

SOFT-SHIELD® 5000 Series Conductive Jacket over Foam Low Closure Force EMI Gaskets

DESCRIPTION

SOFT-SHIELD 5000 Series EMI gaskets are designed to meet the stringent shielding and mechanical performance requirements of today's commercial electronic enclosures, medical electronics, factory automation equipment, reprographics and grounding applications. A growing number of standard profiles and sizes provide flexibility when selecting a gasket for a specific application. Custom profiles or sizes can also be produced.

Each SOFT-SHIELD 5000 Series gasket consists of an electrically conductive fabric jacket over a highly compressible urethane foam core. The nickel-plated, woven nylon rip-stop jacket is self-terminating when cut. Chosen for its excellent compressibility, the foam core typically requires less than 1 lb/in (0.175 N/mm) closure force, making it especially useful for thin-walled plastic enclosures. Standard pressure-sensitive adhesive attachment tape (PSA) makes SOFT-SHIELD 5000 Series gaskets a user-friendly and cost-effective design solution.

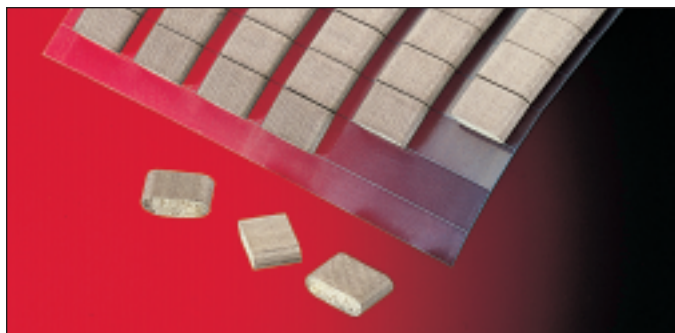
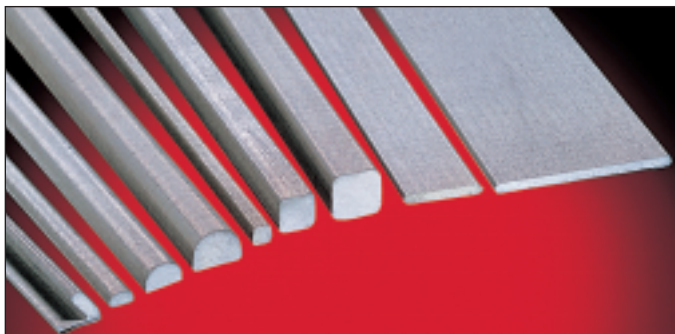
Every profile in the SOFT-SHIELD 5000 Series can be provided in a General Duty version or a UL 94V-0 rated version, as needed, with no difference in performance.

FEATURES

- Choice of General Duty or UL 94V-0 rated versions
- Typically require <1 lb/in (0.175 N/mm) closure force – 5 times lower than other gaskets
- >90 dB attenuation from 20 MHz to 10 GHz
- Asymmetrical profiles, as well as “C”, “V”, “P”, “D” shapes
- No performance degradation after 10,000 compression cycles
- Wide release liner for easy removal
- Kiss-cut parts on release sheets for easy “peel-and-stick” grounding applications
- Self-terminating jacket – no sharp edges
- Tested to Bellcore GR-64-Core Airborne Contaminants requirements
- Custom lengths, custom profiles

BENEFITS

- Cost-effective
- Alternative to BeCu fingerstock
- Pick and place installation
- Technical application support
- Global distributor/fabricator network
- Application-ready custom parts (die-cut, spliced, etc.)



With an extensive choice of profiles and sizes, SOFT-SHIELD Gaskets are supplied as strips or kiss-cut parts on film release backers, or individual pre-cut pieces. Pressure-sensitive adhesive is standard. Single-piece picture frame gaskets also can be fabricated from continuous lengths, incorporating integral pre-cut notches for fasteners. (See page 2.)

CONFIGURATIONS

Gaskets are supplied in standard 8-foot lengths or cut-to-length strips. Depending on the profile, gasketing can also be supplied on spools. For rapid peel-and-stick grounding applications, the material is supplied as kiss-cut parts on polyester film release backers, or as individual pieces.

Chomerics also fabricates single-piece, spliced picture frame gaskets from continuous lengths. With their fully jacketed surfaces, these gaskets are ideally suited for low closure force applications that require 360° EMI shielding, or the ease of installing a one-piece gasket (see next page).

Chomerics' Applications Engineering department welcomes the opportunity to provide assistance with design and prototype fabrication of SOFT-SHIELD 5000 Series EMI Gaskets in custom profiles.

FIGURE 1 Shielding Effectiveness

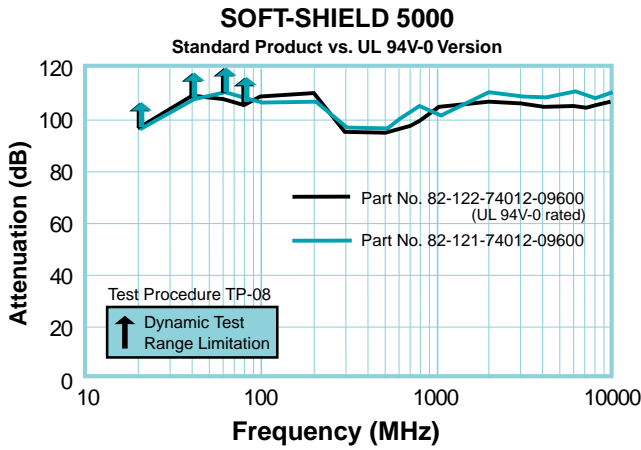
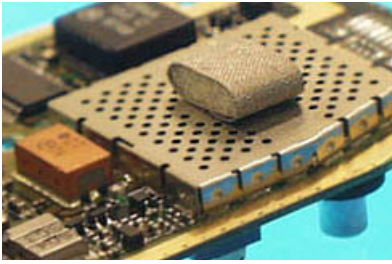


TABLE 1 Typical Properties

Property	Test Method	SOFT-SHIELD 5000
Shielding Effectiveness	CHO-TM-TP08	See Figure 1
Compression-Deflection	ASTM C165 (modified)	See Figures
Compression Set	ASTM D3574 (mod.)	<25%
Electrical Conductivity	CEPS-0002	0.1 ohm/sq. (max.)
Adhesive Peel Strength	ASTM D1000 (90° Bend)	4 lb/inch (0.7 N/mm) (min.)
Pressure-Sensitive Adhesive	—	Non-Conductive Adhesive
Operating Temperature Range	—	-40 to +70°C

Typical Application-Ready Solutions

Mobile phone grounding



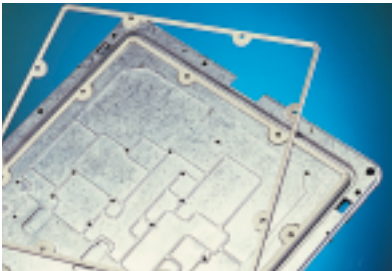
Conditions and Requirements

- minimize thru-resistance for optimum grounding
- maximum 0.25 x 0.25 inch footprint
- accommodate 0.040 inch variation in gap
- snap-in plastic cover with 2 lb max. load at 50% gasket deflection
- high volume application

SOFT-SHIELD Gasket Solution

- highly conductive jacket offers low resistance
- standard 6 x 6 mm profile, no customization required
- meets low closure force requirements
- kiss-cut parts on release paper allow quick peel-and-stick installation

Interface between aluminum casting and plastic antenna housing



Conditions and Requirements

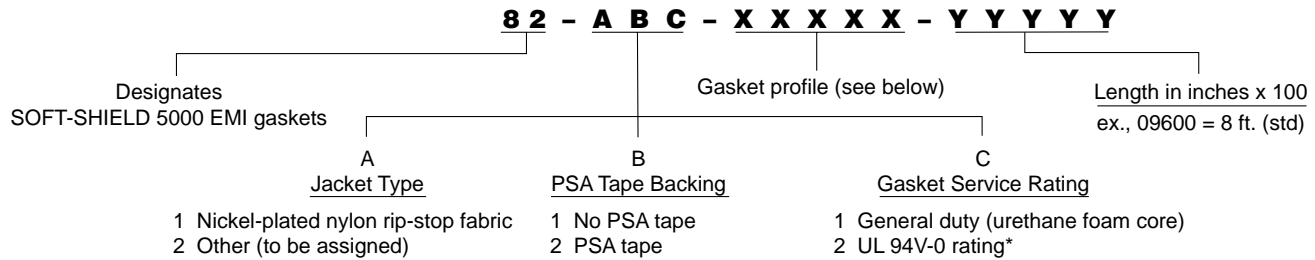
- overcome 45 dB leakage problem
- replace multiple strips with single-piece design for ease of installation
- 0.030 inch flatness tolerance on component mating surfaces
- low cost a priority

SOFT-SHIELD Gasket Solution

- effectively shields the interface
- one-piece picture frame gasket with integral notches for fasteners
- meets low closure force requirements
- customized solution that meets cost criteria—lower installed cost

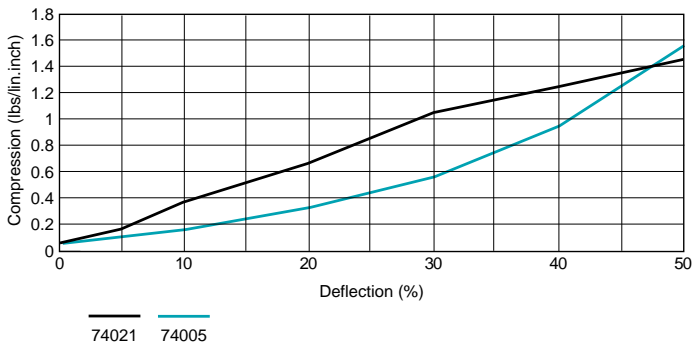
ORDERING INFORMATION

Referring to Tables 2-9, use the part number shown here to order SOFT-SHIELD 5000 Series gasketing.

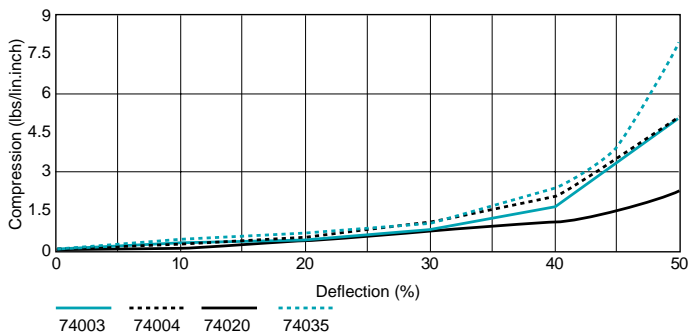


RECTANGULAR PROFILES

74005, 74021



74003, 74004, 74020, 74035



74038

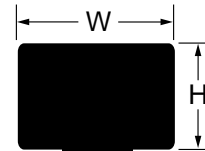
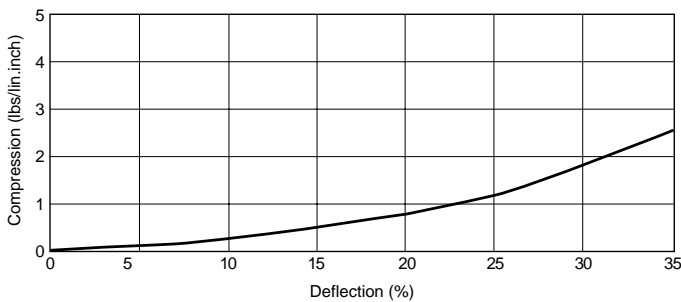
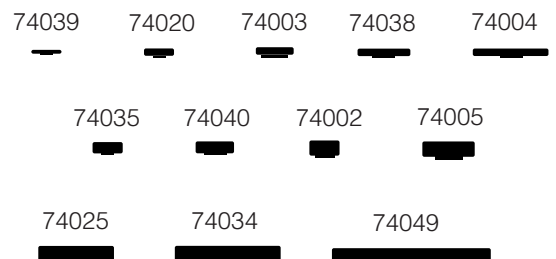


TABLE 2

RECTANGULAR STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74039	0.020 (0.50)	0.157 (4.00)
74020	0.039 (1.00)	0.157 (4.00)
74003	0.039 (1.00)	0.197 (5.00)
74038	0.039 (1.00)	0.275 (7.00)
74004	0.039 (1.00)	0.394 (10.00)
74035	0.059 (1.50)	0.157 (4.00)
74040	0.062 (1.60)	0.200 (5.00)
74002	0.079 (2.00)	0.157 (4.00)
74005	0.079 (2.00)	0.275 (7.00)
74025	0.079 (2.00)	0.394 (10.00)
74034	0.079 (2.00)	0.551 (14.00)
74049	0.079 (2.00)	0.827 (21.00)

continued on next page

ACTUAL SIZE PROFILES



NOTE: Compression/deflection curves are typical. Dimensions shown do not include PSA thickness (0.005 inch typically). Actual size shown with PSA strip.

All SOFT-SHIELD 5000 Series profiles can be supplied in either General Duty or UL 94V-0 rated versions.

RECTANGULAR PROFILES *continued*

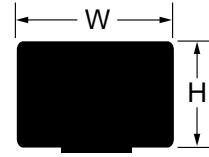
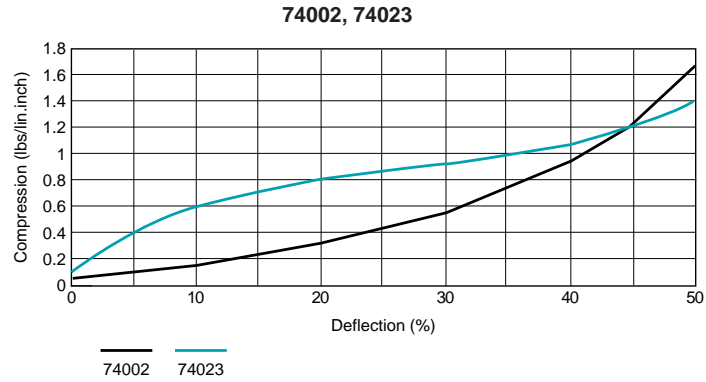
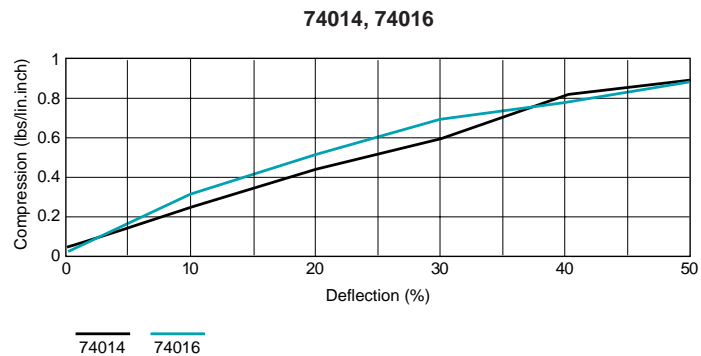
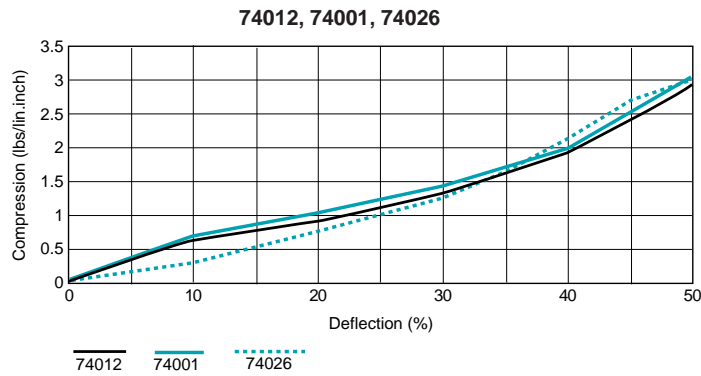
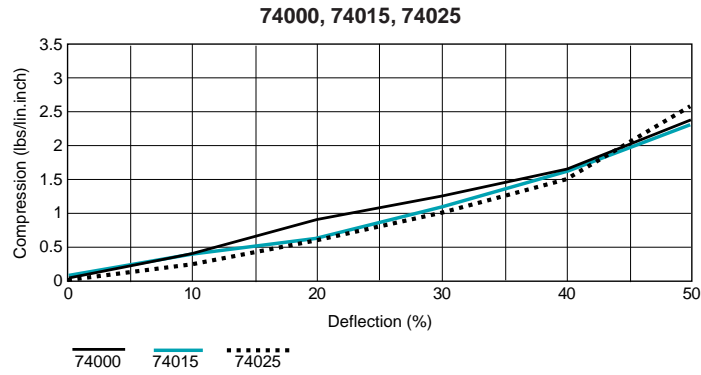


TABLE 2 *continued*

RECTANGULAR STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74048	0.118 (3.00)	0.157 (4.00)
74023	0.125 (3.18)	0.250 (6.35)
74000	0.125 (3.18)	0.375 (9.53)
74012	0.125 (3.18)	0.500 (12.70)
74001	0.125 (3.18)	0.800 (20.32)
74026	0.125 (3.18)	1.850 (47.00)
74015	0.130 (3.30)	0.190 (4.83)
74054	0.200 (5.08)	0.300 (7.60)
74016	0.250 (6.35)	0.375 (9.53)
74014	0.250 (6.35)	0.500 (12.70)
74021	0.375 (9.53)	0.500 (12.70)



ACTUAL SIZE PROFILES



Contact Chomerics for Compression/Deflection data for the following rectangular profiles:

- 74034 74048
- 74039 74049
- 74040 74054

NOTE: Compression/deflection curves are typical. Dimensions shown do not include PSA thickness (0.005 inch typically). Actual size shown with PSA strip.
All SOFT-SHIELD 5000 Series profiles can be supplied in either General Duty or UL 94V-0 rated versions.

SQUARE PROFILES

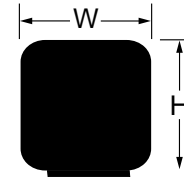
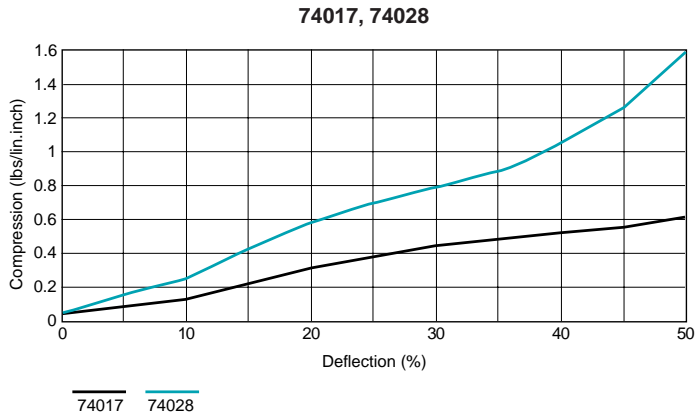
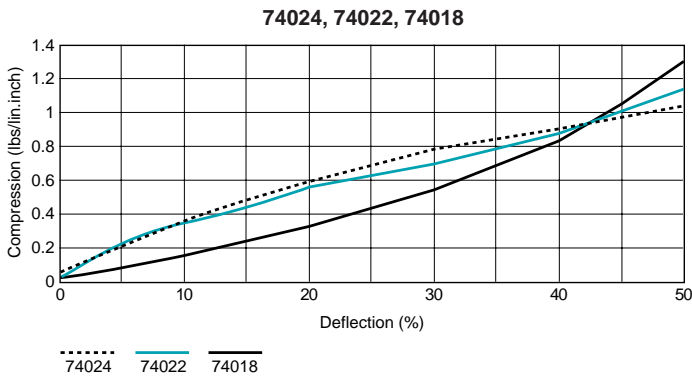
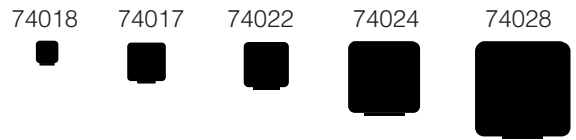


TABLE 3

SQUARE STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74018	0.118 (3.00)	0.118 (3.00)
74017	0.200 (5.08)	0.200 (5.08)
74022	0.236 (6.00)	0.236 (6.00)
74024	0.375 (9.53)	0.375 (9.53)
74028	0.500 (12.70)	0.500 (12.70)

ACTUAL SIZE PROFILES



D-PROFILES

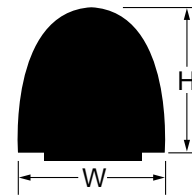
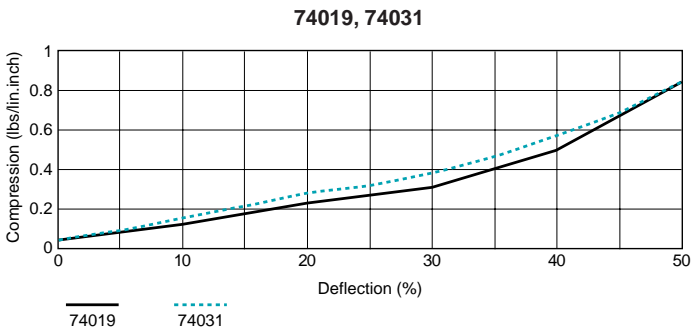
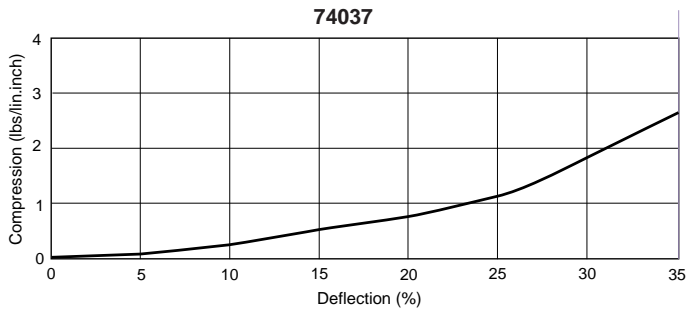
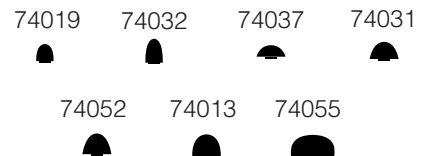


TABLE 4

D-STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74019	0.090 (2.30)	0.090 (2.30)
74032	0.125 (3.18)	0.090 (2.30)
74037	0.060 (1.52)	0.150 (3.80)
74031	0.090 (2.30)	0.150 (3.80)
74052	0.108 (2.74)	0.150 (3.80)
74013	0.120 (3.05)	0.150 (3.80)
74055	0.110 (2.79)	0.225 (5.72)

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ACTUAL SIZE PROFILES

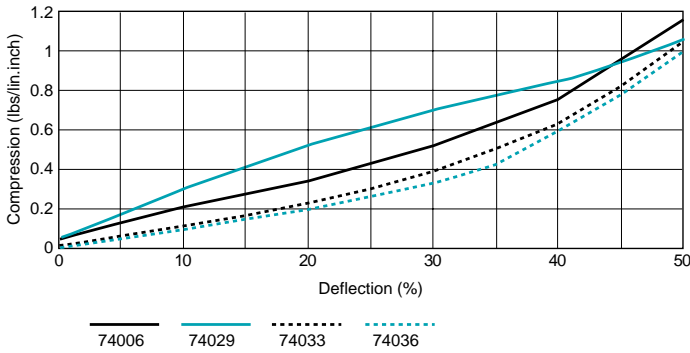


NOTE: Compression/deflection curves are typical. Dimensions shown do not include PSA thickness (0.005 inch typically). Actual size shown with PSA strip.

All SOFT-SHIELD 5000 Series profiles can be supplied in either General Duty or UL 94V-0 rated versions.

D-PROFILES continued

74006, 74029, 74033, 74036



74011, 74013, 74030

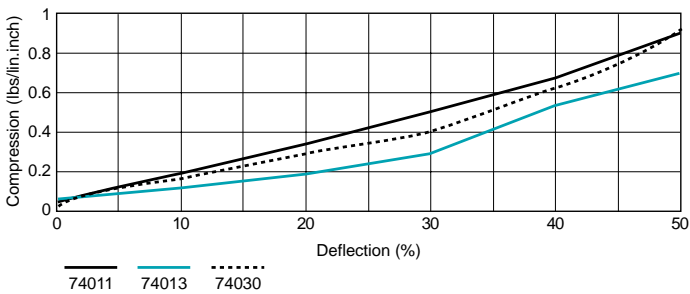


TABLE 4 continued

D-STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74030	0.157 (4.00)	0.236 (6.00)
74053	0.100 (2.54)	0.250 (6.35)
74036	0.120 (3.05)	0.250 (6.35)
74006	0.140 (3.56)	0.250 (6.35)
74011	0.250 (6.35)	0.375 (9.53)
74033	0.180 (4.57)	0.400 (10.16)
74029	0.375 (9.53)	0.500 (12.70)

ACTUAL SIZE PROFILES



Contact Chomerics for Compression/Deflection data for the following D profiles:

- 74032 74053
- 74052 74054

C-FOLD PROFILE

74008, 74027

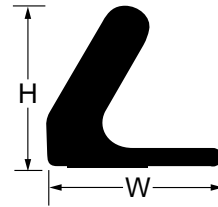
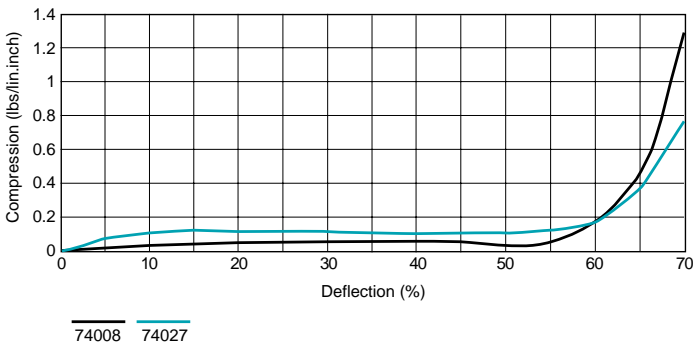


TABLE 5

C-FOLD STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74008	0.385 (9.78)	0.420 (10.67)
74027	0.420 (10.67)	0.465 (11.80)

ACTUAL SIZE PROFILES



NOTE: Compression/deflection curves are typical. Dimensions shown do not include PSA thickness (0.005 inch typically). Actual size shown with PSA strip.
All SOFT-SHIELD 5000 Series profiles can be supplied in either General Duty or UL 94V-0 rated versions.

74009

P-PROFILE

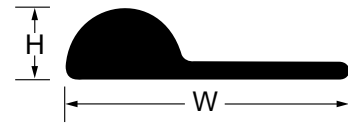
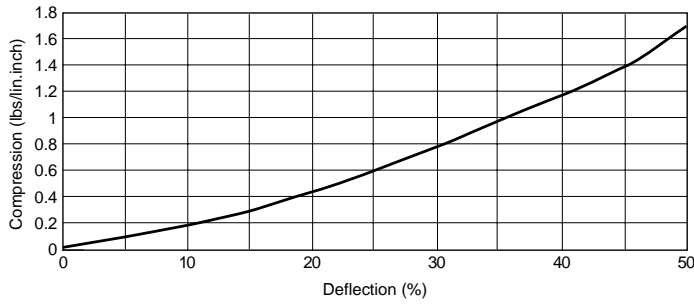


TABLE 6

P-STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74009	0.130 (3.30)	0.520 (13.20)

ACTUAL SIZE PROFILE

74009



74010

ASTRAGEL PROFILE

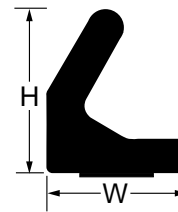
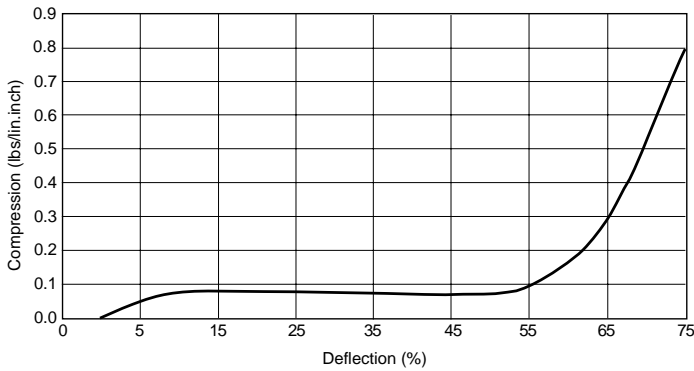


TABLE 7

ASTRAGEL STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74010	0.675 (17.5)	0.580 (14.73)

ACTUAL SIZE PROFILE

74010



TRIANGULAR PROFILE

74042

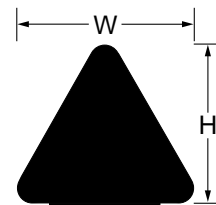
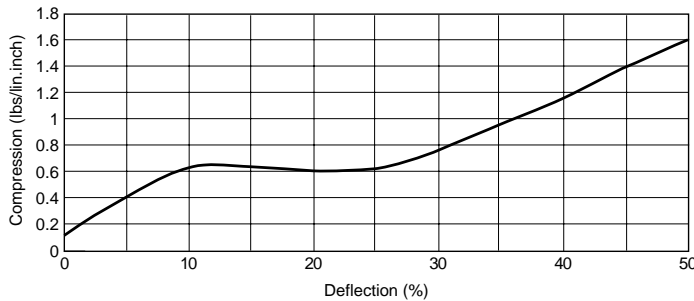


TABLE 8

TRIANGULAR STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74042	0.790 (20.00)	0.904 (23.00)

ACTUAL SIZE PROFILE

74042



NOTE: Compression/deflection curves are typical. Dimensions shown do not include PSA thickness (0.005 inch typically). Actual size shown with PSA strip.

All SOFT-SHIELD 5000 Series profiles can be supplied in either General Duty or UL 94V-0 rated versions.

KNIFE-EDGE PROFILE

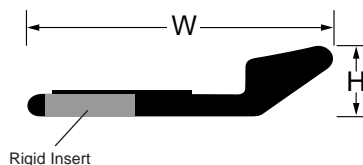
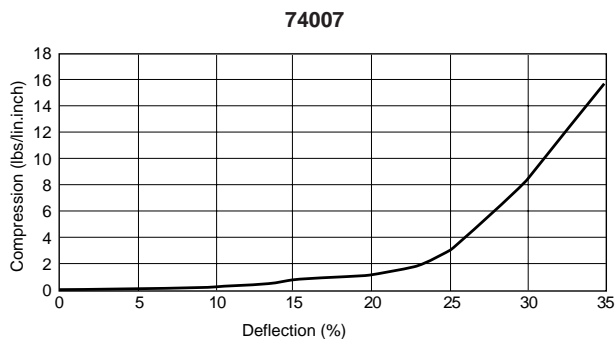


TABLE 9

KNIFE-EDGE STRIPS		
Profile Number	Height inches (mm)	Width inches (mm)
74007	0.106 (2.69)	0.445 (11.30)

ACTUAL SIZE PROFILE



NOTE: Compression/deflection curves are typical. Dimensions shown do not include PSA thickness (0.005 inch typically). Actual size shown with PSA strip.
 All SOFT-SHIELD 5000 Series profiles can be supplied in either General Duty or UL 94V-0 rated versions.

TYPICAL CROSS SECTION TOLERANCES:

- ±0.010 in. (0.25 mm) for all dimensions up to 0.04 in. (1.02 mm)
 - ±0.020 in. (0.51 mm) for all dimensions above 0.04 in. (1.02 mm)
- Detailed part drawings are available on request.

TYPICAL LENGTH TOLERANCES:

- 0.10 to 6.0 in. (0.25 to 15.2 cm) ± 0.030 in. (0.76 mm)
- 6.1 to 18.0 in. (15.5 to 45.7 cm) ± 0.060 in. (1.52 mm)
- 18.1 to 42.0 in. (46.0 to 106.7 cm) ± 0.075 in. (1.91 mm)
- 42.1 to 96.0 in. (107.0 to 243.8 cm) ± 0.090 in. (2.29 mm)

TYPICAL KISS-CUT TOLERANCES:

- 0.04 to 0.12 in. (1.02 to 3.05 mm) ± 0.015 in. (0.38 mm)
- 0.121 to 0.40 in. (3.07 to 10.16 mm) ± 0.035 in. (0.89 mm)

Inquiries are invited concerning other cross sections and sizes.

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