

## European Legislation

As defined in Council Directive 89/686 EEC Relating to PPE (Personal Protective Clothing). All PPE including clothing can be divided into 3 categories depending on type and which risk or danger the clothing are intended to protect against.

### Category I

#### **PPE protecting against minor risks:**

Example of clothing in this category is Hospitality wear. Additional clothing in this category can include light-duty work wear like scrubs and dresses or other work where the risk for injury is minimal. Manufacturers have the option to test and certify Category 1 garments themselves without intervention of a third party.

### Category II

#### **PPE protecting against moderate risks:**

Clothing is placed in this category when the risk is not classified as minimal or irreversible. Clothing in this category includes Industrial wear, Forestry wear, Craftsman wears. The clothing must be subjected to independent testing and certification by a Notified Body, whom then issues a CE marking showing the protective capacities.

### Category III

#### **PPE protecting against mortal injuries or irreversible harm:**

Clothing in this category are designed to protect against the highest levels of risk e.g. FR garment according norm EN ISO 1612.

Garments in this category must also be independently tested and certified by a Notified Body (appointed by the government in each member state) and the unique number of the Notified Body is affixed to the product along with the CE mark and other mandatory markings.

## Standard EN 14404

### Knee protectors for work in the kneeling position

Kneepad certified according to EN 14404 protects the wearer at work in the kneeling position.

Knee protection classes are classified as follows:

#### Appropriate use

- Protection Class 0 Flat floor surfaces
- Protection Class 1 Flat or uneven floor surfaces. Protects against penetration by a force of at least  $(100 \pm 5)$  N
- Protection Class 2 Flat or uneven floor surfaces under severe conditions. Protects against penetration by a force of at least  $(250 \pm 10)$  N.



Knee-pad type is classified as follows:

#### Presentation

- Type 1 Kneepads independent of other clothing, fastened around the legs.
- Type 2 Knee pads in foam or other padding, secured in pockets on the legs, or which is permanently attached to the pants.
- Type 3 Knee pads not stuck to the body, but placed in position as the user moves around.
- Type 4 Knee pads, which is part of a unit with additional functions, such as the framework for support to stand up, or kneeling seat. Can be worn on the body, or be independent.

#### Size:

The knee protectors have a one-size-fits-all design. Type 2 knee protectors are placed inside internal or external pockets on the legs. Make sure that the knee protectors are inserted correctly in the pockets to provide full protection. The “inside” marking on the knee protectors must face the knee.

#### Tests:

The knee protectors are tested for a number of qualities including their dimensions, penetration resistance, force distribution and maximum transmitted force.

## Standard EN 342

### Garments for protection against cold

Protective clothing certified according to EN 342 gives the wearer protection against cold environment. Requirements are set on thermal insulation and air permeability. Resistance to water penetration is an optional requirement.

A = Thermal insulation, measured value

B = Air permeability class (1 – 3 where 1 is best)

C = Resistance to water penetration class (optional) (1-2 where 2 is best)



#### User instructions

Garments certified according to EN 342 protect the wearer against cold environment. Cold environments are characterized by the combination of humidity and wind at air temperature below - 5°C. Before use be sure to close the garment properly, tighten cuffs and waistline for close fitting. The garment protects against cold weather, but note that it is not a guarantee protection in all circumstances and conditions. Note that the protection will be impaired if the garment or wearer becomes wet. Store garments in a dry and well-ventilated area for maintained protection level. The garment should be cared for according to the instructions inside the garment. Please see the CE label inside the garment to find out its protection class under the EN 342 standard. Note that the thermal insulation may decrease after any cleansing properties. For increased protection and prevention of local cooling, be sure to use appropriate protection for head, hands and feet (protection for these body parts is not included in EN 342.) Be careful wearing the certified garments beyond the limited wearing time (level of performance) tables below.

Garments certified according to EN 342 are tested in combination with standard under garment B (two layers).

## Standard EN 471 / EN ISO 20471

### CE certified work wear - high visibility clothing



Protective clothing certified according to EN 471 gives the wearer visibility in hazardous situations under any light of day and under illumination by vehicle headlights in the dark.

High demands are set on the fabric including color and retro reflection. The garment is classified by the area of visible material.

A = Class in accordance to areas of visible material (max 3)\*

B = Level of retro reflective material performance level (max 2)\*

Class	Background material [m <sup>2</sup> ]	Reflective material [m <sup>2</sup> ]
1	0,14	0,10
2	0,50	0,13
3	0,80	0,20

\*Measured at smallest size of article

When wearing several high visibility garments is possible to add the square surfaces of visible material, and thus achieve a higher class. However, you cannot combine classes in order to achieve higher class (e.g. Class 1 + Class 2 Class = 3).

### User instructions

The selection and use of high-visibility clothing should be based on a risk assessment of the conditions in which the wearer of the high-visibility clothing will be working. This is a high-visibility protective garment and must not be covered by other clothing or equipment. If the protective garment is dirty, its performance will be impaired. The garment should be cared for according to the instructions inside the garment. Please see the CE label inside the garment to find out its protection class under the EN 471 standard. When Class 2 certified high-visibility trousers are worn with a certified high-visibility jacket or shirt (Class 2 or higher), the Combination of garments provides Class 3 protection level. The combination of Class 1 high-visibility trousers together with Class 2 high-visibility jacket is not always Class 3. The protective clothing must be stored in a dry and well-ventilated space. The high-visibility garment is not suitable for use when working with fire. The use of a high-visibility garment does not guarantee that the wearer will be visible in all circumstances and conditions. The garment may only be repaired using materials and threads that meet the requirements of the standard for the garment. Note that the class of the garment is based on the area of visible material which is why surface marking of garments is restricted. Classified according to EN 471.

## Standard EN ISO 11612

### Clothing to protect against heat and flame:



Protective clothing certified according to EN ISO 11612 gives the wearer protection against brief contact with heat and flame. The heat can be convective, radiant, molten material, or a combination thereof.

The garment must be used in combination with other clothing that ensures protection in compliance with EN ISO 11612. Parts of the body that are not covered by this clothing must be protected in another way. The garment must be closed when it is used. If a chemical or flammable liquid splashes on the garment, the wearer should immediately move away, carefully remove the garment and make sure that the chemical or liquid does not come into contact with any part of the skin. The garment should then be washed or discarded.

If the garment is splashed with molten metal, the wearer must immediately leave the workplace and remove the item of clothing. It is possible that the garment does not eliminate the risk of burns by hot, molten metal if the garment is worn directly against the skin. When a combination of different garments is worn, they are classified in the same class as the garment that provides the lowest level of protection. The garment is tested for a number of qualities including heat resistance, limited flame spread and heat transfer.

The garment is classified for the following parameters:

- (A1) Limited flame spread
- (A2) Limited flame spread, hemmed specimens
- (B) Convective heat, scale 1-3 where 3 is the best
- (C) Radiant heat, scale 1-4, where 4 is best
- (D) Molten aluminum splash, scale 1-3 where 3 is the best
- (E) Molten iron splash, scale 1-3 where 3 is the best
- (F) Contact Heat, scale 1-3 where 3 is the best

## Standard EN 1149-5 Electrostatic properties of protective clothing:



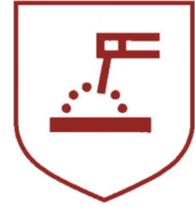
The garment must be used in combination with other clothing that ensures protection in compliance with EN 1149-5. Parts of the body that are not covered by this clothing must be protected in another way. The garment must be closed when it is used.

The person wearing electrostatic dissipative protective clothing must be properly earthed. The resistance from the wearer to earth must be lower than  $10^8 \Omega$ , e.g. by wearing appropriate footwear.

Electrostatic dissipative protective clothing must not be open or taken off when the wearer is in the vicinity of flammable or explosive gases or when handling flammable or explosive substances. The protective garment's electrical insulation properties will be reduced when the clothing is wet, damp or sweaty.

Electrostatic dissipative protective clothing must not be used in oxygen-enriched atmospheres without the approval of the chief safety engineer. The electrostatic dissipative performance of the protective clothing may be affected by wear and tear, laundering and possible contamination. During normal use (including when the wearer bends and moves), electrostatic dissipative protective clothing must at all times cover all materials which do not meet the requirements of the standard

## Standard EN ISO 11611 Protective clothing for use in welding and allied processes:



The garment must be used in combination with other clothing that ensures protection in compliance with EN ISO 11611. Parts of the body that are not covered by this clothing must be protected in another way. The garment must be closed when it is used. It may be necessary to wear additional protection for some parts of the body, e.g. during overhead welding operations. An increased level of oxygen in the air and flammable substances on the garment reduce its flame resistance. The protective garment's electrical insulation properties will be reduced when the clothing is wet, dirty or sweaty. The apron should cover the front of the body, at least from side seam to side seam. When additional protective clothing is worn for parts of the body, the basic garment must meet at least Class 1 requirements.

### **Caution:**

For operational reasons, not all live parts of arc welding equipment can be protected against direct contact.

The protective clothing is designed only to protect the wearer from brief, accidental contact with the live parts of the arc welding circuit. Additional layers of electrical insulating clothing are required where there is an increased risk of electric shock. When a combination of different garments is worn, they are classified in the same class as the garment that provides the lowest level of protection.

Particular care should always be taken when welding in confined spaces.

The garment is tested for a number of qualities including limited flame spread, heat transfer and the impact of molten metal splashes.

**Class 1** protects against less hazardous welding techniques and situations, which produce less spatter and radiant heat.

**Class 2** protects against more hazardous welding techniques and situations, which produce more spatter and radiant heat.

Printed on the label indicates that the garment meets the requirements for limited flame spread. A1 surface ignition method, A2 edge ignition method, A1 + A2 both methods.