

CONDUCTIVE FOAMS

The Problem

As you may know, Static Sensitive Devices (SSD's) are particularly vulnerable to damage from static charged human contact. Personnel handling these devices are generally unaware that walking across a floor, or simply the friction of clothing, can build up massive charges of 1000's of volts which will destroy the chip at a touch. Even protective circuitry does not necessarily protect the device from static charges encountered during routine handling and packaging.

Warning

The answer is to use Electrically Conductive Foam to protect these devices. But, as in medicine, the cure can sometimes be as harmful as the ailment. The materials used in the construction of SSD's, including non-ferrous metals, are highly susceptible to corrosion which can cause irreparable damage during periods of storage. It is therefore, of vital importance that any conductive foam used for handling, packaging and storing of SSD's should be NON-CORROSIVE, and built to the most demanding specifications.

The Solution

A British Company has developed obtained Ministry of Defence, and other approvals, for two grades of non-corrosive electrically conductive foam. Both materials provide maximum protection to SSD's from static discharge and physical damage in storage transportation and operation. VCF conductive foams are treated as safety critical items, and each consignment is manufactured and tested in accordance with the requirements of Defence Standard 05-24.

	M.O.D. SPECIFICATION	TYPICAL VALUE LOW DENSISTY	TYPICAL VALUE HIGH DENSITY
Volume Resistivity Ω m	250 max	36.6	56.2
Corrosivity g/m ²			
Vapour	15 max	5.9	4.9
Contact	15 max	7.2	6.6
Compression Set % (50% compression)	30 max	10.5	22.4
Water Extract ph	5.5min 8.0 max	7.8	7.6
Conductivity of Water mS/m	30 max	18.6	22.6
Water Soluble Chloride %	0.03 max	0.003	0.003
Total Chlorine %	0.4 max	0.32	0.34

Corrosion Resistance

Numerous tests in both our own and government accredited laboratories verify compliance with the most demanding specifications. The most corrosion prone non-ferrous metals such as zinc, nickel etc., are not corroded when in direct contact or in vapour contact with conductive foams even at elevated temperatures and humidities.

Compression Set Resistance

The compression set indicates the ability of the foam to retain its original shape and dimensions after being subjected to long term deformation as experienced in packaging of complete PCB's.