

# A KNOWLEDGE OF THE EUROPEAN STANDARDS

## GENERAL REQUIREMENTS – PROTECTIVE CLOTHING

**EN ISO 13688 (2013)**  
 General requirements of performance relating to ergonomics, the harmlessness, the size designation, the ageing, the sizes, the compatibility and the marking of protective clothing as well as the information that must be supplied by the manufacturer. This standard is intended to be only used with other standards.

## HIGH VISIBILITY CLOTHING

**EN ISO 20471 (2013) + A1 (2016)**  
 High visibility clothing.

Minimal surfaces required from visible materials in cm<sup>2</sup>.

Surface area in m <sup>2</sup>	Category		
	1	2	3
Basic material	0,14	0,50	0,80
Retroreflective material	0,10	0,13	0,20
Combined material	0,20	-	-

## RAIN

**EN 343 (2003) + A1 (2007)**  
 Protection against the rain.

X specifies the water penetration resistance.  
 Y specifies the evaporation resistance.

## COLD

**EN 14058 (2017)**  
 Protection against cool environments (from and above -5°C).

Y : Rct thermal insulation.  
 Y : Air permeability.  
 Y : Value of the effective resultant heat insulation in m<sup>2</sup>/K/W.  
 WP : Water penetration (optional).

**EN 342 (2017)**  
 Protection against cold (> 5°C).

Y(B)/Y(C)/Y(R) Icler sqm K/W of the clothing set (with the underwear B or the underwear C of the manufacturer) or of the standard garment R.  
 AP Air permeability class.  
 WP Water penetration (Optional).  
 The heat insulation can decrease after the procedures of wash.

## SOLAR UV PROTECTION

**EN 13758-2 (2003) + A1 (2006)**  
 Protective clothing with solar protection.

40+ : UPF factor.

## HEAT AND FLAME

**EN ISO 11612 (2016)**  
 Protection against heat and flame.

Material performance codes:  
 A limited flame spread.  
 B convective heat.  
 C radiant heat.  
 D spray of molten aluminium.  
 E spray of molten iron.  
 F contact heat

**EN ISO 14116 (2015)**  
 Protection against heat and flame. Limited flame spread materials, material assemblies and clothing.

Limited flame spread index (1 to 3).

## WELDING AND ALLIED PROCESSES

**EN ISO 11611 (2015)**  
 Protective clothing for use in welding and allied processes.

X indicates the PPE class.  
 • Class 1 is protection against less hazardous welding techniques and situations, causing lower levels of spatter and radiant heat.  
 • Class 2 is protection against more hazardous welding techniques and situations, causing higher levels of spatter and radiant heat.

## STATIC ELECTRICITY RISKS

**EN 1149-5 (2008)**  
 Protection against static electricity

The Personal Protective Equipment must be worn in addition to complete clothing (jacket + trousers to dissipate electrostatic charges). The person wearing the dissipative clothing shall be earthed either by footwear or other suitable systems (the resistance between the person and the earth shall be less than 10 Ω by wearing adequate shoes). The electrostatic dissipative protective clothing shall not be removed whilst in presence of flammable or explosive atmospheres or while handling flammable or explosive substances.

## CHEMICAL RISKS

**EN 13034 (2005) +A1(2009)**  
 Protective clothing against liquid chemicals.

The Personal Protective Equipment now offers limited protection against exposure to liquid aerosols, mist and light splashing of little dangerous chemicals products. The anti-chemical protection usually decreases as the number of cleaning operations, the duration of use, after severe conditions.

## ELECTRIC ARC

**IEC 61482-1-2 (2009)**  
 Protective clothing against the thermal hazards of an electric arc

Part 1-2 : Test methods - Method 2 : Determination of the class of arc protection of materials and clothing by means of a directed and constrained arc (test chamber).  
 Class 1 4kA                      Class 2 7kA