

Electrostatic discharge capable IGP coating powder

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Definition

The electrical resistance within the scope of this Technical Information is the "point-to-point resistance" in accordance with DIN EN 61340-2-3: "Methods of test for determining the resistance and resistivity of solid materials used to avoid electrostatic charge accumulation". The measuring method used is described based on this norm.

The decisive factor for a correct measurement is the contact quality between the metallic measuring electrode and the surface to be measured. To eliminate errors as far as possible, cylindrical electrodes are used that weigh 2.5 kg and which have a piece of soft conductive rubber adhered to them in order to ensure maximum surface contact as far as possible. What is more, prior to the measurement, it is necessary to remove all traces of any soiling from the surface to be measured.

The measurement distance between the electrodes, measured from the center of the electrode, must be 250 mm.

In accordance with the EPA requirements of DIN EN 61340-5-1, a coat is considered conductive if it has an electrical resistance of $<1 \times 10^9 \Omega$. Furthermore, in accordance with Comment f from Table 3 of this norm, it is recommended that the value is not below $<1 \times 10^4 \Omega$.

Values of less than $10^4 \Omega$ are regarded as conductive, whereas surface resistances greater than $10^{11} \Omega$ are defined as electrically insulating.

Since the conductivity between two points on the surface is significantly influenced by the coated substrate, the results when using coated aluminum may be inadequate, which is why the use of coated aluminum in ESD applications is not recommended.

Application

For electrically discharging powder coatings.

At this juncture, it is particularly worth mentioning the protection against electrostatic charging and the resulting spark-overs and rapid discharges, and also that the prevention of dust attraction in industry, in offices and in numerous other sectors, including private households, constitutes a major requirement.

Apart from irritations and health problems as a result of discharges via a person's own body, within the industrial sector, electrostatic processes result in substantial losses due to the damage they cause, e.g. to electronic

components either during their production or when in use. Electrostatically attracted particles of dust can significantly impair the quality of a product and, in addition, can even impact on the safety aspect owing to the explosion hazard.

Processing instructions

The adjustment to electrostatic discharge capability can lead to slight colour impairments. To obtain optimum values in terms of electrical resistance, it is essential to maintain coating thicknesses of 60 to 80 μm . Due to the influence of the structured surface, only comparative measurements can be performed. The necessary coating thickness should be between 80 and 100 μm .

Product range

Electrically discharging powder coatings are labelled with a «C». This affects the 11th position in the IGP-product code, e.g.: 6807A70350C00. At present, the following IGP-powder coatings series are available with this special quality:

- IGP-DURA[®]mix 33

- IGP-DURA[®]pol 68 silky gloss and coarse

structure is available in the standard colours according to the RAL colour range. Further

information can be found in the technical data sheets IGP-DURA[®]mix 33, 35, 39 and IGP-DURA[®]pol 68 gloss and silk gloss.