New ESD Standard

October 2018 saw publication of the new standard "DIN EN IEC 61340-4-3:2018-10 Electrostatics – Standard-Test Methods for Specific Applications – Footwear". It replaces the previous standard dating from the year 2002.

This standard, commonly referred to as the ESD standard, describes a method for the determination of the electrical resistance of footwear and serves for quality testing of new footwear designed to protect, for example, sensitive electronics components or to avoid high potential differences between parts. This reduces or even eliminates the risk of discharges, whose effects can destroy highly sensitive components or even lead to explosions caused by sparking.

Important: The standard does not contain any requirements regarding the personal safety of the wearer. These are regulated in Section 8.2 Electrical Properties of DIN EN ISO 20345.

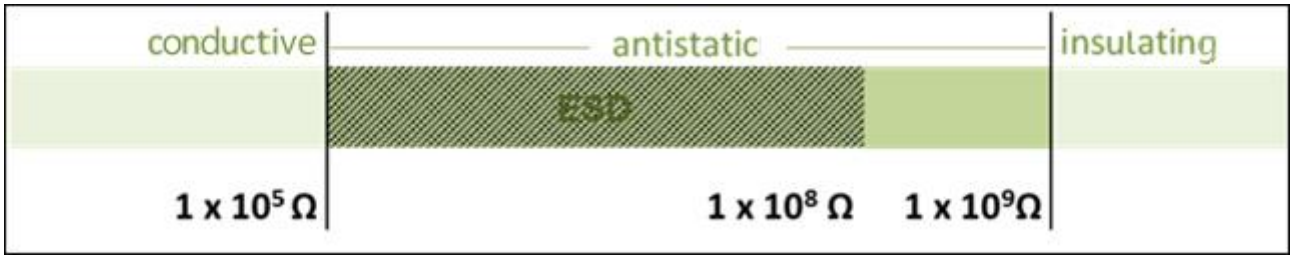
ESD-suitable footwear must meet the requirement of a resistance $R \leq 1 \times 10^8\ \Omega$ after pre-treatment and conditioning, as described in the following table:

	Pre-treatment	Conditioning	Measurement
Hours (h)	$72\ ^{+10}_{0}$	$72\ ^{+10}_{0}$	
Temperature (°C)	40 ± 3	23 ± 3	23 ± 3
Relative humidity (%)	< 15	12 ± 3	12 ± 3

Differentiation according to climate class is no longer made since publication of this standard because two of the three climate classes given in the preceding standard have been deleted.

The pre-treatment and conditioning times were shortened in both cases by 24 h. However, if the given times should not suffice to establish complete equilibrium between the test sample and its environment then the standard recommends a series of measurements taken after a series of conditioning times.

The following diagram shows the areas for the protection of persons and equipment:



Antistatic DIN EN ISO 20345 – Personal Protection - Requirement $1 \times 10^5 < x < 1 \times 10^9$
Conductive DIN EN IEC 61340-4-3 Equipment Protection or DIN EN IEC 61340-5-1 Workplace Measurement - Requirement $1 \times 10^5 < x < 1 \times 10^8$

The values measured on testing according to DIN EN ISO 20345 and to DIN EN IEC 61340-4-3 are not comparable owing to the different methodologies employed. It cannot therefore be concluded that antistatic shoes are generally also ESD-suitable.

The following person will gladly answer any further questions:

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