

Understanding Surface Resistivity

For information applicable to KYDEX® FST please refer to 300 series technical briefs.

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Introduction

I) Fungus Resistance Testing, ASTM G-21

Surface Resistivity measures the electrical resistivity characteristics of a given material. Two electrodes, from a resistivity meter are placed on the surface of the material. A DC electric charge is then passed through the electrodes. The current (amps) that passes over the surface of the material, and between the rails, is measured. Surface Resistivity will then be calculated in ohms/square.

The most common reasons for specifying conductive or dissipative parts are:

1. A reduction or elimination of static buildup.
2. A reduction of potential for fire due to a spark discharge.
3. A reduction of potential for damage to sensitive electronics due to static discharge.
4. The reduction or elimination of dust particles to build up on parts due to static charges.

Anti-static parts are best suited for use in high relative humidity, non or low hazardous environments. Conductive or Static Dissipative parts are better suited for environments that are more hazardous. For total effectiveness, conductive parts need to be grounded or bonded during use.

Common Specifications: NFPA 56A, 99 Mil Spec, MIL-B-81705B, Federal Test Method 101C (Method 4046), or ASTM D257.

The following chart can be used as a handy reference for your application needs. Keep in mind that anti-static and dissipative materials do conduct, just at a slower rate than conductive materials.

Surface Resistivity	Common Description
$10^1 - 10^5$	Conductive
$10^6 - 10^9$	Static Dissipative
$10^{10} - 10^{12}$	Anti-Static
$=> 10^{13}$	Insulative

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