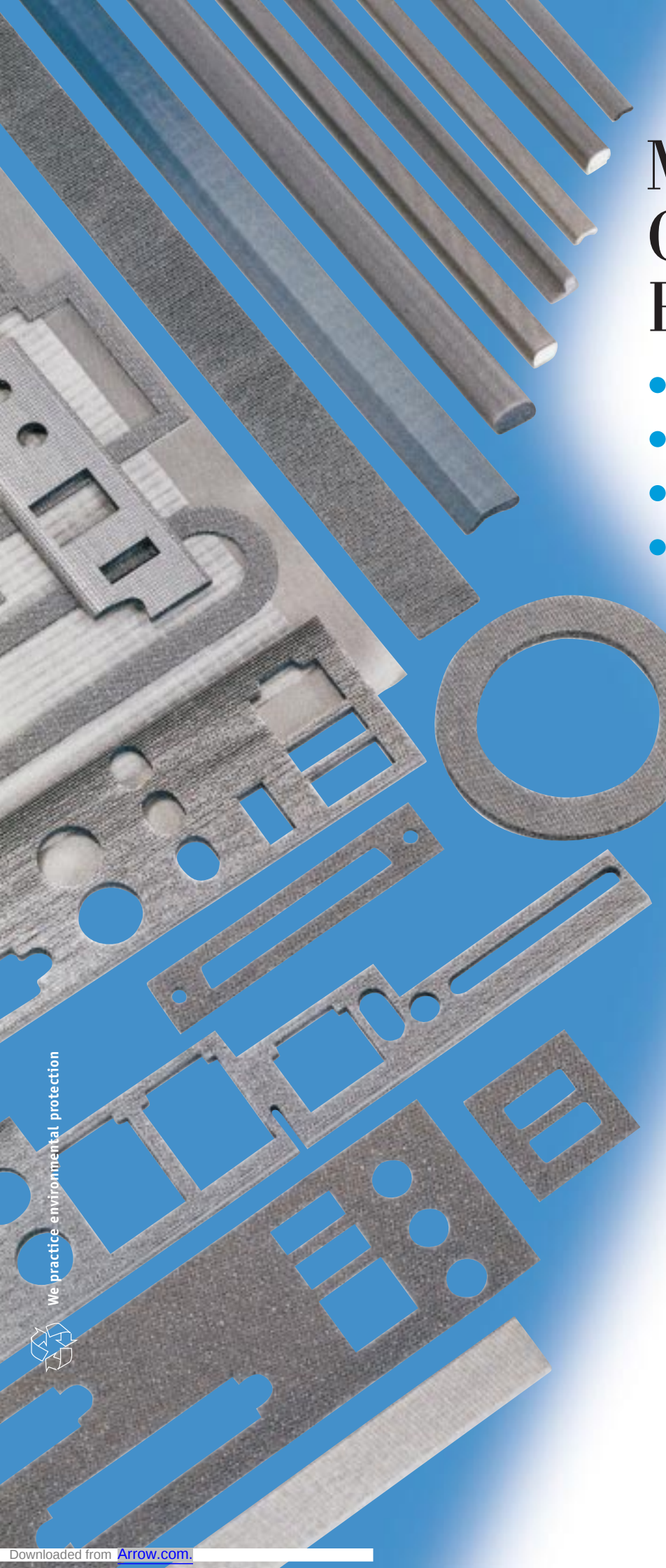




# Metallized Conductive Products

- Fabric-Over-Foam
- Conductive Foam
- Fabric
- Tape

We practice environmental protection



**Laird**  
TECHNOLOGIES®

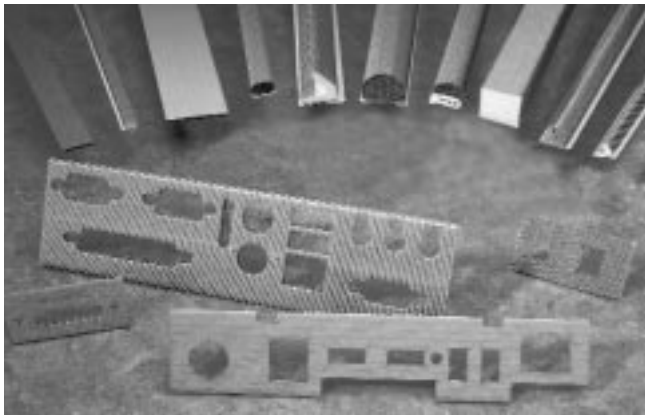


Laird Technologies manufactures a wide range of EMI shielding materials and related products for the computer, telecommunications, aerospace, defense, general electronics, medical equipment and automotive industries. These include beryllium copper finger-stock, knitted wire mesh, conductive elastomers in extruded profiles, molded shapes and form-in-place gaskets, fabric-over-foam and a full range PC board shields, shielded windows, custom metal stampings and ventilation panels. Also offered are microwave and EMI microwave absorber products. In addition, the company provides EMC and product engineering and testing services.

This catalog is designed to provide technical specifications and material characteristics for all categories of metallized fabric and foam products available from Laird Technologies. These products include:

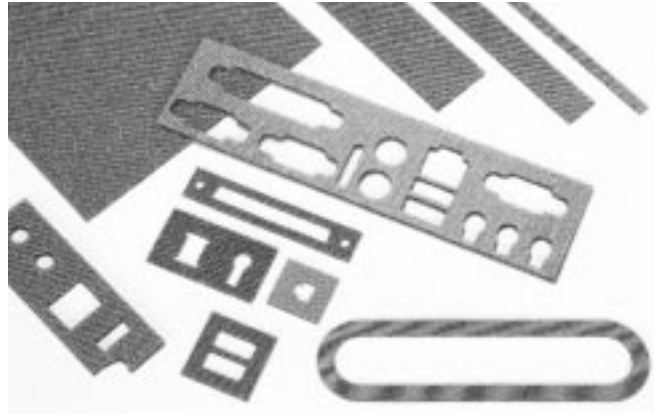
### Fabric-Over-Foam

Profile and Input/Output (I/O) EMI shielding gaskets available in UL94 V0 and HB flame retardant material – ideal for applications requiring low compression force.



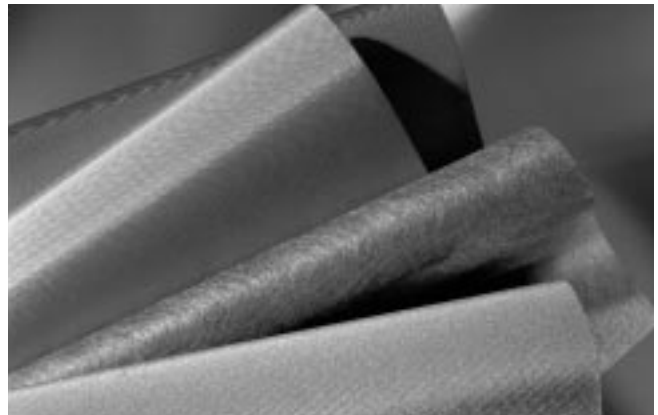
### Conductive Foam

Conductive foam gaskets provide the enhanced EMI shielding effectiveness required by the microprocessor speeds of today's computer and telecommunications equipment.



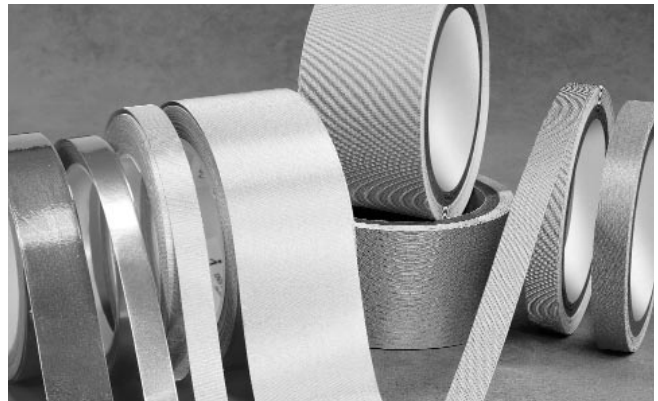
### Conductive Fabric

Metallized fabric combines highly conductive metals with lightweight fabric to meet a diverse range of EMI/RFI shielding requirements.



### Conductive Tape

Conductive shielding tape offers excellent conductivity, conformability and durability in a thin, lightweight and flexible shielding design.



All dimensions shown are in inches (millimeters) unless otherwise specified.



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| 3027-106 | Cu Polyester Nonwoven               | 25 |
| 3027-217 | Ni/Cu Polyester Nonwoven            | 25 |
| 3027-235 | Ni/Cu Polyester Nonwoven UL94 VTM-0 | 25 |
| 3035-213 | Ni/Cu Polyester Taffeta             | 25 |
| 3035-216 | Ni/Cu Polyester Taffeta UL94 V0     | 25 |
| 3050-113 | Cu Nylon Ripstop                    | 25 |
| 3050-226 | Ni/Cu Nylon Ripstop                 | 25 |
| 3050-517 | Ni/Cu Nylon Ripstop UL94 V0         | 25 |
| 3055-121 | Cu Polyester Ripstop                | 25 |
| 3055-233 | Ni/Cu Polyester Ripstop             | 25 |
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| 4023    | D-Shaped Metal Dart           | 12 |
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| 4031    | D-Shaped Metal Dart           | 12 |
| 4032    | C-Fold with Clip              | 12 |
| 4033    | D-Shaped Clip                 | 11 |
| 4037    | B-Shaped Clip                 | 12 |
| 4038    | D-Shaped Clip                 | 11 |
| 4039    | D-Shaped Clip                 | 11 |
| 4040    | D-Shaped Clip                 | 11 |
| 4041    | D-Shaped Clip                 | 11 |
| 4042    | Rectangle Shaped              | 10 |
| 4043    | D-Shaped Clip                 | 11 |
| 4046    | Square Shaped                 | 11 |
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| 4048    | Square Shaped                 | 11 |
| 4049    | Square Shaped                 | 11 |
| 4051    | Rectangle Shaped              | 9  |
| 4051-EE | IEEE 1394 I/O 4 Pin Connector | 16 |
| 4052    | D-Shaped                      | 9  |
| 4053    | D-Shaped                      | 9  |
| 4054    | J-Shaped                      | 12 |
| 4055    | Rectangle Shaped              | 10 |
| 4056    | Rectangle Shaped              | 9  |
| 4057    | Rectangle Shaped              | 10 |
| 4058    | Rectangle Shaped              | 9  |
| 4060    | D-Shaped                      | 9  |
| 4062    | Rectangle Shaped              | 10 |
| 4064    | Rectangle Shaped              | 10 |
| 4065    | Rectangle Shaped              | 10 |
| 4066    | Rectangle Shaped              | 10 |
| 4070    | Rectangle Shaped              | 10 |
| 4071    | Rectangle Shaped              | 9  |
| 4078    | D-Shaped                      | 9  |
| 4079    | Rectangle Shaped              | 9  |
| 4080    | Rectangle Shaped              | 9  |
| 4080-FK | USB Port Connector            | 17 |
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| 4085    | D-Shaped Clip           | 11 |
| 4086    | Rectangle Shaped        | 9  |
| 4087    | Rectangle Shaped        | 10 |
| 4088    | Rectangle Shaped        | 9  |
| 4089    | Square Shaped           | 11 |
| 4090    | D-Shaped                | 9  |
| 4091    | Rectangle Shaped        | 9  |
| 4094    | Rectangle Shaped        | 9  |
| 4096    | Rectangle Shaped        | 9  |
| 4097    | Knife Shaped            | 12 |
| 4098    | Rectangle Shaped        | 10 |
| 4100    | Rectangle Shaped        | 10 |
| 4105    | D-Shaped                | 9  |
| 4106    | Knife Shaped            | 12 |
| 4110    | D-Shaped Clip           | 11 |
| 4111    | D-Shaped Clip           | 11 |
| 4112    | D-Shaped                | 9  |
| 4113    | Rectangle Shaped        | 10 |
| 4114    | Rectangle Shaped        | 10 |
| 4115    | Rectangle Shaped        | 10 |
| 4117    | J-Shaped                | 12 |
| 4120    | D-Shaped                | 9  |
| 4121    | D-Shaped Clip           | 11 |
| 4123    | D-Shaped                | 9  |
| 4126    | Rectangle Shaped        | 10 |
| 4131    | Bell Shaped             | 12 |
| 4133    | Rectangle Shaped        | 10 |
| 4134    | D-Shaped                | 9  |
| 4136    | Rectangle Shaped        | 10 |
| 4142    | Rectangle Shaped        | 10 |
| 4143    | Rectangle Shaped        | 9  |
| 4148    | Rectangle Shaped        | 9  |
| 4150    | P-Shaped                | 11 |
| 4154    | C-Fold Shaped           | 11 |
| 4157    | Rectangle Shaped        | 9  |
| 4158    | Rectangle Shaped        | 10 |
| 4160    | Rectangle Shaped        | 9  |
| 4161    | Rectangle Shaped        | 9  |
| 4163    | Rectangle Shaped        | 9  |
| 4164    | Rectangle Shaped        | 9  |
| 4164-EE | D-Sub Connector         | 15 |
| 4164-FE | SCSI + 50 Pin Connector | 16 |
| 4164-FF | SCSI + 68 Pin Connector | 17 |
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| 4164-FZ | D-Sub Connector         | 15 |
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All dimensions shown are in inches (millimeters) unless otherwise specified.



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| 4170                                | Rectangle Shaped         | 9    |
| 4171                                | Rectangle Shaped         | 9    |
| 4172                                | Rectangle Shaped         | 10   |
| 4173                                | Rectangle Shaped         | 10   |
| 4176                                | Rectangle Shaped         | 10   |
| 4179                                | Rectangle Shaped         | 9    |
| 4181                                | D-Shaped                 | 9    |
| 4182                                | Rectangle Shaped         | 10   |
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| 4184                                | D-Shape Shaped           | 9    |
| 4186                                | Rectangle Shaped         | 9    |
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| 4192                                | Rectangle Shaped         | 10   |
| 4194                                | Rectangle Shaped         | 10   |
| 4198                                | C-Fold Shaped            | 11   |
| 4199                                | Rectangle Shaped         | 9    |
| 4200                                | Rectangle Shaped         | 10   |
| 4201                                | Round Shaped             | 13   |
| 4202                                | D-Shaped                 | 9    |
| 4203                                | Rectangle Shaped         | 10   |
| 4204                                | Square Shaped            | 11   |
| 4205                                | Knife Shaped             | 12   |
| 4206                                | Square Shaped            | 11   |
| 4208                                | Rectangle Shaped         | 9    |
| 4209                                | Rectangle Shaped         | 10   |
| 4210                                | Rectangle Shaped         | 10   |
| 4211                                | Rectangle Shaped         | 10   |
| 4212                                | Square Shaped            | 11   |
| 4215                                | Rectangle Shaped         | 9    |
| 4216                                | Rectangle Shaped         | 10   |
| 4219                                | Rectangle Shaped         | 9    |
| 4219-EB                             | USB Port 4 Pin Connector | 15   |
| 4220                                | Rectangle Shaped         | 9    |
| 4222                                | Rectangle Shaped         | 10   |
| 4223                                | Rectangle Shaped         | 9    |
| 4224                                | Rectangle Shaped         | 10   |
| 4225                                | Rectangle Shaped         | 9    |
| 4226                                | Rectangle Shaped         | 10   |
| 4227                                | Rectangle Shaped         | 10   |
| 4228                                | D-Shaped                 | 9    |
| 4231                                | Rectangle Shaped         | 9    |
| 4231-EE                             | I/O Connector            | 15   |
| 4233                                | Rectangle Shaped         | 10   |
| 4235                                | Rectangle Shaped         | 9    |
| 4237                                | Rectangle Shaped         | 10   |
| 4238                                | Rectangle Shaped         | 10   |
| 4239                                | Rectangle Shaped         | 10   |
| 4240                                | D-Shaped                 | 9    |
| 4241                                | Rectangle Shaped         | 10   |

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| 4242                                | D-Shaped                | 9    |
| 4243                                | C-Fold Shaped           | 11   |
| 4244                                | C-Fold Shaped           | 11   |
| 4245                                | Rectangle Shaped        | 9    |
| 4246                                | Rectangle Shaped        | 9    |
| 4247                                | Rectangle Shaped        | 10   |
| 4248                                | Rectangle Shaped        | 10   |
| 4249                                | Rectangle Shaped        | 10   |
| 4250                                | Rectangle Shaped        | 10   |
| 4251                                | Rectangle Shaped        | 10   |
| 4252                                | Rectangle Shaped        | 10   |
| 4253                                | Rectangle Shaped        | 10   |
| 4254                                | Rectangle Shaped        | 10   |
| 4255                                | Rectangle Shaped        | 10   |
| 4256                                | Rectangle Shaped        | 10   |
| 4257                                | Rectangle Shaped        | 10   |
| 4258                                | Rectangle Shaped        | 10   |
| 4259                                | Rectangle Shaped        | 9    |
| 4260                                | Rectangle Shaped        | 10   |
| 4262                                | Rectangle Shaped        | 10   |
| 4263                                | Rectangle Shaped        | 10   |
| 4264                                | Rectangle Shaped        | 10   |
| 4268                                | Rectangle Shaped        | 9    |
| 4269                                | D-Shaped                | 9    |
| 4270                                | Rectangle Shaped        | 9    |
| 4272                                | Rectangle Shaped        | 10   |
| 4273                                | Rectangle Shaped        | 9    |
| 4281                                | Rectangle Shaped        | 10   |
| 4283                                | D-Shaped                | 9    |
| 4285                                | Rectangle Shaped        | 10   |
| 4286                                | Rectangle Shaped        | 10   |
| 4293                                | Double Rectangle Shaped | 13   |
| 4295                                | D-Shaped                | 9    |
| 4297                                | Rectangle Shaped        | 9    |
| 4299                                | Double D-Shaped         | 13   |
| 4300                                | Rectangle Shaped        | 9    |
| 4302                                | Rectangle Shaped        | 9    |
| 4315                                | Rectangle Shaped        | 10   |
| 4320                                | D-Shaped                | 9    |
| 4325                                | Rectangle Shaped        | 10   |
| 4330                                | Rectangle Shaped        | 10   |
| 4339                                | Rectangle Shaped        | 10   |
| 4349                                | T-Shaped                | 13   |
| 4355                                | Rectangle Shaped        | 10   |
| 4356                                | D-Shaped                | 9    |
| 4358                                | D-Shaped                | 9    |
| 4359                                | Rectangle Shaped        | 10   |
| 4360                                | Rectangle Shaped        | 10   |
| 4361                                | Rectangle Shaped        | 10   |
| 4363                                | Rectangle Shaped        | 9    |
| 4365                                | Rectangle Shaped        | 10   |





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| 4368                                | D-Shaped              | 9    |
| 4370                                | Rectangle Shaped      | 10   |
| 4372                                | Round Shaped          | 13   |
| 4375                                | D-Shaped              | 9    |
| 4376                                | Rectangle Shaped      | 10   |
| 4379                                | Bell Shaped           | 12   |
| 4387                                | Bell Shaped           | 12   |
| 4389                                | Rectangle Shaped      | 10   |
| 4391                                | Rectangle Shaped      | 10   |
| 4392                                | Rectangle Shaped      | 10   |
| 4394                                | Rectangle Shaped      | 9    |
| 4404                                | Rectangle Shaped      | 9    |
| 4408                                | Rectangle Shaped      | 9    |
| 4410                                | Rectangle Shaped      | 9    |
| 4413                                | Rectangle Shaped Clip | 11   |
| 4430                                | Rectangle Shaped      | 9    |
| 4455                                | Rectangle Shaped      | 9    |
| 4469                                | L-Shaped              | 13   |
| 4478                                | Oval Shaped           | 13   |
| 4499                                | Rectangle Shaped      | 10   |
| 4500                                | Rectangle Shaped      | 9    |
| 4501                                | Rectangle Shaped      | 9    |
| 4502                                | J-Shaped              | 12   |
| 4512                                | Rectangle Shaped      | 9    |
| 4513                                | Rectangle Shaped      | 10   |
| 4516                                | Rectangle Shaped      | 10   |
| 4517                                | Square Shaped         | 11   |
| 4518                                | Rectangle Shaped      | 9    |
| 4520                                | Square Shaped         | 11   |
| 4522                                | Square Shaped         | 11   |
| 4524                                | Rectangle Shaped      | 10   |
| 4525                                | Rectangle Shaped      | 10   |
| 4528                                | Rectangle Shaped      | 10   |
| 4529                                | C-Fold Shaped         | 11   |
| 4531                                | Rectangle Shaped      | 10   |
| 4532                                | Rectangle Shaped      | 9    |
| 4533                                | Rectangle Shaped      | 10   |
| 4534                                | L-Shaped              | 13   |
| 4536                                | Rectangle Shaped      | 10   |
| 4537                                | P-Shaped              | 11   |
| 4541                                | D-Shaped              | 9    |
| 4542                                | D-Shaped              | 9    |
| 4548                                | D-Shaped              | 9    |
| 4568                                | Rectangle Shaped      | 10   |
| 4569                                | Rectangle Shaped      | 9    |
| 4570                                | Rectangle Shaped      | 9    |
| 4571                                | Rectangle Shaped      | 10   |
| 4572                                | Rectangle Shaped      | 9    |
| 4573                                | Rectangle Shaped      | 9    |
| 4575                                | Rectangle Shaped      | 10   |
| 4576                                | Custom Bell Shaped    | 13   |

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| 4579                                | Rectangle Shaped | 9    |
| 4581                                | D-Shaped         | 9    |
| 4582                                | Rectangle Shaped | 10   |
| 4583                                | Rectangle Shaped | 10   |
| 4584                                | D-Shaped         | 9    |
| 4591                                | Rectangle Shaped | 9    |
| 4593                                | C-Fold Shaped    | 11   |
| 4594                                | Rectangle Shaped | 10   |
| 4596                                | Rectangle Shaped | 9    |
| 4597                                | Rectangle Shaped | 9    |
| 4599                                | Rectangle Shaped | 9    |
| 4600                                | C-Fold Shaped    | 11   |
| 4601                                | Rectangle Shaped | 10   |
| 4602                                | Rectangle Shaped | 9    |
| 4603                                | Rectangle Shaped | 10   |
| 4606                                | Rectangle Shaped | 9    |
| 4607                                | D-Shaped         | 9    |
| 4608                                | C-Fold Shaped    | 11   |
| 4609                                | D-Shaped         | 9    |
| 4610                                | Rectangle Shaped | 10   |
| 4612                                | Rectangle Shaped | 10   |
| 4615                                | Rectangle Shaped | 10   |
| 4619                                | Rectangle Shaped | 10   |
| 4626                                | Rectangle Shaped | 9    |
| 4628                                | Rectangle Shaped | 9    |
| 4629                                | Rectangle Shaped | 9    |
| 4630                                | Bell Shaped      | 12   |
| 4632                                | Rectangle Shaped | 10   |
| 4633                                | Bell Shaped      | 12   |
| 4649                                | Rectangle Shaped | 10   |
| 4650                                | Rectangle Shaped | 10   |
| 4674                                | Rectangle Shaped | 10   |
| 4675                                | Rectangle Shaped | 10   |
| 4677                                | Rectangle Shaped | 9    |
| 4679                                | Rectangle Shaped | 9    |
| 4686                                | Rectangle Shaped | 10   |
| 4687                                | Rectangle Shaped | 10   |
| 4688                                | Rectangle Shaped | 9    |
| 4691                                | C-Fold Shaped    | 11   |
| 4692                                | D-Shaped         | 9    |
| 4693                                | Rectangle Shaped | 10   |
| 4694                                | Rectangle Shaped | 10   |
| 4695                                | Square Shaped    | 11   |
| 4696                                | C-Fold Shaped    | 11   |
| 4697                                | C-Fold Shaped    | 11   |
| 4698                                | Rectangle Shaped | 10   |
| 4699                                | P-Shaped         | 11   |
| 4701                                | Rectangle Shaped | 10   |
| 4702                                | Rectangle Shaped | 10   |
| 4703                                | C-Fold Shaped    | 11   |

All dimensions shown are in inches (millimeters) unless otherwise specified.



# Part Number Cross Reference

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### Fabric-Over-Foam (continued)

|      |                       |    |
|------|-----------------------|----|
| 4704 | Rectangle Shaped      | 10 |
| 4705 | Rectangle Shaped      | 10 |
| 4740 | Rectangle Shaped      | 10 |
| 4741 | Rectangle Shaped      | 10 |
| 4742 | D-Shaped              | 9  |
| 4743 | D-Shaped              | 9  |
| 4744 | Rectangle Shaped      | 10 |
| 4786 | Rectangle Shaped      | 10 |
| 4787 | D-Shaped              | 9  |
| 4788 | Rectangle Shaped      | 10 |
| 4789 | D-Shaped              | 9  |
| 4791 | Rectangle Shaped      | 10 |
| 4792 | P-Shaped              | 11 |
| 4795 | Rectangle Shaped      | 10 |
| 4796 | Knife Shaped          | 12 |
| 4797 | Knife Shaped          | 12 |
| 4798 | Rectangle Shaped      | 10 |
| 4799 | Rectangle Shaped      | 10 |
| 4801 | Rectangle Shaped      | 10 |
| 4850 | Rectangle Shaped      | 9  |
| 4900 | Rectangle Shaped      | 10 |
| 4902 | Rectangle Shaped      | 10 |
| 4903 | Rectangle Shaped      | 10 |
| 4906 | D-Shaped              | 9  |
| 4907 | Rectangle Shaped      | 9  |
| 4912 | D-Shaped              | 9  |
| 4913 | Rectangle Shaped Clip | 11 |
| 4914 | Rectangle Shaped      | 10 |

### Conductive Foam

|         |                          |    |
|---------|--------------------------|----|
| 5010    | Backplane Profile        | 23 |
| 5015    | Rectangle Shaped         | 20 |
| 5023    | Rectangle Shaped         | 20 |
| 5037-EB | USB Port Connector       | 22 |
| 5044    | Backplane Profile        | 23 |
| 5068-EA | USB Port 4 Pin Connector | 21 |
| 5076    | Rectangle Shaped         | 20 |
| 5078    | Rectangle Shaped         | 20 |
| 5092    | Rectangle Shaped         | 20 |
| 5100    | Rectangle Shaped         | 20 |
| 5104    | Rectangle Shaped         | 20 |
| 5125    | Rectangle Shaped         | 20 |
| 5151    | Backplane Profile        | 23 |
| 5152    | Backplane Profile        | 23 |
| 5157    | Rectangle Shaped         | 20 |
| 5164-EA | D-Sub Connector          | 21 |
| 5164-EE | D-Sub Connector          | 21 |
| 5164-EF | D-Sub Connector          | 21 |
| 5167    | Rectangle Shaped         | 20 |
| 5168    | Rectangle Shaped         | 20 |
| 5169    | Rectangle Shaped         | 20 |

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### Conductive Foam (continued)

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|---------|-------------------|----|
| 5174    | Rectangle Shaped  | 20 |
| 5176    | Rectangle Shaped  | 20 |
| 5191    | Rectangle Shaped  | 20 |
| 5213    | Backplane Profile | 23 |
| 5214    | Rectangle Shaped  | 20 |
| 5219    | Rectangle Shaped  | 20 |
| 5220    | Rectangle Shaped  | 20 |
| 5221    | Rectangle Shaped  | 20 |
| 5233    | Rectangle Shaped  | 20 |
| 5239-EG | I/O Connector     | 22 |
| 5241    | Backplane Profile | 23 |
| 5242    | Backplane Profile | 23 |
| 5248    | Backplane Profile | 23 |
| 5249    | Backplane Profile | 23 |
| 5261    | Rectangle Shaped  | 20 |
| 5262    | Rectangle Shaped  | 20 |
| 5264    | Backplane Profile | 23 |
| 5268    | Backplane Profile | 23 |
| 5269    | Backplane Profile | 23 |
| 5286    | Rectangle Shaped  | 20 |
| 5308    | Rectangle Shaped  | 20 |
| 5997    | Rectangle Shaped  | 20 |
| 5999    | Backplane Profile | 23 |

### Conductive Tape

|              |                             |    |
|--------------|-----------------------------|----|
| 8271-xxxx-39 | Copper Foil Tape            | 27 |
| 8271-xxxx-76 | Tin Plated Copper Foil Tape | 27 |
| 8277-xxxx-77 | Aluminium Foil Tape         | 27 |
| 8277-xxxx-39 | Copper Foil Tape            | 27 |
| 8277-xxxx-76 | Tin Plated Copper Foil Tape | 27 |
| 8274-xxxx-39 | Copper Foil Tape            | 28 |
| 8274-xxxx-76 | Tin Plated Copper Foil Tape | 28 |





## Metallized Fabric-Over-Foam Shielding Gaskets

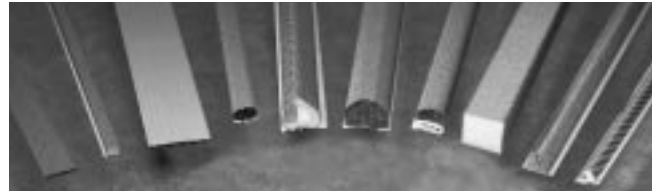
Laird Technologies is a fully integrated manufacturer of profile and Input/Output (I/O) EMI shielding gaskets. The metallized Fabric-Over-Foam product line has been expanded greatly due to our committed efforts in new product development.

This catalog has been developed to provide helpful information to design engineers on our expanded offering. In this section you can find out about the benefits of Fabric-Over-Foam Gaskets, material options and review an extensive list of standard profile and I/O sizes and configurations.

Laird Technologies specializes in the quick turnaround of custom shapes and sizes of EMI shielding gaskets.

If you don't find exactly what you need, our engineers will help you design the right solution to your shielding problem.

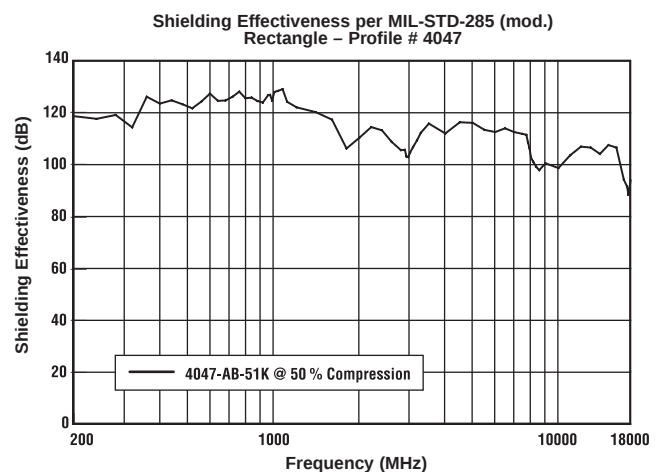
A sampling of standard profiles are shown; custom configurations and sizes can be designed to meet your specific requirements. Profiles are shown in ascending order by height (starting on page 9).



## Benefits of Fabric-Over-Foam Gaskets

- Shielding effectiveness of >100dB (MIL-STD 285 mod.) (see figure 1).
- Extremely low compression forces, ranging from 5-10 lbs./ft., allows use of lighter materials and less fastening and hinge hardware (see figure 2).
- Low Surface Resistivity of <0.07 ohms/square provides improved conductivity (ASTM F390).
- Wide range of flame retardant gaskets available (UL recognized per UL94 V0 or UL94 HB).
- Abrasion resistant metallized fabrics show virtually no degradation in shielding performance after 1,000,000 cycles (ASTM 3880).
- Urethane & Thermoplastic Elastomer (TPE) cores provide low compression set of 5-20 % (ASTM D3574) ensuring long-term reliability of gasket performance.
- Service temperatures from -40 °F to 158 °F (-40°C to 70°C) (ASTM D746).
- Available in Nickel/Copper (Ni/Cu) and Tin/Copper (Sn/Cu) to ensure galvanic compatibility with a wide variety of host materials. Both versions display no significant performance degradation after environmental exposure per the Accelerated Aging Test (ASTM 845).
- Prototype samples can be provided within 24 hours utilizing laser technology, CAD/CAM equipment, and customer supplied drawings in DWG®, DXF®, IGS, PDF®, and BMP file formats.
- Profile and I/O gaskets are available with a variety of PSA tapes, including Easy Peel® with extra wide release liner, which facilitates quick assembly.
- Profile gaskets can be cut to specified lengths, kiss-cut on release liner, or mitered to form frame configurations.

Figure 1



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## Profile & I/O Construction Options

### Fabric\*

| Fabric Types | Metal Coating | Conductivity (ASTM F390) | Application            | Benefits                                          |
|--------------|---------------|--------------------------|------------------------|---------------------------------------------------|
| Ripstop      | Ni/Cu, Sn/Cu  | < 0.07 ohms/square       | I/O or Profile Gaskets | Complex Shapes, Flame Retardant, Shear Resistance |
| Taffeta      | Ni/Cu         | < 0.07 ohms/square       | Profile Gaskets        | Complex Shapes, Flame Retardant                   |
| Knit Mesh    | Ni/Cu         | < 0.07 ohms/square       | I/O Gaskets            | Low Cost, Flame Retardant                         |

### Pressure Sensitive Adhesive\*

| Pressure Sensitive Adhesive | 180° Peel Strength on Stainless Steel (ASTM 3330) | Temperature Resistance (3M™ Internal Test)                | Application                | Benefits                                                             |
|-----------------------------|---------------------------------------------------|-----------------------------------------------------------|----------------------------|----------------------------------------------------------------------|
| 3M™ 9485 or equivalent      | 75 oz/in (82 N/100 mm)                            | Short Term: 450 °F (232 °C)<br>Long Term: 300 °F (149 °C) | High Tack, Shear Resistant | High Peel Strength and Temperature Resistant                         |
| Nitto D5052 or equivalent   | 87 oz / in (95 N/100 mm)                          | Short Term: 311 °F (155 °C)<br>Long Term: 240 °F (160 °C) | High Tack, Shear Resistant | High Cohesive Strength, High Peel Strength and Temperature Resistant |
| 3M™ 950 or equivalent       | 75 oz/in (82 N/100 mm)                            | Short Term: 250 °F (121 °C)<br>Long Term: 180 °F (82 °C)  | High Tack                  | High Peel Strength                                                   |

Other Pressure Sensitive Adhesives can be provided. Contact Engineering to discuss requirements.

### Foam\*

| Foam Types                    | Compression Set (ASTM D 3574) | Color           | Application            | Benefits                                                |
|-------------------------------|-------------------------------|-----------------|------------------------|---------------------------------------------------------|
| Urethane                      | 5 to 10 %                     | Black or Grey   | I/O or Profile Gaskets | Flame Retardant, Low Compression Gasket, Complex Shapes |
| Thermoplastic Elastomer (TPE) | < 20 %                        | Yellow or White | Profile Gaskets        | Complex Shapes, Flame Retardant                         |

The recommended operating compression for Fabric-Over-Foam EMI Gaskets will vary depending on the shape and size of the particular gasket.

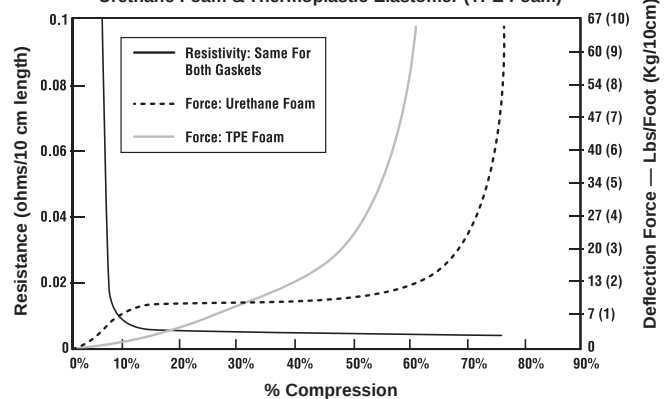
Typically, D-Shaped, Rectangular Shaped, and Square Shaped Fabric-Over-Foam EMI Gaskets should be compressed between 30 % and 50 % of the foam height.

Similarly, C-Shaped Fabric-Over-Foam EMI Gaskets should typically be compressed between 50 % and 75 % of the gasket height.

\* Certain combinations of materials may not be available for all Profiles or I/Os. Please consult the Engineering Department at Laird Technologies when unsure.

Figure 2

Force Displacement Resistance Comparing Different Foams  
Urethane Foam & Thermoplastic Elastomer (TPE Foam)



## Diverse Assembly Options

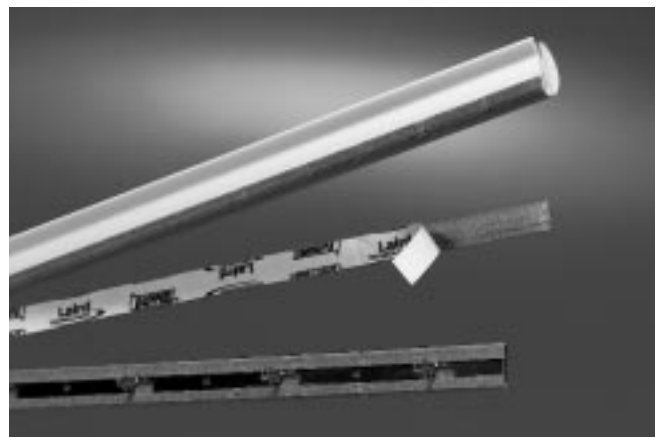
Multiple attachment options provide a variety of ways to install critical EMI products. Pressure Sensitive Adhesive (PSA) has been complemented with the Easy Peel® release liner, rigid clip, and pop rivet configurations. These mechanical attachment options enable you to take advantage of existing tooling on doors and enclosures as well as offer alternate attachment methods to better meet design requirements.

### Profile Gasket Tolerances

| Profile                     | Tolerance Inches (Millimeters) |
|-----------------------------|--------------------------------|
| Height & Width              | ± .020 (0.5)                   |
| Length Inches (Millimeters) | Tolerance Inches (Millimeters) |
| 1 to 6 (25.4 – 152.4)       | ± .030 (0.8)                   |
| 6 to 11 (152.4 – 279.4)     | ± .050 (1.3)                   |
| 11 to 48 (279.4 – 1219.2)   | ± .100 (2.5)                   |
| 48 to 70 (1219.2 – 1778.0)  | ± .187 (4.7)                   |
| 70 to 96 (1778.0 – 2438.4)  | ± .250 (6.4)                   |

For parts shorter than 1 inch (25.4mm), or longer than 96" (2438.4mm), please consult Engineering for tolerances. See back cover for contact information.

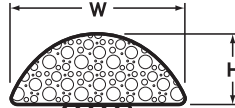
All dimensions shown are in inches (millimeters) unless otherwise specified.





# Fabric-Over-Foam Profile Selection Guide

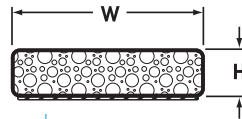
## D-Shaped



| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4584           | 0.040 (1.0)      | 0.150 (3.8)      |
| 4320           | 0.050 (1.3)      | 0.140 (3.6)      |
| 4541           | 0.050 (1.3)      | 0.250 (6.4)      |
| 4358           | 0.060 (1.5)      | 0.100 (2.5)      |
| 4184           | 0.060 (1.5)      | 0.150 (3.8)      |
| 4548           | 0.060 (1.5)      | 0.250 (6.4)      |
| 4356           | 0.070 (1.8)      | 0.180 (4.6)      |
| 4052           | 0.080 (2.0)      | 0.080 (2.0)      |
| 4283           | 0.080 (2.0)      | 0.160 (4.1)      |
| 4181           | 0.080 (2.0)      | 0.394 (10.0)     |
| 4053           | 0.090 (2.3)      | 0.090 (2.3)      |
| 4912           | 0.090 (2.3)      | 0.150 (3.8)      |
| 4375           | 0.094 (2.4)      | 0.200 (5.1)      |
| 4240           | 0.100 (2.5)      | 0.300 (7.6)      |
| 4742           | 0.120 (3.0)      | 0.150 (3.8)      |
| 4202           | 0.120 (3.0)      | 0.250 (6.4)      |
| 4078           | 0.120 (3.0)      | 0.360 (9.1)      |

| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4090           | 0.125 (3.2)      | 0.090 (2.3)      |
| 4906           | 0.130 (3.3)      | 0.188 (4.8)      |
| 4692           | 0.140 (3.6)      | 0.250 (6.4)      |
| 4228           | 0.150 (3.8)      | 0.150 (3.8)      |
| 4123           | 0.150 (3.8)      | 0.354 (9.0)      |
| 4112           | 0.158 (4.0)      | 0.433 (11.0)     |
| 4120           | 0.160 (4.1)      | 0.240 (6.1)      |
| 4295           | 0.170 (4.3)      | 0.250 (6.4)      |
| 4609           | 0.180 (4.6)      | 0.400 (10.2)     |
| 4787           | 0.200 (5.1)      | 0.250 (6.4)      |
| 4134           | 0.200 (5.1)      | 0.390 (9.9)      |
| 4607           | 0.200 (5.1)      | 0.480 (12.2)     |
| 4242           | 0.250 (6.4)      | 0.250 (6.4)      |
| 4542           | 0.250 (6.4)      | 0.290 (7.4)      |
| 4789           | 0.250 (6.4)      | 0.375 (9.5)      |
| 4368           | 0.299 (7.6)      | 0.272 (6.9)      |
| 4105           | 0.375 (9.5)      | 0.500 (12.7)     |
| 4060           | 0.500 (12.7)     | 0.500 (12.7)     |
| 4269           | 0.562 (14.3)     | 0.709 (18.0)     |
| 4743           | 0.787 (20.0)     | 0.580 (14.7)     |
| 4581           | 0.984 (25.0)     | 0.745 (18.9)     |

## Rectangle Shaped



| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4570           | 0.015 (0.4)      | 0.200 (5.1)      |
| 4577           | 0.015 (0.4)      | 0.276 (7.0)      |
| 4572           | 0.015 (0.4)      | 0.394 (10.0)     |
| 4300           | 0.017 (0.4)      | 0.826 (21.0)     |
| 4058           | 0.020 (0.5)      | 0.157 (4.0)      |
| 4569           | 0.020 (0.5)      | 0.196 (5.0)      |
| 4500           | 0.020 (0.5)      | 1.217 (30.9)     |
| 4501           | 0.020 (0.5)      | 1.970 (50.0)     |
| 4850           | 0.030 (0.8)      | 0.900 (22.9)     |
| 4245           | 0.040 (1.0)      | 0.120 (3.0)      |
| 4223           | 0.040 (1.0)      | 0.157 (4.0)      |
| 4220           | 0.040 (1.0)      | 0.200 (5.1)      |
| 4404           | 0.040 (1.0)      | 0.240 (6.1)      |
| 4215           | 0.040 (1.0)      | 0.275 (7.0)      |
| 4208           | 0.040 (1.0)      | 0.395 (10.0)     |
| 4219           | 0.040 (1.0)      | 0.510 (13.0)     |
| 4259           | 0.040 (1.0)      | 0.600 (15.2)     |
| 4677           | 0.040 (1.0)      | 0.709 (18.0)     |
| 4532           | 0.040 (1.0)      | 0.750 (19.1)     |
| 4597           | 0.040 (1.0)      | 0.900 (22.9)     |
| 4297           | 0.040 (1.0)      | 1.000 (25.4)     |
| 4363           | 0.040 (1.0)      | 1.126 (28.6)     |
| 4179           | 0.040 (1.0)      | 1.431 (36.3)     |
| 4512           | 0.040 (1.0)      | 1.640 (41.7)     |
| 4270           | 0.040 (1.0)      | 1.770 (45.0)     |
| 4573           | 0.040 (1.0)      | 1.840 (46.7)     |
| 4394           | 0.040 (1.0)      | 3.300 (83.8)     |
| 4246           | 0.050 (1.3)      | 0.090 (2.3)      |
| 4088           | 0.050 (1.3)      | 0.220 (5.6)      |
| 4086           | 0.055 (1.4)      | 0.850 (21.6)     |
| 4273           | 0.060 (1.5)      | 0.130 (3.3)      |
| 4056           | 0.060 (1.5)      | 0.200 (5.1)      |
| 4157           | 0.060 (1.5)      | 0.280 (7.1)      |
| 4629           | 0.060 (1.5)      | 0.390 (9.9)      |
| 4051           | 0.060 (1.5)      | 0.500 (12.7)     |

| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4455           | 0.060 (1.5)      | 0.551 (14.0)     |
| 4430           | 0.060 (1.5)      | 0.591 (15.0)     |
| 4626           | 0.060 (1.5)      | 0.610 (15.5)     |
| 4606           | 0.060 (1.5)      | 0.620 (15.7)     |
| 4579           | 0.060 (1.5)      | 0.650 (16.5)     |
| 4164           | 0.060 (1.5)      | 0.750 (19.1)     |
| 4170           | 0.060 (1.5)      | 0.866 (22.0)     |
| 4225           | 0.060 (1.5)      | 0.900 (22.9)     |
| 4080           | 0.060 (1.5)      | 1.000 (25.4)     |
| 4599           | 0.060 (1.8)      | 1.063 (27.0)     |
| 4518           | 0.060 (1.5)      | 1.235 (31.4)     |
| 4079           | 0.060 (1.5)      | 1.330 (33.8)     |
| 4161           | 0.060 (1.5)      | 1.370 (34.8)     |
| 4163           | 0.060 (1.5)      | 1.400 (35.6)     |
| 4591           | 0.060 (1.5)      | 1.455 (37.0)     |
| 4091           | 0.060 (1.5)      | 1.525 (38.7)     |
| 4628           | 0.060 (1.5)      | 1.580 (40.1)     |
| 4231           | 0.060 (1.5)      | 1.615 (41.0)     |
| 4679           | 0.060 (1.5)      | 1.690 (42.9)     |
| 4408           | 0.060 (1.5)      | 1.740 (44.2)     |
| 4148           | 0.060 (1.5)      | 1.870 (47.6)     |
| 4169           | 0.060 (1.5)      | 1.900 (48.3)     |
| 4160           | 0.060 (1.5)      | 2.310 (58.7)     |
| 4235           | 0.060 (1.5)      | 2.520 (64.0)     |
| 4596           | 0.060 (1.5)      | 3.091 (78.5)     |
| 4907           | 0.060 (1.5)      | 3.780 (96.0)     |
| 4071           | 0.062 (1.6)      | 0.300 (7.6)      |
| 4171           | 0.062 (1.6)      | 0.870 (22.1)     |
| 4143           | 0.062 (1.6)      | 2.000 (50.8)     |
| 4268           | 0.070 (1.8)      | 0.160 (4.1)      |
| 4302           | 0.070 (1.8)      | 0.550 (13.9)     |
| 4199           | 0.070 (1.8)      | 0.650 (16.5)     |
| 4410           | 0.070 (1.8)      | 1.063 (27.0)     |
| 4688           | 0.079 (2.0)      | 0.118 (3.0)      |
| 4094           | 0.080 (2.0)      | 0.160 (4.1)      |
| 4186           | 0.080 (2.0)      | 0.200 (5.1)      |
| 4602           | 0.080 (2.0)      | 0.236 (6.0)      |
| 4096           | 0.080 (2.0)      | 0.275 (7.0)      |

continued

All dimensions shown are in inches (millimeters) unless otherwise specified.



# Fabric-Over-Foam Profile Selection Guide

Rectangle Shaped (continued)

| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4650           | 0.080 (2.0)      | 0.300 (7.6)      |
| 4601           | 0.080 (2.0)      | 0.315 (8.0)      |
| 4182           | 0.080 (2.0)      | 0.400 (10.2)     |
| 4675           | 0.080 (2.0)      | 0.535 (13.6)     |
| 4359           | 0.080 (2.0)      | 0.710 (18.0)     |
| 4571           | 0.080 (2.0)      | 0.787 (20.0)     |
| 4200           | 0.080 (2.0)      | 0.830 (21.1)     |
| 4361           | 0.080 (2.0)      | 0.900 (22.9)     |
| 4325           | 0.080 (2.0)      | 0.984 (25.0)     |
| 4194           | 0.080 (2.0)      | 1.130 (28.7)     |
| 4389           | 0.080 (2.0)      | 1.259 (32.0)     |
| 4315           | 0.080 (2.0)      | 1.345 (34.2)     |
| 4531           | 0.080 (2.0)      | 1.550 (39.4)     |
| 4263           | 0.080 (2.0)      | 1.620 (41.1)     |
| 4262           | 0.080 (2.0)      | 1.736 (44.1)     |
| 4260           | 0.080 (2.0)      | 1.842 (46.8)     |
| 4355           | 0.080 (2.0)      | 5.340 (135.6)    |
| 4339           | 0.090 (2.3)      | 0.200 (5.1)      |
| 4903           | 0.090 (2.3)      | 0.535 (13.6)     |
| 4248           | 0.090 (2.3)      | 1.060 (26.9)     |
| 4254           | 0.090 (2.3)      | 1.370 (34.8)     |
| 4255           | 0.090 (2.3)      | 1.655 (42.0)     |
| 4256           | 0.090 (2.3)      | 1.700 (43.2)     |
| 4801           | 0.100 (2.5)      | 0.265 (6.7)      |
| 4082           | 0.100 (2.5)      | 0.375 (9.5)      |
| 4612           | 0.100 (2.5)      | 0.500 (12.7)     |
| 4133           | 0.100 (2.5)      | 0.350 (8.9)      |
| 4285           | 0.100 (2.5)      | 1.330 (33.8)     |
| 4582           | 0.100 (2.5)      | 1.500 (38.1)     |
| 4330           | 0.100 (2.5)      | 1.630 (41.4)     |
| 4083           | 0.110 (2.8)      | 0.240 (6.1)      |
| 4042           | 0.118 (3.0)      | 0.125 (3.2)      |
| 4619           | 0.118 (3.0)      | 0.197 (5.0)      |
| 4272           | 0.118 (3.0)      | 0.315 (8.0)      |
| 4583           | 0.118 (3.0)      | 0.787 (20.0)     |
| 4209           | 0.120 (3.0)      | 0.155 (3.9)      |
| 4210           | 0.120 (3.0)      | 0.355 (9.0)      |
| 4286           | 0.120 (3.0)      | 0.390 (9.9)      |
| 4264           | 0.120 (3.0)      | 0.750 (19.1)     |
| 4536           | 0.120 (3.0)      | 1.551 (39.4)     |
| 4126           | 0.120 (3.0)      | 1.720 (43.7)     |
| 4788           | 0.125 (3.2)      | 0.250 (6.4)      |
| 4694           | 0.125 (3.2)      | 0.500 (12.7)     |
| 4065           | 0.125 (3.2)      | 0.600 (15.2)     |
| 4247           | 0.125 (3.2)      | 0.700 (17.8)     |
| 4376           | 0.125 (3.2)      | 0.720 (18.3)     |
| 4064           | 0.125 (3.2)      | 1.000 (25.4)     |
| 4603           | 0.125 (3.2)      | 1.125 (28.6)     |
| 4066           | 0.125 (3.2)      | 1.250 (31.8)     |
| 4158           | 0.125 (3.2)      | 1.400 (35.6)     |
| 4239           | 0.125 (3.2)      | 1.615 (41.0)     |
| 4238           | 0.125 (3.2)      | 1.850 (47.0)     |
| 4693           | 0.130 (3.3)      | 0.190 (4.8)      |
| 4062           | 0.130 (3.3)      | 0.380 (9.7)      |
| 4694           | 0.130 (3.3)      | 0.500 (12.7)     |
| 4632           | 0.130 (3.3)      | 1.630 (41.4)     |
| 4575           | 0.130 (3.3)      | 2.000 (50.8)     |
| 4615           | 0.138 (3.5)      | 0.197 (5.0)      |
| 4594           | 0.140 (3.6)      | 0.350 (8.9)      |
| 4525           | 0.140 (3.6)      | 0.512 (13.0)     |
| 4203           | 0.150 (3.8)      | 0.100 (2.5)      |
| 4047           | 0.150 (3.8)      | 0.500 (12.7)     |
| 4533           | 0.156 (4.0)      | 0.630 (16.0)     |
| 4799           | 0.156 (4.0)      | 0.650 (16.5)     |
| 4914           | 0.156 (4.0)      | 0.709 (18.0)     |
| 4499           | 0.157 (4.0)      | 0.197 (5.0)      |
| 4741           | 0.157 (4.0)      | 0.256 (6.5)      |

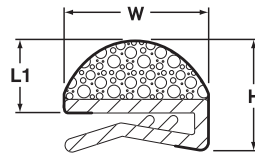
| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4055           | 0.157 (4.0)      | 0.315 (8.0)      |
| 4516           | 0.157 (4.0)      | 0.354 (9.0)      |
| 4791           | 0.157 (4.0)      | 0.394 (10.0)     |
| 4098           | 0.157 (4.0)      | 0.591 (15.0)     |
| 4704           | 0.158 (4.0)      | 0.236 (6.0)      |
| 4241           | 0.160 (4.1)      | 0.200 (5.1)      |
| 4253           | 0.160 (4.1)      | 0.280 (7.1)      |
| 4114           | 0.160 (4.1)      | 0.430 (10.9)     |
| 4115           | 0.160 (4.1)      | 0.590 (15.0)     |
| 4249           | 0.160 (4.1)      | 0.790 (20.1)     |
| 4257           | 0.160 (4.1)      | 0.880 (22.4)     |
| 4252           | 0.160 (4.1)      | 0.985 (25.0)     |
| 4250           | 0.160 (4.1)      | 1.375 (34.9)     |
| 4251           | 0.160 (4.1)      | 1.700 (43.2)     |
| 4142           | 0.177 (4.5)      | 0.354 (9.0)      |
| 4370           | 0.180 (4.6)      | 2.000 (50.8)     |
| 4902           | 0.190 (4.8)      | 0.310 (7.9)      |
| 4258           | 0.190 (4.8)      | 1.625 (41.3)     |
| 4698           | 0.195 (5.0)      | 0.130 (3.3)      |
| 4211           | 0.195 (5.0)      | 0.395 (10.0)     |
| 4674           | 0.197 (5.0)      | 0.512 (13.0)     |
| 4360           | 0.197 (5.0)      | 0.591 (15.0)     |
| 4281           | 0.200 (5.1)      | 3.900 (99.1)     |
| 4365           | 0.216 (5.5)      | 0.394 (10.0)     |
| 4100           | 0.216 (5.5)      | 0.500 (12.7)     |
| 4786           | 0.217 (5.5)      | 0.394 (10.0)     |
| 4528           | 0.217 (5.5)      | 0.709 (18.0)     |
| 4087           | 0.225 (5.7)      | 0.218 (5.5)      |
| 4701           | 0.250 (6.4)      | 0.375 (9.5)      |
| 4795           | 0.250 (6.4)      | 0.500 (12.7)     |
| 4798           | 0.250 (6.4)      | 0.600 (15.2)     |
| 4226           | 0.250 (6.4)      | 0.750 (19.1)     |
| 4224           | 0.250 (6.4)      | 1.000 (25.4)     |
| 4705           | 0.256 (6.5)      | 0.236 (6.0)      |
| 4740           | 0.256 (6.5)      | 0.394 (10.0)     |
| 4649           | 0.275 (7.0)      | 0.394 (10.0)     |
| 4568           | 0.275 (7.0)      | 0.511 (13.0)     |
| 4113           | 0.276 (7.0)      | 0.433 (11.0)     |
| 4227           | 0.283 (7.2)      | 1.180 (30.0)     |
| 4222           | 0.295 (7.5)      | 0.591 (15.0)     |
| 4237           | 0.295 (7.5)      | 1.500 (38.1)     |
| 4057           | 0.315 (8.0)      | 0.157 (4.0)      |
| 4687           | 0.315 (8.0)      | 0.236 (6.0)      |
| 4216           | 0.315 (8.0)      | 0.395 (10.0)     |
| 4610           | 0.335 (8.5)      | 0.394 (10.0)     |
| 4702           | 0.375 (9.5)      | 0.250 (6.4)      |
| 4081           | 0.375 (9.5)      | 0.500 (12.7)     |
| 4070           | 0.375 (9.5)      | 0.750 (19.1)     |
| 4192           | 0.375 (9.5)      | 1.000 (25.4)     |
| 4176           | 0.394 (10.0)     | 0.787 (20.0)     |
| 4513           | 0.413 (10.5)     | 0.394 (10.0)     |
| 4173           | 0.413 (10.5)     | 0.512 (13.0)     |
| 4524           | 0.452 (11.5)     | 0.472 (12.0)     |
| 4391           | 0.500 (13.0)     | 0.984 (25.0)     |
| 4172           | 0.591 (15.0)     | 0.394 (10.0)     |
| 4233           | 0.600 (15.2)     | 1.000 (25.4)     |
| 4136           | 0.670 (17.0)     | 0.590 (15.0)     |
| 4900           | 0.700 (17.8)     | 0.500 (12.7)     |
| 4686           | 0.710 (18.0)     | 0.390 (9.9)      |
| 4744           | 0.787 (20.0)     | 0.580 (14.7)     |
| 4392           | 0.354 (9.0)      | 0.079 (2.0)      |





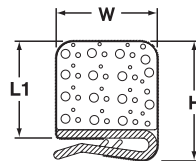
# Fabric-Over-Foam Profile Selection Guide

## D-Shaped Clip



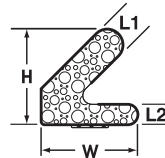
| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 |
|----------------|------------------|------------------|-------------------|
| 4110           | 0.203 (5.2)      | 0.250 (6.4)      | 0.125 (3.2)       |
| 4111           | 0.215 (5.5)      | 0.250 (6.4)      | 0.165 (4.1)       |
| 4039           | 0.300 (7.7)      | 0.480 (12.2)     | 0.190 (4.8)       |
| 4033           | 0.350 (8.9)      | 0.480 (12.2)     | 0.240 (6.1)       |
| 4121           | 0.358 (9.1)      | 0.250 (6.4)      | 0.280 (7.1)       |
| 4040           | 0.410 (10.4)     | 0.480 (12.2)     | 0.300 (7.6)       |
| 4038           | 0.430 (10.9)     | 0.490 (12.4)     | 0.310 (7.9)       |
| 4043           | 0.430 (10.9)     | 0.490 (12.4)     | 0.310 (7.9)       |
| 4085           | 0.430 (10.9)     | 0.490 (12.4)     | 0.310 (7.9)       |
| 4041           | 0.518 (13.2)     | 0.480 (12.2)     | 0.458 (11.6)      |

## Rectangle Shaped Clip



| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 |
|----------------|------------------|------------------|-------------------|
| 4913           | 0.440 (11.2)     | 0.375 (9.5)      | 0.360 (9.1)       |
| 4413           | 0.485 (12.3)     | 0.390 (9.9)      | 0.405 (10.3)      |

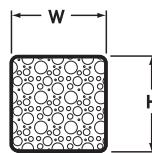
## C-Fold Shaped



| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 | inches (mm)<br>L2 |
|----------------|------------------|------------------|-------------------|-------------------|
| 4593           | 0.250 (6.4)      | 0.280 (7.1)      | 0.125 (3.2)       | 0.060 (1.5)       |
| 4168           | 0.315 (8.0)      | 0.315 (8.0)      | 0.080 (2.0)       | 0.080 (2.0)       |
| 4198           | 0.385 (9.8)      | 0.420 (10.7)     | 0.115 (2.9)       | 0.060 (1.5)       |
| 4154           | 0.395 (10)       | 0.430 (10.9)     | 0.125 (3.2)       | 0.060 (1.5)       |
| 4696           | 0.395 (10.0)     | 0.430 (10.9)     | 0.125 (3.2)       | 0.080 (2.0)       |

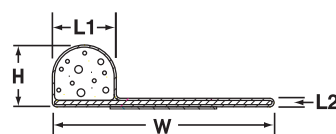
| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 | inches (mm)<br>L2 |
|----------------|------------------|------------------|-------------------|-------------------|
| 4243           | 0.400 (10.2)     | 0.430 (10.9)     | 0.125 (3.2)       | 0.040 (1.0)       |
| 4600           | 0.415 (10.5)     | 0.450 (11.4)     | 0.135 (3.4)       | 0.650 (1.7)       |
| 4529           | 0.465 (11.8)     | 0.420 (10.7)     | 0.115 (2.9)       | 0.060 (1.5)       |
| 4691           | 0.470 (11.9)     | 0.487 (12.4)     | 0.110 (2.8)       | 0.110 (2.8)       |
| 4608           | 0.675 (17.1)     | 0.580 (14.7)     | 0.155 (3.9)       | 0.140 (3.6)       |
| 4697           | 0.675 (17.1)     | 0.590 (15.0)     | 0.165 (4.2)       | 0.156 (4.0)       |
| 4244           | 0.675 (17.1)     | 0.600 (15.2)     | 0.165 (4.2)       | 0.165 (4.2)       |
| 4703           | 0.940 (23.9)     | 0.550 (14.0)     | 0.155 (3.9)       | 0.170 (4.3)       |

## Square Shaped



| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4520           | 0.080 (2.0)      | 0.080 (2.0)      |
| 4046           | 0.118 (3.0)      | 0.118 (3.0)      |
| 4522           | 0.157 (4.0)      | 0.157 (4.0)      |
| 4212           | 0.195 (5.0)      | 0.195 (5.0)      |
| 4048           | 0.236 (6.0)      | 0.236 (6.0)      |
| 4049           | 0.250 (6.4)      | 0.250 (6.4)      |
| 4695           | 0.375 (9.5)      | 0.375 (9.5)      |
| 4206           | 0.395 (10.0)     | 0.395 (10.0)     |
| 4084           | 0.500 (12.7)     | 0.500 (12.7)     |
| 4204           | 0.670 (17.0)     | 0.670 (17.0)     |
| 4517           | 0.750 (19.1)     | 0.750 (19.1)     |
| 4089           | 0.790 (19.7)     | 0.790 (19.7)     |

## P-Shaped



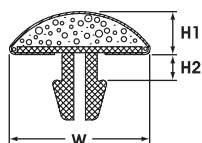
| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 | inches (mm)<br>L2 |
|----------------|------------------|------------------|-------------------|-------------------|
| 4150           | 0.120 (3.1)      | 0.520 (13.2)     | 0.242 (6.1)       | 0.020 (.50)       |
| 4699           | 0.145 (3.7)      | 0.520 (13.2)     | 0.150 (3.8)       | 0.020 (.50)       |
| 4792           | 0.200 (5.1)      | 0.480 (12.2)     | 0.170 (4.3)       | 0.090 (2.3)       |
| 4537           | 0.374 (9.5)      | 0.887 (22.5)     | 0.500 (13.0)      | 0.051 (1.0)       |

All dimensions shown are in inches (millimeters) unless otherwise specified.



# Fabric-Over-Foam Profile Selection Guide

## D-Shaped Metal Dart



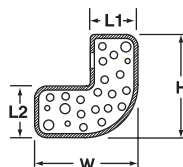
| Profile Number | inches (mm)<br>H1 | inches (mm)<br>H2 | inches (mm)<br>W |
|----------------|-------------------|-------------------|------------------|
| 4027           | 0.110 (2.8)       | 0.067 (1.7)       | 0.360 (9.1)      |
| 4023           | 0.110 (2.8)       | 0.107 (2.7)       | 0.360 (9.1)      |
| 4016           | 0.140 (3.6)       | 0.040 (1.0)       | 0.360 (9.1)      |
| 4031           | 0.160 (4.1)       | 0.040 (1.0)       | 0.360 (9.1)      |

## Knife Shaped



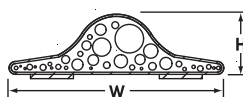
| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4797           | 0.106 (2.7)      | 0.445 (11.3)     |
| 4097           | 0.110 (2.8)      | 0.320 (8.1)      |
| 4796           | 0.110 (2.8)      | 0.450 (11.4)     |
| 4205           | 0.250 (6.4)      | 0.750 (19.1)     |
| 4106           | 0.312 (7.9)      | 0.707 (18.0)     |
| 4189           | 0.350 (8.9)      | 0.750 (19.1)     |

## J-Shaped



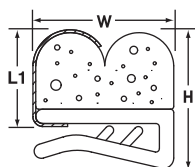
| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 | inches (mm)<br>L2 |
|----------------|------------------|------------------|-------------------|-------------------|
| 4117           | 0.130 (3.3)      | 0.130 (3.3)      | 0.060 (1.5)       | 0.065 (1.7)       |
| 4054           | 0.209 (5.3)      | 0.130 (3.3)      | 0.071 (1.8)       | 0.063 (1.6)       |
| 4502           | 0.400 (10.2)     | 0.300 (7.6)      | 0.175 (4.4)       | 0.140 (3.6)       |

## Bell Shaped



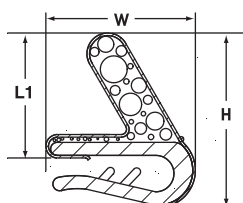
| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4630           | 0.070 (1.8)      | 0.180 (4.6)      |
| 4379           | 0.070 (1.8)      | 0.560 (14.2)     |
| 4387           | 0.080 (2.0)      | 0.680 (17.3)     |
| 4633           | 0.100 (2.5)      | 0.300 (7.6)      |
| 4131           | 0.140 (3.6)      | 0.500 (12.7)     |

## B-Shaped Clip



| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 |
|----------------|------------------|------------------|-------------------|
| 4037           | 0.218 (5.5)      | 0.245 (6.2)      | 0.168 (4.3)       |

## C-Fold with Clip



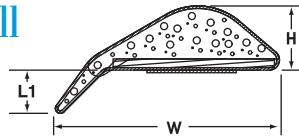
| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 |
|----------------|------------------|------------------|-------------------|
| 4032           | 0.335 (8.5)      | 0.287 (7.3)      | 0.240 (6.1)       |

All dimensions shown are in inches (millimeters) unless otherwise specified.



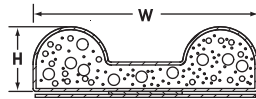
# Fabric-Over-Foam Profile Selection Guide

## Custom Bell Shaped



| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 |
|----------------|------------------|------------------|-------------------|
| 4576           | 0.335 (8.5)      | 0.287 (7.3)      | 0.240 (6.1)       |

## Double D Shaped



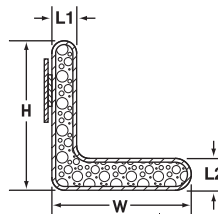
| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4299           | 0.110 (2.8)      | 0.380 (9.7)      |

## Double Rectangle Shaped



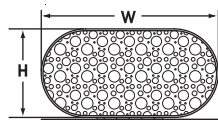
| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4293           | 0.080 (2.0)      | 1.830 (46.5)     |

## L-Shaped



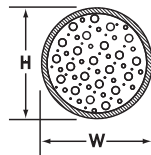
| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 | inches (mm)<br>L2 |
|----------------|------------------|------------------|-------------------|-------------------|
| 4469           | 0.216 (5.5)      | 0.354 (9.0)      | .138 (3.5)        | .118 (3.0)        |
| 4534           | 0.591 (15)       | 0.550 (14)       | .098 (2.5)        | .126 (3.2)        |

## Oval Shaped



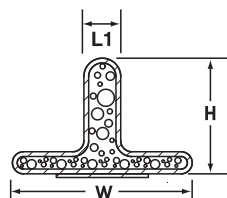
| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4478           | 0.138 (3.5)      | 0.197 (5.0)      |
| 4183           | 0.250 (6.4)      | 0.500 (12.7)     |

## Round Shaped



| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 4201           | 0.100 (2.5)      | 0.100 (2.5)      |
| 4372           | 0.125 (3.2)      | 0.125 (3.2)      |

## T-Shaped



| Profile Number | inches (mm)<br>H | inches (mm)<br>W | inches (mm)<br>L1 |
|----------------|------------------|------------------|-------------------|
| 4349           | 0.157 (4.0)      | 0.244 (6.2)      | 0.050 (1.3)       |

All dimensions shown are in inches (millimeters) unless otherwise specified.



# Fabric-Over-Foam I/O Gasket Selection Guide

The following pages have examples of standard I/O gaskets used in computer and telecommunication applications. If you have different requirements, our Engineering Department will design your gasket to the specifications that you supply. We will design your I/O from a fully detailed print, drawing file, or the actual panel to which the gasket is to be applied.

## I/O Gasket Tolerances

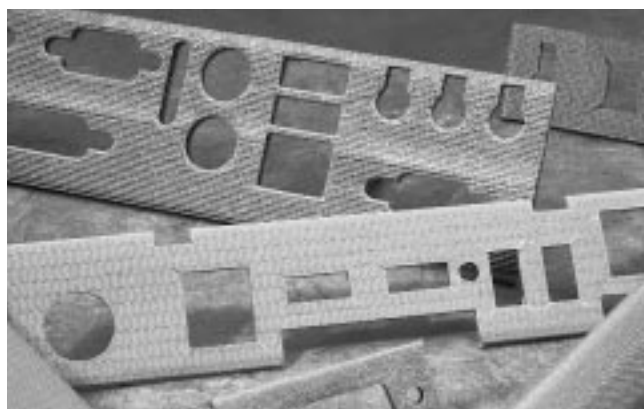
**Height tolerance:**  $\pm .020"$  ( $\pm 0.5$  mm)

**Width tolerance:**  $\pm .020"$  ( $\pm 0.5$  mm)

**Length tolerance:**  $\pm .020"$  ( $\pm 0.5$  mm)

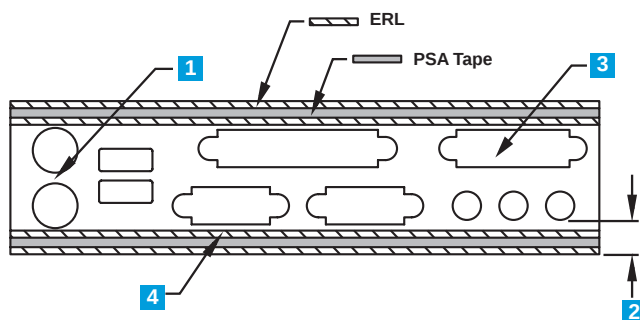
**Cutout tolerance:**  $\pm .020"$  ( $\pm 0.5$  mm)

If different tolerances are required, please consult Engineering. See back cover for contact information.



## Basic I/O Gasket Design

- 1 Space between required cutouts should match or exceed 0.060" (1.5 mm).
- 2 Distance from the edge of a cutout should be at least 0.060" (1.5 mm) from the edge of the gasket. In most cases, a slot can be used in place of a hole that is positioned too close to the gasket edge.
- 3 All cutouts and locations are designed to the customer's specification.
- 4 Pressure-Sensitive Adhesive (PSA) and Extended Release Liner (ERL) can be applied in parallel with the long edge of the gasket.



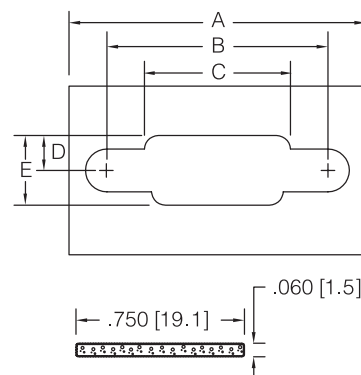
The recommended operating compression for Fabric-Over-Foam EMI gaskets will vary depending on the shape and size of the particular gasket. Typically, I/O gaskets should be compressed between 30 % and 50 % of the foam height.



# Fabric-Over-Foam I/O Gasket Selection Guide

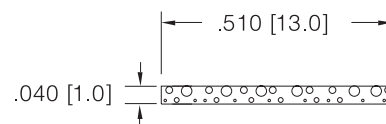
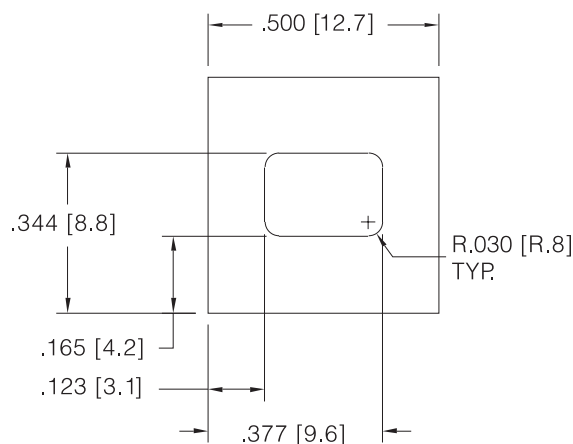
## D-Sub Connector Series

| Part No. | #Pins  | A               | B               | C               | D             | E              | Usage                               |
|----------|--------|-----------------|-----------------|-----------------|---------------|----------------|-------------------------------------|
| 4164-EE  | 9      | 1.320<br>(33.5) | .984<br>(25.0)  | .650<br>(16.5)  | .155<br>(4.0) | .310<br>(8.0)  | Serial, Mouse, Com, Port            |
| 4164-FW  | 11, 15 | 1.640<br>(41.7) | 1.310<br>(33.3) | .971<br>(24.7)  | .155<br>(3.9) | .310<br>(7.9)  | VGA, Game, Multi-media, Serial Port |
| 4164-FY  | 25     | 2.204<br>(56.0) | 1.865<br>(47.4) | 1.500<br>(38.1) | .155<br>(3.9) | .310<br>(7.9)  | Parallel, Serial, Scanner, Printers |
| 4164-FZ  | 37     | 2.859<br>(72.6) | 2.535<br>(64.4) | 2.200<br>(55.9) | .155<br>(3.9) | .310<br>(7.9)  | Serial Port                         |
| 4164-GA  | 50     | 2.750<br>(69.9) | 2.406<br>(61.1) | 2.064<br>(52.4) | .211<br>(5.4) | .422<br>(10.7) | Serial Port                         |



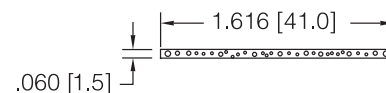
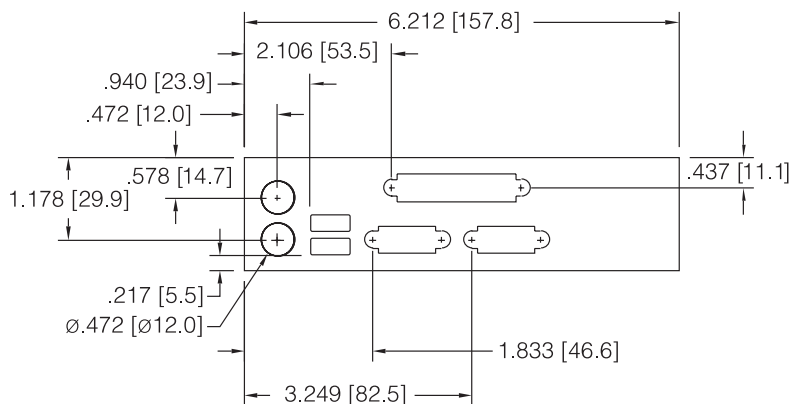
## USB Port 4 Pin Connector, Part Number 4219-EB

Usage: Multi-use, hot plug-and-play



## I/O Connector, Part Number 4231-EE

Usage: Standard PC Motherboard/Main Board (MB) I/O Shield



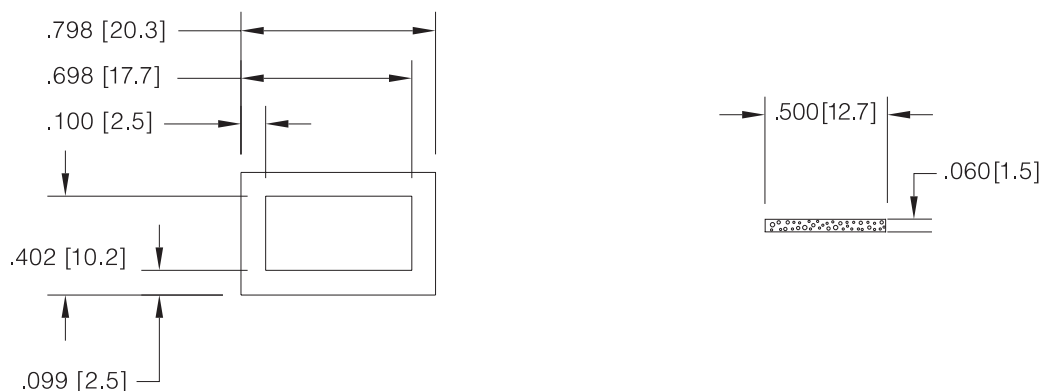
All dimensions shown are in inches (millimeters) unless otherwise specified.



# Fabric-Over-Foam I/O Gasket Selection Guide

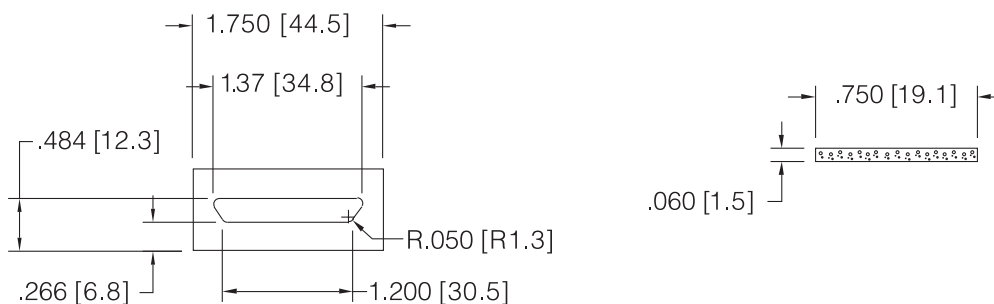
## IEEE 1394 I/O 4 Pin Connector, Part Number 4051-EE

Usage: Plug-and-Play Serial Port (Digital Cameras, Printers, Keyboards, Mouse)



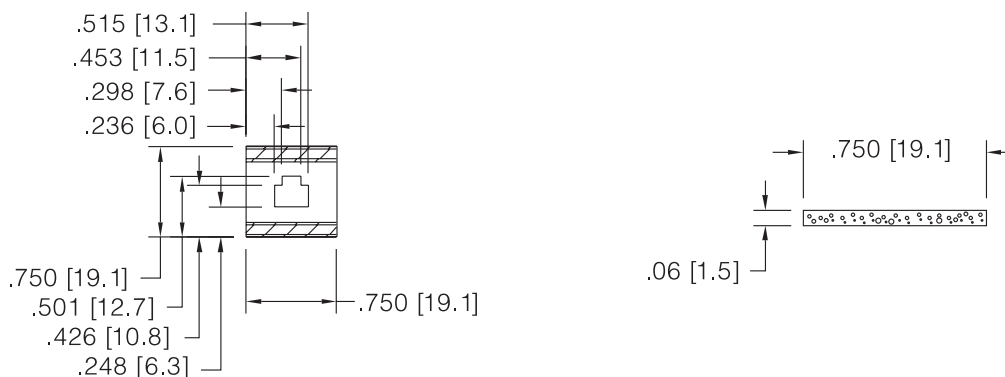
## SCSI + 50 Pin Connector, Part Number 4164-FE

Usage: Peripheral, Hard Disk, CD-ROM



## RJ-45 Connector, Part Number 4164-FH

Usage: Telecom, Ethernet Networking



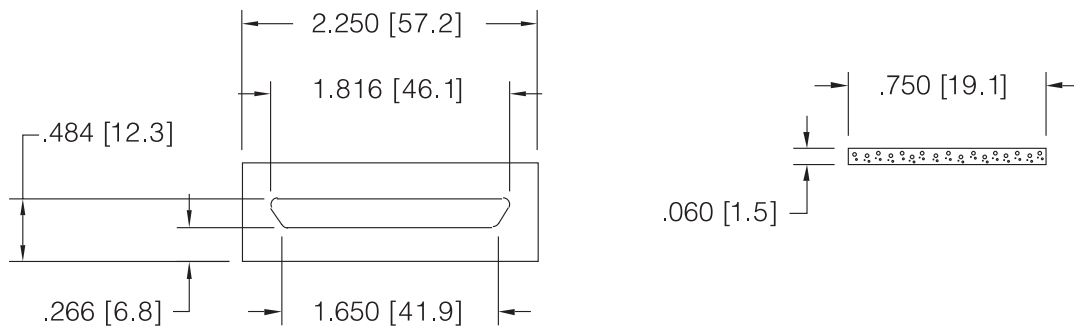
All dimensions shown are in inches (millimeters) unless otherwise specified.



## Fabric-Over-Foam I/O Gasket Selection Guide

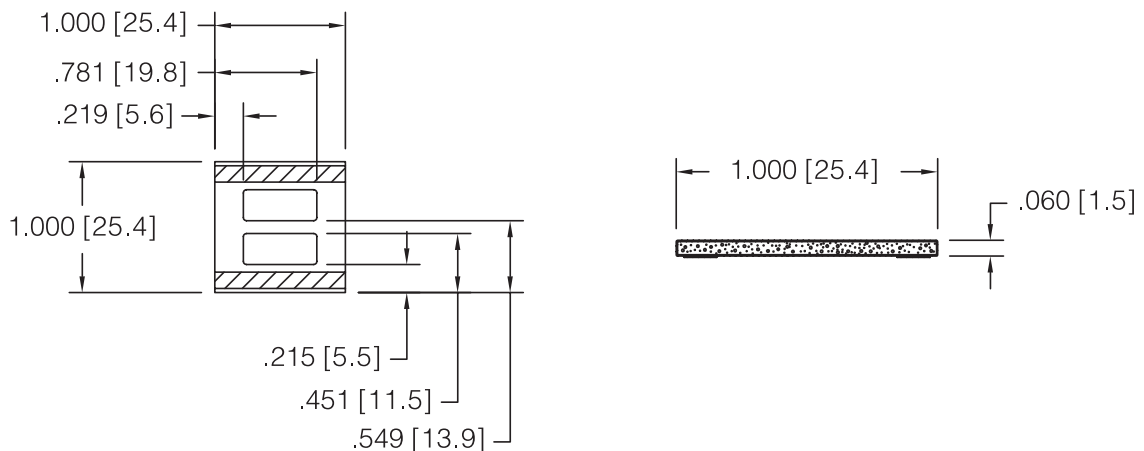
### SCSI + 68 Pin Connector, Part Number 4164-FF

Usage: Peripheral, External Hard Drive



### USB Port Connector, Part Number 4080-FK

Usage: Peripheral Port

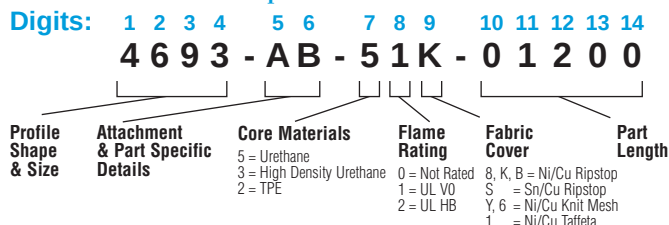


All dimensions shown are in inches (millimeters) unless otherwise specified.



# Fabric-Over-Foam Profile and I/O Ordering Information

## Part Number Example:



\* Certain combinations of materials may not be available for all Profiles or I/Os.  
Please consult the Engineering Department at Laird Technologies when unsure.

See back cover for contact information.

## Digits 1 through 4

Designate profile number. Select profile or I/O and sizes from pages 9-13 (Profile) or 15-17 (I/O).

## Digits 5 through 6

Designate part-specific attributes of the product including cutouts, notches, tape width, tape position and a variety of other customized details. A B is the default and usually designates Pressure Sensitive Adhesive centered on base. These digits will be supplied by Laird Technologies' Engineering personnel.

## Digits 7 through 9

Designate the core materials, flame rating and fabric cover combinations. Select these from the recommended list in the table below. Other foam and fabric combinations are available, please consult Laird Technologies' Engineering Department. See page 8 for additional material performance data.

## Digits 10 through 14

Designate the part length in inches to two decimal places (i.e., In the above example, the "01200" denotes a 12.00 inch (304.8 mm) long gasket).

## Construction Options

| Part Number Suffix Digits (Digits 7,8,9) | Foam Core             | Gasket UL94 Flame Rating | Metallized Fabric Type | Benefits                                                   | Target Gasket                           |
|------------------------------------------|-----------------------|--------------------------|------------------------|------------------------------------------------------------|-----------------------------------------|
| 51K                                      | Urethane              | UL94 V0                  | Ni/Cu Ripstop          | Flame Retardant, High Shear Resistant, Low Compression Set | I/O or Profile                          |
| 51Y                                      | Urethane              | UL94 V0                  | Ni/Cu Knit Mesh        | Flame Retardant, Low Compression Set                       | I/O                                     |
| 51S                                      | Urethane              | UL94 V0                  | Sn/Cu Ripstop          | Flame Retardant, Shear Resistant, Low Compression Set      | I/O or Profile                          |
| 31K                                      | High Density Urethane | UL94 V0                  | Ni/Cu Ripstop          | Flame Retardant, Shear Resistant, Low Compression Set      | Complex Shapes (C-Fold, T-Shaped, etc.) |
| 221                                      | TPE                   | UL94 HB                  | Ni/Cu Taffeta          | Flame Retardant, Wide Variety of Profile Shapes            | Profile                                 |
| 528                                      | Urethane              | UL94 HB                  | Ni/Cu Ripstop          | Flame Retardant, Shear Resistant, Low Compression Set      | I/O or Profile                          |
| 50B                                      | Urethane              | Not Rated                | Ni/Cu Ripstop          | Low Cost, Shear Resistant, Low Compression Set             | I/O or Profile                          |
| 501                                      | Urethane              | Not Rated                | Ni/Cu Taffeta          | Low Cost, Low Compression Set                              | Profile                                 |
| 506                                      | Urethane              | Not Rated                | Ni/Cu Knit Mesh        | Low Cost, Low Compression Set                              | I/O                                     |

## To order, contact our Sales Department.

All dimensions shown are in inches (millimeters) unless otherwise specified.

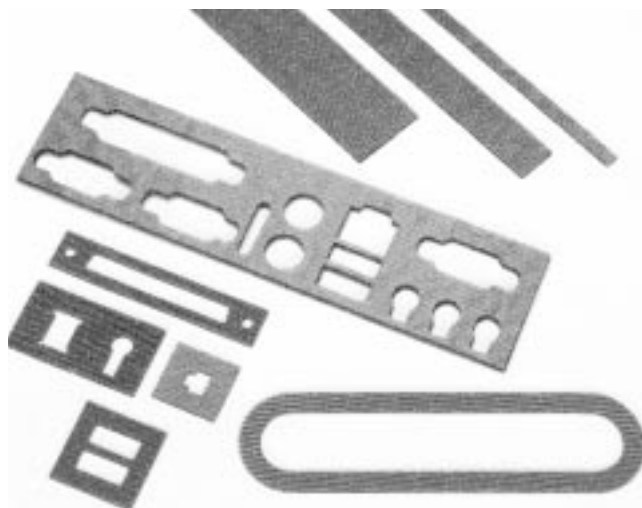


# Conductive Foam

Conductive Foam offers an innovative approach to traditional shielding and grounding by providing X, Y, and Z-axis conductivity, which enhances the shielding effectiveness required to meet the increasing microprocessor speeds of today's computer, telecommunications, and aerospace equipment.

Conductive Foam is designed for low-cycling applications such as input/output (I/O) shielding and other non-shear standard connectors. Rectangular strips are available for perimeter gasketing applications.

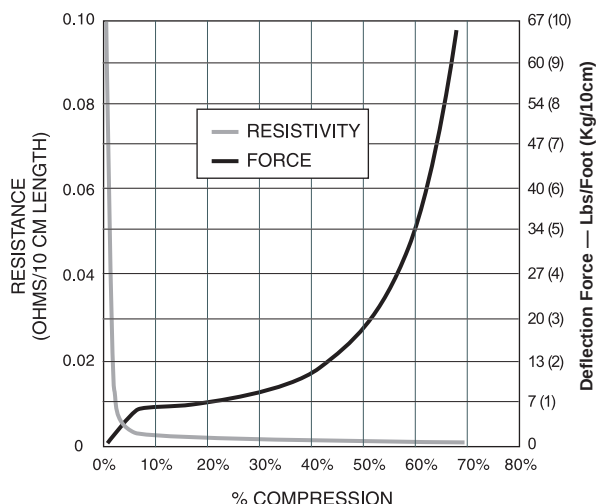
- Halogen-free conductive foam gaskets meet 2006 European Union Directives against the use of bromide in electronic products.
- Improved Z-axis conductivity increases shielding effectiveness to over 90 dB across a wide range of frequencies.
- Available in 0.039" (1 mm), 0.060" (1.5 mm), 0.079" (2 mm), and 0.125" (3.2 mm) thicknesses and widths down to 0.125" (3.2 mm).
- Wide compression ranges of up to 60 % of original uncompressed thicknesses.
- Available in both UL94 HB and V0 rated versions.
- Available in many standard configurations including D-sub, USB port, IEEE 1394, SCSI, and RJ-45. Also available in sheet stock and rectangular profiles.
- Custom die-cut versions are also available.
- Die-cut I/O designs, Rectangle Strip gaskets and Backplane gaskets can be supplied with or without conductive or non-conductive adhesive.



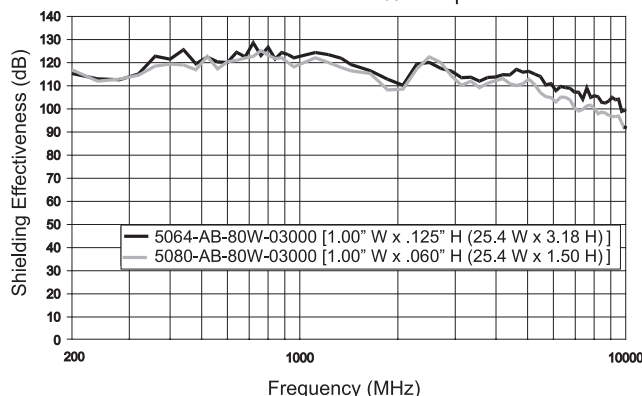
## Product Performance/Physical Properties

|                                                                        |                                                                                                                         |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| X-Y-Axis Surface Resistivity (ASTM F390)                               | < 0.1 ohms/square                                                                                                       |
| Z-Axis Resistivity (APM 130)                                           | < 0.03 ohms/square                                                                                                      |
| Shielding Effectiveness (Mil Std 285 Mod.)                             | > 90 dB (200 MHz to 10 GHz)                                                                                             |
| Abrasion Resistance (ASTM D3886)                                       | > 1,000,000 Cycles                                                                                                      |
| Compression Set (ASTM 3574)                                            | 5 % to 20 %                                                                                                             |
| Service Temperature (ASTM D746)                                        | -40 °F to 158 °F (-40 °C to 70 °C)                                                                                      |
| Pressure Sensitive Adhesive 180 Degree Peel Strength (ASTM D3330 Mod.) | <i>Non Conductive:</i><br>20 Ounces/Inch Width<br><i>Conductive:</i><br>30 Ounces/Inch Width<br>(Only when PSA is used) |

Force Displacement Resistance Graph  
.125" (3,2 mm) Thick x 1.50 (38,1 mm) Wide  
Ni/Cu Conductive Foam Gasket



Shielding Effectiveness per MIL-STD-285 (mod.)  
Conductive Foam at 40% Compression



All dimensions shown are in inches (millimeters) unless otherwise specified.



## Conductive Foam

### Conductive Foam Gasket Tolerances

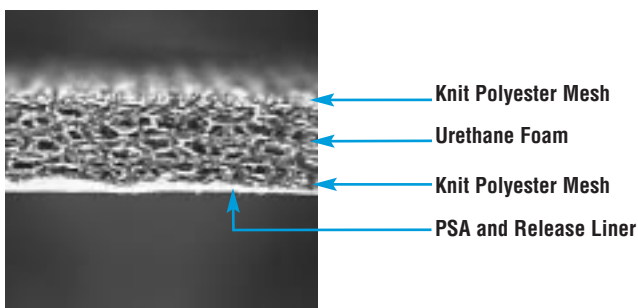
| Profile                            | Tolerance Inches (Millimeters)        |
|------------------------------------|---------------------------------------|
| Height & Width                     | ± .020 (0.5)                          |
| <b>Length Inches (Millimeters)</b> | <b>Tolerance Inches (Millimeters)</b> |
| 1 to 6 (25.4 – 152.4)              | ± .030 (0.8)                          |
| 6 to 11 (152.4 – 279.4)            | ± .050 (1.3)                          |
| 11 to 48 (279.4 – 1219.2)          | ± .100 (2.5)                          |
| 48 to 70 (1219.2 – 1778.0)         | ± .187 (4.7)                          |
| 70 to 96 (1778.0 – 2438.4)         | ± .250 (6.4)                          |

### Pressure Sensitive Adhesive

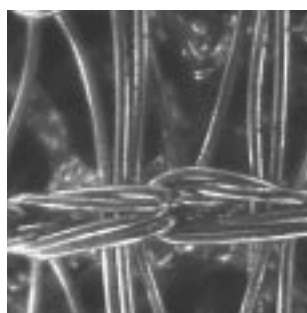
| Pressure Sensitive Adhesive | 180° Peel Strength on Stainless Steel (ASTM D 3330) | Temperature Resistance (3M™ Internal Test) | Application                     | Thickness     |
|-----------------------------|-----------------------------------------------------|--------------------------------------------|---------------------------------|---------------|
| Conductive                  | 30 oz/Inch width                                    | -40F to 158F (-40C to 70C)                 | I/O - Backplane Profile Gaskets | 2 mils (.051) |
| Non-Conductive              | 20 oz/Inch width                                    | -40F to 158F (-40C to 70C)                 | I/O - Backplane Profile Gaskets | 1 mils (.025) |

Other Pressure Sensitive Adhesives can be provided. Contact Engineering to discuss requirements.

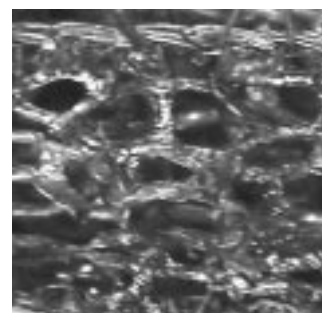
### Conductive Foam Construction



**Cross Section**  
100% Ni/Cu Metallized



**Top and Bottom Surfaces**  
Ni/Cu Knit Polyester Mesh



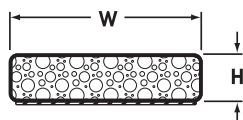
**Core**  
Ni/Cu Metallized Urethane Foam



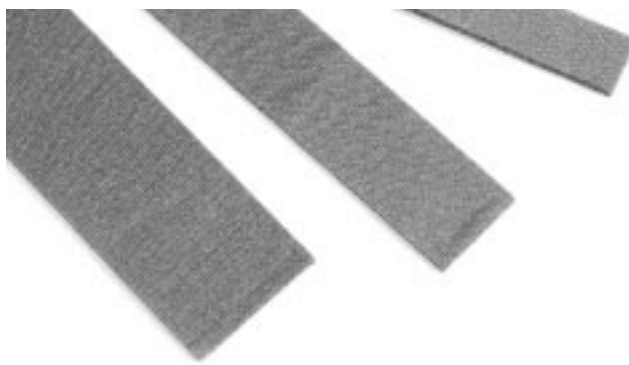
## Conductive Foam Profile Selection Guide

Conductive foam in a rectangular profile design provides a great alternative to standard Fabric-Over-Foam profile gaskets in low shear applications. Supplied in UL94 HB or UL94 V0 fire rated material, with either conductive or non-conductive adhesive, conductive foam is a cost-effective solution for many perimeter shielding and grounding applications.

### Rectangle Shaped



| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 5286           | 0.040 (1.0)      | 1.850 (47.0)     |
| 5176           | 0.040 (1.0)      | 2.580 (65.5)     |
| 5100           | 0.040 (1.0)      | 3.350 (85.1)     |
| 5997           | 0.040 (1.0)      | 4.000 (101.6)    |
| 5308           | 0.060 (1.5)      | 0.120 (3.0)      |
| 5157           | 0.060 (1.5)      | 0.480 (12.2)     |
| 5080           | 0.060 (1.5)      | 1.000 (25.4)     |
| 5023           | 0.060 (1.5)      | 1.500 (38.1)     |
| 5076           | 0.060 (1.5)      | 1.630 (41.4)     |
| 5220           | 0.060 (1.5)      | 2.210 (56.1)     |
| 5214           | 0.060 (1.5)      | 2.410 (61.2)     |
| 5167           | 0.060 (1.5)      | 2.540 (64.5)     |
| 5168           | 0.060 (1.5)      | 2.540 (64.5)     |
| 5078           | 0.060 (1.5)      | 2.840 (72.1)     |



| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 5092           | 0.060 (1.5)      | 3.050 (77.8)     |
| 5104           | 0.060 (1.5)      | 3.400 (86.4)     |
| 5174           | 0.060 (1.5)      | 3.600 (91.4)     |
| 5015           | 0.060 (1.5)      | 4.380 (111.2)    |
| 5191           | 0.060 (1.5)      | 4.000 (101.6)    |
| 5233           | 0.125 (3.2)      | 0.200 (5.0)      |
| 5125           | 0.125 (3.2)      | 0.390 (9.9)      |
| 5064           | 0.125 (3.2)      | 1.000 (25.4)     |
| 5219           | 0.125 (3.2)      | 1.500 (38.1)     |
| 5169           | 0.125 (3.2)      | 2.000 (51.0)     |
| 5221           | 0.125 (3.2)      | 2.210 (56.1)     |
| 5262           | 0.250 (6.4)      | 4.150 (105.4)    |
| 5261           | 0.250 (6.4)      | 2.250 (57.2)     |

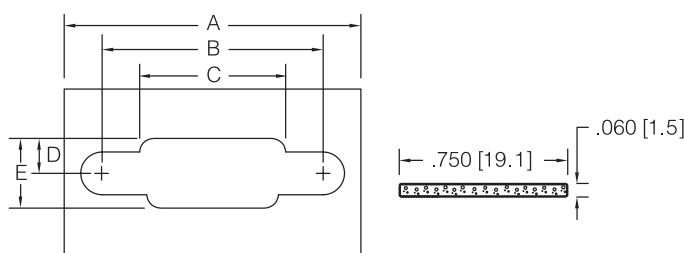
All dimensions shown are in inches (millimeters) unless otherwise specified.



## Conductive Foam I/O Gaskets Selection Guide

For shielding and grounding, conductive foam is an excellent material for Input/Output (I/O) applications. Conductive foam has excellent X, Y, and Z-axis conductivity and shielding effectiveness over 90 dB for a wide range of frequencies. Laird Technologies can help design custom gaskets to your specification using a sketch, electronic drawing or your actual equipment.

Shown here are some examples of I/O gaskets designed for specific applications.

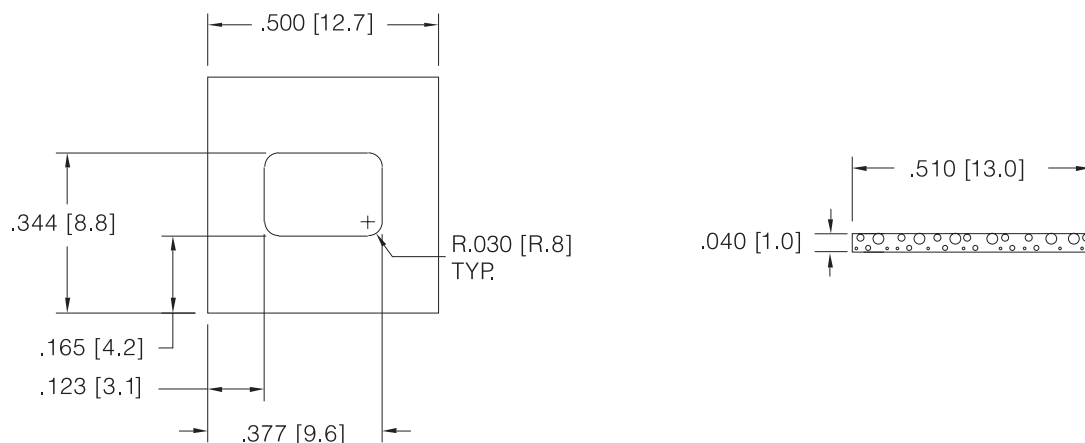


### D-Sub Connector Series

| Part No. | #Pins | A               | B               | C               | D             | E             | Usage                                  |
|----------|-------|-----------------|-----------------|-----------------|---------------|---------------|----------------------------------------|
| 5164-EE  | 9     | 1.320<br>(33.5) | .984<br>(25.0)  | .650<br>(16.5)  | .155<br>(4.0) | .310<br>(8.0) | Serial, Mouse,<br>Com, Port            |
| 5164-EA  | 25    | 2.204<br>(56.0) | 1.865<br>(47.4) | 1.500<br>(38.1) | .155<br>(3.9) | .310<br>(7.9) | Parallel, Serial,<br>Scanner, Printers |
| 5164-EF  | 37    | 2.859<br>(72.6) | 2.535<br>(64.4) | 2.200<br>(55.9) | .220<br>(5.6) | .310<br>(7.9) | Serial Port                            |

### USB Port 4 Pin Connector, Part Number 5068-EA

Usage: Multi-use, hot plug-and-play



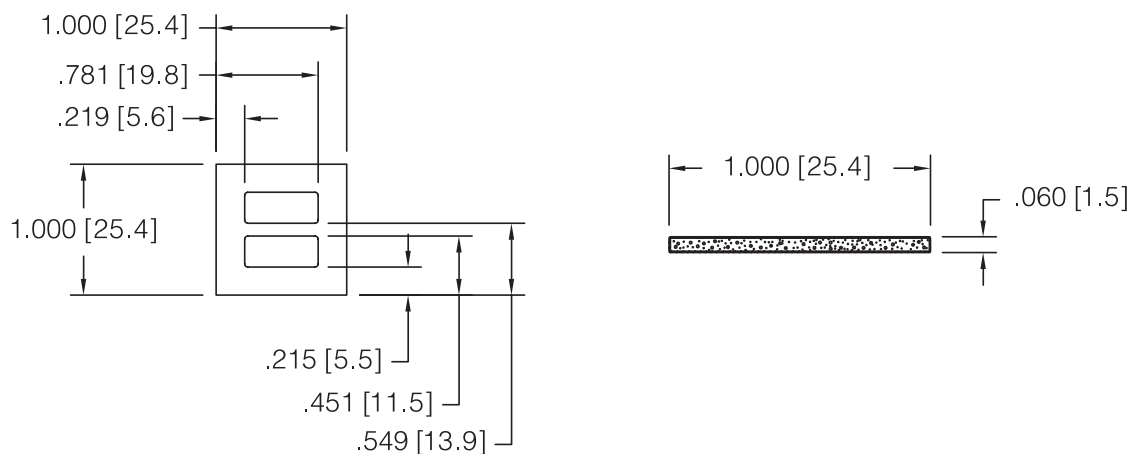
All dimensions shown are in inches (millimeters) unless otherwise specified.



# Conductive Foam I/O Gaskets Selection Guide

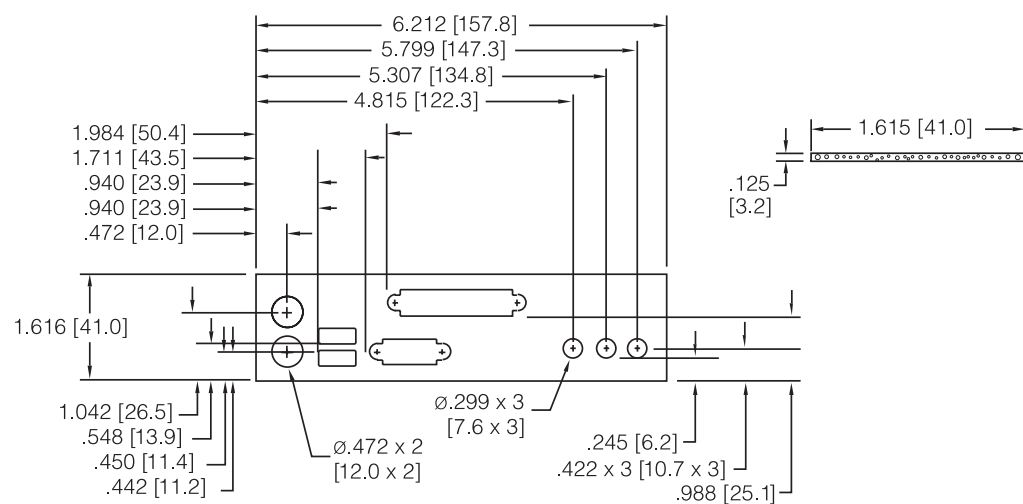
## USB Port Connector, Part Number 5037-EB

Usage: Peripheral Port



## I/O Connector, Part Number 5239-EG

Usage: Standard PC Motherboard/Main Board (MB) I/O Shield



LT\_KA\_2003\_01\_MCP\_E\_15M · ©2003 Laird Technologies

All dimensions shown are in inches (millimeters) unless otherwise specified.

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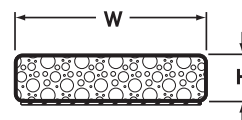
**Laird**  
TECHNOLOGIES



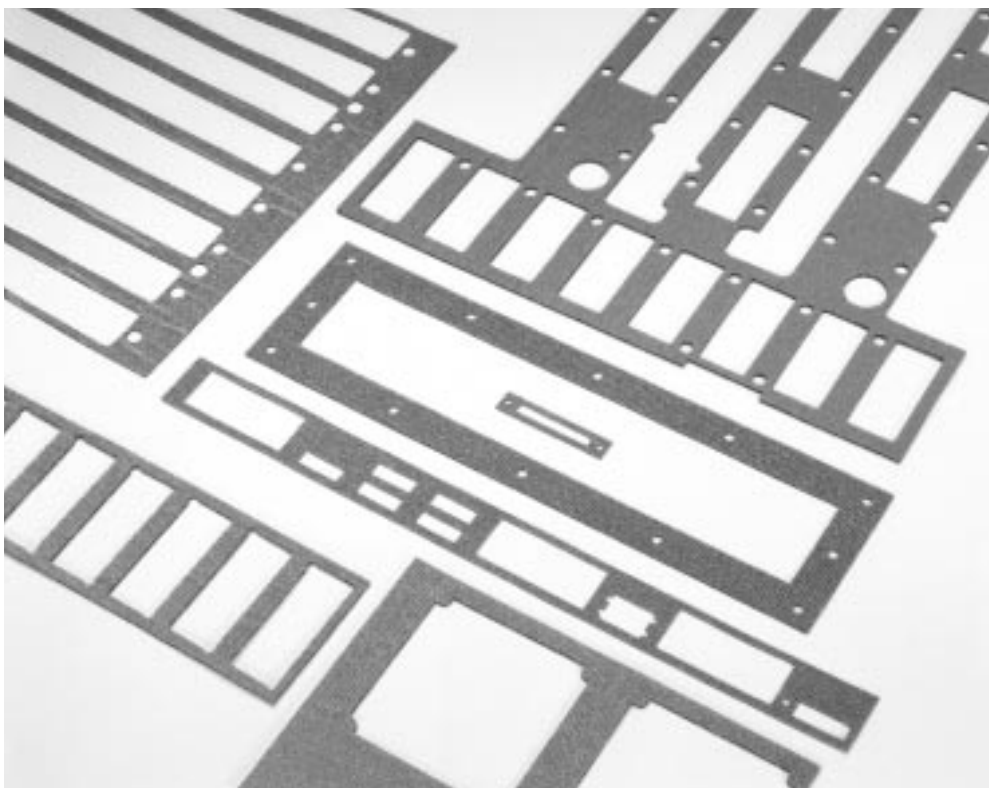
## Backplanes – Large Conductive Foam Gaskets Selection Guide

Conductive foam is a perfect material for any size server, router, or switch system. For example, die-cut solutions can be provided at any length by 54" (1370 mm) wide. As with standard I/O gaskets, Laird Technologies can help design a gasket that fits your application.

### Backplane Profile



| Profile Number | inches (mm)<br>H | inches (mm)<br>W |
|----------------|------------------|------------------|
| 5010           | 0.060 (1.5)      | 6.000 (152.4)    |
| 5241           | 0.060 (1.5)      | 5.250 (133.4)    |
| 5248           | 0.060 (1.5)      | 5.630 (143.0)    |
| 5269           | 0.060 (1.5)      | 5.880 (149.4)    |
| 5264           | 0.060 (1.5)      | 7.870 (200.0)    |
| 5152           | 0.060 (1.5)      | 25.500 (647.7)   |
| 5044           | 0.125 (3.2)      | 6.150 (156.2)    |
| 5151           | 0.125 (3.2)      | 6.500 (165.1)    |
| 5213           | 0.125 (3.2)      | 5.820 (147.8)    |
| 5249           | 0.125 (3.2)      | 6.490 (164.8)    |
| 5268           | 0.125 (3.2)      | 6.750 (171.5)    |
| 5999           | 0.125 (3.2)      | 14.000 (355.6)   |
| 5242           | 0.185 (4.7)      | 6.000 (152.4)    |



Examples of Large Backplane Gaskets



# Conductive Foam Profile and I/O Gaskets Ordering Information

## Part Number Example:

Digits: 1 2 3 4 5 6 7 8 9 10 11 12 13 14  
5 2 3 9 - X X - 8 2 W - 0 2 6 0 0

## Digit 1: Product Type

Designates conductive foam (5).

## Digits 2 through 4: Drawing Number for Basic Profile

Designate the part shape and size. (i.e., In the above example, the "239" indicates a 0.125" (3.2 mm) high by 1.615" (41.0 mm) wide flat stock gasket.) These digits will be defined and supplied by Laird Technologies Engineering personnel.

## Digits 5 through 6: General Guidelines of Customized Options

Designate part-specific attributes of the product including cutouts, notches, tape width, tape position and a variety of other customized details. These digits will be defined and supplied by Laird Technologies Engineering personnel.

## Digit 7: Core Material

Designates the core material Nickel/Copper (Ni/Cu) foam (8).

## Digit 8: Flammability Rating

Designates the fire rating: (1) - UL94 V0  
(2) - UL94 HB

## Digit 9: Cover Fabric

Designates the outer covering  
W = Ni/Cu Mesh with PSA  
X = Ni/Cu Mesh

## Digits 10 through 14: Specific Cut Lengths

Designates the part length in inches to two decimal places. (i.e., In the above example, the "02600" denotes a 26.00 inch (660.40 mm) long gasket.) For reeled gasket material, it designates the reel length in feet to two decimal places.

## Construction Options

| Part Number Suffix (Digits 7,8,9) | Metallized Fabric Type | Core Material | UL94 Fire Rating | General Benefits                               | Target Application               |
|-----------------------------------|------------------------|---------------|------------------|------------------------------------------------|----------------------------------|
| 81W                               | Ni/Cu Mesh with PSA    | Ni/Cu Foam    | UL94 V0          | Flame Retardant, Low Compression Set, Adhesive | Profile, I/O, Sheet or Backplane |
| 82W                               | Ni/Cu Mesh with PSA    | Ni/Cu Foam    | UL94 HB          | Flame Retardant, Low Compression Set, Adhesive | Profile, I/O, Sheet or Backplane |
| 81X                               | Ni/Cu Mesh             | Ni/Cu Foam    | UL94 V0          | Flame Retardant, Low Compression Set           | Profile, I/O, Sheet or Backplane |
| 82X                               | Ni/Cu Mesh             | Ni/Cu Foam    | UL94 HB          | Flame Retardant, Low Compression Set           | Profile, I/O, Sheet or Backplane |

To order, contact our Sales Department.

All dimensions shown are in inches (millimeters) unless otherwise specified.

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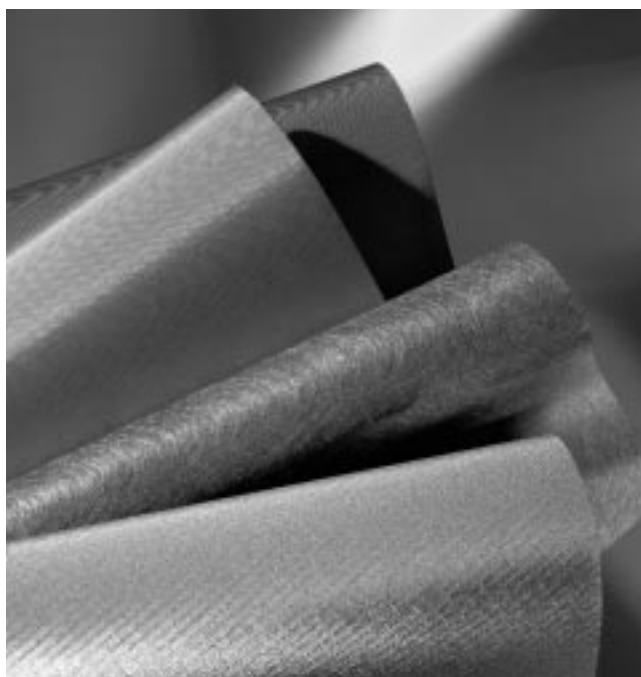




## Conductive Fabric

Electron® metallized fabric combines highly conductive metals with lightweight fabric to meet a diverse range of EMI/RFI shielding requirements. Manufactured with Laird Technologies' patented technology, Electron metallized fabric is available in various woven and non-woven substrate configurations. Whether used as an architectural shielding product to shield complete rooms, or as the shielding material in EMI gaskets, tapes, and shield laminates, Electron fabrics provide a highly effective shielding system that is cost-effective and easily applied.

Laird Technologies uses a patented technology for applying thin metal coatings of copper or nickel to woven and nonwoven fabrics. As a result, Electron metallized materials have the flexibility, conformability and breathability of a fabric with the electrical properties of a metal. Because the manufacturing process does not use an electric potential, the fabric receives a uniform coating of metal on the individual fibers and excellent plating at the fiber crossover points. This means low surface and through resistivity and excellent shielding effectiveness.



### Electron® Products Data Summary

|                                            | Product No. | Nominal Thickness<br>Inches (mm) | Surface Resistivity <sup>1</sup><br>(Ohms/square)<br>(ASTM F390) | Shielding <sup>2</sup> at<br>100 MHz/1GHz<br>(dB)<br>(Mil-Std 285) | Tensile Strength <sup>3</sup><br>CD/MD <sup>4</sup> (lb/in)<br>(ASTM 5035) | Air Flow <sup>3</sup><br>(ft <sup>3</sup> /min/ft <sup>2</sup> ) | Weight<br>(oz/yd <sup>2</sup> )<br>(LT 500) | Max. Short<br>Duration<br>Temperature (°C) |
|--------------------------------------------|-------------|----------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------|--------------------------------------------|
| <b>Cu Polyester Nonwoven</b>               | 3027-106    | 0.016 (0.4)                      | ≤ 0.1                                                            | 80/100                                                             | 7.5/18.5                                                                   | 690                                                              | 1.5 – 2.3                                   | 210                                        |
| <b>Ni/Cu Polyester Nonwoven</b>            | 3027-217    | 0.016 (0.4)                      | ≤ 0.07                                                           | 100/100                                                            | 7.5/18.5                                                                   | 690                                                              | 1.8 – 3.0                                   | 210                                        |
| <b>Ni/Cu Polyester Nonwoven UL94 VTM-0</b> | 3027-235    | 0.016 (0.4)                      | ≤ 0.07                                                           | 100/100                                                            | 7.5/18.5                                                                   | 690                                                              | 13 <sup>†</sup>                             | 210                                        |
| <b>Ni/Cu Polyester Taffeta</b>             | 3035-213*   | 0.006 (0.2)                      | ≤ 0.07                                                           | 80/70                                                              | 50/75                                                                      | 66                                                               | 2.2 – 3.3                                   | 210                                        |
| <b>Ni/Cu Polyester Taffeta UL94 V0</b>     | 3035-216*   | 0.008 (0.2)                      | ≤ 0.07                                                           | 80/70                                                              | 19/81                                                                      | NA                                                               | 7.0 – 9.0                                   | 100                                        |
| <b>Ni/Cu Polyester Ripstop</b>             | 3055-233*   | 0.007 (0.2)                      | ≤ 0.07                                                           | 90/80                                                              | 60/65                                                                      | 68                                                               | 2.2 – 3.3                                   | 210                                        |
| <b>Ni/Cu Polyester Mesh</b>                | 3070-500    | 0.008 (0.2)                      | ≤ 0.07                                                           | 53/48                                                              | 64/24                                                                      | NA                                                               | 1.3 – 2.3                                   | 210                                        |
| <b>Cu Nylon Ripstop</b>                    | 3050-113    | 0.005 (0.1)                      | ≤ 0.1                                                            | 70/70                                                              | 52/56                                                                      | 97                                                               | 1.4 – 1.9                                   | 200                                        |
| <b>Ni/Cu Nylon Ripstop</b>                 | 3050-226*   | 0.005 (0.1)                      | ≤ 0.07                                                           | 70/70                                                              | 52/56                                                                      | 97                                                               | 1.4 – 1.9                                   | 200                                        |
| <b>Ni/Cu Nylon Ripstop UL94 V0</b>         | 3050-517*   | 0.008 (0.2)                      | ≤ 0.07                                                           | 85/75                                                              | 52/56                                                                      | NA                                                               | 5.5 – 7.0                                   | 100                                        |
| <b>Cu Polyester Ripstop</b>                | 3055-121    | 0.007 (0.2)                      | ≤ 0.1                                                            | 90/80                                                              | 60/65                                                                      | 68                                                               | 2.0 – 2.7                                   | 210                                        |

NA = Not Applicable

<sup>1</sup> Product Specifications

<sup>2</sup> Measured per MIL STD 285, Typical values

<sup>3</sup> Typical values for unplated fabric.

<sup>4</sup> CD = cross machine direction, MD = machine direction

<sup>†</sup> Nominal Value

\* Note: Optional anti-fray coating on Ni/Cu woven material.

All dimensions shown are in inches (millimeters) unless otherwise specified.



# Conductive Fabric Descriptions and Applications

For specific material properties, see Data Summary Chart (page 25)

| Product No. | Material                            | Description                                                                                                                                                                                                                                                                                                                                                               | Application                                                                                                                                                    |
|-------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3027-106    | Cu Polyester Nonwoven               | Combines a highly conductive metal with the light weight, flexibility, and breathability of a nonwoven. Offers excellent surface conductivity, shielding effectiveness, and reflectivity.                                                                                                                                                                                 | Protects against EMI/RFI and ESD where weatherability is not a concern: architectural gaskets, tapes, shielding laminates, and grounding.                      |
| 3027-217    | Ni/Cu Polyester Nonwoven            | The base layer is the highly conductive copper, with an outer layer of nickel for corrosion resistance. Combines the properties of these metals with the light weight, flexibility and breathability of a nonwoven material. Offers excellent surface conductivity, shielding effectiveness, and corrosion resistance.                                                    | Protects against EMI/RFI and ESD for a variety of applications and environments: architectural shielding, gaskets, tapes, shielding materials and ribbon.      |
| 3027-235    | Ni/Cu Polyester Nonwoven UL94 VTM-0 | Combines highly conductive copper and corrosion resistant nickel with the lightweight, flexibility and breathability of a nonwoven. Offers excellent surface conductivity, shielding effectiveness and corrosion resistance. This product achieves the UL94 VTM-0 flammability rating.                                                                                    | Protects against EMI/RFI and ESD for a variety of applications and environments: architectural shielding, gaskets, tapes, shielding laminates, and grounding.  |
| 3035-213*   | Ni/Cu Polyester Taffeta             | Combines highly conductive copper and corrosion resistant nickel with the light weight, flexibility, conformability, strength and uniform appearance of a woven. Nickel/Copper Polyester Taffeta offers excellent surface conductivity, shielding effectiveness, and reflectivity.                                                                                        | Protects against EMI/RFI for a variety of applications and environments: enclosures, curtains, gaskets, cable wrap, tapes, shielding laminates, and grounding. |
| 3035-216*   | Ni/Cu Polyester Taffeta UL94 V0     | Combines highly conductive copper and corrosion resistant nickel with the light weight, flexibility, conformability, strength and uniform appearance of a woven. Nickel/Copper Polyester Taffeta offers excellent surface conductivity shielding effectiveness, and reflectivity.                                                                                         | Protects against EMI/RFI for a variety of applications and environments: enclosures, curtains, gaskets, cable wrap, tapes, shielding laminates, and grounding. |
| 3055-233*   | Ni/Cu Polyester Ripstop             | The base layer is the highly conductive copper, with an outer layer of nickel for corrosion resistance. Combines the properties of these metals with the light weight, drapability, strength, and attractive appearance of a Polyester Ripstop. Nickel/Copper Polyester Ripstop offers excellent surface conductivity, shielding effectiveness, and corrosion resistance. | Protects against EMI/RFI and ESD for a variety of applications and environments: enclosures, cables, gaskets, tapes, and grounding.                            |
| 3070-500    | Ni/Cu Polyester Mesh                | Combines highly conductive copper and corrosion resistant nickel with the light weight, flexibility, conformability, breathability and uniform appearance of a knitted mesh. Mesh offers excellent surface conductivity, shielding effectiveness, and reflectivity for a variety of applications.                                                                         | Protects against EMI/RFI for a variety of applications and environments: enclosures, curtains, gaskets, cable wrap, tapes, shielding laminates, and grounding. |
| 3050-113    | Cu Nylon Ripstop                    | This technology combines a highly conductive metal with the light weight, drapability, strength, flexibility, conformability, and attractive appearance of a nylon ripstop. Copper Nylon Ripstop offers excellent surface conductivity, shielding effectiveness, and reflectivity.                                                                                        | Protects against EMI/RFI where weatherability is not a concern: enclosures, curtains, tapes, shielded laminates, infrared camouflage, and radar reflector.     |
| 3050-226*   | Ni/Cu Nylon Ripstop                 | This technology combines highly conductive copper and corrosion resistant nickel with the lightweight, drapability, strength, flexibility, conformability, and attractive appearance of a Nylon Ripstop. Nickel/Copper Nylon Ripstop offers excellent surface conductivity, shielding effectiveness, and reflectivity.                                                    | Protects against EMI/RFI: enclosures, curtains, gaskets, tapes, shielded laminates, infrared camouflage, and radar reflector.                                  |
| 3050-517*   | Ni/Cu Nylon Ripstop UL94 V0         | This technology combines highly conductive copper and corrosive resistant nickel with the drapability, strength, flexibility, and attractive appearance of a Nylon Ripstop fabric. Excellent surface conductivity, shielding effectiveness, and UL94 V0 rating.                                                                                                           | Protects against EMI/RFI: enclosures, cables, tapes, and grounding.                                                                                            |
| 3055-121    | Cu Polyester Ripstop                | This technology combines a highly conductive metal with the lightweight drapability and attractive appearance of a Polyester Ripstop. Copper Polyester Ripstop offers excellent surface conductivity and shielding effectiveness.                                                                                                                                         | Protects against EMI/RFI and ESD: enclosures, cables, tapes, grounding, infrared camouflage, and radar reflector.                                              |

\* Note: Optional anti-fray coating on Ni/Cu woven material.

All dimensions shown are in inches (millimeters) unless otherwise specified.



# Conductive Tape

## Conductive ElectroTape

A soft conductive foil is laminated to a conductive acrylic adhesive which is protected by a siliconised paper cover. The foils can either be supplied with bright surface or with tin plating. Beside the standard widths other dimensions per customer specification are possible. In this case there is a min. quantity of reels which is determined by the master reel with a width of 11,811 inch (300 mm) out of which the individual reels have to be cut.

Also available:

With conductive acrylic adhesive on both sides.

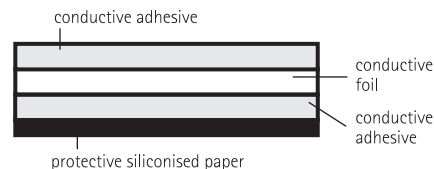


| Part No.                            | 8271-xxxx-39                    | 8271-xxxx-76                    | 8277-xxxx-77                    | 8277-xxxx-39                    | 8277-xxxx-76                    |
|-------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Foil material                       | soft copper                     | soft copper                     | soft aluminium                  | soft copper                     | soft copper                     |
| Surface                             | bright + clean                  | tin plated                      | bright + clean                  | bright + clean                  | tin plated                      |
| Thickness foil material             | 0,001 (0,035)                   | 0,001 (0,035)                   | 0,002 (0,040)                   | 0,001 (0,035)                   | 0,001 (0,035)                   |
| Thickness incl. Adhesive            | 0,002 (0,065)                   | 0,002 (0,065)                   | 0,003 (0,070)                   | 0,003 (0,085)                   | 0,003 (0,085)                   |
| Adhesive                            | electrically conductive acrylic | electrically conductive acrylic | electrically conductive acrylic | electrically conductive acrylic | electrically conductive acrylic |
| Protective cover over foil material | no                              | no                              | no                              | not applicable                  | not applicable                  |
| Adhesive performance                | 4,5 N/cm                        | 4,5 N/cm                        | 4,5 N/cm                        | 5 N/cm                          | 5 N/cm                          |
| Tensile strength                    | 50 N/cm                         | 40 N/cm                         | 25 N/cm                         | 55 N/cm                         | 40 N/cm                         |
| Tear elongation                     | 6 - 10%                         | 5%                              | 8%                              | -                               | 5%                              |
| Max. temp. contin.                  | + 150°C                         | + 150°C                         | + 150°C                         | + 150°C                         | + 150°C                         |
| Width of foil in mm                 | 12-20-25                        | 12-20-25                        | 12-20-25                        | 12-20-25                        | 12-20-25                        |
| Length/reel in m                    | 33                              | 33                              | 33                              | 33                              | 33                              |
| Resistance along foil               | 0,002 Ω                         | 0,002 Ω                         | <1 Ω                            | not applicable                  | not applicable                  |
| Resistance through foil             | <0,1 Ω                          | <0,1 Ω                          | <1 Ω                            | <0,1 Ω                          | <0,1 Ω                          |
| Listing per                         | MIL-T-47012                     | -                               | MIL-T-47012                     | -                               | -                               |
| Construction                        | Foil 1                          | Foil 1                          | Foil 1                          | Foil 2                          | Foil 2                          |

### Foil 1



### Foil 2



## Ordering Code

The ordering code consists of the partgroups, reel width and material code:

8271-0020-76

└─ material code  
└─ reel width  
└─ partgroups

For length and widths not shown, design assistance, samples, or further information, contact our sales department.

All dimensions shown are in inches (millimeters) unless otherwise specified.



## Conductive ElectroMask Tape

ElectroMask conductive foil tape with release mask is a tinned copper tape with peel off mask that allows for high temperature adhesion to withstand curing after painting.

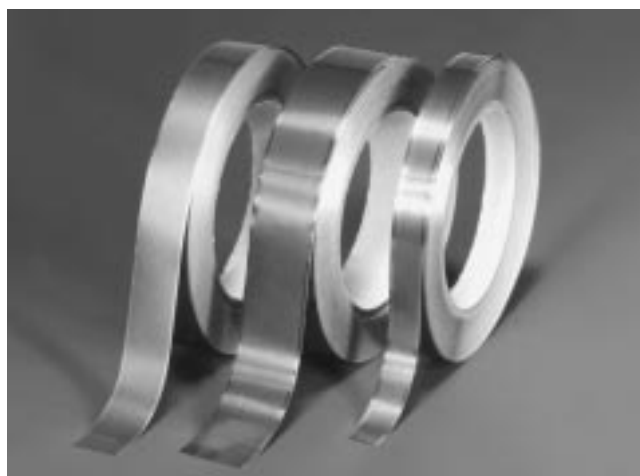
The tape provides a conductive, non-corroding surface when applied to clean metal frames, doors, or panel surfaces where electrical conductivity is required. The release mask is easily removed from the foil layer after painting. The remaining foil leaves a clean, electrically conductive path as a mating surface for an EMI gasket.

- Simple installation.
- Eliminates plating the entire cabinet.
- Die-cut shapes can be provided for grounding points within the closure.

ElectroMask Tape with release mask is offered in continuous rolls of 108 feet (32,92 m), or custom die-cut shapes.

## Application Instructions For Release Mask Tape

1. Conductive surface must be clean and free of any residue. If required, re-new mounting surface with light emery cloth or proper solvent.
2. Apply release mask tape by removing protective paper backing. Press firmly and uniformly to ensure

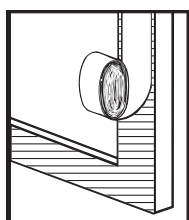


good adhesion. Proper alignment is important. Avoid removal and repositioning. Allow one hour for bonding prior to additional processing.

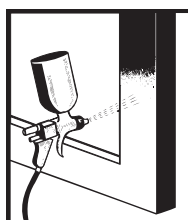
3. Use traditional methods to apply paint to masked area. Release mask tape will withstand baking temperatures up to 437 °F (225 °C) up to 60 minutes.
4. Remove mask as soon as the enclosure cools to room temperature by peeling backward, parallel to foil tape. If foil separates from the surface, simply press back in place.
5. Full adhesion is achieved after 24 hours.



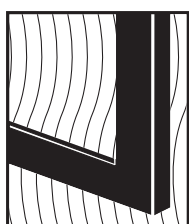
## Example of application



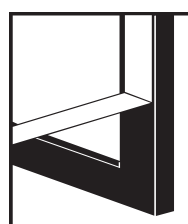
- 1) Apply copper band to the contact surface



- 2) Painting



- 3) Drying the colour



- 4) Remove protective foil: Contact surface is free

## Ordering Code

The ordering code consists of the partgroups, reel width and material code:

8274-0020-76



material code  
reel width  
partgroups

| Part No.                            | 8274-xxxx-39                    | 8274-xxxx-76                    |
|-------------------------------------|---------------------------------|---------------------------------|
| Foil material                       | soft copper                     | soft copper                     |
| Surface                             | bright + clean                  | tin plated                      |
| Thickness foil material             | 0,001 (0,035)                   | 0,001 (0,035)                   |
| Thickness incl. Adhesive            | 0,002 (0,065)                   | 0,002 (0,065)                   |
| Adhesive                            | electrically conductive acrylic | electrically conductive acrylic |
| Protective cover over foil material | Polyester shrink foil           | Polyester shrink foil           |
| Adhesive performance                | 4,5 N/cm                        | 4,5 N/cm                        |
| Tensile strength                    | 50 N/cm                         | 40 N/cm                         |
| Tear elongation                     | 6 - 10%                         | 5%                              |
| Max. temp. contin.                  | + 150°C                         | + 150°C                         |
| Width of foil in mm                 | 12-20-25                        | 12-20-25                        |
| Length/reel in m                    | 50                              | 50                              |
| Resistance along foil               | 0,002 Ω                         | 0,002 Ω                         |
| Resistance through foil             | <0,1 Ω                          | <0,1 Ω                          |
| Listing per                         | MIL-T-47012                     | -                               |

All dimensions shown are in inches (millimeters) unless otherwise specified.



## High-Flex® Conductive Fabric Shielding Tape

High-Flex® conductive fabric shielding tapes offer exceptional conformability and conductivity for dynamic flex applications. High-Flex® tapes are constructed of Electron® nickel/copper metallized ripstop or plain weave fabric with a pressure sensitive adhesive (PSA). This reliable tape design provides outstanding shielding performance while offering superior abrasion and corrosion resistance under high dynamic flex conditions.

The proprietary anti-fray coating of High-Flex® EMI shielding tapes virtually eliminates concerns of loose conductive fibers and their potential to cause board level damage. Other significant advantages over other fabric and foil shielding tapes include:

- Thinner design provides superior flexibility and durability.
- High conductivity and shielding effectiveness.
- Adhesive system provides high peel strength.
- Easy die-cutting and processing.
- Superb adhesion of nickel copper plating.
- Eliminates the potential of injury due to the sharp edges of metal foil tapes.

High-Flex® EMI shielding tape is available in standard roll widths from 0.394" (10 mm) to 1.969" (50 mm) in 0.197" (5 mm) increments and roll lengths of 65.62' (20 M). Master rolls are available in sizes up to 1.4 meter widths and 300 meter lengths. For your unique design requirements, custom die-cut parts are also available.

Some typical applications for High-Flex® EMI shielding tapes include:

- Shielding cables on notebook computers, copiers or other electronic equipment.
- "Fix-it" applications in test laboratories.
- Shielding over a component in which high conformability is essential.
- Shielding or grounding in weight sensitive applications.
- Shielding or grounding for electronic equipment where vibration may be present during operation.

### Tape Construction

|          |                                                                                                                                                          |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Carrier  | Electron® Nickel Copper Ripstop Fabric (1A)<br>Electron® Nickel Copper Ripstop Fabric (2T)<br>Electron® Metallized Nickel Copper Plain Weave Fabric (2Z) |
| Adhesive | High Strength Pressure Sensitive Acrylic Adhesive                                                                                                        |
| Liner    | Kraft Paper                                                                                                                                              |

### Performance Characteristics

|                                                | High-Flex® Tape<br>1A = Nickel Copper Ripstop Fabric    | High-Flex II® Tape<br>2T = Nickel Copper Ripstop Fabric<br>2Z = Nickel Copper Plain Weave Fabric |
|------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Tape Thickness                                 | 0.004 to 0.005 inches (0.10 mm to 0.13 mm)              | 0.003 to 0.005 inches (0.08 mm to 0.13 mm)                                                       |
| Liner Thickness                                | 0.005 to 0.006 inches (0.13 mm to 0.15 mm)              | 0.003 to 0.004 inches (0.08 mm to 0.10 mm)                                                       |
| Break Strength (ASTM 5035)                     | 50 lb./in. (856/100 mm)                                 | 50 lb./in. (856/100 mm)                                                                          |
| Weight (LT 500)                                | 2.3 to 3.0 oz./sq. yard (78.0 to 118.7 grams/sq. Meter) | 2.3 to 3.0 oz./sq. yard (78.0 to 118.7 grams/sq. Meter)                                          |
| XY Sheet Resistivity (ASTM F390)               | Below 0.08 ohms/sq. (Typically 0.03 ohms/sq.)           | Below 0.05 ohms/sq. (Typically 0.02 ohms/sq.)                                                    |
| Peel Strength (ASTM D330 & PSTC-1)             | 48 oz./in. (52 N/100 mm)                                | 54 oz./in. (59 N/100 mm)                                                                         |
| Abrasion Resistance (ASTM D3886)               | > 1,000,000 Cycles                                      | > 1,000,000 Cycles                                                                               |
| Temperature Range                              | -40 °F to 212 °F (Min/Max) (-40 °C to 100 °C)           | -40 °F to 212 °F (Min/Max) (-40 °C to 100 °C)                                                    |
| Shielding Effectiveness per Mil-Std-285 (Mod.) | > 70 dB up to 18GHz                                     | > 70 dB up to 18GHz                                                                              |

All dimensions shown are in inches (millimeters) unless otherwise specified.



### Ordering Information:

**Digits:** 1 2 3 4 5 6 7 8 9 10 11  
1 A 0 2 5 0 R 0 2 0 0

#### Digits 1 and 2

Designate conductive tape product line and fabric options:  
1A = Nickel Copper Ripstop Fabric  
2T = Nickel Copper Ripstop Fabric  
2Z = Nickel Copper Plain Weave Fabric

#### Digits 3 through 6

Designate width in millimeters to one decimal place. (i.e., in the above example, the 0250 indicates a 25 mm wide roll).

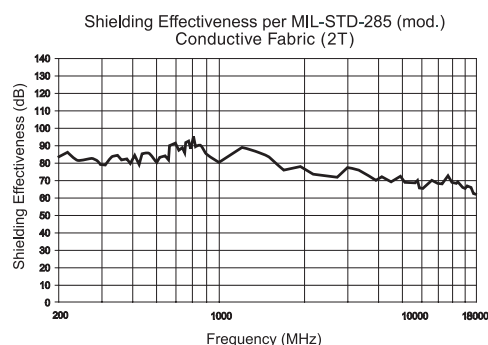
#### Digit 7

Designates the form the tape is provided in:  
R = Roll K = Kiss-Cut in Pieces P = Pieces

#### Digits 8 through 11

Designate the roll length in meters to one decimal place (i.e., in the above example 0200 indicates a roll length of 20 meters).

### Shielding Effectiveness





## Notes



# Effective shielding solutions for a great variety of applications

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