



REGULATORY

EN ISO 11611 & EN ISO 11612

INDUSTRIAL HEAT PROTECTION

**THE STANDARDS BEHIND FLAME RESISTANT
PPE**

YOU DO. WE PROTECT.

**IBO[®]**
TEXTILES PROTECTING LIVES



INDUSTRIAL HEAT PROTECTION

EN ISO 11611 & EN ISO 11612

The safety of protective clothing used in industrial environments is strongly influenced by how well it performs when exposed to heat, flame and molten metal. Two internationally recognised standards help evaluate this performance: EN ISO 11612 for protection against heat and flame, and EN ISO 11611 for protection during welding and allied processes. Although both standards assess flame resistant clothing, they address different types of thermal hazards. Together, they provide a comprehensive framework for evaluating how well protective garments perform under demanding industrial conditions.

EN ISO 11612 evaluates protection against multiple sources of thermal exposure, including flame spread, convective heat, radiant heat, contact heat and molten metal splashes. It is intended for workers operating in industrial environments where one or more of these hazards may be present.

EN ISO 11611 focuses specifically on the hazards associated with welding and related metalworking operations. In addition to flame behaviour, it evaluates resistance to molten metal splashes, radiant heat and other risks generated during welding, while also considering garment design features that improve wearer safety.



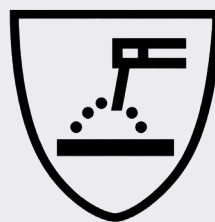
EN ISO 11612

PROTECTION AGAINST HEAT AND FLAME

EN ISO 11612 evaluates how fabrics behave when exposed to different sources of thermal energy. Before any additional testing can be considered, fabrics must successfully pass flame spread testing through A1 (surface ignition) and/or A2 (edge ignition).

These tests verify that the material will not continue burning, melt, drip or create holes after flame exposure. Once flame behaviour has been verified, fabrics may be classified for additional thermal hazards:

- **B** Convective Heat (Levels 1 to 3)
- **C** Radiant Heat (Levels 1 to 4)
- **D** Molten Aluminium Splash (Levels 1 to 3)
- **E** Molten Iron Splash (Levels 1 to 3)
- **F** Contact Heat (Levels 1 to 3)



EN ISO 11611

PROTECTION FOR WELDING OPERATIONS

EN ISO 11611 is specifically developed for protective clothing used during welding and related metalworking operations. In addition to evaluating flame behaviour, it assesses resistance to molten metal droplets, radiant heat, and short periods of thermal exposure, while also considering garment construction features such as closures, pockets, seams, and design details that help prevent sparks and molten metal from becoming trapped during use. Protection is divided into two classes:

Class 1

Suitable for lower risk welding operations with limited spatter and lower heat exposure, such as TIG welding, gas welding and brazing.

Class 2

Designed for higher risk welding environments with greater exposure to molten metal, sparks and radiant heat, including MMA, MIG/MAG and flux cored welding.

WHY THESE STANDARDS MATTER

Industrial heat hazards vary considerably depending on the workplace. A foundry worker experiences different risks than a welder, while maintenance personnel may encounter both during a single shift.

By separating these hazards into measurable laboratory tests, EN ISO 11611 and EN ISO 11612 allow PPE to be selected according to the actual risks faced by the wearer rather than relying on assumptions.

FROM LABORATORY TO THE WORKPLACE SELECTING THE RIGHT PROTECTION

Choosing flame resistant clothing is about more than meeting a certification. The correct PPE must provide the appropriate level of protection for the specific hazards encountered during daily work. For example, workers exposed to industrial furnaces may require high levels of convective (B) and radiant heat (C) protection, foundry operators often need resistance to molten aluminium or iron splashes (D and E), while welders typically require EN ISO 11611 Class 2 garments capable of withstanding heavy sparks and molten metal. Understanding these classifications enables safety managers and manufacturers to select protective clothing that offers the right balance of protection, comfort, and durability for each application.



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 ISO 11611 and EN ISO 11612 represent the foundation of modern industrial heat protection. Together, they establish measurable performance criteria for flame resistance, thermal insulation, molten metal protection and welding safety, 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 FR fabrics, ensuring every material delivers the performance required for demanding industrial environments while maintaining durability, comfort and long term reliability.

Because industrial protection begins with engineered textiles.



bluesign
SYSTEM PARTNER



100% Recycled
Hülsbeck, S.L. is GRS certified by Control Union. Only
the products which are covered by a valid transaction
certificate are GRS certified.



100% Organic
Hülsbeck, S.L. is GOTS certified by Control Union. Only
the products which are covered by a valid transaction
certificate are GOTS certified.



STANDARD
100



IBQ[®]
TEXTILES PROTECTING LIVES

**YOU DO.
WE PROTECT.**