



Engineer's Guide to Form-In-Place Gasket Design

Conductive and non-conductive Form-In-Place (FIP) gaskets are available in a wide range of materials and physical properties to meet your design criteria. FIP products are dispensed with precision CNC machines using positive displacement pumps for excellent control of bead size, junctions, starts and stops. Some of the design properties of FIP gaskets include:

- Excellent shielding effectiveness (normally over 100dB between 200MHz and 12 GHz);
- Small cross sections;
- Accurate dispensing on small ribs and perimeter features;
- Low closure force;
- Excellent adhesion to most substrates;
- Environmental FIP gaskets are far superior to die cut PSA gaskets.

FIP gasket binder systems are primarily silicone and fluourosilicone systems in a variety of durometers. Curing cycles depend on the binder, and fall into three major categories:

- Moisture cure;
- One component thermal cure;
- Two component thermal cure.

Central is also proud to offer Nolato Tri-Shield EMI gaskets. By shaping the FIP gasket prior to curing, we offer 30% less material and lower compression forces.

While each material has specific design criteria, we can offer the following general guidelines:

- All gaskets have finite properties of adhesion and compression, and vary based on composition, fillers, and binder materials;
- FIP can be dispensed on ribs as small as .030" wide;
- A typical gasket height is 80% of the gasket width (except Nolato Tri-Shield);
- Compression stops are highly encouraged for best performance of any gasket;
- Use care in selecting the gasket cure type on injection molded parts to avoid stress relief;
- Aluminum parts should be treated with conversion coating (Mil-DTL-5541 Class 3);
- Magnesium castings should have square ribs and receive a Dow 20 pickle or equivalent;
- All parts should come to us clean and ready for the process, in packaging suitable for return shipment. Exposed gaskets should be protected during shipment.

We welcome involvement as early in the design process as possible, but can respond effectively at **any** point in your product design cycle. Please contact any of our Sales Engineers for prompt answers to your questions.