

Electrostatic Discharge (ESD)

General Information

Electrostatic charges arise when objects of different materials come into contact, rub against each other or are separated from each other. In industrial settings, such charges are primarily observed on plastic components such as conveyor belts, containers, packaging or paneling. An uncontrolled discharge can damage electronic components and even spark an ignition in areas at risk to explosion.

Various electrostatically protected areas must be created to prevent damage. These encompass individual workstations, rooms or even entire buildings. The relevant abbreviation, EPA, stands for electrostatically protected area. Various measures can be employed to achieve the overall electrical discharge resistance required in such areas, such as the use of materials with the appropriate conductivity. The applicable requirements are defined in the standard IEC 61340-5-1.

The abbreviation ESD stands for electrostatic discharge. The term antistatic is also colloquially used even though the conductivity is not precisely defined.

The standard IEC 61340-5-3 classifies the conductivity of packaging types, but it is also used for products.

The following classification scheme applies

- C = Conductive $<1 \times 10^4 \Omega$
- D = Dissipative $\geq 1 \times 10^4 \Omega$ to $>1 \times 10^{11} \Omega$
- S = Insulating $\geq 1 \times 10^{11} \Omega$

