



PROTECTIVE WORKWEAR PROTECTIVE WOR
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User Manual

KIVAN
Group

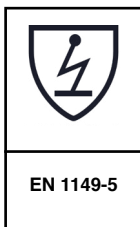


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There are several standards regarding personal protective clothing:

EN 11612 – Heat, Flame & Molten Metal Splash
EN ISO 11611 – Welding Protection
EN ISO 14116 – Heat & Flame Protection, Limited Flame Spread
EN 1149-5 – Electrostatic Properties
EN 61482-1-2 – Electric Arc Protection
EN 20471 – High Visibility
EN 343 – Protection against Rain

Check the label of your garment in order to learn the protection level.

PROTEK® HEAT & FLAME RESISTANT GARMENTS

Different type PROTEK® products are designed to protect the wearer against heat and flames, contact heat, molten metal splashes, electric arc etc. The wearer should make the risk assessment according to the EN ISO 11612:2015 Annex D and should choose the appropriate type of clothing for required risks.

PROTEK® products do not give protection for all parts of the body. For full body protection, other suitable protective equipments (protective helmets, protective gloves, protective footwear etc.) should be used. Avoid wearing synthetic flammable fabrics underneath the garments, since they may melt and cause skin damage.

INFORMATION ABOUT EN 11612 STANDARD

The purpose of this standard is to provide minimum performance requirements for clothing to protect against heat and flame. Within many of the hazards listed in this standard there are three performance levels, Level 1 to indicate exposure to perceived low risk, Level 2 to indicate exposure to perceived medium risk and Level 3 to indicate exposure to perceived high risk. For protection against radiant heat, there is a fourth performance level, to take into account high performance materials such as aluminized and similar materials. The level of personal protection to be provided should be based on the outcome of the risk assessment. For complete protection against exposure to heat and/or flame, it is probable that it will be necessary to protect the head, face, hands and/or feet with suitable PPE and in some cases, appropriate respiratory protection may also be considered as necessity.

Code A: Limited Flame Spread (A1 or A2)

Code B: Protection against Convective Heat (B1, B2 or B3)

Code C: Protection against Radiant Heat (C1, C2, C3 or C4)

Code D: Protection against Molten Aluminium (D1, D2 or D3)

Code E: Protection against Molten Iron Splash (E1, E2 or E3)

Code F: Protection against Contact Heat (F1, F2 or F3)



INFORMATION ABOUT EN ISO 11611 STANDARD

EN ISO 11611:2015 specifies minimum basic safety requirements and test methods for protective clothing including hoods, aprons, sleeves and gaiters that are designed to protect the wearer's body including head (hoods) and feet (gaiters) and that are to be worn during welding and allied processes with comparable risks. For the protection of the wearer's head and feet, EN ISO 11611:2015 is only applicable for hoods and gaiters. EN ISO 11611:2015 does not cover requirements for hand protection. This type of protective clothing is intended to protect the wearer against spatter (small splashes of molten metal), short contact time with flame, radiant heat from the arc, and minimizes the possibility of electrical shock by short term, accidental contact with live electrical conductors at voltages up to approximately 100 V d.c. in normal conditions of welding. Sweat, soiling or other contaminants can affect the level of protection provided against short term accidental contact with live electric conductors at these voltages. EN ISO 11611:2015 specifies two classes with specific performance requirements, i.e. Class 1; the lower level and Class 2; the higher level.

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.

For adequate overall protection against the risks to which welders are likely to be exposed, personal protective equipment (PPE) covered by other standards should additionally be worn to protect the head, face, hands and feet.

INFORMATION ABOUT EN ISO 14116 STANDARD

ISO 14116 specifies the performance requirements for the limited flame spread properties of materials, material assemblies and protective clothing in order to reduce the possibility of the clothing burning and thereby itself constituting a hazard. Additional requirements for clothing are also specified.

Protective clothing complying with this International Standard is intended to protect workers against occasional and brief contact with small igniting flames, in circumstances where there is no significant heat hazard and without the presence of another type of heat. When protection against heat hazards is necessary in addition to protection against limited spread flammability, then standards, such as EN 11612, are more appropriate. A classification system (index 1, index 2, index 3) is given for materials, material assemblies and garments which are tested according to EN ISO 15025:2002, Procedure A.



INFORMATION ABOUT EN 1149-5 STANDARD

This European Standard specifies material and design requirements for electrostatic dissipative protective clothing, used as part of a total earthed system, to avoid incendiary discharges. The requirements may not be sufficient in oxygen enriched flammable atmospheres. This European Standard is not applicable for protection against mains voltages.

Scope: Avoid incendiary discharges

- (May) not sufficient in oxygen enriched flammable atmospheres
- Not for main voltages

The standard specifies 3 areas:

- 1) Material performance requirements
- 2) Design requirements
- 3) Marking & guidance

Performance tests should be made after pretreatment for protective clothing produced from woven fabrics

Electrostatic requirements

Materials with conduction threads in stripe or grid pattern, the maximum space shall not exceed 10 mm in one direction

Surface Resistance EN 1149-1 $\geq 2.5 \times 10^9 \Omega$

Induction Charging EN 1149-3 - 2 Half decay time > 4 s
Shielding factor > 0.2

INFORMATION ABOUT EN 61482-1-2

This standard regulates heat and flame resistant clothing for workers exposed to electric arcs. A direct and constrained electric arc in a low voltage circuit is used to classify material / garments in defined arc protection classes.

Class 1: Fabrics that pass 4 kA current, burning time less than 5 seconds.

Class 2: Fabrics that pass 7 kA current, burning time less than 5 seconds.

Garment test must be done along with material tests. Both tests are necessary for certification. Garment class will be defined according to the results of tests. Garment protection level should be clearly written on the label.

If a garment consists of different layers this should be written on the user manual. Never use synthetic and flammable fabrics inside these garments. You can wear these garments with the other fire retardant suits to increase the safety performance.



INFORMATION ABOUT EN ISO 20471

EN ISO 20471:2013 is the harmonized European standard for high visibility clothing. It specifies the requirements for signaling the users presence day or night. It intends to make users in hazardous situations conspicuous under any light conditions. The standard provides for two performance parameters:

X: Surface of fluorescent and retroreflective material (3 levels)

Y: Quality of the retro-reflecting materials (2 levels)

INFORMATION ABOUT EN 343

EN 343:2007 is the harmonised European standard that applies to garments worn in adverse weather conditions. It specifies the characteristics of protective clothing against the influence of foul weather, wind and cool above -5°C. The standard provides for two performance parameters:

X: Waterproofness (3 levels)

Y: Breathability properties (3 levels)

HOW TO CHECK THE PROPER FIT



Position A



Position B



Position C

A) Position A

While standing, reach over head as high as possible with your hands together. The jacket must overlap the top of the trousers

B) Position B

While standing with your hands together and reaching overhead as far as possible, bend forward to the left or right, and backward. The jacket must overlap the top of the trousers

C) Position C

While crawling on the knees and elbows jacket must overlap the top of the trousers



MARKING CONSIDERATIONS

Labels should contain below information:

- Firefighting pictogram should be as below, showing the Standard and performance level



Xf2
Xr2
Y2
Z2



XXXX

EN 11612

- CE sign and the notified body number of the accredited laboratory
- Model Number
- Content of outershell, moisture barrier, thermal barrier, inner lining
- Warning for firefighter to wear the jacket and the trousers together
- Washing Instruction and related pictograms
- Information of the manufacturer company
- Size of the garment and related pictogram

REPAIRS

All repairs should be carried out by the manufacturer, otherwise repairs may cause damages.

RETIREMENT

USEFUL LIFE AND RETIREMENT

A Garment should be retired when the costs of repair would exceed 50% of the replacement cost. The useful life of a Garment will vary according to the following factors:

- Weight and type of weave of fabric
- Age and frequency of use
- Number and type of previous repairs
- Type of work the wearer performed
- The length of exposure to extreme heat, and the intensity of the heat
- The length of exposure to hazardous substances
- The length of exposure to direct or indirect sunlight, or other light sources such as fluorescent light



DISPOSAL

Retired uncontaminated garments must be destroyed to prevent their unauthorized or mistaken use. Cut them into several pieces and dispose of properly.

Retired Garments that are contaminated with blood or body fluids or hazardous chemicals should be placed in a plastic bag and properly disposed of.

Never use retired Garments for training purposes. Use of retired Garments in hazardous situations could result in serious injury or death.













CLEANING AND REPAIR INSTRUCTIONS

Front loading machines are recommended. All closure system should be fastened (velcros, zipper, etc.) Pretreatment involving the use of a degreaser soak tank is permissible when outershell is impregnated with large concentrations of oil, grease and soot. Launder separately, never mix with non-flame resistant items. Recommended washing temperature is 40°C. No bleach product may be used. The garment is not colorfast or structurally able to withstand any bleach. Do not use washing powder containing soap or chlorine. Liquid detergent is preferred; do not use powdered detergent if possible. pH level should be between 5 and 10. Do not use fabric softeners. Alternatively wash in cold water with industrial non-ionic detergent. Do not use acid while rinsing. Avoid direct and intensive steam while ironing. Avoid overdrying (recommended level of moisture after drying: 10-15%). Store in a dry place-direct sunlight should be avoided while storing. Do not iron over reflective tapes. Ironing may damage reflective tapes. Read and follow the washing and care instruction label in the garment to ensure protection is given throughout the products lifetime. Washing and care instruction are inside the garment, along with model number/name, washing symbols, material combination and which standard(s) to which the product is approved. Wash the garments according to the symbols written on the label. Here are the explanations of each symbol:













WASHING INSTRUCTION

Wash the garments according to the symbols written on the label.

Care Symbol	Written Care Instructions	What Care Symbol and Instructions Mean
Wash		
	Machine Wash, Cold	Initial water temperature should not exceed 30°C or 85°F.
	Machine Wash, Warm	Initial water temperature should not exceed 40°C or 105°F.
	Machine Wash, Hot	Initial water temperature should not exceed 60°C or 140°F.
	Machine Wash, Hot	Initial water temperature should not exceed 95°C or 200°F.
Bleach		
	Bleach When Needed	Any commercially available bleach product may be used in the laundering process.
	Non-Chlorine Bleach When Needed	Only a non-chlorine, color-safe bleach may be used in the laundering process. Chlorine bleach may not be used.
	Do Not Bleach	No bleach product may be used. The garment is not colorfast or structurally able to withstand any bleach.
Bleach		
	Iron, Low	Regular ironing, steam or dry, may be performed at Low setting (110°C, 230°F) only.
	Iron, Medium	Regular ironing, steam or dry, may be performed at Medium setting (150°C, 300°F).
	Iron, High	Regular ironing, steam or dry, may be performed at High setting (200°C, 390°F).
	Do Not Steam	Steam ironing will harm garment, but regular dry ironing at indicated temperature setting is acceptable.
	Do Not Iron	Item may not be smoothed or finished with an iron.



Care Symbol	Written Care Instructions	What Care Symbol and Instructions Mean
Dryclean		
	Dryclean, Any Solvent	Dry Clean, any solvent. Usually used with other restrictions on proper dry cleaning procedure.
	Dryclean, Petroleum Solvent Only	Usually used with other restrictions Dry Clean using only petroleum solvent.
	Dryclean, Any Solvent Except Trichloroethylene	Dry cleaning solvents can be used except Trichloroethylene.
	Do Not Dryclean	Garment may not be commercially drycleaned.
Dry		
	Tumble Dry, Low Heat	A machine dryer may be regularly used at a Low Heat setting.
	Tumble Dry, Medium Heat	A machine dryer may be regularly used at a Medium Heat setting.
	Tumble Dry, High Heat	A machine dryer may be regularly used at a Medium Heat setting.
	Do Not Tumble Dry	A machine dryer may not be used. Usually accompanied by an alternate drying method symbol.
	Line Dry	Hang damp garment from line or bar, in or out doors.
	Dry In Shade	Usually added to Line or Drip Dry. Dry away from direct sunlight.

Hydrolysis may have a negative affect on any protective fabric that is stored under harmful conditions for a long period of time. After prolonged storage, test the garments before using.



MAXIMISE SAFETY

Inspect the garment against damages before using it. To increase safety performance, use this garment in combination with other flame retardant/resistant garments. Avoid wearing synthetic flammable fabrics underneath the garments, since they may melt and cause skin damage. Stop using damaged garments immediately. Do not put under sunlight. Sunlight will have a negative effect in color change on any protective fabric. The clothing has to be worn completely closed. Full body coverage, has to be guaranteed. The user shall not undress the clothing in explosive atmospheres. Specific work- place-risk analysis is needed for application in explosion zone 0 and gas/vapour – air mixtures in explosion group IIC. This clothing is not an electrical isolated protective clothing, for instance according to EN 50286:1999 “electrical insulating protective clothing for work on low-voltage installations”. The whole personal protection requires additional suitable protective equipment, like protection helmet / visor, protective gloves.

Warning: Tears should not be repaired by user; a flammable (not flameproof) thread or heat-reactivable piece is likely to melt which would be very dangerous in the event of exposure to flame. Dirty clothing may lead to a reduction in the level of protection.

BODY SIZE CONTROL

Size		Chest	Waist	Height
2XS	46	86-92	78-82	160-172
XS	48	90-96	82-86	160-172
S	50	94-100	86-90	164-176
M	52	98-104	90-94	168-180
L	54	102-108	94-98	172-184
XL	56	106-112	98-102	176-188
2XL	58	110-116	102-106	180-192
3XL	60	114-120	106-110	184-196
4XL	62	118-124	110-114	188-200

