



Laird Technologies ElectroNit® Enviro-Seal™ gasketing with neoprene or silicone elastomer is specially designed to combine outstanding attenuation characteristics with climatic and thermal protection for electronic enclosures.

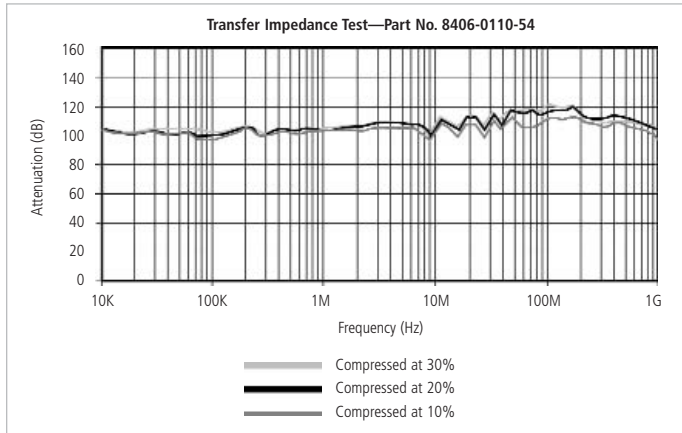
- Effectiveness against severe temperature variations from -103°F to 500°F (-75°C to 260°C)
- Protection against dust, dirt and moisture
- Adhesive backing for ease of installation
- Shielding material selection including beryllium copper, Monel and tin-plated copper clad steel
- Other alloys available upon request

Enviro-Seal gasketing is supplied coiled in multiples of 50 ft. (15,2 m) and is available with either silicone or neoprene sealing strips in either beryllium copper, Monel, or tin plated copper clad steel.

TABLE 1. MATERIAL SPECIFICATIONS

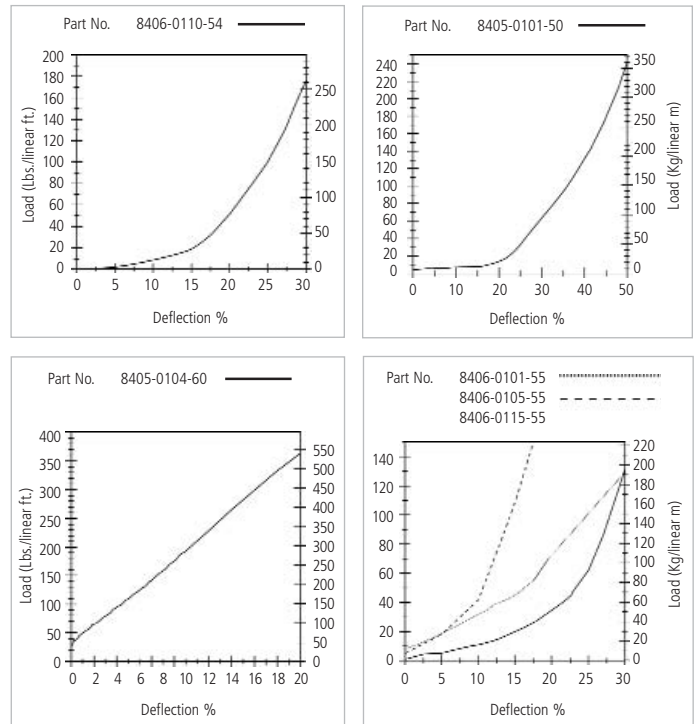
Wire Type	Description	Specification
Wire Type	Beryllium Copper	ASTM B 197
	Monel®	QQ N 281 Class A
	Tin Plated Copper Clad Steel	ASTM B 520
Elastomer Type	Neoprene Sponge	MIL-R-6130 Type II, Grade A (Closed Cell) Conditioned Medium; Temp. Range -24°F to 212°F (-31°C to 100°C)
	Silicone Sponge	AMS 3195 (Closed Cell); Temp. Range -103°F to 400°F (-75°C to 204°C)
	Silicone Solid	ZZ-R-765, Class 2, Grade 50; Temp. Range -80°F to 500°F (-62°C to 260°C)

SHIELDING EFFECTIVENESS



▲ Enviro-Seal gasketing is available in a wide range of sizes, with either silicone or neoprene environmental seal.

COMPRESSION-DEFLECTION

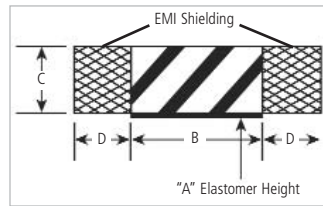
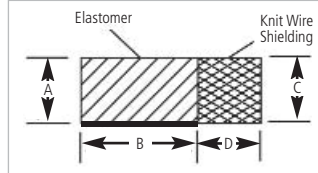




## SIZE VS. TOLERANCE

Size Range	Tolerance				
	A		B		C&D
	Sponge	Solid	Sponge	Solid	
To 0.180 (4,6)	+ 0.030/- 0.020 (+ 0.8/-0.5)	+ 0.020 (±0.5)	± 0.030 (±0.8)	± 0.030 (±0.8)	+ 0.020/- 0.000 (+0.5/- 0.0)
0.190 to 0.380 (4,8 to 9,7)	± 0.030 (± 0.8)	± 0.030 (± 0.8)	± 0.030 (±0.8)	± 0.030 (±0.8)	+ 0.030/- 0.000 (+0.8/- 0.0)
0.390 to 0.050 (9,9 to 12, 7)	± 0.046 (± 1.2)	+ 0.040/- 0.030 (+1.0/-0.8)	± 0.030 (±0.8)	± 0.030 (±0.8)	+ 0.046/- 0.000 (+1.2/- 0.0)
0.510 to 1.000 (13,0 to 25,4)	± 0.062 (± 1.6)	+ 0.060/- 0.040 (+1.5/-1.0)	± 0.060 (±1.5)	± 0.060 (±1.5)	+ 0.062/- 0.000 (+1.6/- 0.0)

For Size vs. Tolerance charts, dimensions measured under 4 oz. load (11,3 gms) with 0.750 dia. (19,1 mm) anvil.



## Application Design Data

Enviro-Seal gaskets are used in applications which require both moisture and dust sealing and EMI shielding. Presented in this section is a guide to several mounting methods, compression stop applications, and fabricated gaskets.

## Mounting Methods

Figures 1a and 1b show two common methods used to mount Enviro-Seal gaskets.

## ENVIRO-SEAL STRIPS WITH PRESSURE-SENSITIVE ADHESIVE (PSA)

Laird Technologies Part No.	Dimensions			
	A	B	C	D
8406-0101-50	0.062 (1,6)	0.250 (6,4)	0.062 (1,6)	0.125 (3,2)
8406-0102-50	0.062 (1,6)	0.375 (9,5)	0.062 (1,6)	0.125 (3,2)
8406-0103-50	0.093 (2,4)	0.375 (9,5)	0.093 (2,4)	0.125 (3,2)
8406-0104-50	0.093 (2,4)	0.500 (12,7)	0.093 (2,4)	0.125 (3,2)
8406-0105-50	0.125 (3,2)	0.125 (3,2)	0.125 (3,2)	0.125 (3,2)
8406-0106-50	0.125 (3,2)	0.188 (4,8)	0.125 (3,2)	0.188 (4,8)
8406-0107-50	0.125 (3,2)	0.250 (6,4)	0.125 (3,2)	0.125 (3,2)
8406-0108-50	0.125 (3,2)	0.250 (6,4)	0.125 (3,2)	0.250 (6,4)
8406-0109-50	0.125 (3,2)	0.375 (9,5)	0.125 (3,2)	0.125 (3,2)
8406-0110-50	0.125 (3,2)	0.625 (15,9)	0.125 (3,2)	0.125 (3,2)
8406-0111-50	0.188 (4,8)	0.188 (4,8)	0.188 (4,8)	0.125 (3,2)
8406-0112-50	0.188 (4,8)	0.250 (6,4)	0.188 (4,8)	0.125 (3,2)
8406-0113-50	0.188 (4,8)	0.500 (12,7)	0.188 (4,8)	0.125 (3,2)
8406-0114-50	0.250 (6,4)	0.250 (6,4)	0.250 (6,4)	0.125 (3,2)
8406-0131-50	0.250 (6,4)	0.380 (9,7)	0.250 (6,4)	0.125 (3,2)
8406-0115-50	0.250 (6,4)	0.500 (12,7)	0.250 (6,4)	0.125 (3,2)
8406-0116-50	0.375 (9,5)	0.500 (12,7)	0.375 (9,5)	0.250 (6,4)
8406-0120-50	0.375 (9,5)	0.750 (19,1)	0.375 (9,5)	0.250 (6,4)

The suffix "50" is BeCu neoprene sponge. For other materials, replace the suffix "50" as follows: **54**-Neoprene sponge and Monel; **52**-Silicone sponge and beryllium copper; **55**-Silicone sponge and Monel; **60**-Neoprene sponge and tin plated copper clad steel; **61**-Silicone sponge and tin plated copper clad steel.

## ENVIRO-SEAL DOUBLE SHIELD STRIPS WITH PRESSURE-SENSITIVE ADHESIVE (PSA)

Laird Technologies Part No.	Dimensions			
	A	B	C	D
8405-0101-50	0.125 (3,2)	0.250 (6,4)	0.125 (3,2)	0.125 (3,2)
8405-0102-50	0.125 (3,2)	0.375 (9,5)	0.125 (3,2)	0.125 (3,2)
8405-0103-50	0.125 (3,2)	0.500 (12,7)	0.125 (3,2)	0.125 (3,2)
8405-0104-50	0.188 (4,8)	0.500 (12,7)	0.188 (4,8)	0.125 (3,2)

The suffix "50" is BeCu neoprene sponge. For other materials, replace the suffix "50" as follows: **54**-Neoprene sponge and Monel; **52**-Silicone sponge and beryllium copper; **55**-Silicone sponge and Monel; **60**-Neoprene sponge and tin plated copper clad steel; **61**-Silicone sponge and tin plated copper clad steel.

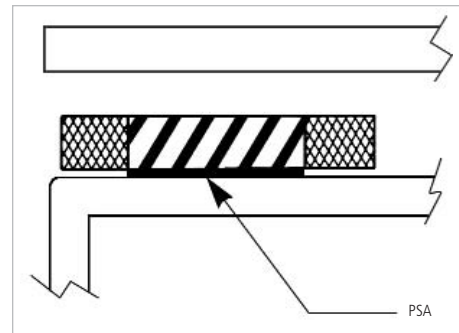


Figure 1a. Double Shield Strip with PSA

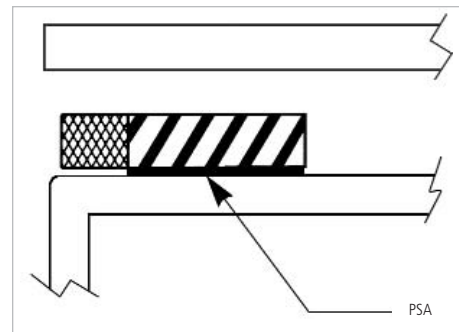


Figure 1b. Enviro-Seal Strip with PSA

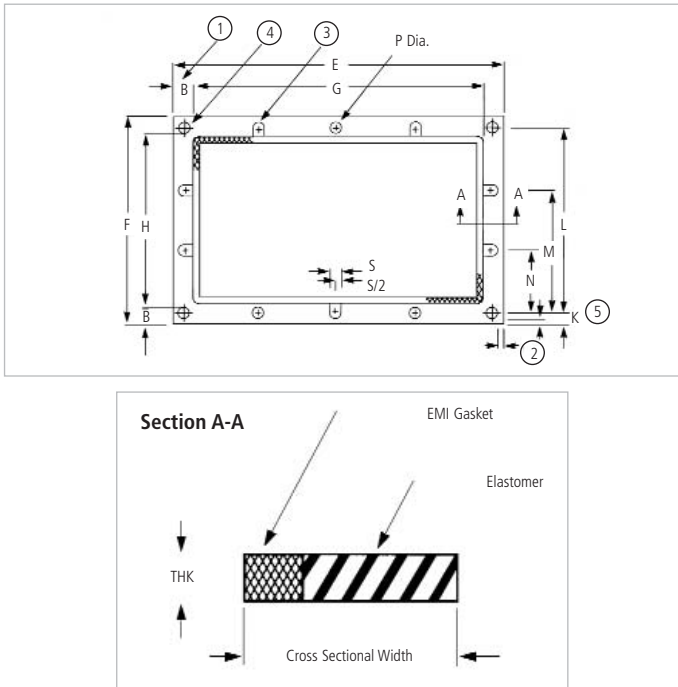
All dimensions shown are in inches (millimeters) unless otherwise specified.



**Fabricated Enviro-Seal Gaskets**

Laird Technologies can supply fabricated gaskets to fit your enclosure size and mounting criteria. Figure 2 is a common Enviro-Seal construction with bolt and/or slotted hole design.

**FIGURE 2. ENVIRO-SEAL GASKET**



**Notes:**

1. Minimum sealing gasket width is 0.125 in. (3,2 mm) but not less than gasket thickness.
2. Minimum distance from bolt hole or compression stop to edge of sealing gasket is not less than thickness of elastomer material.
3. If bolt holes must be closer than stated in Note 2, use U-shaped slots.
4. Minimum hole diameter not less than elastomer thickness.
5. Datum.

**TOLERANCE**

Dimensional Location	Size Range with Tolerance			
	0 to 4 (0 to 101,6)	4.1 to 12.0 (104,1 to 304,8)	12.1 to 24.0 (307,3 to 609,6)	
F, H, E, G	Length & Width	± 0.020 (±0,5)	± 0.031 (±0,8)	± 0.040 (±1,0)
K, N, M, L	Hole Location	± 0.010 (±0,3)	± 0.015 (±0,4)	± 0.020 (±0,5)

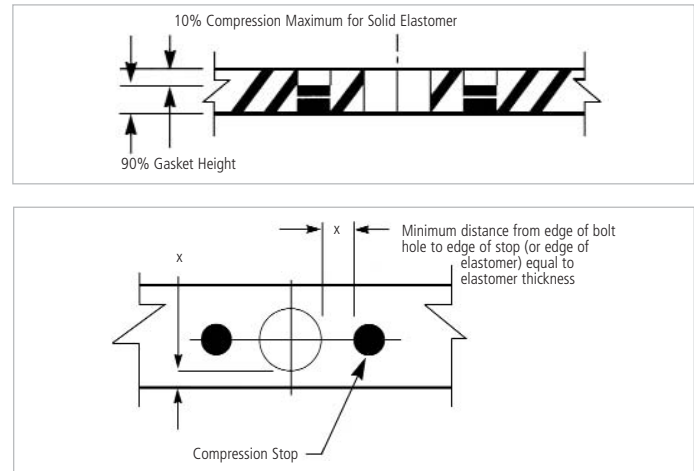
All dimensions shown are in inches (millimeters) unless otherwise specified.

**Compression Stops**

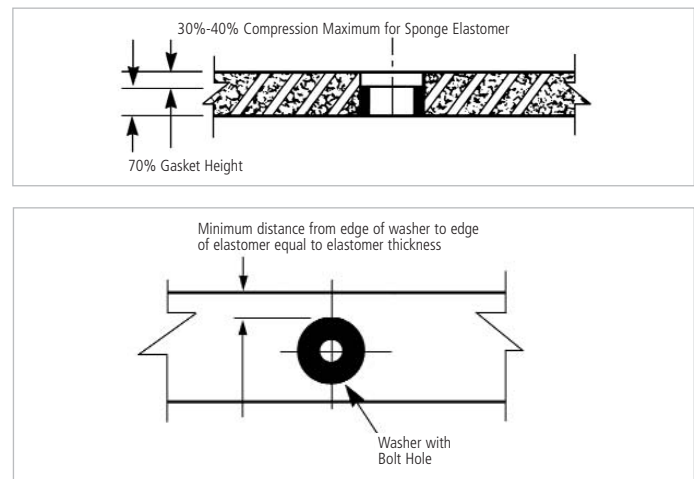
In order to avoid over-compressing the gasket or excessive bowing of the cover plate from gasket overcompression, disc or washer type compression stops can be provided as part of the gasket assembly. Compression stops are either fabricated from sheet, rod, or tubing material. Most commonly used are aluminum and stainless steel material.

Typical compression stop assemblies are shown in Figures 3a and 3b.

**FIGURE 3A. DISC TYPE COMPRESSION STOP**



**FIGURE 3B. WASHER TYPE COMPRESSION STOP**





Laird Technologies offers the channel clip-on gasket, providing users with the ease of a clip-on mounting channel adaptable to a variety of gasket materials.

- Available in customized kits of various gasketing materials with finished terminations
- Also available in a continuous length of gasketing material, resulting in gap-free corners, thereby providing an additional 20 dB in shielding effectiveness
- Unique clip-on channel base provides easy snap-in installation of EMI gasketing materials
- Lances in channel mount bite into grounding surface providing positive retention and preserving conductivity
- Channel provides gasket protection, positive stop, and additional RF barrier
- Channel can be painted to match cabinet color

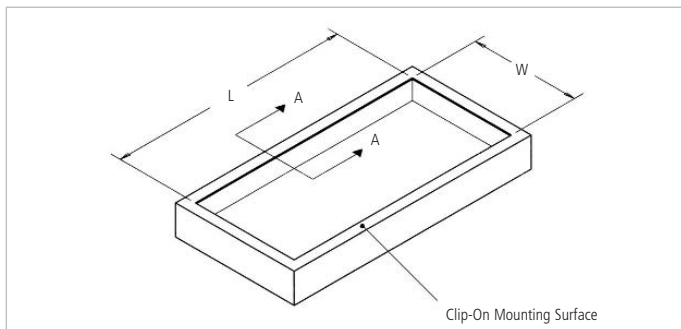
### How to Specify

1. Determine which base part number best suits your application:
  - a. Four-piece EMI gasket 8644-0100-XX
  - b. One-piece EMI gasket 8645-0100-XX
2. Determine lengths required to fit door mounting surface to nearest hundredth of an inch (L & W dimensional Figure 1). Convert millimeters to inches for ordering. Each door will require two pieces each for L and W dimension.
3. Insert lengths in place of 0100 of base part number.
4. Example: a. Length required: 19.25 in. (Convert millimeters to inches for ordering.)
  - b. Part number 8644-1925-XX
5. Determine material code (41 or 65).\*
6. Insert material code in place of XX.
7. The four-piece construction is supplied with EMI gasket installed in channel with ends sealed to prevent fray.
8. The one-piece EMI gasket will be cut to a length 6.00 in. longer than door opening periphery and packaged separately from channel for shipping. (Instructions for joint termination will be included in your order.)

### Material

1. EMI Gasket:
  - \*Code 41 - UltraFlex® "D" shaped tin plated beryllium copper wire hollow core
  - \*Code 65 - ElectroNit® tin copper plated steel wire over silicone hollow "D" elastomer core
2. Channel Clip-On: Stainless steel 304

Figure 1. Inside View of Door

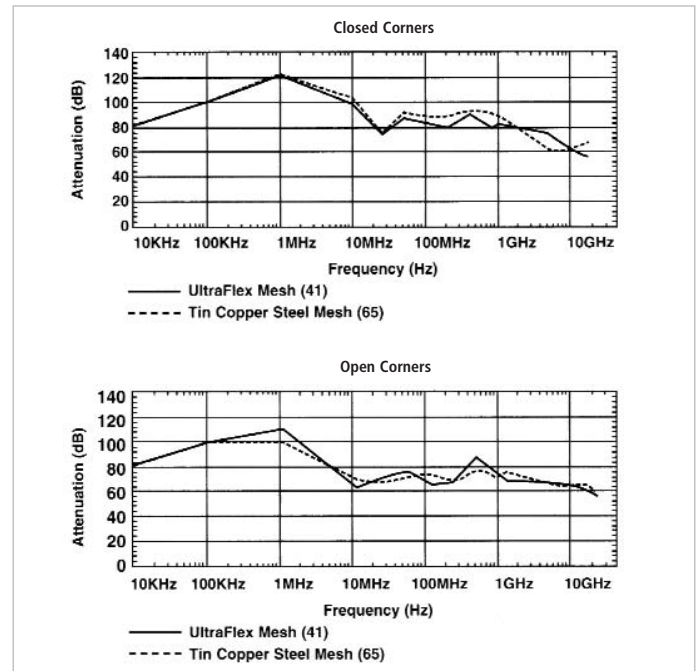


All dimensions shown are in inches (millimeters) unless otherwise specified.



### CLIP-ON CHANNEL MOUNT COMPARISON TESTING USING MIL-285 RADIATED METHOD

#### Shielding Effectiveness



#### Channel Mount

