

Section B: Metal Fibers and Screens

*U.S. Customary
[SI Metric]*



PRODUCT	PAGE
DUOLASTIC™ (Woven Wire Impregnated with Elastomer)	B1 - B2
TECKFELT™ (Thin Gasket Sheets of Sintered Metal Fiber)	B3 - B4
TECKSPAN™ (Expanded Metal with Optional Elastomer Filler)	B5 - B6



Duolastic™

WIRE MESH GASKET MATERIAL

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

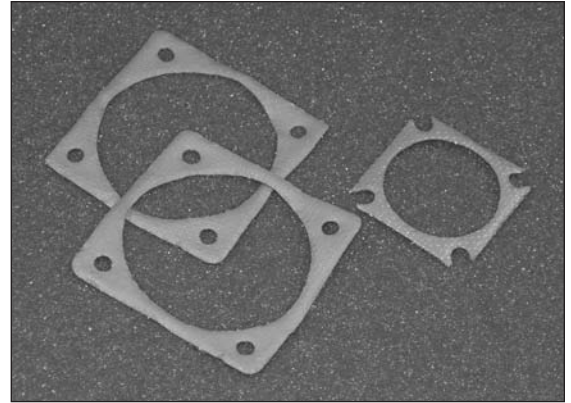
TECKNIT DUOLASTIC* material consists of a woven aluminum wire screen impregnated with neoprene or silicone elastomer. DUOLASTIC provides both EMI shielding and environmental sealing. The aluminum wire screen provides electrical contact between mating surfaces, while the elastomer material fills the gaps between the individual wires of the screen to ensure a fluid tight seal.

APPLICATION INFORMATION

TECKNIT DUOLASTIC is the thinnest TECKNIT gasket material available. Parts are manufactured from sheets 0.016 or 0.020 in. [0.41 or 0.51 mm] thick. The physical properties of DUOLASTIC allow gaskets of intricate shapes to be manufactured. DUOLASTIC should be used in applications where space limitations require a gasket of minimum thickness.

EMI SHIELDING PERFORMANCE

When properly installed, DUOLASTIC will provide a total E-Field shielding effectiveness of 75 to 100 dB, out to 1 GHz.



SPECIFICATIONS

MATERIAL DESCRIPTION

- **Wire Screen:** Aluminum alloy 5056 per SAE-AMS-4182.
- **Sealing Elastomer:** Neoprene per SAE-AMS-3222 or Silicone per AMS 3302D.

PERFORMANCE CHARACTERISTICS

Temperature Range:

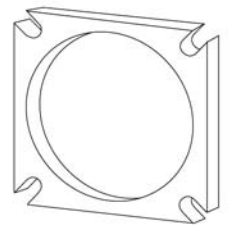
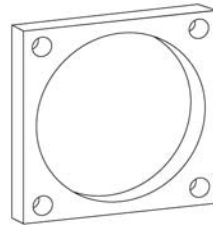
- 40°F to 212°F [-40°C to 100°C] for Neoprene.
- 75°F to 500°F [-60°C to 260°C] for Silicone.

Recommended Closing Force: 100 psi [690 kPa].

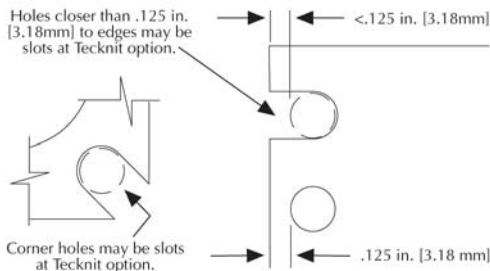
CABLE CONNECTOR GASKET

(Mounting Flange Type)

TECKNIT offers many EMI materials which can be formed into cable Connector Gaskets. DUOLASTIC is the thinnest gasket material available for applications where space limitations require a gasket of minimum thickness and has proven to be a very reliable EMI material in such applications. Refer to TECKNIT Standard Cable Connector Gaskets.



HOLES VS. SLOTS



TOLERANCES

DUOLASTIC gaskets less than 10 in. can be cut to $\pm .015$ in.; greater than 10 in. but less than 20 in.: $\pm .030$ in.; for gaskets 20 in. and greater: $\pm .040$ in.

ORDERING INFORMATION

DUOLASTIC gaskets can be fabricated in virtually any shape or size. Wall thickness should be not less than .075 in. [1.91 mm] to avoid breakout. DUOLASTIC materials are also available in bulk form 8 in. [203 mm] wide and up to 50 ft. [15.24 m] in length. When ordering DUOLASTIC, specify all gasket dimensions and TECKNIT part number. For assistance, contact the TECKNIT area representative or factory nearest you.

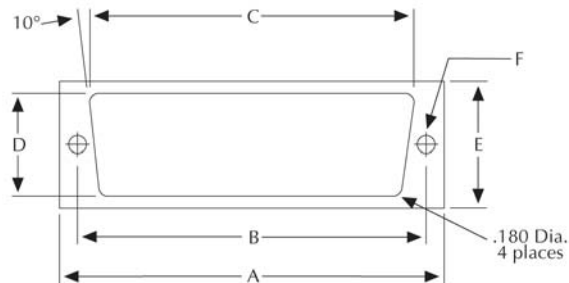
PARTS NUMBERS

MATERIAL NUMBER	THICKNESS in. [mm]	SEALING MATERIAL
42-80000	.020 \pm .004 [0.51 \pm 0.10]	Neoprene
42-60000	.020 \pm .004 [0.51 \pm 0.10]	Silicone
42-80500	.016 \pm .004 [0.41 \pm 0.10]	Neoprene
42-60500	.016 \pm .004 [0.41 \pm 0.10]	Silicone

“D” Subminiature Connector Gaskets

ALUMINUM WOVEN WIRE SCREEN IMPREGNATED WITH ELASTOMER

DUOLASTIC is also used to manufacture “D” subminiature connector gaskets. The woven aluminum wire screen is provided with either neoprene or silicone elastomer to meet individual design requirements where effective electrical contact between mating surfaces is essential. In addition, the elastomer material fills in between the individual wires of the screen affording environmental protection.



* See section H: EMI Connector Gaskets for additional information

GASKET DIMENSIONS

PART NUMBER	MOUNTING METHOD	NUMBER OF CONNECTOR PINS	A	B	C	D	E	F
			$\pm .020$	$\pm .005$	$\pm .010$	$\pm .010$	$\pm .020$	$\pm .005$
42-X1700	Front Mounting	9	1.313	.984	.782	.450	.750	.140
42-X1701	Rear Mounting		1.313	.984	.665	.370	.750	.140
42-X1702	Front Mounting	15	1.641	1.312	1.110	.450	.750	.140
42-X1703	Rear Mounting		1.641	1.312	.993	.370	.750	.140
42-X1704	Front Mounting	25	2.188	1.852	1.650	.450	.750	.140
42-X1705	Rear Mounting		2.188	1.852	1.533	.370	.750	.140
42-X1706	Front Mounting	37	2.829	2.500	2.298	.450	.750	.140
42-X1707	Rear Mounting		2.829	2.500	2.181	.370	.750	.140
42-X1708	Front Mounting	50	2.740	2.406	2.200	.562	.860	.140
42-X1709	Rear Mounting		2.740	2.406	2.087	.480	.860	.140

NOTE: When ordering .020 Silicone Filled Duolastic, replace the “X” in the Part Number with a “6”. When ordering .020 Neoprene Filled Duolastic, replace the “X” in the Part Number with an “8”.



Teckfelt™

SINTERED METAL FIBER GASKET MATERIAL

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

TECKFELT is a sintered metal fiber felt structure produced in sheet form. It can be filled with silicone elastomer for applications requiring an environmental or fluid seal. TECKFELT can also be supplied unfilled when EMI is the sole consideration.

APPLICATION INFORMATION

The randomly arranged compacted metal fibers characteristic of TECKFELT provide a highly conductive path between mating surfaces. This makes TECKFELT an ideal material for EMI or EMP shielding, grounding, and static discharge applications, especially in corrosive environments.

SEALING PROPERTIES

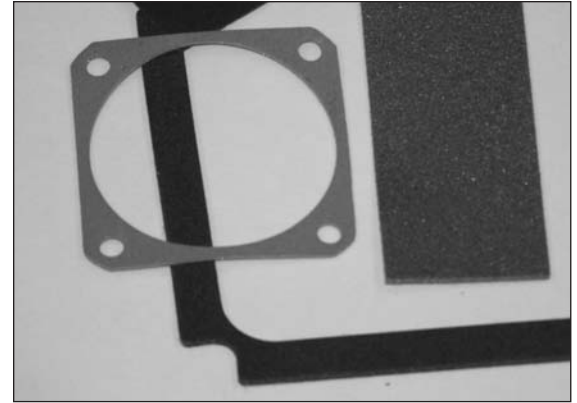
TECKFELT elastomer impregnated gaskets have been compared to other types of thin, dual-purpose gaskets and are proven to have the lowest air leak rate and best sealing properties of all thin EMI gasket materials.

EMI SHIELDING PERFORMANCE*

TECKNIT TECKFELT Shielding Effectiveness has been tested in accordance with TECKNIT Test Method TSETS-01 and based upon modified MIL-STD-285. Typical values are given below.

MATERIALS	H-FIELD	E-FIELD	PLANE WAVE	
	100 kHz	10 MHz	1 GHz	10 GHz
	dB	dB	dB	dB
Teckfelt	70	130	85	70

*Based on 127 mm x 127 mm Aperture



SPECIFICATIONS

MATERIAL DESCRIPTION

Metals: Corrosion resistant steel.

- **Fiber Diameter:** 0.0004 to 0.004 in. [0.01 to 0.1 mm] mean diameter range.

- **Density:** 1.5 g/cm³ (unfilled).

Filler (when specified): Commercial Grade Silicone elastomer

Temperature Range (with filler): -75°F to 392°F [-60°C to 200°C].



TECKFELT SHEETS

Standard sheet size is 12 in.x 15 in. [305x380mm].

MATERIAL TYPE	SHEET THICKNESS*	PART NUMBER
Unfilled	.031 in. [0.79 mm]	45-09810
	.063 in. [1.59 mm]	45-09812
Filled	.031 in. [0.79 mm]	45-09811
	.063 in. [1.59 mm]	45-09813

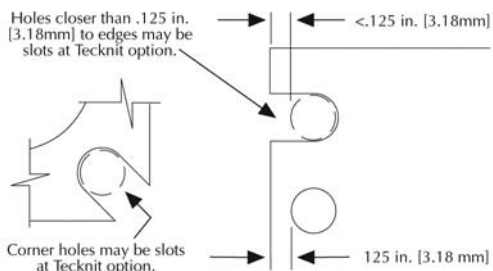
*Sheet thickness tolerance $\pm .005$ in. [0.13 mm]

CUSTOM TECKFELT GASKETS

TECKFELT gaskets can be manufactured in a wide range of shapes and sizes.

When designing custom TECKFELT gaskets, it is important to maintain a minimum wall thickness of 0.090 in. [2.29 mm] between the outside edge of the gasket and the edge of any internal opening, such as at mounting holes, to avoid break out of thin gasket sections. For standard TECKFELT connector flange gaskets, see EMI Connector information.

HOLES VS. SLOTS



TOLERANCES

TECKFELT gaskets less than 10 inches can be cut to $\pm .015$ inches. For each additional 5 inches add an additional $\pm .015$ inches to tolerance.

CUSTOM TECKFELT SHEETS

Sheets thicker than standard sheet size can be manufactured by bonding two or more standard TECKFELT sheets using a silicone adhesive.

ORDERING INFORMATION

When ordering TECKFELT Gaskets, specify gasket dimensions and TECKNIT part number. To order CUSTOM TECKFELT or for other assistance, contact your nearest TECKNIT area representative or factory location.



Teckspan™

EXPANDED METAL GASKETS

U.S. Customary
[SI Metric]

GENERAL DESCRIPTION

TECKSPAN materials are manufactured from sheets of aluminum or monel expanded metal to produce a conductive material with over 200 contact points per square inch of gasket surface. The small openings of the expanded metal can be filled with a silicone elastomer which effectively provides an environmental seal in addition to an EMI shield. Where EMI shielding only is required, metal gaskets may be easily stamped from the unfilled sheets of TECKSPAN.

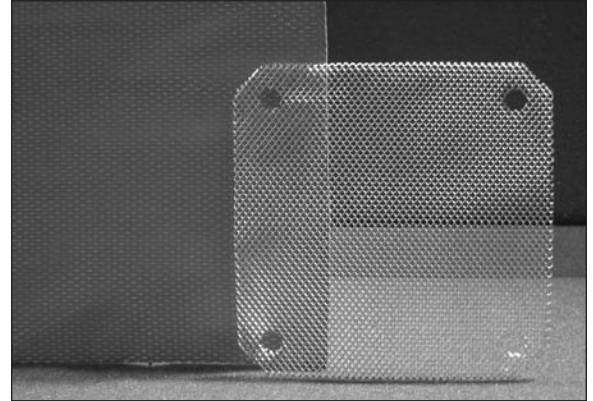
APPLICATION INFORMATION

TECKSPAN is one of the TECKNIT family of thin EMI shielding materials. TECKSPAN can be used in shielding electronic enclosures where size limitations necessitate the use of thin gasket materials and where closure pressures are 50 psi or greater. When filled with a silicone elastomer, TECKSPAN provides good fluid sealing properties at moderate flange pressures. The many expanded metal contact points of both filled and unfilled TECKSPAN also provide a low impedance contact surface.

EMI SHIELDING PERFORMANCE

TECKNIT TECKSPAN Shielding Effectiveness has been tested in accordance with TECKNIT Test Methods TSETS-01 and based upon modified MIL-STD- 285. Typical values for a 5" square size are given below.

MATERIALS	H-FIELD	E-FIELD	PLANE WAVE	
	100 kHz	10 MHz	1 GHz	10 GHz
	dB	dB	dB	dB
Monel	60	125	85	50
Aluminum	50	85	70	40



SPECIFICATIONS

MATERIAL DESCRIPTION

Expanded Metal

- **Monel:** per QQ-N-281.
- **Aluminum alloy:** QQ-A-250/2 (ASTM-B-209).
- **Openings:** Diamond shaped, .100 in. x .100 in. [2.54 mm x 2.54 mm] approximately.
- **Contact Points:** 200-250 per in.² [31-39 per cm²].

Sealing Elastomer

- **Silicone rubber:** per ZZ-R-765 (AA-59588), Class 2b, Grade 50, Color gray.
- **Fluorosilicone Rubber:** per MIL-R-25988B Class 1 Grade 40. (SAE-AMS-25988)

PERFORMANCE CHARACTERISTICS

Temperature: -75°F to 500°F [-60°C to 260°C]

Recommended Closing Force: 50 psi [345 kPa] minimum.



CABLE CONNECTOR GASKETS

(Mounting Flange Type)

TECKNIT has many EMI shielding materials that can be used for manufacturing cable connector gaskets. TECKSPAN has proven to be a very reliable EMI material for such applications. Refer to TECKNIT Standard EMI Connector Gaskets data.

STANDARD BULK SHEET

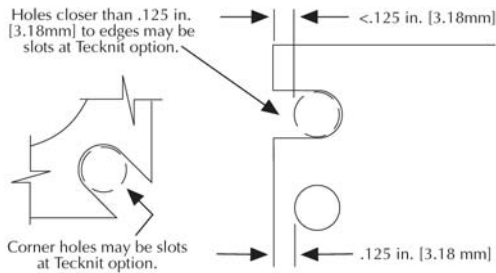
THICKNESS ±.004 in. [±.10mm]	METAL EMI SHIELD	ELASTOMER SEAL	PART NUMBER
.020 [0.51]	Monel	Silicone	48-09862*
.020 [0.51]	Aluminum	Silicone	48-09863*
.020 [0.51]	Monel	Fluorosilicone	48-01094**
.032 [0.81]	Monel	None	48-00476
.032 [0.81]	Aluminum	None	48-00481
.032 [0.81]	Monel	Silicone	48-09860
.032 [0.81]	Aluminum	Silicone	48-09866

*Not stocked

**Standard Width 11.50 in.

NOTE: Except where noted, all materials are available 7.50" wide.

HOLES VS. SLOTS



TOLERANCES

TECKSPAN gaskets less than 10 inches can be cut to ± .015 inches. For each additional 5 inches add an additional ± .015 inches to tolerance.

ORDERING INFORMATION

TECKSPAN gaskets are available in many shapes and sizes. TECKSPAN gaskets can be fabricated to minimum tolerances of .015 in. [± 0.38 mm]. Wall thickness should not be less than .125 in. [3.18 mm] to avoid "breakout". All materials, except where noted, are available in bulk form-7.50 in. [190 mm] maximum width and from 10 ft. [3.05 m] to 50 ft. [15.25 m] maximum lengths. Use TECKNIT Part Numbers for specifying materials. For specification assistance, contact your nearest TECKNIT area representative or factory location.

