



REGULATORY

EN 1149 & IEC 61482

ELECTROSTATIC & ELECTRIC ARC PROTECTION

**THE STANDARDS BEHIND ELECTRICAL HAZARD
PROTECTION**

YOU DO. WE PROTECT.

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TEXTILES PROTECTING LIVES



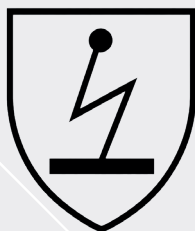
ELECTRICAL HAZARD PROTECTION

EN 1149 & IEC 61482

Electrical hazards in industrial environments can arise from static electricity or electrical arc faults, each presenting different risks to workers and requiring specific forms of protection. Two internationally recognised standards address these hazards: EN 1149 for electrostatic properties and IEC 61482 for protection against the thermal hazards of an electric arc. Although both standards relate to electrically hazardous environments, they evaluate different performance characteristics. Together, they provide a comprehensive framework for assessing protective clothing used where electrical risks are present.

EN 1149 evaluates the electrostatic properties of protective clothing designed to dissipate static electricity, helping reduce the risk of incendiary discharges in potentially explosive atmospheres. It is intended for workers operating in environments where electrostatic charge accumulation could create an ignition hazard.

IEC 61482 evaluates protective clothing against the thermal effects of an electric arc. It measures how garments perform when exposed to the intense heat generated by an arc flash, helping protect workers involved in electrical installation, maintenance and power distribution.



EN 1149

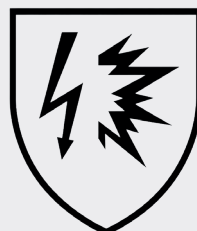
ELECTROSTATIC PROTECTION

EN 1149 is a series of standards that evaluates the electrostatic performance of protective clothing. Its purpose is to ensure that garments are capable of dissipating electrostatic charges in a controlled manner, reducing the likelihood of spark generation in hazardous environments.

The standard includes several test methods covering:

- Surface Resistivity (EN 1149-1)
- Charge Decay (EN 1149-3)
- Material and Garment Performance Requirements (EN 1149-5)

Protective clothing certified to EN 1149-5 is designed to be worn as part of a complete grounding system and helps minimise electrostatic discharge where flammable gases, vapours or combustible dusts may be present.



IEC 61482

PROTECTION AGAINST ELECTRIC ARC

IEC 61482 specifies the performance requirements for protective clothing exposed to the thermal hazards of an electric arc. Unlike electric shock, an arc flash generates extremely high temperatures, intense radiant energy and molten particles capable of causing severe burns within milliseconds. The standard includes two internationally recognised test methods:

Open Arc Test (IEC 61482-1-1)

Measures the Arc Thermal Performance Value (ATPV) or Energy Breakopen Threshold (EBT), expressed in cal/cm², indicating the amount of incident energy the garment can withstand before a second degree burn is predicted.

Box Test (IEC 61482-1-2)

Evaluates garment performance under controlled arc conditions and classifies protection into two performance levels, with higher classifications providing greater protection against the thermal energy generated during an electric arc event:

- APC 1 (4 kA)
- APC 2 (7 kA)

WHY THESE STANDARDS MATTER

Electrical hazards vary significantly depending on the workplace, from electrostatic discharge in potentially explosive atmospheres to arc flash risks during live electrical work. By evaluating these hazards through dedicated laboratory testing, EN 1149 and IEC 61482 enable PPE to be selected according to the specific electrical risks present, ensuring appropriate protection while maintaining comfort and functionality.

FROM LABORATORY TO THE WORKPLACE SELECTING THE RIGHT PROTECTION

Choosing protective clothing for electrically hazardous environments requires understanding the specific risks involved. Workers operating in explosive atmospheres require garments certified to EN 1149 to safely dissipate static electricity, while those working on electrical equipment require IEC 61482 certified clothing capable of limiting burn injuries caused by arc flash exposure. In many industrial applications, garments are designed to comply with both standards, providing protection against multiple electrical hazards within a single PPE solution.



BEYOND CERTIFICATION PERFORMANCE IN REAL CONDITIONS

Laboratory testing provides repeatable and objective performance data, but real world garment performance also depends on factors such as garment design, construction quality, maintenance, washing procedures and correct use. Protective clothing should therefore be considered as a complete system, where certified fabrics, intelligent garment engineering and proper care work together to deliver reliable, long term protection.

PROTECTION ENGINEERED FOR INDUSTRY

EN 1149 and IEC 61482 represent the foundation of modern protection against electrical hazards. Together, they establish measurable performance criteria for electrostatic dissipation and electric arc protection, enabling manufacturers to develop garments that meet the demands of today's industrial workplaces.

At IBQ Textiles, these standards are integrated into the development of our protective fabrics, ensuring every material delivers the performance required for electrically hazardous environments while maintaining durability, comfort and long term reliability.



Because engineered textiles power safer workplaces.



**YOU DO.
WE PROTECT.**