

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.

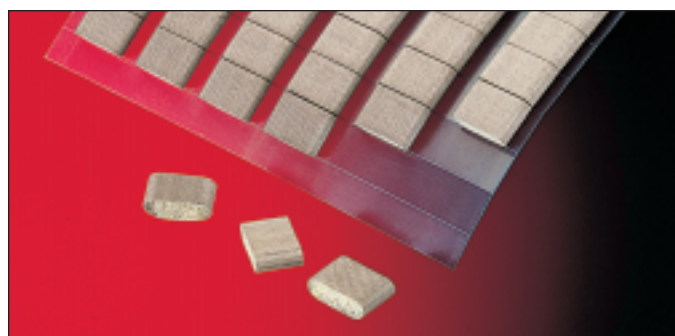
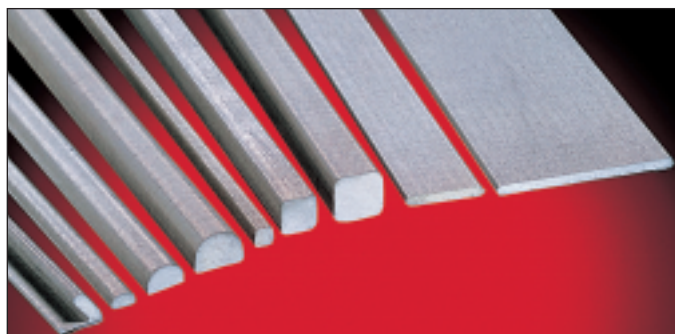
Every profile in the SOFT-SHIELD 5000 Series can be provided in a General Duty version or a UL 94V-0 rated version, as needed, with no difference in performance.

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

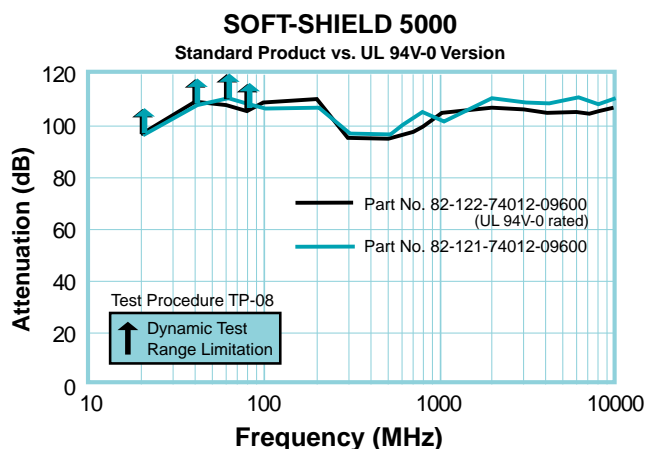
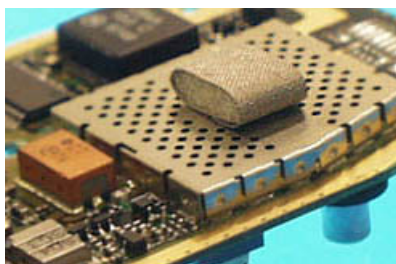


TABLE 1 Typical Properties

| 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



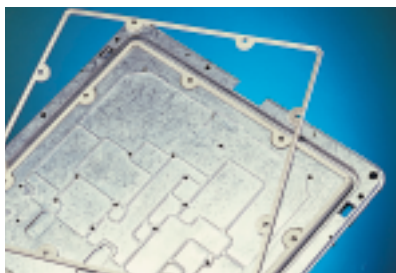
Conditions and Requirements

- 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

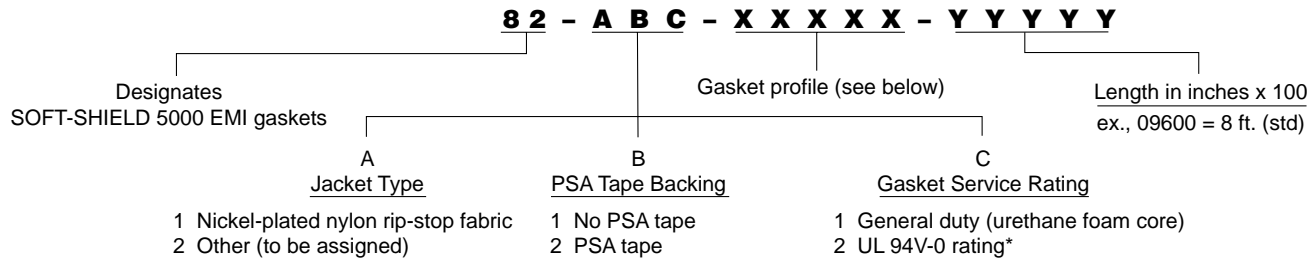
- overcome 45 dB leakage problem
- replace multiple strips with single-piece design for ease of installation
- 0.030 inch flatness tolerance on component mating surfaces
- low cost a priority

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

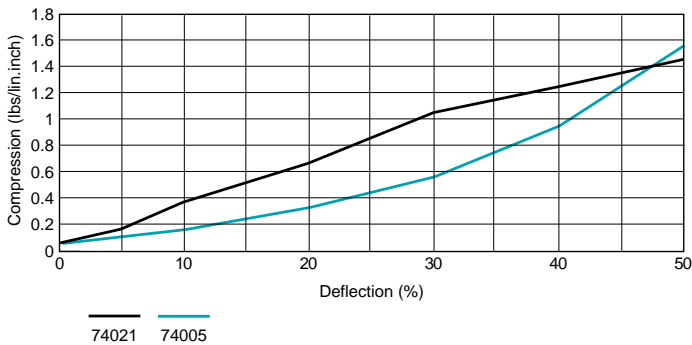
ORDERING INFORMATION

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

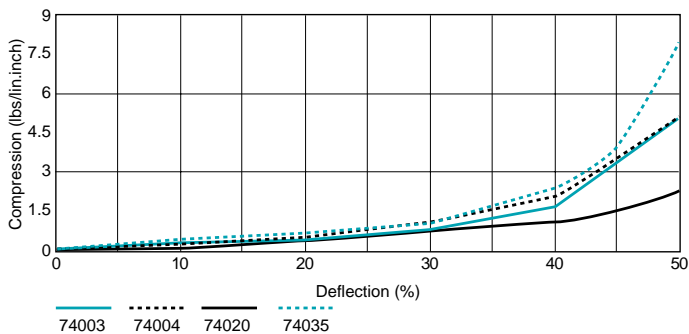


RECTANGULAR PROFILES

74005, 74021



74003, 74004, 74020, 74035



74038

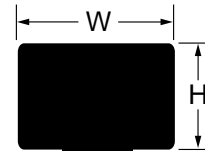
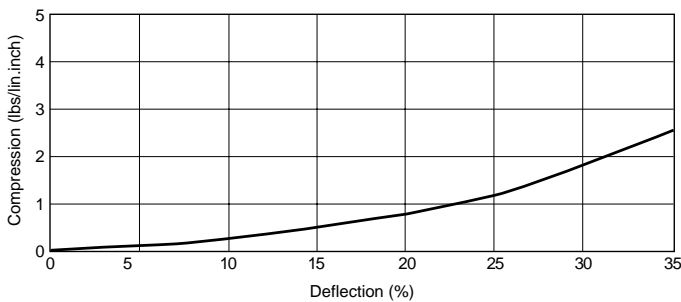
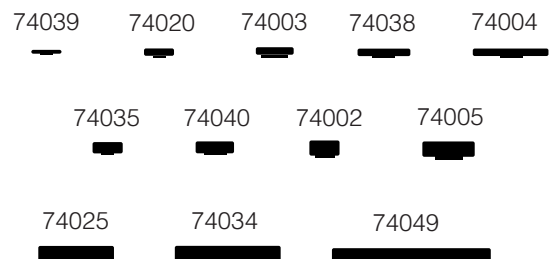


TABLE 2

| 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*

74002, 74023

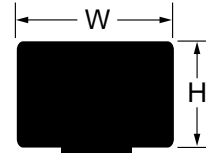
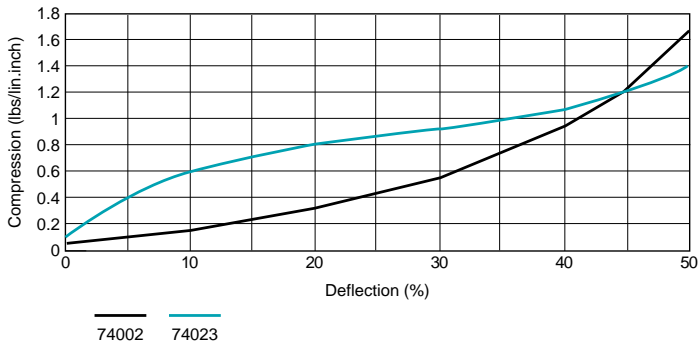
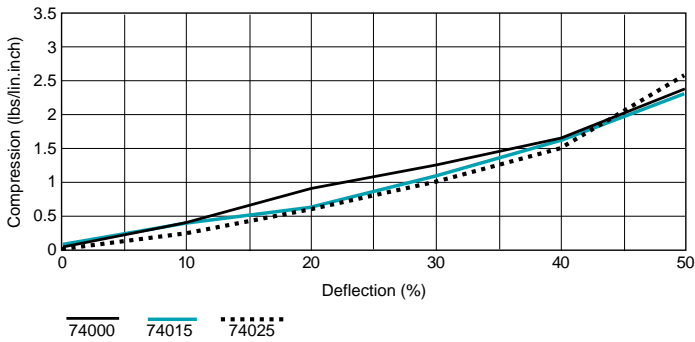


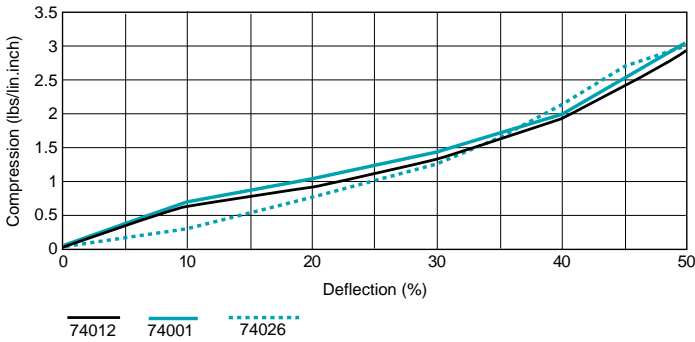
TABLE 2 *continued*

| 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) |

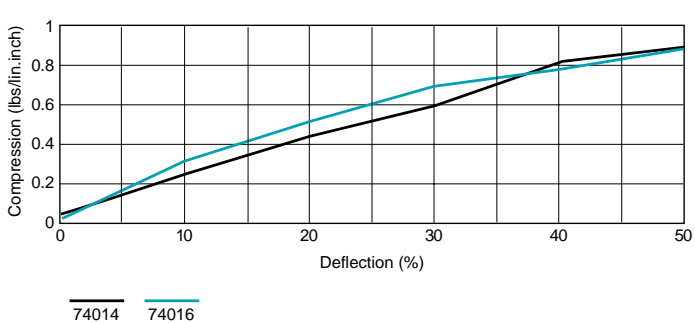
74000, 74015, 74025



74012, 74001, 74026



74014, 74016



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

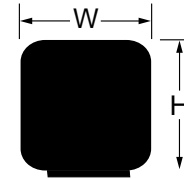
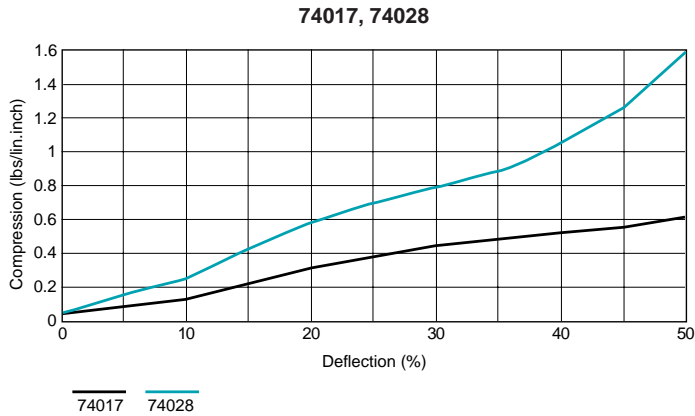
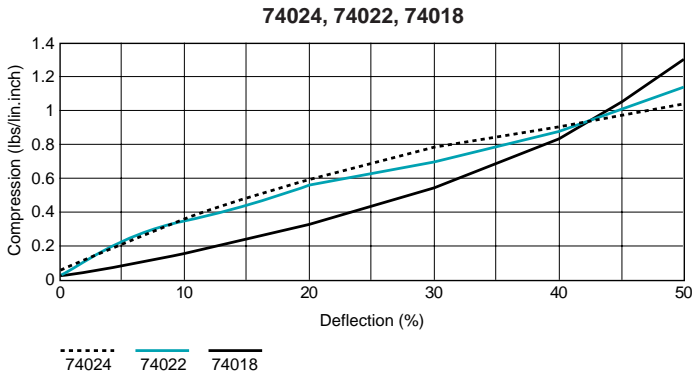


TABLE 3

| 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

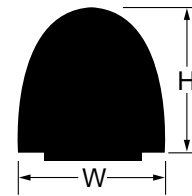
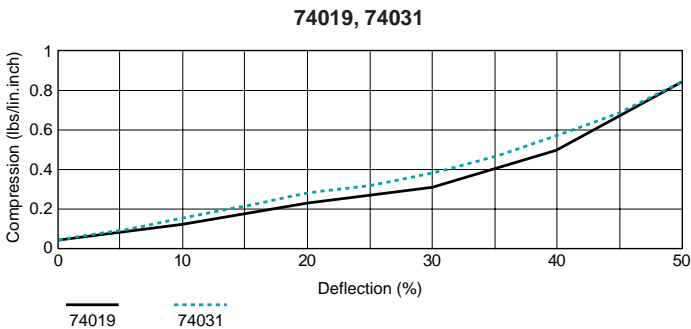
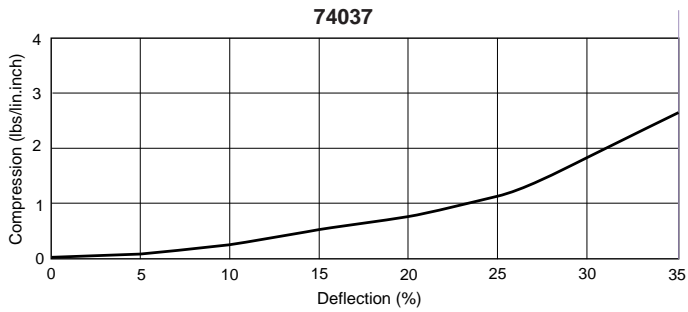
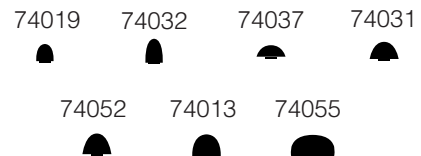


TABLE 4

| 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

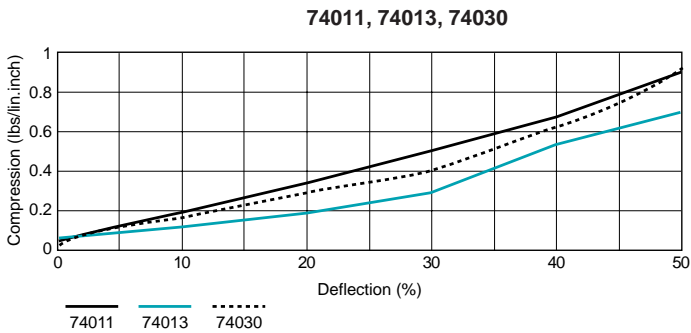
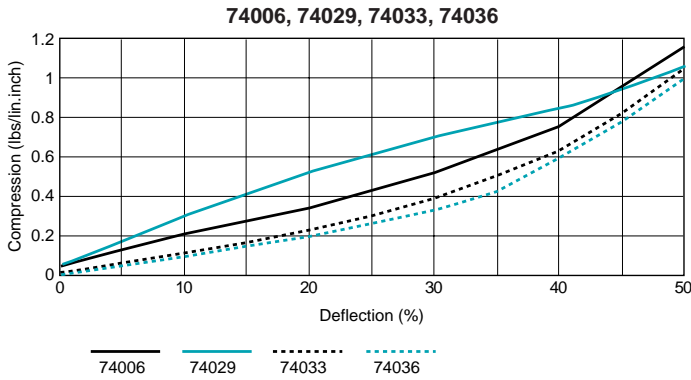
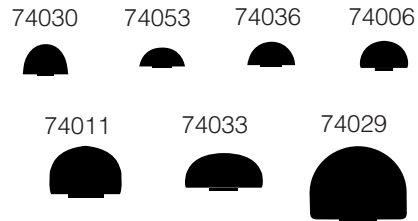


TABLE 4 continued

| 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

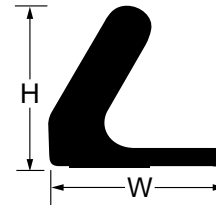
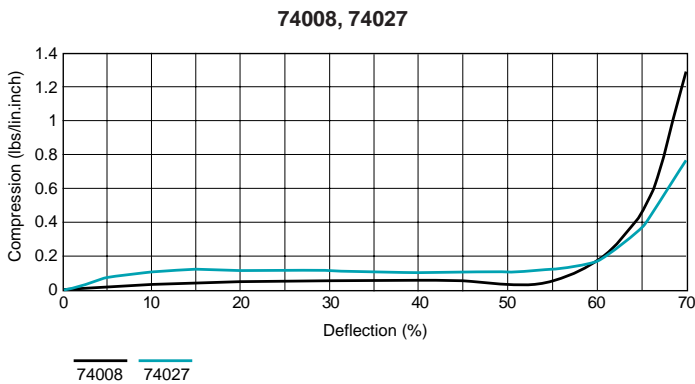


TABLE 5

| 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

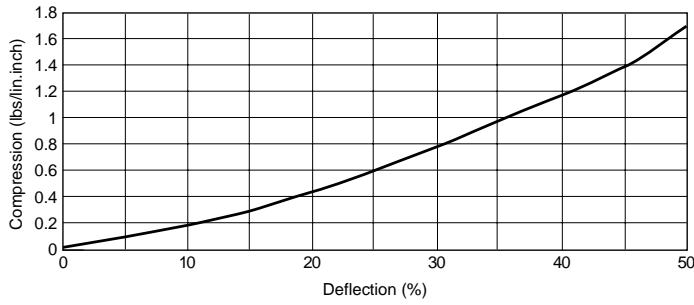


TABLE 6

| 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

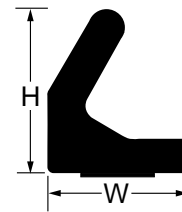
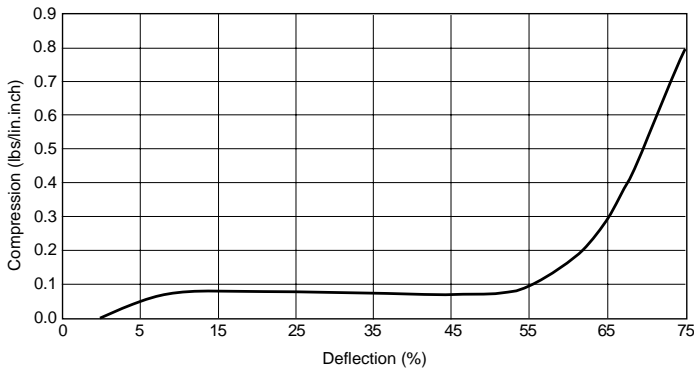


TABLE 7

| 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

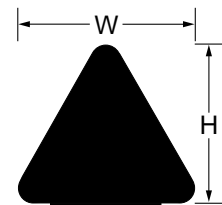
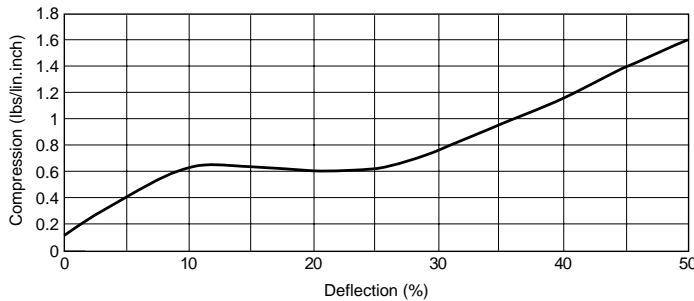


TABLE 8

| 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

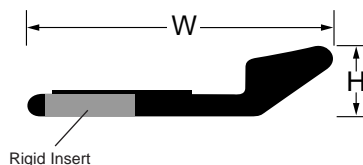
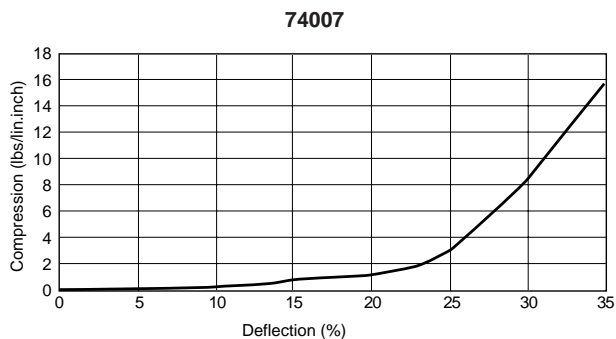


TABLE 9

| 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.

| | | | | | |
|--|---|--|---|--|---|
| www.chomerics.com | Chomerics, Div. of Parker Hannifin 77 Dragon Court Woburn, MA 01888-4014 TEL: 781-935-4850 FAX: 781-933-4318 | | Parker Hannifin PLC Chomerics Europe Parkway, Globe Park Estate Marlow, Bucks, SL7 1YB, United Kingdom TEL: (44) 1628 404000 FAX: (44) 1628 404090 France Freephone TEL: (0590) 8170 Germany Freephone TEL: (0130) 818074 | | Parker Hannifin Hong Kong Ltd. Chomerics Sales Department 8/F King Yip Plaza 9 Cheung Yee Street, Cheung Sha Wan Kowloon, Hong Kong TEL: (852) 2 428 8008 FAX: (852) 2 423 8253 |
|--|---|--|---|--|---|

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