

# Teckfip™ Gaskets

FORMED-IN-PLACE CONDUCTIVE ELASTOMER

U.S. Customary  
[SI Metric]

## GENERAL DESCRIPTION

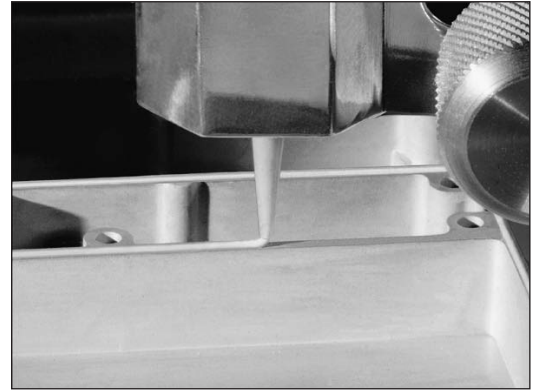
TECKFIP (FORM-IN-PLACE) gasketing is a custom process where a highly conductive silicone based gasket is dispensed on a part where an EMI shield is required. The materials range from a pure silver filled resin to silver/copper, silver/aluminum, silver/glass and our new tungsten/carbide filled resins that all cure to form a flexible EMI shields and environmental seals. They are precisely applied in a programmed pattern and are ideal solutions meeting the requirements and cost demands of commercial applications.

TECKFIP compounds are ideal for applications requiring a quick full cure gasket that meets wide temperature range demands. Most TECKFIP compounds adhere best to Aluminum (with chromate conversion per MIL-C-5441 Class 1A or 3A) or Zinc.

TECKFIP compounds have a Shore A hardness ranging from a soft 50 durometer to a firmer 70 durometer. Our soft 50 Shore A durometer material is ideal for lightweight fragile plastic or metal parts. It cures at room temperature as required by plastic applications and its low compression set helps the gasket withstand repeated assembly and compression. In addition, TECKFIP low durometer compounds adhere to most materials and are compatible with conductively coated plastics such as ABS, PVC, etc. The compounds can also be applied to bare metals surfaces such as aluminum, magnesium, steel, nickel, copper, silver chromated and nickel and other plated surfaces. Fast curing allows faster handling and shipping of finished parts.

## TECKFIP FEATURES AND BENEFITS

- Excellent EMI shielding performance.
- Direct application of gasket to component part reduces assembly and handling.
- Able to be applied to enclosure walls and partitions in widths as small as .020 inches.
- Low compression set.
- Eliminates costly tooling resulting in faster turnaround and design changes.
- Minimizes material cost in comparison to die cut or molded gasket equivalency.
- Room temperature curing (ideal for shielded plastic components).
- Soft and compressible.
- Gaskets can be handled quickly after applying.



## SPECIFICATIONS

### MATERIAL DESCRIPTION

#### FIP-C: Ag/Cu

This compound is an all round high performance compound, and is very similar to a Consil C molded or extruded elastomer. It has been traditionally used for telecommunications base station shielding. This material has excellent adhesive strength, and the electrical conductivity remains stable even under long term mechanical loads such as vibration or periodic loading and temperature fluctuations.

This compound has long been established as the market leader in conductive Form-in-Place applications with the reliability and durability needed in the telecommunications marketplace. It is available in two forms, moisture cure (FIP-C) and heat cure (HC FIP-C).

#### FIP-C SP: Ag/Cu - small particle

This is the small particle version of the FIP-C compound. It was specifically designed for mobile cell phone applications, which require a high degree of EMI shielding. While the compound has been optimized for its overall shielding effectiveness, high cycling applications are not recommended for this material. This compound is ideally designed for projects that will not get opened and closed frequently, such as mobile phones.

#### FIP-E: Ag/glass

This is Tecknit's commercial grade FIP compound designed for moderate shielding performance. The Ag/glass particles are very smooth which leads to very low compression set value. The material is also available as a heat cured compound (HC FIP-E).

#### FIP-E SP: Ag/glass – small particle



FIP Comparison Reference

	FIP-X	FIP-R	FIP-N/FIP-N (LD)	FIP-E	FIP-E (SP)	FIP-C	FIP-C (SP)	FIP-A	HC FIP-C	HC FIP-E
<b>Specifications:</b>										
<b>Metal Filler:</b>	tungsten carbide	pure silver	silver/nickel	silver/glass Small Particle	silver/glass	silver/copper Small Particle	silver/copper	Silver Aluminium Heat Cure	silver/copper Heat Cure	silver/glass
<b>Color:</b>	dark gray	pale yellow	pale yellow	ivory	ivory	beige	beige	silver/tan	grey	ivory
<b>Shore A hardness:</b>	65 +/- 8	50 +/- 7	60 +/- 7/48 +/- 7	55 +/- 2	70 +/- 10	50 +/- 5	55 +/- 5	60 +/- 7	50 +/- 5	70 +/- 10
<b>Specific Gravity +/- 15% :</b>	1.74	2.7	3.5	1.8	1.8	2.5	2.11	3.5	2.6	1.8
<b>Temp Range:</b>	-55 to +125C	-55 to +125C	-55 to +125C	-55 to +125C	-55 to +125C	-55 to +125C	-55 to +125C	-55 to +125C	-55 to +125C	-55 to +125C
<b>Tack Free Time:</b>	<12 min.	<12 min.	<12 min.	<12 min.	<12 min.	<3 min.	<6 min.	< 12 min	N/A	N/A
<b>Cure Time:</b>	<24 hours nom.	<24 hours nom.	<24 hours nom.	<24 hours nom.	<24 hours nom.	<24 hours nom.	<24 hours nom.	full 24 hours	1 hour @ 125C	1 hour @ 125C
<b>Volume Resistivity:ohm-cm</b>	0.031	0.005	0.02 max	0.007	0.009	0.008 (max)	0.018	0.01 (max)	0.01 (max)	0.01 (max)
<b>Surface Resistivity:</b>	1.5 ohms-cm	0.015	0.02 max	0.012	0.012	0.01	0.01	0.02 (max)	0.01 (max)	0.01 (max)
<b>Aged Surface Resistivity: after 168 hours at 85C</b>	0.046	0.02 max		0.012	0.012	0.012		0.02 (max)	0.03 (max)	0.03 (max)
<b>Compression Set: After 22 hours at 70C</b>	31%	28%	28%	13%	7%	28%	57%	15%	27%	23%
<b>Tensile Strength:</b>	215psi	200psi	200 psi (min)	273 psi	273psi	110 psi	157 psi	90 PSI	200 PSI	200 PSI
<b>Elongation:</b>	90% min.	100%	50% min	71%	71%	100%	31%	30% min	50% min	50% min
<b>Compression Range:</b>	10-50%, 25% recom	10 - 25%	10 - 25%	30% recom.	10 - 25%	10 - 25%	10 - 25%	15 - 25%	10 - 25%	10 - 25%
<b>Shielding Effectiveness:</b>										
<b>Salt Spray Resistance:</b>	Passed ASTM B117									
<b>Adhesion Strength (N/cm<sub>2</sub>):</b>	90 min	90 min	90 min	167.5 (typ)	90 min	90 min	90 min	90 min	90 min	90 min

10 MHz to 10 Ghz : > 65 dB

PART NUMBERS

<b>700g cartridge</b>	<b>69-10020X</b>	<b>69-10040R</b>	<b>69-10050N</b>	<b>69-10010E</b>	<b>69-10000C</b>	<b>69-10000CSP</b>	<b>69-10030A</b>	<b>69-10000HC</b>	<b>69-10010EHC</b>
<b>30cc syringe</b>	<b>69-10021X</b>	<b>69-10041R</b>	<b>69-10051N</b>	<b>69-10011E</b>	<b>69-10001C</b>	<b>69-10001CSP</b>	<b>69-10031A</b>	<b>69-10001CHC</b>	<b>69-10011EHC</b>

Note: Shelf life for the 700g cartridge is 6 months; Shelf life for the 30cc syringe is 1 month.



# Teckfip™ Gaskets cont.

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This is the small particle version of the Ag/glass (FIP E) compound that was specifically designed for the mobile cell phone applications. It should be noted that this compound offers the lowest compression set value of all the compounds, making it ideally suited to applications where by the gasket is frequently compressed and uncompressed.

### FIP-X: Al/WC

FIP-X is Tecknit's newest compound and features a conductive powder that is a unique particle combining tungsten carbide and aluminum. The premium advantage of this compound is its ability to be non-corrosive even in the most hostile of external environments. The compound has been exhaustively tested for hostile environments and easily exceeds the requirements of the ASTM B117 test specification. Tecknit also offers a flame-retardant version of this compound which has achieved the UL94-VO rating.

### FIP-A: Al/Cu

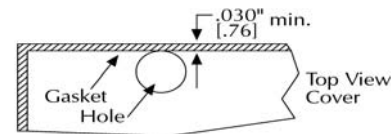
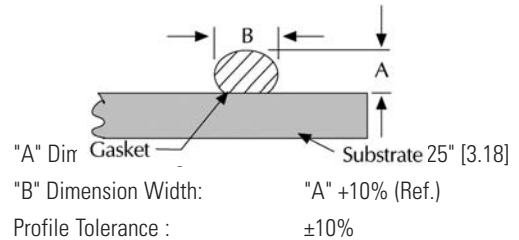
This compound is ideally suited to corrosion-concerned applications where the gasket is applied to an aluminum casting. The corrosion resistance is enhanced due to the galvanic compatibility between the casting and the conductive Aluminum/Copper particle used. The compression set performance is good and this compound offers a very stable EMI shielding performance even under large mechanical stress. The electrical conductivity performance and EMI shielding is very similar to the high performing FIP-C elastomer gasket.

### FIP-N: Al/Ni

This compound is similar in performance to FIP-A elastomer and hence offers a good non-corrosive EMI shield in harsh conditions. This material is one of our more cost effective FIP compounds

### FIP-R: Ag

This compound is based on a very rugged pure silver particle. By using silver as the conductive medium, this compound offers great performance in terms of heat aged electrical conductive stability and prolonged mechanical vibration. In addition to this, the electrical conductivity performance is the highest of all Tecknit FIP compounds.



Minimum Range:	0.000 to 0.002
Outside Radius:	1/2 "B" Width Dimension
Inside Radius:	Sharp
Maximum Overall Size:	28" x 19" x 4" [711.2] x [482.6] x [101.6]
Recommended Compression:	25% of Gasket Height "A"
Gasket Path:	Can be comprised of any geometric shape connected together (ie. line, arc, circle, ellipse).

## ORDERING INFORMATION

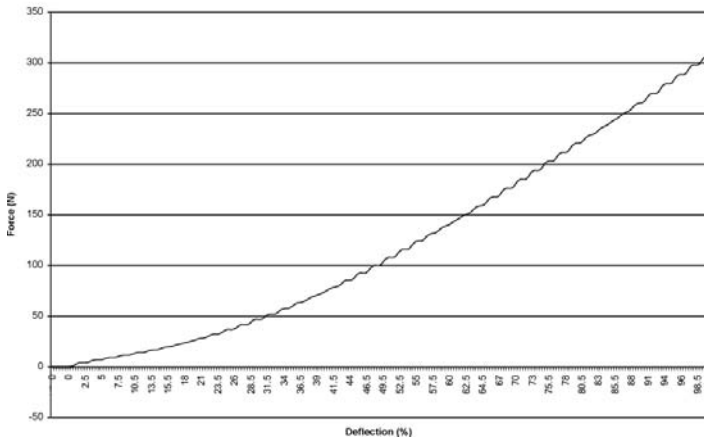
1. Teckfip can be applied to your part at any of our growing number of global application sites. Tecknit currently has sites in the US, UK, Spain, Mexico and China. Contact a Tecknit representative or our application support group to discuss your application.
2. Teckfip compound can be applied in easy to use containers for gasket application at a customer's site. The compounds are compatible with several application machines. Contact our application support group to confirm application machine compatibility.

## TECKFIP DESIGN GUIDELINES

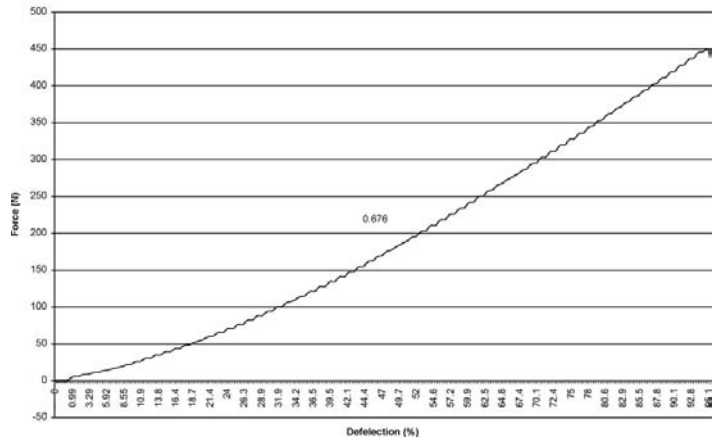


TECKFIP FORCE/DEFLECTION

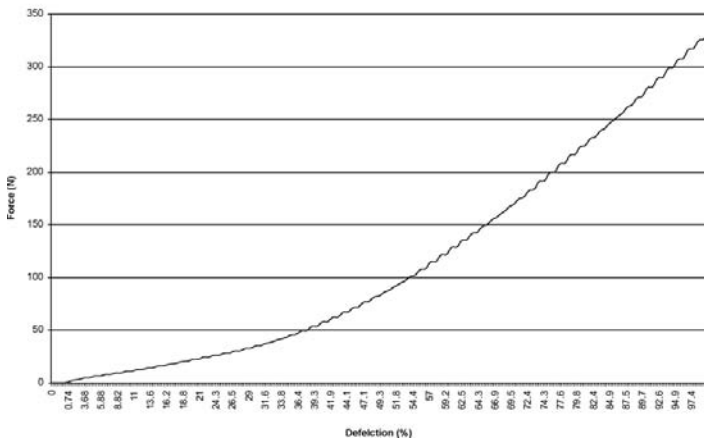
Force Deflection Curve for a 0.5mm high bead



Force Deflection Curve for a 0.76 mm high bead



Force Deflection Curve for a 0.68mm high bead



Force Deflection Curve for a 0.98mm high bead

