

EMI Gaskets for 5G Telecommunications

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Are you looking for business opportunities in emerging markets? You've probably heard of 5G, the fifth generation technology standard for broadband cellular networks. As a gasket fabricator, you have an opportunity to meet demand for 5G telecommunications gaskets. These fabricated products provide reliable shielding against electromagnetic interference (EMI) for electronic enclosure seams, power and signal panels, and connector back shells.

As 5G networks proliferate, the isolation of sensitive circuits and electronic systems is becoming increasingly important, especially in urban environments. Noise from power supplies, propagation from repeater station antennas, and other forms of electromagnetic interference (EMI) can degrade electronic system isolation and increase crosstalk between circuits, jeopardizing the fast, reliable, and uninterrupted 5G service that users expect. Specialty Silicone Products (SSP) makes an innovative EMI shielding material for 5G telecommunications gaskets. SSP-2551, a nickel-aluminum fluorosilicone, combines EMI shielding and electrical conductivity with resistance to galvanic corrosion, damage that occurs when two dissimilar metals are exposed to a corrosive electrolyte such as saltwater. Because 5G electronic enclosures, power and signal panels, and connector backshells can be made of different metals and installed outdoors, engineers need proven EMI shielding that also provides reliable environmental resistance.

Shielding Levels and Environmental Resistance

The shielding levels in SSP-2551 have been independently tested, and the data is available on SSP's website. DLS Electronic Systems, Inc., an ANSI accredited laboratory under an ISO/IEC 17025 ANAB

program, tested SSP-2551 at frequencies between 1 and 40 GHz. Shielding effectiveness declined at the upper end of this range, but SSP-2551 met or exceeded 100 decibels (dB) at all of the GHz frequencies that were tested. The 5G Spectrum includes a band in the sub-6 GHz range (FR1) and a band in the millimeter-wave frequency range (FR2) from 24.25 GHz to 52.6 GHz. Additional applications for SSP-2551 include military electronics, and this material meets MIL-DTL-461 5.18 RE103 and MIL-DTL-83528.

With its fluorosilicone base, SSP-2551 can withstand a wide range of outdoor temperatures along with the higher heat associated with 5G's greater power densities. This 72-durometer elastomer has a thermal stability range of -60°C to 220°C and resists fuels, chemicals, and exhaust fumes, all of which are common in the urban environments of 5G networks. Nickel-aluminum filled products are tested to ASTM B117 requirements for galvanic corrosion resistance and ASTM E595 for outgas testing. During salt spray testing, nickel-aluminum can provide up to twice the galvanic corrosion resistance of silver-aluminum and performs better than silver-copper. Nickel-aluminum also eliminates the price volatility associated with silver-filled elastomers.

Find EMI Shielding for 5G Telecommunications Gaskets

Specialty Silicone Products supplies SSP-2551 as full-cured conductive sheet stock, continuous extrusion profiles, ready-to-mold compounds, and bonded O-rings. All of these materials and products are manufactured at our Ballston Spa, New York (USA) facility in accordance with our ISO 9001:2015 certified quality management system. To request a quote or for more information, contact SSP on-line or email Dominic Testo (dtesto@sspinc.com), SSP's Business Development Manager.