

Conductive Powder Coatings with discharging properties

In accordance with Standard IEC 61340-5-1 the electrical surface resistance at ESD – Workstations must range be max. 10^9 Ohm.

Our specialist products in this area of application have an electrical resistance of $7,5 \times 10^5 - 1 \times 10^9$ m-ohms at a film **thickness of 70 – 100 μm** (increasing the film thickness will improve the electrical resistance accordingly).

Measurement of the surface resistance takes place under the following conditions:

Measured Area	Not conductive work surface
Substrate	Steel-Gradient Panel
Measuring Instrument	Tera Ohmmeter Model TE 3600
Probes	2,5 kg/ 64mm measuring substrate
Distance	30 cm
Voltage	100 V
Sample Conditions	23°C and 25% relative humidity

The measurement of Resistance against earth leakage (e.g. 1 mega ohm) takes place under the following conditions.

Measured Area	Not conductive work surface
Substrate	Steel-Gradient Panel
Measuring Instrument	Tera Ohmmeter Model TE 3600
Probes	2,5 kg/ 64mm measuring substrate
Distance	30 cm
Position of the Probes	A probe of the coating A probe on uncoated part of the test board
Voltage	100 V
Sample Conditions	23°C and 25% relative humidity

Remarks

- Conductive Powder Coatings can be manufactured in many colours
- Grey and dark colours are easily adjustable
- Pure multi-coloured colours e. g. RAL 1021 and white-dependeent colours e. g. RAL 9010, RAL 9016 are not adjustable
- With purchased quantities > 1to/batch each feasible colour can be prepared
- Our Conductive Powder Coatings are **not** suitable for „Tribo Application“.

Help to convert of electric resistance

ohm [Ω]	ohm [Ω]	kiloohm [kΩ]	kiloohm [kΩ]	megaohm [MΩ]	megaohm [MΩ]	gigaohm [GΩ]	gigaohm [GΩ]	teraohm [TΩ]	teraohm [TΩ]
1	10 E ⁻¹	0,001		0,000.001	1 E ⁻⁶	0,000.000.001	1 E ⁻⁹	0,000.000.000.001	1 E ⁻¹²
10	1 E ¹	0,01		0,000.01	1 E ⁻⁵	0,000.000.01	1 E ⁻⁸	0,000.000.000.01	1 E ⁻¹¹
100	1 E ²	0,1		0,000.1	1 E ⁻⁴	0,000.000.1	1 E ⁻⁷	0,000.000.000.1	1 E ⁻¹⁰
1.000	1 E ³	1		0,001	1 E ⁻³	0,000.001	1 E ⁻⁶	0,000.000.001	1 E ⁻⁹
10.000	1 E ⁴	10	1 E ¹	0,01	1 E ⁻²	0,000.01	1 E ⁻⁵	0,000.000.01	1 E ⁻⁸
100.000	1 E ⁵	100	1 E ²	0,1	1 E ⁻¹	0,000.1	1 E ⁻⁴	0,000.000.1	1 E ⁻⁷
1.000.000	1 E ⁶	1.000	1 E ³	1	10 E ⁻¹	0,001	1 E ⁻³	0,000.001	1 E ⁻⁶
10.000.000	1 E ⁷	10.000	1 E ⁴	10	1 E ¹	0,01	1 E ⁻²	0,000.01	1 E ⁻⁵
100.000.000	1 E ⁸	100.000	1 E ⁵	100	1 E ²	0,1	1 E ⁻¹	0,000.1	1 E ⁻⁴
1.000.000.000	1 E ⁹	1.000.000	1 E ⁶	1.000	1 E ³	1	10 E ⁻¹	0,001	1 E ⁻³
10.000.000.000	1 E ¹⁰	10.000.000	1 E ⁷	10.000	1 E ⁴	10	1 E ¹	0,01	1 E ⁻²
100.000.000.000	1 E ¹¹	100.000.000	1 E ⁸	100.000	1 E ⁵	100	1 E ²	0,1	1 E ⁻¹
1.000.000.000.000	1 E ¹²	1.000.000.000	1 E ⁹	1.000.000	1 E ⁶	1.000	1 E ³	1	10 E ⁻¹

limits of permissible errors for electric resistance

	Surface resistance or discharge resistance	
isolating	> 1 E ¹¹ Ω	(to IEC 61340-5-1: ≥ 1 E ⁹ Ω)
Electric static dissipative	≥ 1 E ⁵ Ω to ≤ 1 E ¹¹ Ω	(to IEC 61340-5-1: ≤ 1 E ⁹ Ω)
Electric static conductive	≥ 1 E ² Ω to ≤ 1 E ⁵ Ω	