

Absorption

Dissipation of electromagnetic energy, in the medium through which the energy passes. The loss is measured in decibels (dB)

Alocrom 1200

A chromate surface treatment which acts as a barrier to corrosion. It is normally applied to Aluminium, and many of its alloys. The density of the finish may be varied, the light iridescent layer which RFI Shielding Ltd applies, provides adequate corrosion protection in most applications, whilst allowing good electrical contact.

Antenna

A conductor which may radiate or receive, both wanted, and unwanted electromagnetic energy.

Attenuation

The reduction of signal amplitude. It is normally expressed in decibels (dB), and represents, for example, the ratio of field strengths measured at a point in space before and after insertion of a shield, i.e. EMI gasket.

Bond/Bonding

Literally to connect components or part of a circuit, so that they are at the same electric potential. In enclosures this implies low joint resistance, which can be achieved by good gasket or seal design

Bus

A main conductor in a circuit.

Compression Set

Permanent deformation of an elastomer following a period of imposed load or stress. It is usually expressed as a percentage of the initial compression of the test sample.

Compression Stop

A mechanical device used to limit the amount of compression which can be applied to a material. In gaskets, a metal disc or collar can be incorporated into the design, to avoid damaging the seal through over compression.

Conductance

A measure of the ability of a system or device to conduct electric current when measured using direct current. The conductance of an alternating current circuit is its resistance divided by the square of its impedance. It is the reciprocal of resistance and is expressed in Siemens or MHOS.

Conducted EMI

Spurious signals that may pass between interconnected equipment via power signal or control lines.

Conductivity

The ability of a material to conduct electricity. The reciprocal of volume resistivity; measured in Mhos-cm or Siemens-cm.

Contact Resistance

The resistance, expressed in Ohms, between two electrically conductive objects in contact with each other. A term usually applied to switches, but also important for gasket joints.

Decibel

A dimensionless unit, one tenth of a bel, used for expressing the ratio of two values of power or voltage.

Die-Cutting

A repeatable method of accurately cutting gaskets, using preformed dies.

Elastomer

A polymeric material which may be compressed or otherwise deformed, and by virtue of its molecular structure, will recover almost completely to its original form.

Electric or E Field

A high impedance field that exists up to one sixth of a wave length from a transmitting antenna, or source. Electric field intensity is measured in volts per metre.

Electric Field Strength

In an electromagnetic wave, the amplitude of the electric component of the field. Expressed in volts per metre.

Electromagnetic Compatibility (EMC)

A legal requirement relating to electrical and electronic products, that they should be constructed so that they do not cause excessive electromagnetic interference, nor should they be unduly affected by electromagnetic interference, when operating in their intended electromagnetic environment

Electromagnetic Interference (EMI)

An electromagnetic emission, which has a disturbing effect on devices exposed to it.

Electromagnetic Pulse (EMP)

Broad band, high intensity, transient electromagnetic fields, such as those produced by lightning, or nuclear explosion.

Fluorosilicone Elastomer

A synthetic rubber, useful in applications involving petroleum oils, fuels and hydraulic fluids, as it is less affected when exposed to them than many other elastomer types.

Galvanic Corrosion

Corrosion which occurs between two dissimilar metals in the presence of moisture, or some other electrolyte. Under these conditions an electrochemical cell is formed, and current flows from one metal to the other, carrying ions of the most reactive metal with it.

Gasket EMI

A component, usually incorporating a formed resilient metal, and/or elastomer, which will allow a seam or enclosure panel interface to be reliably interconnected (electrically bonded) along the entire joint. This is preferred to relying on fasteners, as these provide only discontinuous electrical bonding.

Giga (G)

Prefix denoting ten to the power of nine. Therefore 1 Gigahertz = 1,000,000,000 Hertz.

Ground

A reference potential to which all signal and power voltages are established.

Groundplane

A conductive surface or plate, used as a common reference point for circuit returns and electrical or signal potentials.

Hardness (Elastomer)

The resistance to indentation by a material or gasket. Recognised units of measure are, Shore 'A', or I.R.H.D. (International Rubber Hardness Degree).

Hertz (Hz)

A unit of frequency which is equivalent to one cycle per second.

Impedance

The total opposition offered by a component or circuit to the flow of an alternating current. Impedance is the vector sum of resistance and reactance.

Kilo (K)

Meaning ten to the power of three. A kilowatt is a unit equivalent to 1,000 watts.

Mega (M)

Meaning ten to the power of six. A megaohm is a unit equivalent to 1,000,000 ohms.

Magnetic of 'H' Field

A low impedance field that exists up to approximately one sixth of a wavelength from a transmitting antenna or source. Magnetic field intensity is measured in amps per metre.

Ohm cm

See volume resistivity.

Permeability (μ)

A relative measure of the ease of a material to serve as a path for magnetic lines of force, based on air being equivalent to 1.

Plane Wave

An electromagnetic wave in which all points normal to the propagation of the wave are in phase.

Radio Waves

Electromagnetic waves in the frequency range 3KHz to 300GHz, propagated through space without artificial guide.

Reflection Loss

The loss of electromagnetic energy due to reflection at a boundary or discontinuity of a shield.

Relative Conductivity

A comparative measure of electrical conductivity, based on Copper being equal to 1.

Resilience

The property of an elastomer to forcibly regain its original form after it has been extended, compressed, or otherwise deformed.

Radio Frequency Interference (RFI)

Electromagnetic interference in the frequency range 3KHz to 300GHz.

Shield, EMI

Electrically conductive materials placed around a circuit, component or cable, to suppress the effect of an electromagnetic field.

Shielding Effectiveness

The effectiveness of a given material as a shield under a set of specific conditions. Expressed in dB's.

Silicone Elastomer

An elastomer which retains its elastomeric properties over a wide temperature range. It also has excellent ageing properties. See also fluorosilicone.

Stress Relaxation (Elastomers)

This is the phenomenon exhibited by an elastomer under constant compression, whereby the opposing force exerted by the elastomer decreases with time.

Tear Strength

The exertion required to tear material with the force acting parallel to the major axis of the test specimen. Unit of measure, Newtons per metre (pounds per inch).

Tensile Strength (Elastomers)

The maximum force required to stretch (stress) a specimen to the point of rupture. Unit of measure Mega Pascals (pounds per square inch).

Volume Resistivity

The electrical resistance between opposing faces of a cubic centimetre of material. Expressed in Ohm-cm.