

## STANDARDS

### SFS-EN ISO 13688 REFERENCE STANDARD FOR GENERAL REQUIREMENTS FOR PROTECTIVE CLOTHING

The general requirements for protective clothing are set out in International Standard SFS-EN ISO 13688. It replaces the previously used European Standard SFS-EN 340.

This standard defines requirements for the ergonomics, harmlessness, size designation, aging, compatibility and labeling of protective clothing as well as requirements for information supplied by the manufacturer with the protective clothing. The standard is a reference standard, referenced in specific standards where appropriate. The standard is not intended to be used alone, but only in conjunction with another standard that contains specific protection requirements for the protective product.

All our certified protective clothing meets the general requirements of the reference standard SFS-EN ISO 13688.

### EN ISO 20471 HIGHLY VISIBLE CLOTHING



Protective clothing in accordance with EN ISO 20471 is intended for use in work where visible safety is important. Fluorescent material gives visibility in daylight and twilight, reflectors in the dark, illuminated by a light source.

Clothing is divided into three categories in terms of visibility, with the highest category being 3. By combining clothing, the degree of protection is increased or decreased. The number 3, 2 or 1 on the side of the product pictogram indicates the degree of protection. Look at the inner brands of your protective clothing for what standard and level of protection the garment meets.

Minimum areas of fluorescent material and reflective tape in different categories:

Fluorescent material: Grade 3: 80m<sup>2</sup>, Grade 2: 0.50m<sup>2</sup>, Grade 1: 0.14m<sup>2</sup>

Reflective Material: Grade 3: 0.20m<sup>2</sup>, Grade 2: 0.13, Grade 1: 0.10m<sup>2</sup>

### EN ISO 11611 PROTECTIVE CLOTHING FOR WELDING AND SIMILAR WORK



Protective clothing for welding and similar work, such as blade cutting and burning. The welder's protective garment according to EN ISO 11611 is intended to protect against welding sparks, ie small splashes of molten metal, heat radiation from the welding arc, short-term flame contact and UV radiation.

There are two types of protective clothing for a welder. Class 1 clothing offers less protection from sparks and heat radiation than class 2 clothing. The type of protective clothing to be used and the degree of protection shall be selected according to the welding process.

Category 1: Clothing is intended for manual welding processes with low welding sparks and spatter. The classification is suitable for TIG, MIG and MMA welding, soldering, spot welding and gas welding.

Category 2: Suitable for MMA, MAG and MIG welding, plasma cutting and welding.

The flammability test of a material is described by a combination of letters and numbers: A1 or A2 or A1 + A2. The letter-number combinations on the garment label mean:

A1 = the flammability test of the material is carried out with a flame on the surface

A2 = the flammability test of the material is carried out with a flame on the bottom edge.

## EN ISO 11612 HEAT AND FIRE PROTECTIVE CLOTHING



Protective clothing according to EN ISO 11612 protects the user against short flame contact and heat. The heat may be convection heat, heat radiation, molten material, or combinations thereof.

Protector combinations of letter and number categories are explained as follows:

A1 = Flame spread

A2 = Flame spread from fabric edge

B = Flame contact, ie protection against convection heat on a scale of 1-5, where 5 is the best

C = Thermal radiation, on a scale of 1-5, where 5 is the best

D = Molten aluminum splashes on a scale of 1-3 with 3 being the best

E = Melted iron splashes on a scale of 1-3, with 3 being the best

F = Contact heat, on a scale of 1-3 with 3 being the best

## EN ISO 14116 RESTRICTED FUEL MATERIALS, MATERIAL COMBINATIONS AND CLOTHING



## EN 1149-5 PROTECTIVE CLOTHING FOR ELECTROSTATIC CHARGING



Protective clothing according to EN 1149-5 protects against sudden electrostatic discharges in high-risk environments. Suitable for use in work environments with electrostatic charging, spontaneous discharge or explosion hazard.

The test method of EN 1149-5 specifies requirements for the materials and design of electrostatic protective clothing to provide the best possible protection for the wearer. The suitability of the materials is investigated by two methods: the surface resistivity measurement method and the charge discharge measurement method.

## IEC 61482-2 ARC PROTECTION



Voltage protection according to IEC 61482-2, where arcing is possible. For example, when working on high-voltage equipment or servicing equipment in unprotected power distribution plants or switchboards. The garment protects the arc from thermal effects, it does not protect against electric shocks.

Material and clothing are tested in the so-called boxtest and is classified into two categories:

Category 1 = 4kA (Arc Energy 168kJ)

Category 2 = 7kA (Arc Energy 320kJ)

Voltage: 400V, Duration: 500ms, Frequency: 50 or 60HZ

## EN 342 COLD PROTECTION



EN 342 Antifreeze clothing protects the user from the adverse effects of cold. Cold refers to conditions where the combined effect of frost, humidity and wind is below -5 degrees Celsius.

The frost protection garment according to EN 342 has been tested and classified according to heat and wind resistance. Frost protection clothing is classified according to its thermal insulation. Protective clothing can be a one-piece, two-piece or a single piece of clothing.

Sections a, b, c and d on the side of the pictogram indicate which tests have been performed on the product. A and c are mandatory tests, b and d are optional. Look at the inside labels of your protective clothing for what standard and level of protection the garment meets.

- (a) Thermal insulation measured with a mobile thermal dummy under laboratory conditions. The motion stimulates the effect of light or medium work on the thermal insulation. Tests use standard 2-layer clothing b.
- (b) Thermal insulation measured with a stationary heat sink under laboratory conditions. Tests use standard 2-layer clothing b.
- c) Air permeability, ie windproof. Three classes, of which Class 3 is most windproof.
- (d) Waterproofing. Two classes, of which Class 2 is the most waterproof.

#### **EN 343 + A1 PROTECTION AGAINST RAIN**



Protective clothing according to EN 343 protects against water and sleet, fog or earth moisture.

The materials and seams of the outfits have been tested for water permeability and water vapor permeability. The upper number X on the side of the pictogram indicates waterproofing and the lower Y indicates water vapor permeability. Waterproof (x) and breathability (y) are each divided into classes 1-3, 3 of which are the best. Look at the inner brands of your protective clothing for what standard and level of protection the garment meets.

#### **EN 13034 + A1 PROTECTIVE CLOTHING AGAINST LIQUID CHEMICALS**



Chemical protection clothing of EN 13034 + A1 provides limited protection against liquid chemicals. Certified protective clothing certified by this standard is intended for work that can only be exposed to low power jets, liquid aerosols or small splashes without the need for complete molecular-level liquid permeability.

The standard includes Type 6 chemical protection suits and Type PB 6 accessories. Type 6 chemical protection suits are full overalls or two piece suits and type PB 6 accessories provide partial body protection. PB = partial body protection.

Chemical protection should be renewed every 5 washes in an industrial laundry.

Clothing protects against specific chemicals: Sulfuric acid, H<sub>2</sub>SO<sub>4</sub>, 30%, Sodium hydroxide, NaOH, 10%, Ortho-xylene, undiluted and 1-butanol, undiluted

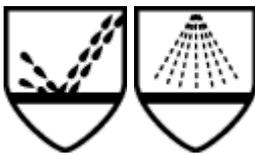
#### **EN 943 PROTECTIVE CLOTHING AGAINST LIQUID AND GASIC CHEMICALS INCLUDING LIQUID AEROSOLS AND SOLID PARTS**



- Part 1: Protective requirements for gas-tight, type-1 and gas-permeable, type

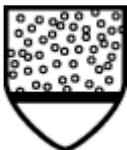
-2 chemical protection suits with ventilation and ventilation. - Part 2: Protective Requirements for Gas-tight Type 1 Rescue Force (ET) Chemical Protective Suits.

### EN 14605 PROTECTIVE CLOTHING AGAINST LIQUID CHEMICALS



Requirements for chemical - resistant protective clothing with type 3 or splash - proof joints, including type 3 body protection products, PB 3 and PB 4.

### EN ISO 13982-1 PROTECTIVE CLOTHING AGAINST SOLID PARTICULATES



Requirements for chemical protective clothing for full body protection against solid airborne particles, type 5 clothing.

### EN 1073-2 PROTECTIVE CLOTHES AGAINST RADIOACTIVE PARTICULATE EMISSIONS



**EN 14126** PROTECTIVE CLOTHES AGAINST INFECTING AGENTS



**EN 381** PROTECTION AGAINST HAND-HELD CHAINSAWS

