e	Ag/SS Blk	230	47	120	120	95	95	80	60
1X6f	Ag/SS Blk	100	65	120	115	112	95	90	70
1X6g	Ag/SS Blk	165	46	120	120	106	100	81	60
1X7a	SS	50	88	93	90	80	60	55	25
1X7b	SS	80	77	106	88	80	65	60	32
1X7c	SS	100	64	120	105	88	76	62	40
1X7d	SS	230	47	120	120	95	95	80	60
1X8	Conductive Film	N/A	N/A	120	120	106	100	81	61

Hertz - Unit of frequency equal to 1 cycle per second.

KHz - Kilohertz - one thousand cycles per second (1,000)

MHz - Megahertz - one million cycles per second (1,000,000)

GH2 - Gig hertz - one billion cycles per second (1,000,000,000) Shielding Effectiveness testing was performed by independent testing laboratories, IAW MIL-STD-285

Material	Thickness (in.)	Thickness (mm)	Weight of Free Falling Object	Energy to Break (ft-lb)
Acrylic Sheet	.098	2.5	.25	3.0
Acrylic Sheet	.118	3.0	2.0	4.7
Acrylic Sheet	.177	4.5	2.0	11.1
Acrylic Sheet	.236	6.0	5.0	18.1
Single Strength Window Glass	.100	—	.25	0.8
Double Strength Window Glass	.125	—	.25	1.8
Plate Glass	.187	—	.25	2.0
Plate Glass	.250	_	.25	1.0
Laminated Safety Glass	—	_	.25	1.1

Table 1.6 : IMPACT RESISTANCE OF ACRYLIC SHEET VS. GLASS

TABLE 1.5 - SHIELDING PERFORMANCE

Acrylic Sheet Impact Comparison Falling Projectile Impact Strength

The table to the left shows that various thickness of Acrylic sheets have greater impact resistance than various types of glass when impacted with a hard object, such as a stone. The test samples were 12" x 12", with edges loosely clamped.

Termination Styles





Air Filtration Devices series 200

DESCRIPTION:

Ventilation panels are specifically designed to maintain substantial airflow, while filtering unwanted EMI and/or dust. Ja-Bar's air filtration devices are available in a wide variety of styles, and are supplied to meet your specific needs.

APPLICATION:

Intended for use where electronic equipment requires ventilation, while the free flow of electro-magnetic waves are not acceptable. The filtration media chosen for your application depends on your specific requirements. Listed below are the various types available.

Honeycomb Core: This type of media is used most frequently in the electronics industry. This allows for the best airflow of all the available filtration media. The effective attenuation depends on the core material chosen, the depth and width of the cell, and the plating used.

Woven Screen: This style of media is used when dust and EMI must be controlled. Corrugated screen is layered to the required thickness, usually one half inch, and is supplied with a watersoluble film to aid in dust retention.

Expanded Metal: Layers of expanded metal screen are compiled to produce our most effective Dust/EMI filtration device. This media generates the most resistance to the airflow, however its' efficient retention of dust is unsurpassed.

A variety of thicknesses (and cell widths) are available for each of the filtration media. Listed below are our standards.

Part No.	Thickness	Cell width
2X1	.250	.062
2X2	.375	.062
2X3	.375	.125
2X4	.500	.062
2X5	.500	.125
2X6	.750	.125
2X7	.750	.188
2X8	1.00	.125
2X9	1.00	.188



SPECIFICATIONS: Listed below are various filtration media available

Part No.	Material	Style	Specification
21X	Aluminum-0 slant	Honeycomb	Al alloy 5056
22X	Aluminum-30 slant	Honeycomb	Al alloy 5056
23X	Aluminum-45 slant	Honeycomb	Al alloy 5056
24X	Soldered Brass	Honeycomb	Brass alloy 260
25X	Soldered Brass	Honeycomb	SAE-1010
26X	Aluminum Screen	Woven	AMS-4182
27X	Copper Screen	Woven	*
28X	Aluminum Screen	Expanded	QQ-A-250
29X	Copper Screen	Expanded	*

SHIELDING EFFECTIVENESS

The shielding effectiveness of a vent panel will vary depending on its construction. Thickness, cell size, metal make-up, plating, fastener location and interface gasket all play an important role in the final effectiveness of the installed panel. The following table shows the variation of specific designs using the same style of caskets interface (SnCuFe wire mesh) in 12 in X 12 inch vents.

Part No.	Plating	100 KHz	10MHz	100 MHz	1GHz	10GHz
215	CHROMATE	65	110	110	80	65
215	TIN	85	130	130	110	90
246	TIN	120	130	130	120	120
256	TIN	120	125	130	120	120
264	CHROMATE	85	110	110	85	65
264	TIN	90	120	120	110	90
294	TIN	100	130	130	110	110

GASKET DESIGN

As stated previously, gasket choice is a major decision which will effect the overall performance of the vent panel. The following list depicts the part number designator for the most commonly used gasketing interfaces:

2XX-X1XX:	Neoprene Sponge / Wire mesh gasket
2XX-X2XX	Neoprene Solid / Wire mesh gasket
2XX-X3XX	Silicone Sponge / Wire mesh gasket
2XX-X4XX	Silicone Solid / Wire mesh gasket
2XX-X5XX	Wire Oriented in silicone gasket
2XX-X6XX	Wire mesh gasket
2XX-X7XX	Silver filled silicone gasket
2XX-X9XX	Custom Vent Panel Design

Air Filtration Devices

FASTENER DESIGN

The type of fastener as well as the spacing between the fasteners is also an important design consideration. This decision must incorporate the compressibility of the gasket, the thickness (flexibility) of the mating surfaces, and the intended closing force. The most commonly used fasteners are listed below with their part number designators (2XX-XXXX-___):

1XXX	Thru Holes
2XXX	6-32 Rivnuts
3XXX	8-32 Rivnuts
4XXX	6-32 Helicoil
5XXX	8-32 Helicoil
6XXX	No Holes

FINISHING OPTIONS

1XX	Chemical Conversion MIL-C-5541, Class I
2XX	Tin Plating per MIL-T-10727, Type I
3XX	Cadmium Plate per QQ-P-416
4XX	Electroless Nickel Plate per MIL-C-26074

FRAME DESIGN

Aluminum vent panels require extruded frames for structural support. Ja-Bar stocks five different commonly used frames styles, insuring fast delivery of a vent panel you can use for your particular application. Figures 2.1 thru 2.5 show the cross-section view of our extruded framing materials.

2XX-1XXX:	Fig. 2.1: 0.375 base X 0.250 leg
2XX-2XXX:	Fig. 2.2: 0.500 base X 0.250 leg
2XX-3XXX:	Fig. 2.3: 0.625 base X 0.500 leg
2XX-4XXX:	Fig. 2.4: 1.125 base X 0.500 leg
2XX-5XXX:	Fig. 2.5: 1.060 base X 0.375 leg



PLATING CAPABILITIES

Black Oxide Coating - (Mil-C-13924)

Black oxide coating is a uniform black coating for ferrous metals, used mostly for decoration, for moving parts that cannot tolerate a dimensional change and to decrease light reflections. It gives only limited corrosion resistance under mild conditions. Black Oxide is given a supplementary protective treatment for relatively short-term corrosion resistance.

Chemical Film - (Mil-C-5541)

Chemical film coatings for aluminum can be clear to golden iridescent in color Chemical film is used as a corrosion preventative film for electrical and electronic applications, or to improve adhesion of paint finish systems.

Chrome - (QQ-C-320)

Chrome can be bright or have a satin finish. It has excellent hardness, wear corrosion, heat and friction resistance. Chrome is used for decoration.

Copper - (Mil-C 4550)

Copper in color; matte to shiny finish, as under-coat, for heat treatment stop off and to prevent basic metal migration into tin.

Electroless Nickel - (Mil-C-26074)

Electroless nickel is similar to stainless steel in color plates uniform & in recesses and cavities, (does not build up on edge). Corrosion resistance is good. Can be used for salvage of mis-machined parts.

Nickel - (OQ-N-290)

Nickel has bright or semi-bright finish. This protects iron, copper or zinc alloys against corrosion, as an undercoat for chromium, and precious metals, or for decoration. This also helps against, build-up of worn or undersized parts, wear; abrasion and chemical corrosion resistance.

Passivate - (QQ-P-35)/(Mil-S-5002)

Passivate, a process to remove foreign materials from the surface of stainless steels and corrosion resistant steels, promotes natural tendency of the surface to oxidize.

Sulfuric Anodize - (Mi1-A-8625)/Type IICL 1

Sulfuric anodize corrosion resistant coating for aluminum. The color will vary with alloy. Can be dyed specific colors. Aluminum with low alloying elements will show practically no color change. Best coating on aluminum for dying.

Sulfuric Anodize - (Mil-A-8625)/Type II-CL2

Can be dyed practically any color or shade. (black blue. red. gold, etc.)

Hard Anodized - (Mil-A-8625)/Type III

Color will vary from light tan to black depending on alloy and thickness. Can be dyed in darker colors, depending on thickness.

Coating penetrates base metal as much as builds up on the surface. The term THICKNESS includes both the build-up and penetration. Provides very hard ceramic type coating abrasion resistance will vary with alloy and thickness of coating. Good dielectric properties. Corrosion resistance is good, but recommend seal hard anodize in 5% dichromate solution where increased corrosion resistance is required. (Where extreme abrasion resistance is required, do not seal as some softening my is encountered.)

Tin - (Mil-T-10727)/Type I only

Tin, gray white in color for type I. Soft, but ductile, good corrosion resistance, excellent solderability.

*Reference Military Plating Specifications

Air Filtration Devices Series 200

STANDARD VENT DESIGNS



Part No. WxL А В С D Е F 1.25 1.25 XX01 3 X 3 1 1 XX02 3 X 4 1.25 1.75 1 1 _ XX03 3.5 X 7.25 1.50 1.25 2.12 --1.75 1.75 XX04 4 X 4 _ 1 1 XX05 4 X 5 1.75 2.25 1 1 _____ 4 X 6 1.75 1.00 3.50 1 2 XX06 _ XX07 4 X 7 1.75 1.50 3.50 _ 1 2 4 X 8 XX08 1.75 .750 3.00 1 3 ____ XX09 4 X 10 1.75 1.25 3.50 1 3 — XX10 4 X 12 1.75 1.25 3.00 1 4 4 X 15 XX11 1.75 1.25 3.00 1 5 _ 4 X 17 1.75 1.25 XX12 3.50 1 5 ____ XX13 5 X 5 2.25 .750 3.00 — 1 2 1.00 XX14 5 X 6 2.25 3.50 1 2 _ 2.25 XX15 5 X 7 1.50 3.50 1 2 — XX16 5 X 9 2.25 .750 4.00 1 3 2.25 5 X 10 1.25 XX17 3.50 1 3 _ 2.25 1.25 1 XX18 5 X 11 3.00 3 _ XX19 5 X 12 2.25 1.25 3.00 _ 1 4 1.00 1.00 3.50 3.50 2 XX20 6 X 6 2 1.00 1.50 3.50 3.50 2 XX21 6 X 7 2 XX22 6 X 8 1.25 .750 3.00 3.00 2 3 2 1.00 1.25 3.50 3.50 XX24 6 X 10 3 1.25 2 XX25 6 X 12 1.00 3.00 3.50 3 XX26 6 X 15 1.00 1.25 3.00 3.50 2 4 1.50 1.50 3.50 2 XX27 7 X 7 3.50 5 XX28 7 X 8 1.50 .750 3.00 3.50 2 2 XX29 7 X 9 1.50 .750 4.00 3.50 2 3 2 XX30 7 X 10 1.50 1.25 3.50 3.50 3 7 X 11 1.25 2 XX31 1.50 3.00 3.50 3 XX32 7 X 12 1.50 1.25 3.00 3.50 2 3 XX33 7 X 14 1.50 1.50 3.50 3.50 2 4 2.00 .750 2 XX34 8 X 8 3.00 3.50 3 XX35 8 X 9 2.00 .750 4.00 3.50 2 3 XX36 8 X 10 2.00 1.25 3.50 3.50 2 3 8 X 11 2 XX37 2.00 1.25 3.00 3.50 3 XX38 8 X 12 .750 1.25 3.00 3.00 3 4 XX39 8 X 14 .750 1.50 3.50 3.00 3 4 XX40 8 X 16 .750 1.25 3.25 3.00 3

Series 200

5



Knitted Wire Mesh Materials

DESCRIPTION:

Wire mesh shielding utilizes singlestrand wire, available in a wide range of metals, knitted and formed into prespecified cross sections, yielding an economical and reliable gasket for the use in a variety of shielding applications. Cross sections vary from round and rectangular to round with a fin, and double round with a fin interconnector.

APPLICATION:

Wire mesh gaskets are best suited for those applications where high shielding required, effectiveness is an environmental seal is not needed, and the gasket must comform to an irregular surface. Panel gaskets, cable wrapping, door gaskets, and static discharge "washers", are just a few of the commonly chosen applications.

COMPATIBILITY:

(To the mating surfaces), and environmental conditions must be considered when choosing the type of mesh gasket used. Compatible metals have been listed together below for guick reference. Metals from one group should not be used with metals from another group without first applying a protective coating. Tin, Cadmium, and Zinc may be used with all metals in both Groups II & III.



Group I	Group II	Group III	Group IV
Magnesium Alloys	Aluminum	Zinc	Copper
Tin	Aluminum Alloys	Cadmium	Copper Alloys
Aluminum Alloy 5052	Zinc	Steel	Chromium
Aluminum Alloy 5056	Cadmium	Lead	Stainless Steel
Aluminum Alloy 5356	Tin	Tin Tin Lead	Gold
Aluminum Alloy 6061	Stainless Steel	Stainless Steel	Silver
Aluminum Alloy 6063	Tin Lead	Nickel	Nickel

Table 3.1

SPECIFICATIONS: Listed below are those wire mesh materials most commonly used for EMI/RFI shielding.

Part No.	Wire	Specification	Diameter
301	Monel	QQ-N-281b	.0045
302	SnCuFe	ASTM B520	.0045
303	Aluminum	AMS 4182	.0050
304	SnPhBronze	ASTM B105	.0045
305	AG Brass	QQ-W-321	.0045
306	Stainless	Alloy 304	.0060

Other metals are available by special request.

AVAILABLE CROSS-SECTIONS

1xxx	Rectangular Cross Section
2xxx	Round Cross Section
3xxx	Dumbbell Cross Section
4xxx	Tadpole Cross Section
5xxx	Compressed Mesh Unit

PERFORMANCE CHARACTERISTICS

Material:	Monel	SnCuFe	Aluminum	SnPhBronze
Shielding db: 100 KHz	45	50	40	65
10 MHz	115	115	100	120
500 KHz	110	110	90	110
1 GHz	95	95	80	95
Closure Force: (Min psi)	10	10	10	10

Table 3.3

RECTANGULAR GASKETING



Figure 3.1 - Rectangular Gasket

Part No.	W	Н
1001	0.062	0.062
1002	0.062	0.125
1003	0.062	0.187
1004	0.062	0.250
1005	0.062	0.312
1006	0.062	0.375
1007	0.062	0.500
1033	0.062	0.625
1034	0.062	0.750
1035	0.062	1.000
1008	0.093	0.093
1009	0.093	0.125
1010	0.093	0.187
1011	0.093	0.250
1012	0.093	0.312
1013	0.093	0.375
1014	0.093	0.500
1036	0.093	0.625
1015	0.125	0.125
1037	0.125	0.156
1016	0.125	0.187
1017	0.125	0.250
1018	0.125	0.312
1019	0.125	0.375
1020	0.125	0.500
1038	0.125	0.625
1039	0.125	0.750
1040	0.125	1.000
1021	0.187	0.187
1022	0.187	0.250
1023	0.187	0.312
1024	0.187	0.375
1025	0.187	0.500
1041	0.187	0.625
1042	0.187	0.750
1043	0.187	1.000
1026	0.250	0.250
1027	0.250	0.312
1028	0.250	0.375
1029	0.250	0.500
1044	0.250	0.625

DUMBBELL GASKETING



Figure 3.3 – Dumbbell Gasketing

Part No.	BULBS	W (Overall)
3050	0.062	0.375
3051	0.062	0.500
3052	0.062	0.625
3053	0.062	0.675
3054	0.062	0.750
3055	0.062	0.875
3056	0.093	0.500
3057	0.125	0.500
3058	0.125	0.625
3059	0.125	0.675
3060	0.125	0.750
3061	0.125	0.875
3062	0.125	1.000
3063	0.187	0.625
3064	0.187	0.750
3065	0.187	0.875
3066	0.187	1.000
3067	.0250	0.750
3068	0.250	0.875
3069	0.250	1.000
3070	0.250	1.250
3071	0.375	1.000
3072	0.375	1.250

ROUND GASKETING



Figure 3.2 – Round Gasketing

Part No.	Diameter
2001	0.062
2002	0.093
2003	0.125
2004	0.156
2005	0.187
2006	0.250
2007	0.312
2008	0.375
2009	0.437
2010	0.500

TADPOLE GASKETING



Figure 3.4 – Tadpole Gasketing

Part No.	D (Bulb)	W (Overall)
4050	0.062	0.375
4051	0.062	0.500
4052	0.062	0.625
4053	0.062	0.750
4054	0.093	0.375
4088	0.093	0.500
4055	0.093	0.750
4056	0.125	0.375
4057	0.125	0.437
4067	0.187	0.625
4068	0.187	0.750
4069	0.187	0.875
4070	0.250	0.500
4071	0.250	0.625
4072	0.250	0.750
4073	0.250	0.875
4074	0.250	1.000
4075	0.312	0.625
4076	0.312	0.750
4077	0.312	0.875
4058	0.125	0.500
4059	0.125	0.562
4060	0.125	0.625
4061	0.125	0.750
4062	0.156	0.500
4063	0.156	0.625
4064	0.156	0.750
4065	0.187	0.437
4066	0.187	0.500
4078	0.375	0.625
4079	0.375	0.750
4080	0.375	0.875
4081	0.375	1.000
4082	0.437	0.750
4083	0.437	0.875
4084	0.437	1.000
4085	0.500	0.750
4086	0.500	0.875
4087	0.500	1.000





Ja-Bar manufactures a Monel mesh "tape" for electronic shielding applications. The mesh is used by simply wrapping the cable or harness assembly with the mesh, using a .250" overlap to insure proper continuity. The mesh wrap is then terminated one end, or preferably both ends, to the ground. The "tapes" are available in various widths as noted below. Physical make-up and Electrical characteristics are as follows:

Property	UM	Value
Wire Type		Monel
Wire Diameter	in.	0.0045"
Available Widths		
Part Number 301-6005	in.	2.0"
Part Number 301-6004	in.	1.5"
Part Number 301-6003	in.	1.0"
Part Number 301-6002	in.	0.75"
Part Number 301-6001	in.	0.50"
Pull Strength	#	40-50 #
Solderability		Very Good
Corrosion Resistance		Very Good
Shielding Effectiveness		
100 KHz	dB	45 dB
10 MHz	dB	60 dB
1 GHz	dB	40 dB
10 GHz	dB	25 dB

Mesh Tape is also available in alternative metals such as SnCuFe wire mesh (Tin-plated Copper Clad Steel Wire), and SnPhBronze wire mesh (Tin Plated Phosphor Bronze Wire). Please contact the factory for application assistance.

MESH TAPE (SnCuFe WIRE)

Ja-Bar Part No.	Mil-Spec Part No.	Length (Roll)
395-001	90095-001	25 FT.
395-002	90095-002	100 FT
395-003	90095-003	1000 FT



RFI/EMI Shielding Products are

designed to either keep out or keep in electromagnetic interference. Shielding reflects and absorbs incident radiation waves. Although many applications require both environmental and EMI/RFI shielding, many do not, and are reliably shielded with BeCu contact strips.

Contact Strips

Beryllium Copper (BeCu) is a high performance metal which can be fabricated into a wide variety of components. Its mechanical and electrical properties make it the ideal material for RFI/EMI shielding products. Beryllium copper's electrical properties provide shielding effectiveness over an extremely broad frequency range. At the same time, its mechanical properties yield a high deflection range, in addition to a long life without compression set.

BeCu alloy 25 (CA172) is used in these applications for maximum spring properties of strength and fatigue resistance. Consult the factory for high temperature applications. Some contact strips and "D" connector gaskets are also available in stainless steel. Contact the factory for availability.

Custom Designed Shielding

Ja-Bar Silicone Corporation supplies many custom designed beryllium copper and stainless steel shielding components for special applications from high volume requirements using progressive dies, to prototype and small quantities utilizing photoetch fabrication. Call for Data Sheets.



EMI SHIELDING PERFORMANCE

Material	H-Field - 100kHz	E-Field - 10MHz	P-Field - 1GHz
BeCu	>110 dB	>110 dB	<110 dB
Monel	60 dB	>115 dB	95 dB
T.C.S.	80 dB	125 dB	100 dB
Aluminum	38 dB	100 dB	80 dB

Note: Plating the mating surfaces and wire mesh with the same material will provide superior performance. Chromate chemical film on aluminum maintains surface conductivity by reducing corrosion.

Material Specifications

Chemical Composition

Beryllium: 1.80-2.00% Cobalt plus nickel: 0.20% Min. Cobalt + nickel + iron: 0.6% Max. Copper: Balance

Physical Properties (heat treated)

Electrical conductivity (% IACS): 22-25 Modules of elasticity (psi): 18.5 x 106

Mechanical Properties (heat treated)

	•	,
Temper (1,000 psi)	1/4 HT	1/2 HT
Tensile strength:	175 Min.	185 Min.
Yield strength .2% offset:	150 Min.	160 Min.

Beryllium Copper Shielding Series 300

Achieving Electrochemical Compatibility

To avoid galvanic action between contacting metals refer to the following chart. Materials in adjacent groups may be safely used together. Choosing materials from within a single group in the table will provide the least corrosion due to galvanic action when the materials are in contact for an extended period of time with appropriate protective finish. Ja-Bar Silicone Corporation is happy to help you choose appropriate materials.

Grouping of Metals by Decreasing Galvanic Activity

Group 1 Group 2		Group 3	Group 4	
	Magnesium	Aluminum	Cadmium Plating	Brass
	Magnesium Alloys	Aluminum Alloys	Carbon Steel	Stainless Steel
	Aluminum	Zinc & Zinc Plating	Iron	Beryllium Copper
	Aluminum Alloys	Chromium Plating	Nickel & Nickel Plating	Copper & Copper Alloys
	Zinc & Zinc Plating	Cadmium Plating	Tin & Tin Plating	Nickel / Copper Alloys
	Chromium Plating	Carbon Steel	Tin/Lead Solder	Monel
	Aluminum Alloys	Iron	Brass	Silver
	Zinc & Zinc Plating	Nickel & Nickel Plating	Stainless Steel	
	Chromium Plating	Tin & Tin Plating	Beryllium Copper	
		Tin/Lead Solder	Copper & Copper Alloys	
			Nickel / Copper Alloys	
			Monel	
_				

Available Finishes

Finish	Ordering Code	Finish	Ordering Code
Solderable	01	Tin Lead	07
Clean and Bright	02	Bright Tin	08
Gold	03	Nickel	09
Silver	04	Zinc/Clear Chromate	15
Cadmium/Clear Chromate	05	Electroless Nickel	18











A description of each mounting style follows:

Clip-on Mounting: Series 317 Clip-on Mounting provides a reliable mechanical installation when there is an accessible mounting flange. Various flange thicknesses can be accommodated, and lances can be incorporated to enhance the holding force to the flange.

Stick-on Mounting: Series 327 Pressure Sensitive Mounting provides doublesided pressure sensitive transfer tape for a fast, reliable installation. 3M F9469PC transfer tape is standard and may be used at ambient temperatures from -67°F to 300°F. Apply only on a clean, oil-free surface, and allow a 24-hour cure time. Consult the factory for other adhesives.

OMNI Mounting: Series 337 OMNI Mounting offers snap-on shielding preassembled on brass pads. OMNI shielding comes in lengths up to 16" and can be mounted as individual pads or in strips cut to multiples of the pad length. Double adhesive transfer tape or plastic rivets are available mounting options. The OMNI shielding configuration is also an excellent choice for bidirectional applications.

Snap-on Mounting: Series 347 Snap-on shielding is ideal for bi-directional applications, such as sliding drawers, doors and rack mounted assemblies. Snap-on shielding is easily mounted by snapping it into parallel slots or over a mounting track. Mounting track sold separately or in the "Snap-to-Trac" sets, can be installed by screws, rivets, spot welding, or pressure-sensitive, double-adhesive transfer tape. Order "T" Retaining Caps or Plastic Rivets for end stops for the shielding . Stops can also be incorporated in sheet metal. Hole diameter to mount track should be .125". Specify Plastic Rivets PR45 or PR60, if preferred.

Hook-on Mounting: Series 357 Hook-on shielding is also ideal for bidirectional applications. The leading edge hooks over a flange and the shielding strip is held firmly in place with pressure sensitive adhesive.

"TF" Style .0035"

Standard .005"

Standard .005"

"TF" Style .0035"

Standard .005"

"TF" Style .0035"

Standard .005"

Standard .006"

"TF" Style .0035"

Standard .005"

Standard .005"

Standard .005"

Standard .005"

Standard .003

Standard .003"

Standard .003"

Standard .003"

317-6010

317-6011

317-6012

317-6013

317-6014

317-6015

317-8016

317-8017

317-8018

317-9019

317-9020

317-9021

317-9080



Consult the Factory

140 lbs/ft

N/A

Consult the Factory

69 lbs/ft

20.9 lbs/ft

93 lbs/ft

83 lbs/ft

30.1 lbs/ft

43 lbs/ft

44 lbs/ft

15 lbs/ft

15 lbs/ft

22 lbs/ft

22 lbs/ft

48 lbs/ft

48 lbs/ft

Consult the Factory

23 lbs/ft

18 lbs/ft

Consult the Factory

11 lbs/ft

6.9 lbs/ft

12 lbs/ft

15 lbs/ft

6.6 lbs/ft

17 lbs/ft

12 lbs/ft

5 lbs/ft

5 lbs/ft

10 lbs/ft

10 lbs/ft

32 lbs/ft

32 lbs/ft

Strip Gaskets

Reverse Bend Contacts

Twisted Contacts



D-Sub Connector Gaskets BeCu and Stainless Steel

	→ →025°	3B8-0004 : Beryllium 3S8-0004 : Stainless Steel 9 Pin "D" Connector		
		Dash No.	A Dim	B Dim
		-01	0.44"	0.22"
		-02	0.35"	0.18"

	025"	3B8-0001 : Beryllium 3S8-0001 : Stainless Steel 15 Pin "D" Connector		
		Dash No.	A Dim	B Dim
	-01	0.44"	0.22"	
		-02	0.35"	0.18"

125"	3B8-0005 : Beryllium 3S8-0005 : Stainless Steel 25 Pin "D" Connector		
	Dash No.	A Dim	B Dim
	-01	0.44"	0.22"
	-02	0.35"	0.18"

	3B8-0002 : Beryllium 3S8-0002 : Stainless Steel 37 Pin "D" Connector		
	Dash No.	A Dim	B Dim
	-01	0.44"	0.22"
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-02	0.35"	0.18"

	3B8-0003 : Beryllium 3S8-0003 : Stainless Steel 50 Pin "D" Connector		
	Dash No.	A Dim	B Dim
	-01	0.55"	0.28"
	-02	0.45"	0.23"



#### **DESCRIPTION:**

Wire mesh/elastomer combinations are produced by vulcanizing shielding mesh, normally SnCuFe (Tin plated, Copper clad, Steel wire) or Monel, with an elastomer, either silicone or Neoprene. To create a reliable low cost shielding gasket with environmental sealing properties, for use in military and electronic applications.

#### **APPLICATION:**

Ideal for use as enclosure, window, and panel gaskets and where substantial joint unevenness is apparent. Choice of shielding mesh should take into consideration the type of metals being interfaced, to insure compatibility; and the attenuation required. The elastomer should be chosen to meet your compression, temperature, and sealing needs. The elastomer is available with an adhesive back; either temporary (PSA) or permanent (DRYBACK Neoprene only), for ease in installation.

#### **SPECIFICATIONS:**

Listed below are the most commonly used mesh and elastomer types. Others are available upon request.

#### AVAILABILITY:

Each of the above products is available in a variety of cross sections. Ja-Bar's number system is designed to eliminate confusion when ordering a particular style. As you can see the first three digits determine the mesh and elastomer required. The next four digits determine the cross sectional make-up of the finished part, the first of which tells us if it is "standard" or "custom". If it is "custom" the remaining three digits will be assigned from Ja-Bar's numerical listing of custom parts. If it is "standard", reference the following system.

4xx-0xxx	Standard
4xx-00xx	Plain (no adhesive)
4xx-01xx	PSA
4xx-1xxx	Custom
4xx-02xx	Dry back (green)
4xx-03xx	Dry back (red)



Part No.	Elastomer	Specification	Color
41X	Silicone Sponge	AMS 3195	Gray /Red
42x	Neoprene Sponge	Mil-R-6130	Black
43x	Silicone Solid	ZZ-R-765 (2b40)	Gray/Red
44x	Silicone Solid	ZZ-R-765 (3a30)	Gray/Red
45x	Neoprene Solid	Mil-R-6855	Black
46x	Fluorosilicone	Mil-R-25988 (50)	Blue
47x	Fluorosilicone Sponge	—	Blue

TABLE 4.1 - ELASTOMER SPECIFICATIONS

Part No.	Wire	Specification	Diameter
4X1	Monel	QQ-N-281	.0045
4X2	SnCuFe	ASTM B520	.0045
4X3	Aluminum	AMS 4182	.005
4X4	SnPhBr	ASTM B105	.0045
4X5	AgBrass	QQ-W-321	.0045

TABLE 4.2 - MESH SPECIFICATIONS

Material:	Monel	SnCuFe	Aluminum	SnPhBronze
Shielding Effectiveness:				
100 KHz	45	50	40	65
10 MHz	115	115	100	120
500 KHz	110	110	90	110
1 GHz	95	95	80	95
Closure Force: (min psi)	10	10	10	10
Compression Set (40min psi)	7%	9%	12%	9%

TABLE 4.3 - PERFORMANCE CHARACTERISTICS

#### **TOLERANCE LIMITATIONS**

From	То	Solid Elastomer	Sponge Elastomer	Wire Mesh
.062	.093	+ /015	+ /016	+.016 /000
.125	.188	+ /015	+ /031	+.031 /000
.250	.500	+ /032	+ /047	+.047 /000
.625	1.000	+ /047	+ /094	+.062 /000

TABLE 4.5

### Wire Mesh/Elastomer Combinations Series 400

Part No.	"A"	"B"	"C"	"D"
0x01	062	125	062	125
002	.002	125	. 002	250
0x02	.062	.125	.062	.230
0x03	.062	.125	.062	.375
0x04	.062	.125	.062	.500
0x05	062	125	062	625
000	.002	125	.002	1.00
0x06	.062	.125	.062	1.00
0x07	.093	.125	.093	.125
0x08	.093	.125	.093	.250
0x09	.093	.125	.093	.375
0×10	003	125	003	500
0.11	.093	.125	.093	.300
0x11	.093	.125	.093	.625
0x12	.093	.125	.093	1.00
0x13	.093	.188	.093	.125
0x14	.093	188	.093	250
0×15	003	199	003	375
0.1.5	.093	.100	.093	.373
0x16	.093	.188	.093	.500
0x17	.093	.188	.093	.625
0x18	.093	.188	.093	1.00
0x19	125	125	093	125
0,20	125	125	002	250
0.21	.123	.123	.075	.230
0x21	.125	.125	.093	.3/5
0x22	.125	.125	.093	.500
0x23	.125	.125	.093	.625
0x24	125	125	093	875
0x25	125	125	.003	1.00
0.25	.123	.123	.093	1.00
0x26	.125	.125	.125	.125
0x27	.125	.125	.125	.250
0x28	.125	.125	.125	.375
0x29	.125	.125	.125	.500
0×30	125	125	125	625
0x30	.125	.125	.125	.025
0x31	.125	.125	.125	.8/5
0x32	.125	.125	.125	1.00
0x33	.125	.187	.125	.187
0x34	.125	.187	.125	.312
0x35	125	250	125	250
0x35	125	250	125	.230
0,27	.125	.230	.123	.300
0x37	.125	.250	.125	./50
0x38	.187	.125	.156	.250
0x39	.187	.125	.156	.375
0x40	.187	.125	.156	.500
0x41	187	125	156	875
042	.107	.125	.130	.075
0X4Z	.16/	.125	.16/	.125
0x43	.187	.125	.187	.250
0x44	.187	.125	.187	.375
0x45	.187	.125	.187	.625
0×46	187	125	187	875
047	107	107	107	.07.5
UX4/	.18/	.18/	.18/	.18/
0x48	.187	.187	.187	.312
0x49	.187	.187	.187	.563
0x50	.187	.187	.187	.812
0x51	.188	.250	.188	.250
0~52	188	250	188	375
0	.100	.230	100	.575
UX53	.188	.250	.188	.500
0x54	.188	.250	.188	.750
0x55	.250	.125	.250	.125
0x56	.250	.125	.250	.250
0x57	.250	.125	.250	.375
0x58	250	125	250	500
0,50	.230	125	.230	.300
0x39	.230	.123	.230	.023
0x60	.250	.125	.250	.875
0x61	.250	.250	.250	.125
0x62	.250	.250	.250	.250
0x63	.250	.250	.250	.500
0x64	250	250	250	750
0,46	.230	.230	.230	.7.50
UXDD	.3/3	.230	.3/3	.250
0x66	.375	.250	.375	.500
0x67	.375	.250	.375	.750
0x68	.375	.375	.375	.125
0x69	.375	.375	.375	.375
0	275	275	275	125
0270	.575	.575	.575	.123

#### **COMMON MESH / ELASTOMER COMBOS**

The last two digits will specify the dimensions



#### TWIN MESH/ ELASTOMER COMBO



Part No.	"A"	" B"	"C"	"D"
0x75	.093	.093	.093	.312
0x76	.125	.125	.125	.250
0x77	.125	.125	.125	.375
0x78	.125	.125	.125	.500
0x79	.125	.125	.125	.750
0x80	.125	.250	.125	.500
0x81	.187	.187	.156	250
0x82	.187	.187	.156	.375
0x83	.187	.187	.187	.250
0x84	.187	.187	.187	.375
0x85	.250	.250	.250	.250



#### **DESCRIPTION:**

Wire mesh over an elastomer is a double layer of wire mesh knitted over a round or rectangular core of elastomer. The mesh layers provide EMI/RFI shielding, while the elastomer acts as a dust and moisture seal. The standard mesh material is monel or tin-plated copper clad steel (SnCuFe).

#### **APPLICATION:**

Wire mesh over elastomer combinations is used with doors, cabinets, and where surfaces may be uneven and low closure forces exist. For the many applications that require "cut-to-length" pieces that must be terminated with adhesive to stop the freying of the knitted mesh, Ja-Bar has devised a "co-extrusion" method of manufacturing silicone knit-overs, which results in a "Self-Terminating" material supplied in continuous lengths for use in a production line. Our new "Self-Terminating" can be specified by replacing the "0" in the fifth digit of our part number with "1"(silicone cores only).

#### **SPECIFICATIONS:**

Listed in table 5.1 are those wire mesh materials most commonly used for EMI/RFI shielding. Other metals are available by special request.



#### AVAILABLE WIRE MESH

Part No.	Wire	Specification	Diameter
5x1	Monel	QQ-N-281b	.0045
5x2	SnCuFe	ASTM B520	.0045
5x3	Aluminum	AMS 4182	.0050
5x4	SnPhBronze	ASTM B105	.0045
5x5	AGBrass	QQ-W-321	.0045
5x6	Stainless	Alloy 304	.0060

#### AVAILABLE ELASTOMERS

51x	Neoprene Sponge Core	
52x	Silicone Sponge Core	
53x	Neoprene Solid Core	
54x	Silicone Solid Core	
55x	Silicone Tube (.040 wall thickness)	
56x	Neoprene Tube (.040 wall thickness)	

#### **AVAILABLE CROSS-SECTIONS**

Part No.	Cross-Section	Table	Figure
1xxx	Rectangular	5.3	5.1
2xxx	Round	5.4	5.2
Зххх	Dumbbell	5.5	5.3
4xxx	Tadpole	5.6	5.4

#### PERFORMANCE CHARACTERISTICS RECTANGULAR GASKETING

Material:	Monel	SnCuFe	Aluminum	SnPhBronze
Shielding db: 100 KHz	45	50	40	65
10 MHz	115	115	100	120
500 MHz	110	110	90	110
1 GHz	95	95	80	95
Closure Force: (Min psi)	10	10	10	10

#### Wire Mesh Over Elastomers Series 500

W Ĥ

FIGURE 5.1 - RECTANGLE GASKET

#### **RECTANGULAR GASKETING**

Part No.	W	Н
1001	0.062	0.062
1002	0.062	0.125
1003	0.062	0.187
1004	0.062	0.250
1005	0.062	0.312
1006	0.062	0.375
1007	0.062	0.500
1033	0.062	0.625
1034	0.062	0.750
1035	0.062	1.000
1008	0.093	0.093
1009	0.093	0.125
1010	0.093	0.187
1011	0.093	0.250
1012	0.093	0.312
1013	0.093	0.375
1014	0.093	0.500
1036	0.093	0.625
1015	0.125	0.125
1037	0.125	0.156
1016	0.125	0.187
1017	0.125	0.250
1018	0.125	0.312
1020	0.125	0.500
1038	0.125	0.625
1039	0.125	0.750
1040	0.125	1.000
1021	0.187	0.187
1022	0.187	0.250
1019	0.125	0.375
1023	0.187	0.312
1024	0.187	0.375
1025	0.187	0.500
1041	0.187	0.625
1042	0.187	0.750
1043	0.187	1.000
1026	0.250	0.250
1027	0.250	0.312
1028	0.250	0.375
1029	0.250	0.500
1030	0.312	0.312
1031	0.375	0.375
1032	0.375	0.625
	1	



## **ROUND GASKETING**

Part No.	Diameter
2001	0.062
2002	0.093
2003	0.125
2004	0.156
2005	0.187
2006	0.250
2007	0.312
2008	0.375
2009	0.437
2010	0.500

FIGURE 5.2 - ROUND GASKET



FIGURE 5.3 - DUMBBELL GASKET

#### **DUMBBELL GASKETING**

Part No.	D (bulbs)	W (overall)
3050	0.062	0.375
3051	0.062	0.500
3052	0.062	0.625
3053	0.062	0.675
3054	0.062	0.750
3055	0.062	0.875
3056	0.093	0.500
3057	0.125	0.500
3058	0.125	0.625
3059	0.125	0.675
3060	0.125	0.750
3061	0.125	0.875
3062	0.125	1.000
3063	0.187	0.625
3064	0.187	0.750
3065	0.187	0.875
3066	0.187	1.000
3067	0.250	0.750
3068	0.250	0.875
3069	0.250	1.000
3070	0.250	1.250
3071	0.375	1.000
3072	0.375	1.250
		TABLE 5.5



#### **TADPOLE GASKETING**

Part No.	D (bulb)	W (overall)
4050	0.062	0.375
4051	0.062	0.500
4052	0.062	0.625
4053	0.062	0.750
4054	0.093	0.375
4088	0.093	0.500
4055	0.093	0.750
4056	0.125	0.375
4057	0.125	0.437
4058	0.125	0.500
4059	0.125	0.562
4060	0.125	0.625
4061	0.125	0.750
4062	0.156	0.500
4063	0.156	0.625
4064	0.156	0.750
4065	0.187	0.437
4066	0.187	0.500
4067	0.187	0.625
4068	0.187	0.750
4069	0.187	0.875
4070	0.250	0.500
4071	0.250	0.625
4072	0.250	0.750
4073	0.250	0.875
4074	0.250	1.000
4075	0.312	0.625
4076	0.312	0.750
4077	0.312	0.875
4078	0.375	0.625
4079	0.375	0.750
4080	0.375	0.875
4081	0.375	1.000
4082	0.437	0.750
4083	0.437	0.875
4084	0.437	1.000
4085	0.500	0.750
4086	0.500	0.875
4087	0.500	1.000



Ja-Bar has recently added to it's Line of EMI/RFI Shielding Materials, the Metalized Fabric over Foam Gasketing Products. This product combines the use of Highly Flexible Nickel over Copper Plated Polyester Fabric over a open celled polyurethane foam core to provide an economical, non-corrosive, highly effective, conductive pad. The bottom surface is supplied with a pressure sensitive adhesive (PSA) strip with release liner if required.

#### **Standard Available Cross-sections**

Part No.	Figure	"A"	"B"
577-5001	Figure 1	0.039	0.118
577-5002	Figure 1	0.039	0.157
577-5003	Figure 1	0.039	0.197
577-5004	Figure 1	0.039	0.276
577-5005	Figure 1	0.039	0.394
577-5006	Figure 1	0.039	0.710
577-5007	Figure 1	0.039	1.00
577-5008	Figure 1	0.079	0.500
577-5009	Figure 1	0.079	0.157
577-5010	Figure 1	0.079	0.276
577-5011	Figure 1	0.079	0.394
577-5012	Figure 1	0.079	0.827
577-5013	Figure 1	0.079	1.125
577-5014	Figure 1	0.079	1.625
577-5015	Figure 1	0.079	2.362
577-5016	Figure 1	0.118	0.118
577-5017	Figure 1	0.125	0.500
577-5018	Figure 1	0.146	0.827
577-5019	Figure 1	0.157	0.591
577-5020	Figure 1	0.180	1.625
577-5021	Figure 1	0.197	0.315
577-5022	Figure 1	0.200	0.200
577-5023	Figure 1	0.236	0.236
577-5024	Figure 1	0.250	0.375
577-5025	Figure 1	0.250	0.500
577-5026	Figure I	0.295	0.591
577-5027	Figure 1	0.375	0.375
577-5028	Figure 1	0.375	0.500
577 5029	Figure 1	0.435	0.414
577 5031	Figure 1	0.373	1.00
577-5032	Figure 1	0.023	0.669
577-5032	Figure 3	0.002	0.007
577-5035	Figure 4	0.250	0.234
577-5036	Figure 3	0.250	0.730
577-5038	Figure 3	0.365	0.420
577-5039	Figure 3	0.710	0.560
577-5040	Figure 3	0.940	0.550
577-5041	Figure 3	0.675	0.580
577-5043	Figure 2	0.600	0.150
577-5044	Figure 2	0.125	0.280
577-5045	Figure 2	0.140	0.250
577-5046	Figure 2	0.189	0.300
577-5047	Figure 2	0.250	0.375
577-5048	Figure 2	0.180	0.480
577-5050	Figure 4	0.106	0.445
577-5051	Figure 4	0.106	0.445R
577-5052	Figure 4	0.106	0.314



#### **Physical And Electrical Performance Characteristics**

Property	Value	Test Method
Abrasion Resistance	>500,000 cycles	ASTM D3886
Contact Resistance	< 0.1 Ω-inch	ASTM D991
Operating Temperature	-40°C - + 70°C	ASTM D746
Surface Resistivity	< 0.5 Ω	ASTM D991
Flammability	UL94HB + UL94VO	UL94
Compression Set	< 5%	ASTM D3574
Tolerances	+/- 0.020	< 0.100
	+/- 0.030	> 0.100
Shielding Effectiveness	30 MHz	95 dB
	100 MHz	110 dB
	500 MHz	110 dB
	1 GHz	110 dB
	10 GHz	120 dB

* average for 20 MHz to 10 GHz







Figure 3: "C" Fold



Figure 4: Knife Edge



Figure 5: "D-Sub" Connector

"B" Profile "A" Part No. Figure 577-5061 9 Pin 0.750 1.313 Figure 5 577-5062 Figure 5 15 Pin 0.750 1.641 577-5063 25 Pin 0.750 Figure 5 2.188 577-5064 37 Pin 0.750 2.829 Figure 5 577-5065 Figure 5 50 Pin 0.860 2.740



## Self Terminating Silver Yarn Knit-over Foam

Ja-Bar has recently added to it's Line of EMI/RFI Shielding Materials, the Silvered Yarn over Foam Gasketing Products. This product combines the use of Highly Flexible Silver Plated Nylon Yarn over a variety of foam cores, to provide an economical, non-corrosive, highly effective, Extremely low Closure Force, conductive shielding gasket.

Select foam cores are supplied with a specialized coating, fusing the Knitted Yarn outer Layer, which provides for the materials self-terminating ends. Alternative foam cores

can be supplied "cut-to-length" to customer specifications, and secondarily terminated. Standard Core configurations include rectangles, squares, and select "D" profiles.

Used in a wide variety of applications, including access panels, electronic enclosure perimeter

seals, Optical filter conductive bus terminations, and card cage grounding contacts. Virtually any soft closure force application that does not require environmental sealing, or abrasive shearing during closure.

The bottom surface is supplied with a pressure sensitive adhesive (PSA) strip with release line for ease of installation.

#### **Standard Available Cross-sections**

Part No.	Figure	"A"	"B"
589-5017	figure 1	0.125	0.500
589-5018	figure 1	0.146	0.827
589-5019	figure 1	0.157	0.591
589-5022	figure 1	0.200	0.200
589-5023	figure 1	0.236	0.236
589-5024	figure 1	0.250	0.375
589-5025	figure 1	0.250	0.500
589-5027	figure 1	0.375	0.375
589-5028	figure 1	0.375	0.500
589-5030	figure 1	0.375	1.00
589-5031	figure 1	0.625	1.00
589-5032	figure 1	0.669	0.669
589-5044	figure 2	0.125	0.250
589-5045	figure 2	0.140	0.250
589-5046	figure 2	0.189	0.300
589-5047	figure 2	0.250	0.375
589-5048	figure 2	0.180	0.480



#### **Physical And Electrical Performance Characteristics**

Property	Value	Test Method
Shielding Effectiveness*	see graph	Mil-Std 285
Contact Resistance	< 0.1 Ω-inch	ASTM D991
Operating Temperature (core dependant)	-50°F - + 210°F	ASTM D746
Surface Resistivity	< 0.5 Ω	ASTM D991
Flammability (core dependant)	meets UL94 HB / VO	**
Compression Force Curve	see graph	ASTM D3574





# Wire Oriented in Silicone fies 600

#### **DESCRIPTION:**

Gasketing material produced from the combination of specification grade silicone and wire; used in sheet and strip form The silicone elastomer acts as an environmental seal; while the wires provide excellent conductivity to establish EMI/RFI integrity. Available in both solid and sponge silicone, and with aluminum or monel wires. Custom compositions are available on request.

#### **APPLICATION:**

While primarily suggested for use in gasket applications requiring high levels of attenuation along with a moisture seal; because of its economics, it is also recommended for commercial shielding. Order with or without PSA (pressure sensitive adhesive), in sheet, strip or custom form as you require.



**SPECIFICATIONS:** Listed below are the most commonly used substrates. Other combinations may be available upon request.

Part No.	Description	Specification
6XX-	Wire Oriented In Silicone	
61X-	Solid Silicone Elastomer	ZZ-R-765 2b 40
62X-	Sponge Silicone	AMS 3195
63X-	Fluorosilicone	Mil-R-25988 Gr50
64x-	Silicone	WSI-9206 TYPE 1
6X1-	Monel Wire	QQ-N-281 ,.0045 dia.
6X2-	Aluminum Wire	Alloy 5056 ,.005 dia
6X3-	SnPhBronze	ASTM B105 ,.0045 dia.
6X4-	Monel Wire Mesh	QQ-N-281 ,.0045 dia
6X5-	Aluminum Wire Mesh	Alloy 5056 ,.005 dia.
6X6-	Tin Plated Copper	QQW-343
	•	•

#### **PERFORMANCE CHARACTERISTICS**

	SC	OLID SILICO	NE / FLUOR	OSILICONE	ELASTOME	RS	SILICONE SPONGE ELASTOMER		
Part No. Designator	611	612	613	631	632	633	621	622	623
Shielding dB 200 KHz	70	70	70	70	70	85	70	70	70
100 MHz	125	100	130	125	100	130	120	85	130
1.0 GHz	125	100	125	125	100	125	125	70	125
Fuel/Solvent resistant	NO	NO	NO	YES	YES	YES	NO	NO	NO
Closing Force (psi)	25-100	25-100	25-100	25-100	25-100	25-100	5-50	5-50	5-50
Compression Set	25%	25%	25%	25%	25%	25%	25%	25%	25%
Temperature range (C)	-65/200	-65/200	-65/200	-55/200	-55/200	-55/200	-65/200	-65/200	-65/200
EMP Survivability Color	YES GREY	YES GREY	YES GREY	YES: BLUE	YES BLUE	YES BLUE	YES GREY	YES GREY	YES GREY
Wire Count/ sq. in.	900	900	900	900	900	900	650	650	650

**AVAILABILITY** Each of the above are available in a variety of cross sections, and die cut configurations. In order to determine the full part number for the material you desire, use the following system. As previously shown, the first three digits of our part number determine the elastomer and wire used in the composite. The next four digits will determine the

cross sectional make-up of the material to be supplied. The first (of the four) determine whether the part is "custom" or "standard". If you require a "custom" part not shown in the following pages, this digit will be a "1", and the rest of the part number will be assigned by Ja-Bar. If the part you require is standard, this digit will be "0".

6XX-0XXX	Standard
6XX-1XXX	Custom
6XX-2XXX	Standard with PSA

If your part is standard, please use the following information to determine the remaining digits of the material you require.

6XX-00XX	Sheet Stock	
6XX-01XX	Strip Stock (3 ft)	
6XX-02XX	Combo Strip Stock	
6XX-03XX	Ring Gaskets	
6XX-04XX	Connector Gaskets	
6XX-05XX	Strip Stock (18 ft)	

#### TOLERANCES

Dimention	Thickness	Width
0.032" - 0.055"	+.010" / - 0.005"	N/A
0.062" – 0.250"	+ /010"	+ /016"
0.251" – 0.750"	+ /010" *	+ /031"
0.751" – 1.50"	+ /010" *	+ /047
3.0"	N/A	Minimum
4.5"	N/A	Minimum
6.0"	N/A	Minimum
9.0"	N/A	Minimum

Series 600

## Wire Oriented in Silicone Series 600

#### STANDARD STRIP/SHEET STOCK - 3 FT. LENGTHS



Figure 6.1 - Standard Strip 6XX-01XX

## PORTIONED STRIP/SHEET STOCK



Figure 6.2 - Portioned Strip 6XX-02XX

Part No.	Thickness	Width
0005	.032	3.0
0006	.032	4.5
0007	.032	6.0
0008	.032	9.0
0009	.045	3.0
0010	.045	4.5
0011	.045	6.0
0012	.045	9.0
0013	.055	3.0
0014	.055	4.5
0015	.055	6.0
0016	.055	9.0
0017	.062	3.0
0018	.062	4.5
0019	.062	6.0
0020	.062	9.0
0021	.093	3.0
0022	.093	4.5
0023	.093	6.0
0024	.093	9.0
0025	125	3.0
0026	125	4.5
0027	.125	6.0
0028	.125	9.0
0029	.156	3.0
0030	.156	4.5
0031	.156	6.0
0032	.156	9.0
0033	.188	3.0
0034	.188	4.5
0035	.188	6.0
0036	.188	9.0
0037	.250	3.0
0038	.250	4.5
0039	.250	6.0
0040	.250	9.0
0041	.312	3.0
0042	.312	4.5
0043	.312	6.0
0044	.312	9.0
0045	.375	3.0
0046	.375	4.5
0047	.375	6.0
0048	.375	9.0

Part No.	НхW
0101	.062 x .062
0102	.062 x .093
0103	.062 x .125
0104	.062 x .156
0105	.062 x .188
0106	.062 x .250
0107	.062 x .312
0108	.062 x .375
0109	.062 x .500
0110	.062 x .625
0111	.062 x .750
0112	.062 x 1.00
0113	.093 x .062
0114	093 x .093
0115	.093 x .125
0116	.093 x .156
0117	.093 x .188
0118	.093 x .250
0119	.093 x .312
0120	.093 x .375
0121	.093 x .500
0122	.093 x .625
0123	.093 x .750
0124	.093 x 1.00
0125	.125 x .062
0126	.125 x .093
0127	.125 x .125
0128	.125 x .156
0129	.125 x .188
0130	.125 x .250
0131	.125 x .312
0132	.125 x .375
0133	.125 x .500
0134	.125 x .625
0135	.125 x .750
0136	.125 x 1.00
0137	.156 x .062
0138	.156 x .093
0139	.156 x .125
0140	.156 x .156
0141	.156 x .188
0142	.156 X .250
0143	.156 X .312
0144	.156 X .375
0145	.156 X .500
0146	.156 X .625
0147	.156 X .750
0148	.156 x 1.00
0149	.188 x .062
0150	.188 x .093

Part No.	H x W
0151	.188 x .125
0152	.188 x .156
0153	.188 x .188
0154	.188 x .250
0155	.188 x .312
0156	.188 x .375
0157	.188 x .500
0158	.188 x .625
0159	.188 x .750
0160	.188 x 1.00
0161	.250 x .062
0162	.250 x .093
0163	.250 x .125
0164	.250 x .188
0165	.250 x .250
0166	.250 x .375
0167	.250 x .500
0168	.250 x .625
0169	.250 x .750
0170	.250 x 1.00
0171	.375 x .125
0172	.375 x .250
0173	.375 x .375
0174	.375 x .500
0175	.375 x .625
0176	.375 x .750
0177	.375 x 1.00
0178	.500 x .250
0179	.500 x .375
0180	.500 x .500
0181	.500 x .625
0182	.500 x .750
0183	.500 x 1.00
0184	.625 x .250
0185	.625 x .375
0186	.625 x .500
0187	.625 x .625
0188	.625 x .750
0189	.625 x 1.00
0190	.750 x .250
0191	.750 x .375
0192	.750 x .500
0193	.750 x .625
0194	.750 x .750
0195	.750 x 1.00
0196	1.00 x .250
0197	1.00 x .500
0198	1.00 x .750
0199	1.00 x 1.00
	I

### STRIP LENGTH AVAILABILITY

Thickness	Width	Maximum Length
0.032"	0.062" – 9.00"	36"
0.062" – 1.0"	0.062" – 0.250"	216"
0.125" – 1.0"	0.250" – 0.375"	132"





Ja-Bar Series 600 Materials, as well as many other conductive and non-conductive elastomers, are often supplied with PSA (pressure sensitive adhesive) for ease of installation in your assembly. A 0.005" thick film of a high tack acrylic adhesive on a silicone treated release paper. It features excellent adhesion to a wide variety of substrates including polyethlene. The thick adhesive mass permits bonding to many irregular or textured surfaces such as foam and fabric. Meets Mil-P-19834B, Type 1.

#### **Physical properties and Performance Characteristics:**

Adhesive Type	A-60 medium-firm acrylic
Adhesive Carrier	None
Release Liner	Tan Paper
Approximate Thickness of release liner	0.004"
Tape only	0.005"
Tape Color	Clear
Adhesion to Steel	75 oz/in (82 N/100 mm)
Operating Ranges: Long Term	180 °F
Operating Ranges: Short Term	250 °F
Relative Solvent resistance	Medium



#### **DESCRIPTION:**

Thermally conductive silicones are compounded with fillers such as Alumina and Boron Nitride, which readily allow the passage of heat, maintain flexibility through their service life, and create an electrical insulative barrier between the two mating surfaces.

#### **APPLICATION:**

Thermally conductive products are commonly used to isolate power sources from heat sinks. Ja-Bar offers a variety ranging from high performance insulators for demanding military applications, to moderately performing materials for less demanding commercial applications.

#### **SPECIFICATION:**

TABLE 7.1 gives specific information on thermally conductive materials.

Ja-Bar Series 701: Is our original thermally conductive material. Series 701 is a composite of silicone rubber fiberglass and alumina. It is flame retardant and is specially formulated for use as a thermally conductive insulator. Primary use is to electrically isolate power sources from heat sinks. Series 701 has an excellent mechanical and physical characteristic. Surfaces are pliable and allow complete surface contact with excellent heat dissipation. Series 701 actually improves its thermal resistance with age. The reinforcing fiberglass and alumina gives excellent cutthrough resistance and Series 701 is nontoxic and resists damage from cleaning agents. Contact us for available thicknesses of Series 701. See Table 7.1 for specific properties and comparative information.

Ja-Bar Series 702: Is a composite of silicone rubber and fiberglass. It is boron nitride filled and offers low thermal resistance. Series 702 is non-toxic and resists damage from cleaning agents. It includes a flame retardant and is specially formulated for use as a thermally conductive insulator. Series 702 has the same excellent mechanical and physical characteristics of our Series 701 material while offering a 35% reduction in thermal resistance. See Table 7.1 for specific properties and comparative information.

Ja-Bar Series 703: Offers enhanced thermal performance thermal applications while meeting specific cost considerations. See Table 7.1 for specific properties and comparative information.



**Ja-Bar Series 704:** Is a high performance, high reliability thermally conductive insulator, Series 704 is designed for demanding military/aerospace and commercial applications, in these applications, Series 704 complies with military standards. This boron nitride loaded silicone elastomer is formulated to maximize the thermal and dielectric performance of the filler/binder matrix. The result is a "grease free", conformable material capable of meeting or exceeding the thermal and electrical requirements of high reliability electronic packaging applications. See Table 7.1 for specific properties and comparative information.

Ja-Bar Series 705: Is designed and developed in conjunction with DuPont. Series 705 combines the thermal transfer properties of our well-known thermal rubber with high dielectric strength, and physically tough DuPont Kapton MT Film. Kapton MT is a specially developed film, which has high thermal conductivity. The result is a durable insulator that withstands high voltages, requires no thermal grease to transfer heat, is available in customized shapes and sizes and saves time and costs while increasing productivity. Expect immediate delivery of all standard configurations. See Table 7.1 for specific properties and comparative information.

**Ja-Bar Series 706:** Is a high performance insulator, which combines Kapton MT polyimide film with boron nitride filled silicone rubber. Series 706 is designed to replace ceramic insulators such as Beryllium Oxide, Boron Nitride and Alumina that are expensive and break easily. Series 706 eliminates breakage and costs much less than ceramics. See Table 7.1 for specific properties and comparative information.

Ja-Bar Series 707: Is a fiberglass-based insulator coated with a boron nitride filled polyester resin. Series 707 offers superior thermal resistance for high performance applications. See Table 7.1 for specific properties and comparative information.

**Ja-Bar Series 708:** Is a composite of a DuPont Kapton film coated with an alumina-filled polyester resin. Series 708 is an economical insulator and the Kapton carrier provides excellent dielectric and physical strength. See Table 7.1 for specific properties and comparative information.

Ja-Bar Series 709: Is a composite of DuPont Kapton film coated with a boron nitride-filled polyester resin; Series 709 offers superior thermal performance for your most critical applications with thermal resistance of 0.2 C/Watt as well as excellent dielectric strength. See Table 7.1 for specific properties and comparative information.

**Ja-Bar Series 700-CTCS:** Our new Conformable Thermally Conductive Silicone is specifically designed to provide excellent thermal interface between electronic devices and the mating Heat Sink. The very nature of the 700-CTCS, being highly conforming, yet resistance to compression set, substantially reduces the amount of insulating air between PCB's and their interface.

Ja-Bar Series 704-1905: Maintains the impression of the surfaces, unlike our other Conformable materials, which should be considered during design. Ideal for many electronic applications including PCB heat sinks where high thermal transfer is necessary.

Series 700

Series	701	702	703	704	705	706	707	708	709	700ctcs
Color	Gray	Pink	Green	White	Gray	Beige	Yellow	Mauve	Yellow	Pink
Thickness Inches	.010	.010	.015	.015	.006	.006	.009	.006	.006	.020/.188
Filler	AL	BN	AL/BN	BN	AL	BN	AL	AL	BN	AL
Hardness Shore A	85	85	80	80	90	90	90	90	90	_
Breakdown Voltage (AC Volts)	4500	4500	4000	4000	6000	6000	2500	6000	6000	6000
Thermal Conductivity (W/m-k)	0.9	1.2	2.0	3.5	0.9	1.3	1.2	0.9	1.3	-
Thermal Resistance (C/watt)	0.50	0.30	0.23	0.20	0.40	0.20	0.30	0.30	0.20	0.20
Dielectric Constant (1000 Hz)	5.5	4.5	4.0	4.0	5.0	3.7	4.5	5.0	3.7	5.5
Breaking Strength (#/in)	100	100	65	65	30	30	100	30	30	_
Tensile Strength (KPSI)	11.1	11.1	6.5	4.3	5.0	5.0	14.1	5.0	5.0	_
Elongation Percent	4	4	4	4	40	40	4	40	40	_
Specific Gravity	2.1	1.5	—	1.5	—	—	1.5	—	—	2.0
Outgassing % TML	0.40	0.22	—	0.26	0.28	0.36	_	—	_	—
24 hr PC	0.25	—	—	0.07	—	—	—	—	—	—
% CVLM	0.11	0.08	—	0.10	0.07	0.09	—	—	—	—
24 hr PC	0.07	_	—	0.03	_	_	_	—	_	-
Continuous use Temp (°C)	-60/+180	-60/+200	-60/+200	-60/+200	-60/+180	-60/+180	-20/+150	-20/+150	-20/+150	-60/+200

### **Conformable Thermally Conductive Silicone** Series 700-CTCS

Ja-Bar Silicone's thermally conductive materials are produced to meet the most demanding of military and commercial applications. The following is a cross-reference between Ja-Bar series 700 materials and Mill-I-49456. Upon request, we will forward our complete cross-reference listing for Mill-I-49456 as well as Mil-M-38527/08, Mil-I-49466, and Mil-H-87111. To indicate the need for PSA change the second digit from a 0 to a 1 for PSA on one side. For PSA on both sides, change second digit from 0 to 2. Note that although the PSA is thermally conductive, the addition of PSA degrades the performance significantly.

Property :	700-CTCS	704-1905	
Thickness Available	0.020" - 0.160"	0.020" - 0.160"	+010
Color	Pink	Pink	—
Hardness	55	65	Type 00
Specific Gravity	2.0	2.2	gms/cc
Heat Capacity	1	1.0	J/g-К
Continuous Use Temp	-60 - +200	-60 - +200	С
Dielectric Constant	5.5	5.5	1000 Hz
Dielectric Breakdown	6	>6	kV-AC
Thermal Conductivity	0.8	3.0	W/m-K
Thermal Impedance			
.020 thick	1.0	1.0	C-in _ /W
.040 thick	2.0	2.0	C-in _ /W
.080 thick	4.0	4.0	C-in _ /W
.120 thick	6.2	6.2	C-in _ /W
Standard Sheet Size	8.0" X 16.0"	12.0" X 15.0"	_

TABLE 7.2 - CONFORMABLE SPECIFICATIONS

Mil-I-49456 Dash #	Ja-Bar Series	Maximum Thickness (Inches)	Part
11 YY	704	020	01
-11-7	704	030	01
-12-77	704	.030	01
-12-XX	702	.003	01
-12-XX	704	.007	01
-13-XX	707	015	01
-13-XX	702	009	01
-14-XX	704	.009	01
-14-XX	702	.030	01
-14-XX	701	.020	01
-21-XX	703	.010	01
-21-XX	704	.020	01
-22-XX	704	.030	01
-22-XX	702	.009	01
-22-XX	701	.007	01
-23-XX	704	.040	01
-23-XX	702	.015	01
-23-XX	701	.009	01
-24-XX	704	.090	01
-24-XX	702	.030	01
-24-XX	701	.020	01
-31-XX	714	.010	01
-32-XX	714	.020	01
-32-XX	713	.010	01
-33-XX	714	.030	01
-33-XX	712	.012	01
-33-XX	711	.009	01
-34-XX	714	.080	01
-34-XX	712	.020	01
-34-XX	711	.020	01
-41-XX	724	.010	01
-42-XX	724	.015	01
-43-XX	724	.020	01
-43-XX	723	.010	01
-43-XX	722	.009	01
-44-XX	/24	.070	
-44-XX	722	.020	01
-44-XX	/21	.015	01
			01

Part No.	Thickness	Sheet Size
0101	.006	8 X 8
0102	.007	8 X 8
0103	.009	8 X 8
0104	.011	8 X 8
0105	.012	8 X 8
0106	.015	8 X 8
0107	.020	8 X 8
0108	.030	8 X 8
0109	.040	8 X 8
0110	.045	8 X 8
0111	.050	8 X 8
0112	.060	8 X 8
0113	.125	8 X 8
0114	.006	10 X 10
0115	.007	10 X 10
0116	.009	10 X 10
0117	.011	10 X 10
0118	.012	10 X 10
0119	.015	10 X 10
0120	.020	10 X 10
0121	.030	10 X 10
0122	.040	10 X 10
0123	.045	10 X 10
0124	.050	10 X 10
0125	.060	10 X 10
0126	.125	10 X 10
0127	.006	12 X 12
0128	.007	12 X 12
0129	.009	12 X 12
0130	.011	12 X 12
0131	.012	12 X 12
0132	.015	12 X 12
0133	.020	12 X 12
0134	.030	12 X 12
0135	.040	12 X 12
0136	.045	12 X 12
0137	.050	12 X 12
0138	.060	12 X 12
0139	.125	12 X 12
0140	.006	16 X 16
0141	.007	16 X 16
0142	.009	16 X 16
0143	.011	16 X 16
0144	.012	16 X 16
0145	.015	16 X 16
0146	.020	16 X 16
0147	.030	16 X 16
0148	.040	16 X 16
0149	.045	16 X 16
0150	.050	16 X 16
0151	.060	8 X 8
0152	.125	8 X 8
0153	.020	8 X 8
0154	.040	8 X 8
0155	.060	8 X 8
0156	.080	8 X 8
0157	.125	8 X 8
0158	.156	8 X 8
0159	.188	8 X 8
TAB	LE 7.1 - STANDAR	D SPECIFICATIONS

Ja-Bar can also supply a wide variety of finished die cut insulators. The diagrams, their dimensions, and the Ja-Bar part number equivalent follows:



Part No. Suffix	"A'	"B"	"C"	"D"	"E"	"F"	"G"
0406	1.312	.762	.140	.062	.960	.200	.100

TABLE 7.5 - 4 LEAD TO 66 SPECIFICATIONS





Descriptions	Part No. Suffix	"A"	"B"	"C"	"D"
TO-126	0501	.437	.312	.140	.093
TO-126	0502	.437	.312	.140	.122
Various	0503	.500	.385	.170	.120
TO 220	0504	.610	.560	.245	.125
Various	0505	.687	.562	.218	.125
Various	0506	.710	.500	.160	.141
Various TO-220	0507	.750	.410	.225	.156
(Clip Mount)	0508	.750	.500	—	—
TO-220	0509	.750	.500	.187	.147
TO-220	0510	.750	.500	.187	.125
Various	0511	.750	.600	.240	.150
Various	0512	.750	.600	.240	.115
Various	0513	.855	.562	.218	.125
Various	0514	.855	.630	.230	.093
TO-218	0515	.860	.740	.200	.160
Various	0516	1.125	.625	.200	.145
Various	0517	1.140	.810	.355	.147
Various	0521	.866	.650	.217	.142
Various	0522	.750	.800	.150	.160
TO-3P	0523	1.000	.750	.300	.140

TABLE 7.6 - PLASTIC POWER SPECIFICATIONS



Part No. Suffix	"A"	"В"	"C"	"D"	"E"	"F"
-0524	1.500	.900	.150	1.200	.450	.075
-0525	2.500	2.000	.344	1.812	1.000	.156

TABLE 7.7 - POWER MODULE SPECIFICATIONS



Part No. "A" "B" "C" "D" "E" "F" "G" Suffix 0518 .910 .265 .500 .200 .125 .580 .046 0519 .983 .750 .432 .156 .665 .101 .217

TABLE 7.8 - PLASTIC POWER SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
0520	1.000	.500	.200	.141	.626	.046	.219	.032

TABLE 7.9 - PLASTIC POWER SPECIFICATIONS



Description	Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"
RH-25	-0821	1.187	1.205	.234	.469	.212	.156	.719	.781	.140
RH-50	-0822	2.093	1.265	.265	.530	.210	.255	1.563	.845	.140
RH-5	-0803	.725	.771	.140	.280	.140	.156	.445	.491	.093
RH-10	-0804	.805	.890	.127	.250	.130	.190	.551	.630	.121
RH-25	-0801	1.150	1.180	.231	.425	.190	.270	.688	.800	.147
RH-50	-0802	1.965	1.236	.198	.404	.132	.263	1.569	.972	.130

TABLE 7.10 - POWER RESISTORS SPECIFICATIONS



FIGURE 7.7 - MULTIPLES TO 220

	Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	# of Holes
2 Parts	0601	1.000	.750	.187	.125	.250	.500	2
3 Parts	0602	1.500	.750	.187	.125	.250	.500	3
	0603	2.000	.750	.187	.125	.250	.500	4
	0604	2.500	.750	.187	.125	.250	.500	5
	0605	3.000	.750	.187	.125	.250	.500	6
	0606	3.500	.750	.187	.125	.250	.500	7
	0607	4.000	.750	.187	.125	.250	.500	8

TABLE 7.11 - MULTIPLES TO 220 SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
0618	1.440	1.000	.140	.055	.960	.480	.325	36DEG

TABLE 7.12 - 9 LEAD TO 66 SPECIFICATIONS



FIGURE 7.9 - MULTI-LEAD TO 66

Part No. Suffix	"A"	"В"	"C"	"D"	"E"	"F"
0408	1.350	.800	.140	.400	.960	.480

TABLE 7.13 - 9 LEAD TO 66 SPECIFICATIONS



FIGURE 7.10 - DIODE WASHER

Diode Washer	Part No. Suffix	"A"	"B"
Various	0701	.360	.260
Various	0702	.510	.140
DO-4	0703	.510	.200
Various DO-4	0704	.512	.161
(Oversized)	0705	.625	.200
Various	0706	.750	.125
Various	0707	.800	.190
DO-5	0708	.800	.260
Various	0709	.812	.115
Various	0710	.812	.145
DO-8	0711	.875	.313
Various DO-5	0712	1.000	.140
(Oversized)	0713	1.000	.260
Various	0714	1.180	.515
Various	0715	1.250	.380
Various	0716	1.500	.200
Various	0717	1.500	.500

TABLE 7.14 - DIODE WASHER SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"
0805	1.063	.690	.190
		TABLE 7.15 - TO	36 SPECIFICATIONS



FIGURE 7.12 - SMALL POWER DEVICE

SMALL POWER	Part No. Suffix	"A"	"B"	"C"
TO-18, 3Holes	0806	.250	.100	.036
TO-18, 4Holes	0807	.250	.100	.036
TO-5, 3 Holes	0808	.360	.200	.040
TO-5, 4 Holes	0809	.360	.200	.040
TO-5, 3 Holes	0810	.390	.200	.040
TO-5, 4 Holes	0811	.390	.200	.040

TABLE 7.16 - SMALL POWER DEVICE SPECIFICATIONS



C DIA. FIGURE 7.13 - RECTIFIER

Part No. Suffix	"A"	"B"	"C"
0812	1.000	1.000	.187
0813	1.125	1.125	.140
0814	1.250	1.250	.200

TABLE 7.17 - RECTIFIER SPECIFICATIONS



	Part No. Suffix	"A'	"B"	"C"	"D"	"E"
TIP-36 Plastic Tip	0815	.865	.650	.650	.140	.205
Clip Mount	0816	.984	.787	—	_	.205
Plastic Clip	0817	.984	.787	.708	.142	.205
TO-3P	0818	1.260	.787	.984	.142	.205

TABLE 7.18 - TIP PACKAGES SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"
0819	2.510	1.260	.630	.305	1.900	.205	.205

TABLE 7.19 - POWER MODULE SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"
0820	1.450	.838	.612	.245	.960	.170	.120

TABLE 7.20 - SIP PACKAGE SPECIFICATIONS



Part No. Suffix	"A"	"В"	"C"	"D"	"E"	"F"	"G"
0301	1.563	1.050	.140	.080	1.187	.430	.072
0302	1.563	1.100	.140	.140	1.187	.430	.072
0303	1.593	1.050	.156	.062	1.187	.430	.072
0304	1.650	1.065	.140	.046	1.187	.430	.072
0305	1.650	1.140	.122	.062	1.187	.430	.072
0306	1.650	1.140	.140	.093	1.187	.430	.072
0307	1.650	1.140	.165	.062	1.187	.430	.072
0308	1.650	1.140	.140	.046	1.187	.430	.072
0309	1.650	1.140	.165	—	1.187	—	
0310	1.700	1.187	.156	.062	1.187	.430	.072
0311	1.780	1.250	.140	.093	1.187	.430	.072
0312	1.780	1.250	.165	.094	1.187	.430	.072
0313	1.780	1.250	.140	.046	1.187	.430	.072
0314	2.070	1.560	.122	.062	1.187	.430	.072

TABLE 7.21 - TO 3 STYLE SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"
0318	1.655	1.187	.156	.060	1.187	40 DEG	.500

TABLE 7.23 - 8 LEAD TO 3 SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"			
0319	1.650	1.140	.165	.040	1.187	.593	32.7 DEG			

TABLE 7.24 - 10 LEAD TO 3 SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"
0401	1.250	.700	.140	.062	.960	.200	.100
0402	1.312	.762	.140	.062	.960	.200	.100
0402	1.375	.825	.140	.062	.960	.200	.100
0402	1.440	1.000	.140	.075	.960	.200	.100

TABLE 7.25 - TO 66 STYLE SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
0405	1.275	.750	.156	.100	.960	.200	.100	.200

TABLE 7.26 - 3 LEAD TO 66 SPECIFICATIONS



Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"["	
0315	1.650	1.140	.140	.093	1.187	.430	.400	.155	.718	

FIGURE 7.18 - 3 LEAD TO 3

TABLE 7.22 - 3 LEAD TO 3 SPECIFICATIONS



0316 1.560 1.050 .156 .080 1.170 .470 18 DEG 59 DE	Part No. Suffix	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
	0316	1.560	1.050	.156	.080	1.170	.470	18 DEG	59 DEG
0317   1.563   1.050   .156   .063   1.187   .470   18 DEG 59 DE	0317	1.563	1.050	.156	.063	1.187	.470	18 DEG	59 DEG

TABLE 7.22 - 3 LEAD TO 3 SPECIFICATIONS



#### **DESCRIPTION:**

These elastomers are a unique composite of high quality silicone and conductive microscopic particles, manufactured to strict formulations, yielding gasketing materials that meet nearly every military and/or electronic requirement. Ja-Bar produces a wide variety of conductive elastomers to choose from. This enables you, the user, to select the best-suited compound for your application; keeping in mind not only performance characteristics, but economics as well. If you fail to find the perfect compound to fit your needs, within our current listing, we will custom compound.

#### **APPLICATION:**

Frequently, your applications may require extremely high shielding effectiveness, environmental sealing, reliability, and durability. Ja-Bar's family of conductive silicone elastomers can fill these needs.

The following part number system was devised to segregate the various types of conductive elastomers available at Ja-Bar. The products beginning with 8xx-, depict the use of microscopic particles to establish a conductive path within the elastomer, yielding a highly versatile group of gasketing materials for use in EMI/RFI suppression. Each compound has its own unique properties therefore it is essential that a distinction be made.

The second digit in the 800 series specifies the type of elastomer to be used and the grade of the final product. Commercial grade shielding elastomers are for those applications that require slightly less performance and are price sensitive. The Military Grade material is produced to meet the more demanding EMI/RFI requirements of our industry, and can be certified to meet the requirements of MIL-DTL-83528, Missile and Weapons Specifications.

If a "1" appears, the next three digits are assigned from our numerical listing of custom parts. If the part has been determined to be "standard", the next digit will determine the product family:



80x	Military Grade / Standard Silicone
81x	Military Grade / Fluorosilicone
82x	Military Grade / EPDM
83x	Military Grade/ Fluoroelastomer Co-polymer
84x	Military Grade/ Combination: Conductive / Non-conductive
85x	Commercial Grade / Standard Silicone
86x	Commercial Grade / Fluorosilicone
878	Silver Coated Silicone
88x	One Part "Form-In-Place" Gasket Material
89x	Two Part "Room Temperature Cure "Form-In-Place" Material

The third digit classifies the conductive filler type used in the compound. The different classes are as follows:

8x0	Non-Corrosive Particle
8x1	Carbon
8x2	Nickel
8x3	Silver Plated Glass
8x4	Silver Plated Nickel
8x5	Silver Plated Aluminum
8x6	Silver Plated Copper
8x7	Silver - Low Density
8x8	Silver - High Density
8x9	Reinforced Silver Plated Copper

The next set of four digits establishes the end products dimensional characteristics. The first of these four tell us whether the part is of a standard configuration, or a custom design.

8XX-0XXX	Standard
8XX-1XXX	Custom

8XX-01XX	Sheet Stock					
8XX-02XX	Extrusion - Round					
8XX-03XX	Extrusion - Rectangular					
8XX-04XX	Extrusion - "D-Shaped"					
8XX-05XX	Extrusion - "P-Shaped"					
8XX-06XX	Extrusion - "U-Channel"					
8XX-07XX	O-Rings					
8XX-08XX	Flat Washer					
8XX-09XX	Standard Connector					
8XX-28XX	Standard Waveguide					

#### PERFORMANCE CHARACTERISTIC: MILITARY GRADE MATERIAL TYPES PER MIL-DTL-83528

Series	U of M	801	802	812	803	813	804	814	805	815
Filler	—	С	Ni/Gr	Ni/Gr	AG/Glass	AG/Glass	AG/Ni	AG/Ni	AG/Al	AG/Al
Elastomer	_	Silicone	Silicone	Fluoro- silicone	Silicone	Fluoro- silicone	Silicone	Fluoro- silicone	Silicone	Fluoro- silicone
MIL-83528 TYPE	—	—	—	—	М	—	L	—	В	D
Operating Tomp (°C)	Min	-55	-55	-55	55	55	-55	-55	-55	-55
Operating temp. ( C )	Max	+200	+150	+150	+160	+160	+125	+160	+160	+160
Hardness	Shore A	70	30-70	65	65	65	75	70	65	70
Specific Gravity	g/cc	1.2	1.95	1.95	1.9	1.9	4.0	4.4	2.0	2.0
Compression Deflection	% min	3.5	3.5	3.0	3.5	3.5	3.5	3.5	3.5	3.5
Tensile Strength	#/in sq	650	150	150	200	200	200	180	200	180
Elongation	Min-	100	100	100	100	100	100	60	100	60
Liongation	Max	_	_	_	300	300	300	260	300	260
Compression Set	%	40	35	25	30	30	32	30	32	30
Tear Strength	#/in	40	40	35	30	30	30	35	30	35
Volume Res.	Ohm-cm	7.0	.10	0.1	.006	.006	.005	.012	.008	.012
	100 MHz	80	100	100	100	100	120	120	120	120
Shielding Effectiveness	500 MHz	80	100	100	100	90	120	120	120	120
Mil-DTL-83528	2 GHz	60	100	100	90	90	120	115	115	115
	10 GHz	50	100	100	90	90	110	110	115	115
Series	U of M	806	816	806	807	808	818	808	809	822
Filler	_	Silver Copper	Silver Copper	Silver Copper	Silver Low Density	Silver Pure	Silver Pure	Silver Pure	Silver Copper	Nickel Graphite

Series	0.01.00	000	0.0	000	007	000	010	000	007	022
Filler	_	Silver Copper	Silver Copper	Silver Copper	Silver Low Density	Silver Pure	Silver Pure	Silver Pure	Silver Copper	Nickel Graphite
Elastomer	_	Silicone	Fluoro- silicone	Silicone	Silicone	Silicone	Fluoro- silicone	Silicone	Silicone	EPDM
MIL-83528 TYPE	_	А	С	К	J	E	F	Н	G	N/A
Operating Temp (°C)	MIN	-55	-55	-45	-55	-55	-65	-55	-45	-30
operating remp. ( C)	MAX	+125	+125	+125	+160	+160	+160	+160	+125	+100
Hardness	Shore A	65	75	85	45	65	75	80	80	75
Specific Gravity	g/cc	3.5	4.1	3.8	1.8	3.5	4.0	4.0	4.75	2.1
Compression Deflection	(% min)	3.5	3.5	2.5	8.0	2.5	3.5	2.5	2.5	2.0
Tensile Strength	(#/in sq)	200	180	400	150	300	250	400	600	200
Elongation	MIN	100	100	100	50	200	100	90	20	75
Liongation	MAX	300	300	300	250	500	300	290	N/A	_
Compression Set	(%)	32	35	35	35	45	60	60	N/A	40
Tear Strength	(#/in)	25	35	40	20	50	40	60	70	70
Volume Res.	(ohm-cm)	.004	.010	.005	.010	.002	.002	.005	.007	5
	100 MHz	120	120	120	100	120	120	120	120	90
Shielding Effectiveness	500 MHz	120	120	120	100	120	120	120	120	90
Mil-DTL-83528	2 GHz	120	120	120	90	120	120	120	120	80
	10 GHz	120	115	120	90	120	120	120	120	80

#### PERFORMANCE CHARACTERISTICS: COMMERCIAL GRADE MATERIAL TYPES

Series	852	853	854	855	856	857	858
Filler	Pure Nickel	Silver Glass	Silver Nickel	Silver Aluminum	Silver Copper	Silver Low Density	Silver Pure
Operating Temp. (C) MIN	-55	-55	-55	-55	-55	-55	-65
Operating Temp. (C) MAX	+125	+170	+180	+200	+125	+160	+180
Specific Gravity	3.05	1.8	4.0	2.0	3.5	1.7	4.0
Hardness Available (Shore A)	45-75	45-75	45-75	45-75	45-75	45-75	45-75
Tensile Strength (# / in. sq)	400	200	200	200	200	150	200
Elongation * (%)	300	280	300	280	300	100	300
Tear Strength* (#/in)	40	35	35	35	35	25	60
Volume Res.* (ohm-cm)	2.0	.05	.06	.08	.06	.1	.04
Shielding Effectiveness (20 MHz – 1 GHZ) min	60	75	80	75	85	70	85

#### OUTGASSING OF CONDUCTIVE ELASTOMERS

Many of the conductive elastomers produced by Ja-Bar Silicone are silicone compounds. Due to the high electrical insulative properties of silicone, there has been growing concern that the outgassing of volatile residues from silicone based conductive compounds may interfere with critical electrical contacts. NASA has set specification limits for both the Total Mass Loss and Collected Volatile (TML) Condensable Materials (CVCM) as determined by ASTM E595-84 for use in spacecraft applications. The normally accepted limit for TML is 1.00% and the **CVCM** is 0.10%.

Use of materials meeting the above listed "accepted criteria" does not deem the materials acceptable for your application. Ja-Bar Silicone has specific manufacturing procedures designed to reduce both TML and CVCM to well below acceptable limits, thereby further reducing the potential detrimental outgassing. Listed below are typical results you can expect of Ja-Bar produced Conductive Silicone Compounds when tested to ASTM E 595-84.

Series	Conductive Particle	TML %	CVCM %
802	Nickel	.09	.05
803	Silver Glass	.10	.02
804	Silver Nickel	.09	.03
805	Silver Aluminum	.11	.01
806	Silver Copper	.07	.02
807	Silver, Low Density	.20	.11
808	Silver, High Density	.10	.01

Further testing performed on Ja-Bar Series 806 using test parameters other than that required in ASTM E595 yielded the following results.

Temperature	Time (days)	Vacuum Torr	TML %
Room Temp	14	5 x 10 (-9)	.069
Room Temp	27	8 x 10 (-10)	.20
150°F	6	2 x 10 (-7)	.35
250°F	4	3 x 10 (-7)	.35

#### **Standard Sheet Stock**

			,
Part No.	Thickness	Sheet Size	Tolerance
0101	.020	10 x 10	+/004
0102	.032	10 x 10	+/004
0103	.062	10 x 10	+/005
0104	.093	10 x 10	+/007
0105	.125	10 x 10	+/010
0106	.020	12 x 12	+/004
0107	.032	12 x 12	+/004
0108	.062	12 x 12	+/005
0109	.093	12 x 12	+/- 007
0110	.125	12 x 12	+/- 010
0111	020	15 x 20	+/- 004
0112	032	15 x 20	+/- 005
0113	062	15 x 20	+/- 005
0114	093	15 x 20	+/- 008
0115	125	15 x 20	+/- 010
0115	020	17.8 x 20.5	+/010
0110	.020	17.0 × 20.5	+/005
0117	.032	17.8 x 20.5	+/003
0110	.002	17.8 × 20.5	+/003
0119	.075	17.8 × 20.5	+/008
0120	.125	17.0 X 20.5	+/010
0121	.027	10 x 10	+/004
0122	.030	10 x 10	+/004
0123	.040	10 x 10	+/004
0124	.047	10 x 10	+/004
0125	.060	10 x 10	+/005
0126	.027	12 x 12	+/004
0127	.030	12 x 12	+/004
0128	.040	12 x 12	+/004
0129	.047	12 x 12	+/004
0130	.060	12 x 12	+/005
0131	.027	15 x 20	+/004
0132	.030	15 x 20	+/004
0133	.040	15 x 20	+/005
0134	.047	15 x 20	+/005
0135	.060	15 x 20	+/005
0136	.027	17.8 x 20.5	+/005
0137	.030	17.8 x 20.5	+/005
0138	.040	17.8 x 20.5	+/005
0139	.047	17.8 x 20.5	+/005
0140	.060	17.8 x 20.5	+/005
0141	.020	10 x 20	+/004
0142	.027	10 x 20	+/004
0143	.030	10 x 20	+/004
0144	.032	10 x 20	+/005
0145	.040	10 x 20	+/005
0146	.047	10 x 20	+/005
0147	.060	10 x 20	+/005
0148	.062	10 x 20	+/005
0149	.093	10 x 20	+/008
0150	.125	10 x 20	+/010
0151	.020	12 x 18	+/004
0152	.027	12 x 18	+/004
0153	.030	12 x 18	+/004
0154	.032	12 x 18	+/005
0155	.040	12 x 18	+/005
0156	.047	12 x 18	+/005
0157	.060	12 x 18	+/005
0158	.062	12 x 18	+/005
0159	.093	12 x 18	+/008
0160	.125	12 x 18	+/010

#### Solid Round Stock

Part No.	'D'	M83528 Dash	
0201	.040	1/001	
0202	.053	1/002	
0203	.062	1/003	
0204	.070	1/004	
0212	.080	1/005	
0205	.093	1/006	
0206	.103	1/007	
0213	.112	N/A	
0207	.119	1/008	
0208	.125	1/009	
0214	.130	N/A	
0209	.139	1/010	
0215	.150	N/A	
0216	.160	N/A	
0217	.188	1/011	
0210	.216	1/012	
0211	.250	1/013	

### Solid Rectangle Stock



	-		<i>,</i> (
Part No.	"A"	"B"	M83528 Dash
0314	.032	.032	N/A
0301	.063	.042	9/001
0302	.095	.062	9/002
0303	.120	.075	9/003
0304	.125	.062	9/004
0305	.156	.062	9/005
0306	.250	.062	9/006
0307	.500	.075	9/007
0308	.500	.125	9/008
0309	.500	.188	9/009
0310	.750	.062	9/010
0311	.880	.062	9/011
0312	1.000	.250	9/012
0313	1.180	.062	9/013
0315	.060	.080	N/A

#### Hollow Round Stock

Part No.	"OD"	"ID"	M83528 Dash	_
0226	.070	.025	N/A	
0227	.093	.035	N/A	D
0228	.103	.040	11/007	
0220	.125	.045	11/001	
0229	.125	.062	11/006	
0221	.156	.050	11/002	
0230	.177	.079	11/008	
0222	.250	.125	11/003	
0223	.312	.192	11/004	
0224	.375	.250	11/005	
0225	.437	.250	N/A	





#### "D" Profile - Hollow Stock

Part No.	"A"	"B"	"C"	"D"	M83528 Dash
0401	.156	.045	.078	.045	N/A
0402	.156	.078	.078	.045	7/001a
0403	.187	.093	.093	.050	7/002a
0404	.250	.125	.125	.065	7/007a
0405	.312	.156	.156	.062	7/003a
0406	.312	.156	.156	.062	7/004b
0408	.487	.080	.244	.080	7/006a
0409	.312	.200	.112	.062	7/005a

## "D" Profile - Solid Stock

Part No.	"A"	"B"	"C"	M83528 Dash
0410	.031	.055	.064	N/A
0411	.031	.062	.068	3/001
0412	.047	.062	.068	N/A
0413	.047	.094	.078	3/002
0414	.039	.078	.089	3/003
0415	.047	.094	.094	3/004
0416	.031	.062	.100	3/005
0417	.075	.150	.110	3/006
0418	.061	.122	.131	N/A
0419	.061	.124	.136	3/007
0420	.059	.118	.156	3/008
0421	.078	.156	.156	3/009
0422	.089	.178	.175	3/010
0423	.094	.188	.188	3/011
0424	.125	.250	.250	3/012

### "U" Profile Stock

Part No.	"A"	"B"	"C"	"D"	M83528 Dash	
0601	.100	.100	.034	.033	10/001	
0602	.126	.110	.026	.050	10/002	
0603	.126	.225	.020	.075	10/003	
0604	.156	.156	.062	.047	10/004	
0605	.175	.156	.047	.047	N/A	│
0606	.175	.156	.047	.075	10/005	
0607	.327	.235	.062	.115	10/006	

### "P" Profile Stock



Part No.	"A"	"B"	"C"	"D"	M83528 Dash
0501	.200	.080	.275	.062	N/A
0502	.200	.080	.650	.062	8/001
0503	.250	.125	.250	.062	8/002
0504	.250	.125	.375	.062	8/003
0505	.250	.150	.375	.062	8/004
0506	.250	.125	.625	.062	N/A
0507	.312	.187	.563	.062	8/005
0508	.360	.255	.420	.070	8/006
0509	.200	.080	.275	.062	8/007
0510	.250	.125	.625	.062	8/008

Part No.	CS "B"	I.D. "C"	GRP I	GRP II	GRP III	GRP IV
0701	.030	.442		_	_	5/001
0702	.030	.577	_	_	—	5/002
0703	.030	.692	_	_	—	5/003
0704	.030	.817	_	_	—	5/004
0705	.039	.425	-	_	_	5/005
0706	.048	.295	_	_	—	5/006
0707	.050	.533	-	_	_	5/007
0708	.051	.446	_	_	—	5/008
0709	.057	.415	_	_	_	5/009
0710	.063	.541	_	_	—	5/010
0711	.063	.648		_	_	5/011
0712	.068	.847	_	_	—	5/012
0713	.068	1.182	_	_	—	5/013
0714	.068	3.165	_	_	_	5/014
0715	.070	.145	_	—	2/007	_
0716	.070	.301	_	_	2/011	_
0717	.070	.364	_	—	2/012	_
0718	.070	.426	_	_	2/013	—
0719	.070	.489	_	—	2/014	_
0720	.070	.495	_	_	—	5/015
0721	.070	.551	6	—	2/015	_
0722	.070	.610	_	_	—	5/016
0723	.070	.635	_	—	—	5/017
0724	.070	.667	_	_	_	5/018
0725	.070	.676	8	_	2/017	_
0726	.070	.735	_	_	_	_

#### "O"- RINGS

Different Military specifications call for the same size O-Ring. The following table shows which Military Specs. use common O-Ring Shell or Dash # designators.

The following part number listing cross-references the above Military Specs with their corresponding dimensions and the Ja-Bar part number.

Group I Shell	Group II Shell	Group III Dash	Group IV Dash
MC38999	MC81511	MS29513	M83528/5
MC26482		MS9021	
		M83528/2	



Part No.	CS "B"	I.D. "C"	GRP I	GRP II	GRP III	GRP IV	Part No.	CS "B"	I.D. "C"	GRP I	GRP II	GRP III	GRP IV
0727	.070	.739	_	8	2/018	_	0757	.094	.750	_	_	_	_
0728	.070	.801	9,10	_	2/019	_	0758	.095	.897	_	_	_	_
0729	.070	.860	_	_	_	5/019	0759	.095	1.074	_	_	_	_
0730	.070	.864	9,10	_	2/020	—	0760	.100	1.005	_	_	_	—
0731	.070	.926	_	—	2/021	—	0761	.101	2.805		_	_	_
0732	.070	.989	11,12	_	2/022	—	0762	.101	3.153		—	—	_
0733	.070	1.046		_	—	—	0763	.101	3.613		—	—	_
0734	.070	1.110	_	—	—	—	0764	.103	1.040	-	—	—	_
0735	.070	1.114	13,14	13,14	2/024	—	0765	.103	.612	_	—	2/114	_
0736	.070	1.176	_	_	025	—	0766	.103	.676		—	2/115	_
0737	.070	1.230		_	—	5/020	0767	.103	.799		—	2/117	_
0738	.070	1.239	15,16	15,16	2/026	—	0768	.103	1.240		—	—	_
0739	.070	1.296	_	—	—	—	0769	.103	1.362	_	—	2/126	_
0740	.070	1.364	17,18	17,18	2/028	—	0770	.103	1.487	19,20	—	2/128	—
0741	.070	1.485		_	—	—	0771	.103	1.612	21,22	—	130	5/022
0742	.070	1.609	_	—	—	—	0772	.103	1.737	23,24	—	2/132	—
0743	.070	1.614	_	—	030	—	0773	.103	1.790	_	—	—	5/023
0744	.070	1.674	—	—	—	—	0784	.103	1.862	_	—	2/134	—
0745	.070	1.735	_	—	_	—	0785	.103	2.362	_	—	2/142	—
0746	.070	1.864	_	_	032	_	0786	.103	2.550	_		2/145	_
0747	.070	1.980	_	_	_	_	0774	.103	3.987	_		2/155	_
0748	.070	3.009	_	_	_	_	0775	.115	2.683	_	_	13/029	—
0749	.070	3.170	_	_	_	_	0776	.115	2.876	_	_	_	_
0750	.070	3.489	_	_	043	_	0777	.139	2.011	_		13/022	—
0751	.076	.656	_	_	_	_	0778	.147	2.265	_		_	_
0752	.076	.779	_	_		_	0779	.147	3.690	_	_		_
0753	.084	.852	_	_	_	_	0780	.188	.673	_	_	—	_
0754	.084	2.678	_	_	_	_	0781	.210	3.475	_	_	_	_
0755	.087	1.250	_	—	_	—	0782	.243	3.409	_	_	_	_
0756	.087	2.360	_	_	_	_	0783	.394	3.464		_	_	—



#### "D"-RINGS

Part No.	"A"	"B"	I.D "C"	Radius	M83528 Dash
0801	.048	.078	.587	FULL	13/004
0802	.048	.078	.587	FULL	—
0803	.056	.082	.410	.041	13/002
0804	.059	.093	2.705	FULL	—
0805	.059	.095	3.193	FULL	_
0806	.061	.025	.180	FULL	—
0807	.061	.039	.151	FULL	—
0808	.062	.069	.893	FULL	_
0809	.062	.096	1.562	FULL	_
0810	.065	.099	1.122	.049	13/008
0811	.066	.059	.565	FULL	_
0812	.067	.097	1.094	FULL	—
0813	.069	.094	1.072	FULL	_
0814	.070	.065	.809	FULL	_
0815	.073	.034	.230	FULL	_
0816	.076	.095	1.397	FULL	—
0817	.076	.097	1.581	FULL	-
0818	.076	.097	1.460	FULL	—
0819	.076	.113	1.262	FULL	—
0820	.077	.103	1.511	FULL	—
0821	.077	.115	1.310	FULL	13/012
0822	.078	.105	1.550	FULL	13/017
0823	.083	.093	1.357	FULL	_
0824	.085	.095	1.392	FULL	13/014
0825	.088	.095	1.340	FULL	13/011
0826	.101	.130	.592	FULL	—
0827	.118	.174	1.385	FULL	_
0828	.120	.152	.865	FULL	—
0829	.123	.123	.853	FULL	_
0830	.125	.138	2.859	FULL	—
0831	.125	.155	.885	FULL	13/006
0832	.130	.180	3.412	FULL	_
0833	.188	.234	3.837	FULL	—
0834	.188	.240	3.910	FULL	13/036



#### **Flat Washer**

Part No.	"A"	"В"	"T"	MC5051/ MC26482	M83528 Dash
0840	.250	.625	.031	_	12/001
0841	.250	.625	.062	_	12/002
0842	.319	.422	.075	8	—
0843	.328	.391	.031	_	—
0844	.375	.750	.031	—	12/003
0845	.375	.750	.062	—	12/004
0846	.406	.469	.031	10S/SL	—
0847	.447	.550	.075	10	—
0848	.500	.875	.031	—	—
0849	.500	.656	.031	—	12/005
0850	.500	.656	.062	—	12/006
0851	.500	.656	.031	—	12/007
0852	.500	.875	.062	12/008	_
0853	.531	.594	.031	12/12D	—
0854	.547	.703	.075	12	_
0855	.641	.703	.031	14/14S	—
0856	.671	.828	.075	14	—
0857	.750	1.000	.031	—	12/009
0858	.750	1.000	.062	—	12/010
0859	.781	.844	.031	16/16S	—
0860	.797	.953	.075	16	—
0861	.891	.953	.031	18	—
0862	.891	1.047	.075	—	—
0863	.984	1.047	.031	20	—
0864	1.000	1.438	.031	—	12/011
0865	1.000	1.438	.062	—	12/012
0866	1.039	1.172	.075	20	—
0867	1.109	1.172	.031	22	—
0868	1.141	1.297	.075	22	—
0869	1.219	1.281	.031	24	
0870	1.266	1.422	.075	24	—
0871	1.455	1.547	.045	28	_
0872	1.672	1.766	.045	32	—
0873	1.891	1.984	.045	36	_

#### Waveguide Connector Gaskets

Ja-Bar Silicone offers a complete selection of waveguide cover, choke, and contact flange gaskets for pressure and EMI/RFI sealing. All of our Silver Filled, "Non-Corrosive Particle" Filled elastomers can be produced into the configurations shown below. The thickness of the die cut gasket is .027+..003 unless otherwise specified at time of order. The most commonly used waveguide flange requirements are separated into groups for clarification and ease of cross-reference to Ja-Bar Silicone's part number:



Group I	Group II	Group III Flange	Group IV Description	Group V	Group VI
M83528	EIA SIZE WR	JAN RG-/U	UG	CPR	CMR

#### DIE-CUT SQUARE RECTANGLE WAVEGUIDE CONNECTOR GASKETS

Part No.	"A"	"В"	"C"	"D"	"E"	Group I	Group II	Group III	Group IV	Group V	Group VI
2801	1.496	1.796	.760	.385	.155	13/007	75	—	—	_	_
2802	.750	.750	.145	.285	.116	13/001	28	96	599	_	_
2803	.875	.875	.175	.425	.116	13/003	42	53/121	595/97	_	_
2804	1.313	1.313	.630	.320	.140	13/005	62	91/107	419	—	_
2805	1.625	1.625	.905	.405	.169	13/009	90	52/67	39/135	—	_
2806	1.875	1.875	1.130	.505	.180	13/015	112	51/68	51/138	—	—
2807	3.750	5.440	1.710	3.410	.264	13/038	340	112/112	533/54	_	_
2808	4.188	6.344	2.160	4.310	.266	13/040	430	104/105	435/37	—	_
2809	5.438	8.688	3.260	6.510	.250	13/042	650	69/103	417/418	—	-
2810	1.594	2.094	.405	.905	.169	13/010	90	52/67	1736/37	90F	_
2811	1.937	2.687	.633	1.380	.206	13/020	137	50/106	1732/33	137F	_
2812	2.438	3.188	.805	1.600	.257	13/024	159	—	1730/31	159F	—
2813	3.500	2.500	4.880	.880	.266	13/027	187	49/95	1728/29	187F	_
2814	2.750	3.875	1.155	2.300	.270	13/031	229	—	1726/27	229F	_
2815	4.500	3.000	2.850	1.350	.266	13/034	284	48/75	1724/25	284F	_
2816	3.750	5.438	1.710	3.410	.266	13/039	340	112/112	—	340F	_
2817	6.344	4.188	4.310	2.160	.266	13/041	430	104/105	—	430F	-
2818	1.531	2.281	.632	1.382	.150	13/021	137	51/106	—	—	137
2819	1.750	2.500	.800	1.600	.160	13/025	159	—	—	—	159
2820	1.784	2.781	.882	1.882	.156	13/028	187	49/95	—	—	187
2821	2.000	3.156	1.155	2.300	.150	13/032	229	—	—	—	229
2822	3.844	2.344	2.850	1.350	.172	13/035	284	48/75	—	—	284
2823	1.750	2.500	.505	1.130	.171	13/016	—	—	—	—	—
2824	6.344	4.188	4.300	2.150	.147	—	—	_	—	—	—
2825	4.188	6.344	2.150	4.300	.328	-	-	_	—	—	_
2826	3.750	5.438	1.715	.281	.264	-	—	—	—	—	-
2827	2.000	3.156	1.155	3.000	.188				—		
2828	1.875	1.875	1.182	.527	.250	-					
2829	1.875	1.875	1.182	.527	.180	-	-	—	—	—	-



#### DIE- CUT CIRCULAR WAVEGUIDE CONNECTOR GASKETS

Part No.	"A"	"B"	"C"	"D"	Thick.	Group I	Group II	Group III	Group IV	Group V	Group VI
2831	3.125	.632	1.382	.234	.027	13/ 019	137	50/ 106	344/ 441		_
2832	3.625	.882	1.882	.234	.027	13/026	187	49/95	149A/4 07		_
2833	5.312	1.350	2.850	.290	.027	13/ 033	284	48/75	53/ 584	_	_

## MOLDED RECTANGULAR/"O" CROSS SECTION WAVEGUIDE CONNECTOR GASKETS



Part No.	"A"	"B"	"T"	Group I	Group II	Group III	Group IV	Group V
2834	1.368	.868	.103	13/013	90	52/67	1360/61	90-G
2835	1.616	.991	.103	13/018	112	51/68	1494	
2836	1.866	1.116	.106	13/023	137	50/106	1356/57	137-G
2837	2.449	1.449	.139	13/030	187	49/95	1352/53	187-G
2838	3.451	1.951	.139	13/037	284	48/75	1348/49	284-G

#### MOLDED RECTANGULAR WITH "D" CROSS SECTION WAVEGUIDE CONNECTOR GASKETS



Part No.	"A"	"В"	"C"	"D"	Group I
2840	.988	.290	.083	.127	6/001
2841	.988	.490	.083	.127	6/002
2842	3.000	.830	.083	.127	6/003
2843	5.280	1.340	.083	.127	6/004
2844	2.980	1.480	.125	.127	6/005
2845	5.970	1.500	.125	.187	_
2846	3.000	.830	.135	.187	
2847	3.000	1.273	.135	.187	—
2849	5.280	1.340	.135	.187	—





## Formable Conductive Gasket

#### Series 882/885/886 1 Part Series 892/895/896 2 Part

Our Formable Gasket materials are designed for use in automated dispensing systems used to create gaskets directly onto electronic housings.

Both Silver Plated Copper (8X6), and Silver Plated Aluminum (8X5), versions are available for applications requiring high conductivity, while the Nickel Coated Graphite (8X2) version is available for applications requiring less conductivity with better galvanic compatibility to the mating surfaces from exposure to the environment.

Conductive bead diameters as small as 0.025" can be precisely dispensed with as little as 20 psi of dispensing pressure. Material remains flexible after cure, providing an excellent dust, moisture, and RF seal.

Cure times vary depending on housing substrate and adhesion requirements. May be used on Aluminum and Zinc metals as well as Plastics with conductive coatings.

Ja-Bar offers these materials for sale to those who have the available equipment, or we can quote the assembly complete to your requirements. The ability to, precisely place the gasket only where required, eliminate costly assembly time, design with limited gasket size, combined with low start up cost in comparison with molded seals, allow for its use in both high and low volume electronic applications.





#### Product Specifications are as follows:

Specification	Series 882 1 Part	Series 892 2 Part	Series 885 1 Part	Series 895 2 Part	Series 886 1 Part	Series 896 2 Part
Conductive Filler	Nickel Graphite	Nickel Graphite	Silver Aluminum	Silver Aluminum	Silver Copper	Silver Copper
Volume Resistivity	0.044 ohm-cm	0.044 ohm-cm	0.010 ohm-cm	0.010 ohm-cm	0.010 ohm-cm	0.010 ohm-cm
Durometer	65	65	60	60	65	65
Compression Set	25%	25%	25%	25%	25%	25%
Shear Strength	100 psi					
Cure Time	2 hrs @ 160°C	1/2 hrs @ 23°C	2 hrs @ 160°C	1/2 hrs @ 23°C	2 hrs @ 160°C	1/2 hrs @ 23°C
Recommended Compression	15-25%	15-25%	15-25%	15-25%	15-25%	15-25%

Expanded Metal/Screen Cloth Elastomer Combinations



#### **DESCRIPTION:**

A composite of metal sheeting impregnated with an elastomer to yield a highly conductive, yet resilient Gasketing material for EMI/RFI shielding as well as a pressure and environmental seal. Ja-Bar's unique fabrication process allows for unmatched consistency in quality and performance.

Available without elastomer filler for use in applications where an environmental seal is not necessary, or for use in applications as a low performance RF air filter.

#### **APPLICATION:**

Designed for those specific applications where joint unevenness does not exceed .004 inches and/or where space restrictions occur. Conductivity is achieved on contact due to the protruding contact points, which lends to its use in nearly all types flat connectors.

#### **SPECIFICATIONS:**

Listed below are the most commonly used mesh and elastomer types. Others are available upon request.

#### **AVAILABILITY:**

Due to the various combinations available from Ja-Bar we have devised a part number system for the most commonly used materials. As you can see, the first three digits determine the type of metal and the type of filler required. The next four digits establish the end products dimensional characteristics.

The first of these four, determine whether the part is of a standard configuration, or a custom design. If a "1" appears, the part is custom designed by you, the customer, and the next three digits will be assigned from our numerical listing of custom parts.

If the part has been determined to be "standard", the next digit will determine the applicable product family.

9XX-0XXX	Standard
9XX-1XXX	Custom
9XX-01XX	Sheeting



#### **AVAILABLE METALS:**

Part No.	Metal	Specification
9X1-	Expanded Monel	QQ-N-281B
9X2-	Expanded Aluminum	QQ-A-250
9X3-	Expanded Copper	N/A
9X4-	Expanded Nickel	N/A
9X5-	Expanded Stainless Steel	Alloy 302
9X6-	Woven Aluminum Screen Cloth	AMS 4182

#### **AVAILABLE ELASTOMERS:**

Part No.	Elastomer	Specification
90X-	None	N/A
91X-	Silicone	ZZ-R-765 CL2 GR50
92X-	Silicone	AMS 3302D
93X-	Synthetic	AMS 3222C
94X-	Fluorosilicone	MIL-R-25988
95X-	Low Out Gassing Silicone	ASTM E595-84

#### SHIELDING PERFORMANCE CHARACTERISTICS:

	901	902	903	926 / 936
Shielding db: 200 KHz	60	60	70	65
Shielding db: 100 MHz	90	90	100	90
Shielding db: 1.0 GHz	70	70	85	75
EMP: Survivability	yes	yes	yes	yes
Closing Force: (PSI)	50-75	50-75	50-75	50-75
Compression Set @ 50 PSI	1%	1%	1%	1%

#### **STANDARD SHEETING: 50 FOOT ROLLS**

Part No.	Thickness (+/004")	Width (minimum)
0101	.016	8.0
0102	.016	10.0
0103	.016	12.0
0104	.020	8.0
0105	.020	10.0
0106	.020	12.0
0107	.030	8.0
0108	.030	10.0
0109	.030	12.0
0110	.010	12.0



## Conductive Foil Shielding Tape

#### **DESCRIPTION:**

Our Aluminum and Copper Foil Conductive Tapes with conductive particle filled adhesive, provide excellent electrical bonding and high levels of shielding in new applications with insufficient room for conventional gasketing materials, and in repairs of old applications unable to meet today's rigorous shielding demands.

Rolls are available both in standard slit widths, and custom slit and kiss cut to customer supplied specifications.

## TYPICAL USES OF CONDUCTIVE FOIL SHIELDING TAPE:

- Electrical bonding of seams
- ESD Grounding
- Shielding Wrap of Flex Cable
- Post production repairs



Properties	Copper	Tin Plated Copper	Aluminum
Part Number	908	918	909
Thickness	.002"	.0015"	.003"
Electrical Resistance	< .010 Ohms/in2	< .003 Ohms/in2	< .010 Ohms/in2
Adhesive	Conductive Acrylic	Conductive Acrylic	Conductive Acrylic
Shielding Effectiveness 10 MHz-1GHz	> 60 dB	> 60 dB	>55 dB
Adhesion to steel (lbs/in.)	2.75	2.75	2.75
Adhesion to aluminum (lbs/in.)	3.12	3.12	3.12

The standard available widths and their corresponding part number designators are as follows:

Part No.	Width
-0301	0.500"
-0302	0.750"
-0303	1.0"
-0304	1.5"
-0305	2.0"
-0306	4.0"

The full part number for 0.500° Aluminum Foil Shielding Tape is 909-0301. Custom die cut and continuous "kiss" cut configurations available upon request. Change the 4th digit from a "0" to a "1", to indicate non-conductive PSA.



Silicone Filled Knitted Wire 900

Ja-Bar has developed a specialized product, that incorporates the flexibility of Knitted Monel Wire Mesh, with the environmental sealing capability if silicone filled woven wire mesh, called Silicone Filled Knitted Monel Wire Mesh. This materials' flexibility lends it to be ideal for applications which require conforming properties around corners and edges. The silicone filler both supports the knitted monel mesh, and allows the material to create an environmental seal as both a cover and a Electrical compression seal. conductivity is maintained on one surface for ease of grounding. Physical and Electrical characteristics are as follows:

Materials	Property		
	.0045 wire diameter		
Monel Wire Mosh	10 – 15 openings / inch		
Sleeve	Double Layer mesh		
	QQ-N-281b		
Solid Silicope	ZZ-R-765 CI II		
Solid Silicone	50 Duro Shore A		
Composite Thickness	0.018" +/005"		
Shielding Performance	Effectiveness		
1 MHz	35 db		
10 MHz	70 db		
100 MHz	85 db		
400 MHz	85 db		
1 GHz	35 db		
10 GHz	25 db		

Our Knitted woven mesh is readily available in 8.0 inch widths, and in 12.0 inch widths with longer lead times. Modifications to thickness can be made with slight penalties in flexibility. (Thickening material without adding layers of mesh will eliminate the exposed electrically conductive surface on the one side.)

## Silicone Filled Knitted/Woven Wire Mesh Combination 1990

Ja-Bar has developed a specialized product, that incorporates the combination of Knitted Monel Wire Mesh, 100 OPI Woven Stainless Steel wire screen, and the environmental sealing capability of silicone. This materials' flexibility lends it to be ideal for applications require conforming which properties around corners and edges. The silicone filler both supports the mesh combination, and allows the material to create an environmental seal as both a cover and a compression seal. Electrical conductivity is maintained on one surface for ease of grounding. Physical Electrical and characteristics are as follows:

Materials	Property		
	.0045 wire diameter		
Monel	10 – 15 openings / inch		
Sleeve	QQ-N-281b		
	Double Layer mesh		
Woven	.0015 wire diameter		
Stainless Steel Mesh	100 openings / inch		
Solid Silicono	ZZ-R-765 Cl II		
Solid Silicone	50 Duro Shore A		
Composite Thickness	0.030" +/005"		
Shielding Performance	Effectiveness		
1 MHz	70 dB		
10 MHz	85 dB		
100 MHz	100 dB		
400 MHz	100 dB		
1 GHz	65 dB		
10 GHz	60 dB		

Our Mesh combo is readily available in 8.0 inch widths, and in 12.0 inch widths with longer lead times. Modifications to thickness can be made with slight penalties to flexibility.



Ja-Bar's conductive particle filled adhesive sealants are a one part electrically conductive room temperature curing elastomer. They are supplied as a readily extrudable paste that cures rapidly when exposed to moisture. atmospheric When completely cured, Ja-Bar 000 series conductive adhesives are highly resiliant elastomers that exhibit superior adhesion to a variety of substrates as well as low volume resistivity.

#### FEATURES:

- Electrically conductive
- Thixotropic paste
- Non corrosive
- Excellent adhesion to various substrates
- One part no mixing
- Fluorosilicone options available

Surfaces to be bonded must be clean, dry and oil free. Typical solvents used to clean substrates are acetone, methyl ethyl ketone, xylene and isopropyl alcohol. Apply adhesives directly from their package to the desired area. If this product is to be used as a sealant, it should be applied liberally to the interface. It is important to force adhesives into the material being bonded as much as possible. lf maximum adhesion and RFI shielding are desired, apply weight to the sealed interface during cure. An appropriate primer is also available for difficult bonding substrates.

Part No.	Туре
000 -	Standard silicone
000-1100	.5 fl. oz. (metal tube)
000-1200	1.0 fl. oz. (metal tube or cartridge)
000-1300	2.5 fl. oz. (cartridge)
000-1400	10.3 fl. oz. (cartridge)



#### **TYPICAL PROPERTIES**

	020 Nickel Graphite	030 Silver Glass	040 Silver Nickel	050 Silver Aluminum	060 Silver Copper	080 Pure Silver
Specific Gravity	2.29	1.82	3.58	1.86	3.58	4.20
Consistency	thick paste	thick paste	thick paste	thick paste	thick paste	thick paste
Lap Shear Strength Minimum (PSI)	150	120	120	175	200	225
Operating Temp. Range (°F)	-55 /+400	-55 /+400	-55 /+400	-55 /+400	-55 /+400	-55 /+400
Skin Over (MIN)	15	15	15	15	15	15
Tack Free (MIN)	90	90	90	90	90	90
Cure for Handling (HRS)	12 - 24	12 - 24	12 - 24	12 - 24	12 - 24	12 – 24
Full Cure (HRS)	72 - 144	72 - 144	72 - 144	72 - 144	72 - 144	72 - 144
Color	dark gray	light tan	tan	blue	dark tan	tan
Durometer Shore A	65	70	75	68	70	65
Tensile Strength PSI (MIN)	540	415	285	260	285	280
Elongation % (MIN)	210	100	150	155	150	165
Tear Strength #/IN (MIN)	90	52	50	45	50	54
Volume Resistivity OHM-CM	.06	.01	.008	.01	.008	.005

#### SAFETY AND HANDLING INFORMATION:

**WARNING:** Contact with adhesives is irritating to skin and eyes. If contact is made with the skin, the excess should be wiped off with a dry cloth or paper towel followed by a waterless hand cleaner such as the type used to clean grease or oil from the skin. For specific information regarding safety and handling of this product refer to the Material Safety Data Sheet.

**CLEAN UP:** Uncured adhesives may be removed from a surface with xylene or acetone.

#### **STORAGE INFORMATION:**

Shelf life of adhesives are one (1) year from date of shipment provided the products are stored in the dry, tightly sealed, original container below 23°C (73.4°F).

#### **ORDERING INFORMATION:**

Specify product number, quantity and container size as indicated. Orders may be sent to the nearest Regional Sales Office, or directly to Ja-Bar Silicone Corporation. Special packaging available upon request.



By combining highly conductive Silver Plated Particles with a very fine film thickness of our silicone PSA system, we are able to provide an Electrically Conductive PSA on our conductive molded sheets and extrusions, without detrimental results to the shielding effectiveness of the final gasket. This adhesive system is only available when applied by Ja-Bar, and is supplied with a special release liner, fitting the specific application.

Developed for positioning of the gasket during production assembly of your unit, this type of PSA is very low tack, and is not intended to be used as a permanent adhesive system.

	Silver Aluminum	Silver Nickel
Thickness	.001003	.001003
Operating Temp. (C)	-55/+175	-55/+175
Effect on Shielding Effiveness	<15 dB	<10 dB

## Conductive Transfer PSA for Conductive Silicones Series 000

3M™ XYZ-Axis Electrically Conductive Adhesive Transfer Tape 9719 is a silicone adhesive isotropically conductive pressure sensitive tape. Tape 9719 conducts electricity through the thickness (Zaxis) and in the plane of the adhesive (X, Y planes) and is suitable for low surface energy (LSE*) EMI/RFI shield and EMI/RFI gasket attachment to metal surfaces. The tape consists of a high performance, low surface energy 3M adhesive loaded with conductive fibers. The result is a double-sided tape providing both good adhesion and good electrical performance. The conductive fibers in tape 9719 also provide improved handling characteristics.

XYZ-Axis Electrically Conductive tape 9719 is suitable for attaching Low Surface Energy (LSE) EMI shields to electronic and electrical devices where high temperature performance (up to 400°F [204°C]) is required. Tape 9719 may be used with many types of foil laminate shields, to provide a customized shielding solution. This tape may also be used to attach conductive fabric/foam core EMI gaskets to electronic cabinetry. Tape 9719 may be applied in strips or die cut to specific shapes and sizes. Compared to screws or other mechanical connectors, tape 9719 provides reduced assembly time and a solid bond line with no gaps which might result in EMI emission.

Aluminum / Aluminum	Aluminum / Stainless Steel	Copper / Stainless Steel	Copper / Copper
< 2.5 Ohm	< 2.0 Ohm	< 1.0 Ohm	< 0.5 Ohm

	-		-	-	-
Substrate	15 min @ 72°F	1 hr @ 72°F	24 hr @ 72°F	1 hr @ 158°F	24 hr @ 158°F
Stainless Steel	> 30	> 30	> 30	> 30	> 30
Aluminum	> 30	> 30	> 30	> 30	> 30
Copper	> 30	> 30	> 30	> 30	> 30
Silicone Rubber	> 20	> 20	> 20	> 20	> 20



## Conductive Seals Specialty shielding



## **Reinforced Conductive Seals**

#### **DESCRIPTION:**

Often times standard conductive particle filled elastomers do not have the inherent strength required for demanding hatch, access panel, and door seal applications. The strength can be greatly increased by the addition of a reinforcing fabric such as dacron or fiberglass. As you can see in the above diagram of a bulb seal, the fabric can be imbedded into the seal so environmental sealing and shielding effectiveness remain unaffected.

#### **APPLICATION:**

Our reinforced electrically conductive seals are mostly used in applications where there is high vibration which can wear down a gaskets resilience and where closing forces create shear forces to high for standard gasketing to withstand.

#### **SPECIFICATIONS:**

All of our reinforced electrically conductive seals are manufactured with the same military grade compounds as our non- reinforced materials, and are certified to meet Mil-DTL-83528 where applicable.



## **Coated Mesh Knit-over Elastomer**

#### **DESCRIPTION:**

Coated-Mesh Knit-over Elastomers is a new addition to our shielding materials. It is manufactured with a core of silicone (solid, solid tube, or sponge) and a single layer of knitted wire mesh. We then co-extrude a fine layer of silicone based coating to the exterior which adheres the wire to the core, yet allows for the electrical properties to be maintained.

#### **APPLICATION:**

Used most commonly in electronic packaging where cost efficiency is critical, but standard wire mesh or knitted wire mesh over elastomers are unusable due to the possibility of dislodged and fraying wires interfering with the electronics.

Due to the "Self-Terminating" capability, our coated knit-overs may be purchased in continuous lengths on spools, and cut to length on your factory floor while being installed. Or if you would rather, Ja-Bar can supply cut to length or vulcanized into ring gaskets meeting your specific requirements.

Standard dimensions and ordering information can be found in our SERIES 500 section of this catalog. Custom dimensions are available upon request.



**Mold-in-Place Conductive Seals** 

Certain applications require the technology of molding the conductive gasket directly to an Access Panel or Housing. This manufacturing technique permits the use of much smaller and tighter toleranced cross-sections, while eliminating the need for machined grooves or mounting adhesives. The same compounds depicted in the 800 Series Conductive Particle Elastomer section can be specified for this direct molding operation.









SHIELDING GASKET "A"	UNITS	PROPERTIES
Mil-DTL Type	_	Туре В
Elastomer Binder	—	Silicone
Conductive Filler	_	Silver Plated Aluminum
Color	_	Blue
Temperature Range	С	-55 / +160
Volume Resistivity	ohm-cm max	0.008
Hardness	Shore A	65 +/- 7
Specific Gravity	gms/cc	2.0 +/- 13%
Tensile Strength	# / sq. in.	200
Elongation	% max/min	100 / 300
Compression Set	%	32.0
Tear Strength	# / in.	30.0
	dB Min	
	200 KHz	100 min
Shielding Effectiveness	100 MHz	100 min
Shielding Enectiveness	500 MHz	100 min
	2 GHz	100 min
	10 GHz	100 min
SEALING GASKET "B"	UNITS	
Temperature Range	С	-55 / +160
Hardness	Shore A	40 +/- 5
Specific Gravity	gms/cc	1.2 +/- 3%
Tensile Strength	# / sq. in.	700
Elongation	% min	240
Compression Set	% max	25.0
Tear Strength	# / in.	30.0
PSA	UNITS	
Туре	_	3M 9473
Peel Adhesion	lb/in.	9
Fungus Resistant	Mil-Std-810	yes
Temperature Range	С	-65 / +150

## **Co-Molded Conductive Seals**



## Connector Gaskets Specialty shielding

All of our materials which are supplied in sheet form can also be supplied by Ja-Bar in the form of die cut connector gaskets. The following are the most



commonly required Connector Gaskets for the Military and Commercial market. The standard thickness is .032+- .005. To determine your required Ja-Bar part number, choose the material series (three digit #) from the description found throughout our catalog and add (separate by a hyphen) the four digit part number found below which best fits your dimensional requirements.

The most commonly referenced specification for connector gaskets are grouped together below:

Group I	Group II	Group III	Group IV	Group V	Group VI
M83528	JT,PT,PC	MC38999	MC81511	AN	MC83723
85099	MC26482	SERIES	MS90484	MC5015	
	MS3110	I		HT&QWL	
	MS3112	II,IV		MS3100	
	MS3119	III		MS3102	
	MS3120				

Part No.	"A"	"B"	"C"	"D"	Group I	Group II	Group III	Group IV	Group V	Group VI
0901	.469	.375	.738	.141	4/001	6	_	_	_	6
0902	.469	.375	.688	.156		_	_	_	_	_
0903	.500	.348	.687	.100	_	_	_	_	_	_
0904	.500	.375	.812	.128	_	_	_	_	_	_
0905	.500	.437	.687	.100	_	_	_	_	_	_
0906	.500	.440	.800	.120	_	_	_	_	_	_
0907	.594	.500	.875	.172			_	_	_	_
0908	.594	.500	.812	.156	4/004	8	_	_	8	8
0909	.594	.531	.875	.120	_	_	_	_	_	_
0910	.594	.568	.812	.125	4/003	_	_	8	_	_
0911	.594	.630	.840	.135	4/002	_	118	_	_	—
0912	.641	.375	.953	.172	_	_	_	_	_	_
0913	.719	.609	.953	.120	_	_	_	_	_	—
0914	.719	.625	1.000	.156	4/007	10	_	_	10	10
0915	.719	.625	.938	.155	_	_	_	_	_	_
0916	.719	.656	1.000	.120	_	_	_	_	_	_
0917	.719	.680	.937	.125	4/006		_	10	_	_
0918	.719	.703	1.000	.156	_	_	_	_	_	_
0919	.719	.719	1.031	.130	_	_	_	_	_	_
0920	.719	.750	.965	.135	4/005	19/1110	_	_	_	_
0921	.734	.500	1.047	.172	_	_	_	_	_	—
0922	.750	.875	1.046	.141	—	_	_	_	_	—
0923	.812	.687	1.125	.172	_	—	_	—	_	—
0924	.812	.750	1.125	.156	_	_	_	_	_	—
0925	.812	.781	1.094	.120	_	_		—	—	—
0926	.812	.875	1.060	.141	4/008	11/  12	—	—	—	—
0927	.812	.875	1.094	.143	—	_	—	—	—	—
0928	.813	.750	1.031	.156	_	_	—	—	—	—
0929	.813	.750	1.094	.141	4/009	12	—	—	12	12
0930	.843	1.000	1.156	.141	—	_	—	—	—	—
0931	.906	.750	1.188	.156	_	_	—	—	—	—
0932	.906	.875	1.203	.125	—	—	—	—	—	—
0933	.906	.875	1.188	.156	4/012	14	—	—	14	14
0934	.906	.875	1.125	.156		_	_		_	—
0935	.906	.906	1.188	.120						_
0936	.906	.925	1.160	.125		—			—	—
0937	.906	.937	1.265	.140		_				—
0938	.906	.938	1.188	.120		_				—
0939	.906	.938	1.125	.125	4/011			14		_
0940	.906	.950	1.188	.120	_	_	_	_		

## **Connector Gaskets** specialty shielding materials

Part No.	"A"	"B"	"C"	"D"	Group I	Group II	Group III	Group IV	Group V	Group VI
0941	.906	.984	1.188	.125	_	_	_	_	_	—
0942	.906	1.000	1.156	.141	_	_	_	_	_	_
0943	.906	1.005	1.153	.135	4/010	113/1114	_	_	_	_
0944	.938	.781	1.266	.125	_	_		_	_	_
0945	.938	.781	1.250	.172	_			_	_	_
0946	.968	1.187	1.281	.141	_			_	_	_
0947	.969	.875	1.281	.150	_	_		_	_	_
0948	.969	1.000	1.219	.156	_				_	_
0949	.969	1.000	1.281	.156	4/015	16		_	16	16
0950	969	1.000	1.188	.065				_		_
0951	.969	1.031	1.281	.120	_			_	_	_
0952	969	1.063	1 250	125	4/014			16		
0953	969	1.003	1.250	188		<u> </u>	_		_	_
0953	969	1.005	1.230	120						
0955	.707	1.005	1.201	156	4/013	115/1116				
0955	1 000	1.133	1.230	177	4/013	113/1110				_
0950	1.000	1.000	1.400	1.177						_
0937	1.013	970	1.400	.141					_	_
0958	1.030	.870	1.300	.120						_
0959	1.031	.8/5	1.344	.172					_	_
0960	1.031	1.000	1.544	.156						
0961	1.062	.8/5	1.500	.1//						
0962	1.062	1.000	1.375	.166				_	_	_
0963	1.062	1.125	1.406	.149	_			—		
0964	1.062	1.135	1.375	.156	4/018	18		_	18	18
0965	1.062	1.189	1.343	.125	4/017	_	_	18	_	_
0966	1.062	1.260	1.351	.156	4/016	117/1118	-	—	_	—
0967	1.063	1.000	1.375	.128		_	_		_	—
0968	1.063	1.125	1.375	.203				_	_	_
0969	1.063	1.125	1.312	.156				—	_	—
0970	1.063	1.156	1.375	.120				_	_	_
0971	1.063	1.188	1.375	.120	—		_	_	_	_
0972	1.125	1.000	1.500	.188	—			_	_	_
0973	1.125	1.000	1.438	.172	—	_	_	—	—	—
0974	1.125	1.031	1.500	.173	—	_	—	—	_	—
0975	1.125	1.062	1.437	.156	—	—	—		—	—
0976	1.125	1.125	1.437	.156	_	-	_	_	_	—
0977	1.132	1.312	1.687	.156	_	_	_	—	_	—
0978	1.132	1.439	1.740	.136	—	_	_	_	—	—
0979	1.132	1.560	1.735	.125	—	_	—	_	—	—
0980	1.140	1.437	1.531	.141	_	_	_	_	_	_
0981	1.156	1.140	1.500	.120	_			_	_	_
0982	1.156	1.219	1.500	.156	_	_	_	_	_	_
0983	1.156	1.250	1.500	.172	4/021	20	l —	_	20	20
0984	1.156	1.281	1.469	.156	—	_	—	—	_	_
0985	1.156	1.281	1.500	.120	_	_	_	_	_	_
0986	1.156	1.312	1.467	.125	4/020	_	—	20	_	_
0987	1.156	1.375	1.500	.141	4/019	119/1120	_	_	_	_
0988	1.188	1.344	1.500	.171			_	—	_	_
0989	1.203	1.125	1.516	.172	_	- 1		_	_	_
0990	1.203	1.156	1.531	.125	_			_	_	_
0991	1.203	1.250	1.516	.156	_	_	_	_	_	_
0992	1.250	1.312	1.594	.173					_	
0993	1.250	1.375	1.625	.203						
0994	1.250	1.375	1.563	.130						
0995	1.250	1.375	1.625	.172	4/024	22		_	22	22
0996	1,250	1.406	1.625	120	., 52 1					
0997	1.250	1.406	1.594	141						
0998	1 250	1 437	1 625	120						
0999	1 250	1 437	1.525	125	4/023			22		
2001	1 250	1.457	1.502	1/1	4/023	121/112				
2201	1.200	1.500	1.023	141	7/022	121/112	<u> </u>		<u> </u>	
2902	1.201	1.023	1.750	.141	I —	I —	I —	I —	I —	I —

## **Connector Gaskets**

specialty shielding materials

Part No.	"A"	"B"	"C"	"D"	Group I	Group II	Group III	Group IV	Group V	Group VI
2903	1.297	1.250	1.672	.172	_	_	_	_	_	_
2904	1.297	1.281	1.750	.173	_	_	_			
2905	1.297	1.375	1.672	.125			_	_	_	
2906	1.297	1.385	1.688	.150	_	_	_	_	_	
2907	1.312	1.500	1.750	.125	_	_	_	_	_	_
2908	1.312	1.560	1.812	.125	_	_	_	_		_
2909	1.312	1.562	1.750	140	_	_	_	_		
2910	1.375	1.375	1,750	172	_	_	_	_		
2911	1.375	1.500	1.750	188	_	_	_	_	_	
2912	1.375	1.500	1.750	203	4/027	24	_	_	24	24
2913	1.375	1.500	1.750	.125		_	_	_		_
2914	1.375	1.500	1.688	.156	_	_	_	_	_	_
2915	1.375	1.531	1.750	.147	_	_	_	_	_	_
2916	1.375	1.531	1.875	.109	_	_	_	_		_
2917	1.375	1.563	1.703	.152	4/026	_	_	24	_	_
2918	1.375	1.625	1.750	.172	4/025	123/1124	_			
2919	1.380	1.440	1.800	.204		_	_	_	_	_
2920	1.392	1.750	1.843	.172	_	_	_	_	_	_
2921	1.437	1.250	2.000	.257				_		_
2922	1.437	1.437	2.000	.257	_	_		_		
2923	1.437	1.567	2.000	.257			_	_		_
2924	1.438	1.594	1.781	.136	_	_	_	_	_	_
2925	1.500	1.500	1.875	.172	_	_	_	_	_	_
2926	1.500	1.625	1.875	.156	_	_	_	_	_	_
2927	1.500	1.750	1.875	.172	4/028	125/IV25	_			
2928	1.563	1.750	2.000	.203	4/029	_	_	_	24	_
2929	1.563	1.781	2.000	.188	_	_	_	_	_	_
2930	1.568	2.000	2.171	.172	_	_	_	_	_	_
2931	1.688	1.688	2.125	.195	_	_	_	_		_
2932	1.688	2.015	2.281	.219	_	_	_	_		_
2933	1.688	2.032	2.375	.125	_	_	_	_		_
2934	1.734	2.187	2.356	.203	_	_	_	_		_
2935	1.750	1.250	2.500	.312	_	_	_	_		_
2936	1.750	1.625	2.500	.312	_	_	_	_	-	_
2937	1.750	1.843	2.250	.219	_	_	_	—	_	_
2938	1.750	2.000	2.250	.219	4/030	_	_	_	28	_
2939	1.750	2.031	2.250	.219	_	_	_	_	_	_
2940	1.852	2.250	2.500	.177	_	_	_	_	_	_
2941	1.888	1.250	1.437	.125	_	_	_	_	_	_
2942	1.888	1.312	1.469	.125	_	_	_	_	_	_
2943	1.938	2.188	2.500	.219	_	_	_	_	_	_
2944	1.938	2.250	2.500	.219	4/031	_	_	_	36	_
2945	1.938	2.281	2.500	.281	_	_	-	—		_
2946	1.938	2.281	2.500	.173						
2947	2.085	2.515	2.765	.236	_	_	_	—		_
2948	2.093	2.188	2.625	.221	_	—	_	—	_	_
2949	2.094	2.531	2.875	.138	—	—	—	—	—	—
2950	2.188	2.438	2.750	.219	_	_		_		_
2951	2.188	2.500	2.750	.219	4/032	—	_	_	40	_
2952	2.188	2.531	2.750	.173				_		
2953	2.234	2.500	2.781	.166				_		
2954	2.234	2.531	2.750	.173				_		
2955	2.250	2.250	2.690	.201						
2956	2.375	2.781	3.000	.219	4/033			—	44	
2957	2.475	2.138	3.375	.166				—		
2958	2.500	2.500	2.875	.154				—		
2959	2.531	3.015	3.281	.281				—		
2960	2.531	3.035	3.265	.296				_		
2961	2.625	3.031	3.250	.219	4/034			_	48	
2962	3.000	2.000	4.000	.281				—		
2963	3.250	3.125	3.812	.312				—		—
2964	3.375	2.938	4.000	.180					_	
2965	3.800	3.000	4.500	.250						
2966	3.875	4.000	4.500	.281	-	-	_	—	_	



# Glossary II/RFI shielding

**ABSORPTION:** The retention of electromagnetic and radio frequency waves (energy) within the shielding material without reflection or transmission to another medium. Expressed in decibels (db). The energy dissipates as heat.

**ATTENUATION:** The loss of electrical energy caused by a shielding materials (or any other barriers) presence, expressed in decibels (db)

**BUS BAR:** A highly conductive element used to enhance the transmission of an electrical current from one medium to another. Frequently used on the edges of EMI/RFI windows.

**COMPATIBILITY:** The ability of two or more dissimilar materials to remain in contact in the presence of moisture without degradation

**COMPRESSION SET:** The permanent loss of a materials specific volume measured in a relaxed state, caused by a compressive force. Expressed in a percentage of either its original volume or the volume change due to compression.

**CONDUCTIVITY:** The ability or lack thereof of a material to allow the passage of an electrical current, measured in mhos.

**CONTACT RESISTENCE:** The inherent resistance of an electrical current between two contacting materials, expressed in ohms.

**DECIBEL:** A unit of measure used to express the relative difference in strength of electrical signals, equal to ten times the logarithm of the ratio of the two levels. Abbreviated as (db).

**DEFLECTION:** The movement of a gasketing material due to the application of a pre-specified amount of compressive force.

**DEGRADATION:** The process of transmission from a higher to a lower level of effectiveness, caused by a variety of factors including but not limited to: corrosion, aging, heat, vibration, etc.

"DRY BACK" ADHESIVE: pre-cured film of adhesive applied to solvent resistant elastomers which may be "activated" with solvents when ready for use.

**ELASTOMER:** A classification of "rubber" like materials, organic or synthetic.

**EMI:** "Electromagnetic Interference" or unwanted electrical noise which negatively influences the operation of electronic equipment.

**EMP:** "Electromagnetic Pulse" or a term used to describe the electromagnetic phenomenon resulting from a nuclear explosion. EMP is an instantaneous (approx. 10 nanoseconds), high intensity surge of electro-magnetic energy, primarily at a frequency between 10KHz to100MHz, which can degrade or destroy some shielding materials.

**ESD:** Electrostatic Discharge or the sudden release of an electrical (static) charge avoidable with the use of a conductive element to a common ground.

**GROUND:** A conductive path leading to earth, common in all electrical systems.

**HERTZ:** (Hz) A term used to describe the unit of measure of frequency equivalent to one cycle per second.

**INSERTION LOSS:** A term used to describe the effectiveness a shielding product, measured in db, equal to the improvement through its' use.

**MONEL:** A Nickel/Copper alloy predominantly used in a shielding environment requiring corrosion resistance, resiliency, and reasonably high conductivity.

**OHM:** A unit of measure depicting electrical resistance.

**OHM-cm:** A unit of measure depicting a materials inherent resistance with respect to its' volume.

**PSA:** "Pressure Sensitive Adhesive" or a thin film of adhesive on an elastomer used for positioning during installation, commonly accompanied with a "liner" of protection for shipping and storage.

**REFLECTION LOSS:** The attenuation of an electromagnetic wave through reflection commonly caused by induced currents within the shielding barrier.

**RFI:** "Radio Frequency Interference" or the electrical noise between 10KHz and 15KHz which negatively influences the operation of electronic equipment.

**SnCuFe:** The elemental designation (Tin/Copper/Iron) of a common wire used in shielding gaskets.

