

USER INSTRUCTION

SONTEX HAVIS POWER®

Jacket art. no. 20 045, Trousers art. no. 21 045, Bib Trousers art. no. 22 045

1. Manufacturer

SONTEX Schutzbekleidung®

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2. Certification Authority

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3. Composition

66% Cotton, 33% Polyester, 1% AST.

The assessments were made on the basis of regulation EU 2016/425.

The PPE is used in the following workplaces, among others: in the steel processing industry and in factories where people need to be protected from high temperatures.

If the PPE is not worn during activities in the above-mentioned workplaces, this can lead to health hazards such as burns, injuries caused by chemicals and electrostatic charge.

PPE protects against risks that are covered by the underlying standards.

In order to provide the specified level of protection, it is necessary that both parts of the garment are always worn together:

Jacket 20 045 with waistband trousers 21 045 or bib trousers 22 045 must always be worn in combination.

The protective clothing must be worn when closed.



4. EN ISO 11612:2015 Protective clothing for heat exposed industrial workers

Code	Inspection	Test Norm	Performance Level	lowest	highest
A	limited flame spread face ignition edge ignition	EN ISO 15025 method A method B	Code A1 Code A2		
B	convective heat	EN ISO 9151		B1	B3
C	radiant heat	EN ISO 6942 $q_0 = 20 \text{ kW/m}^2$		C1	C4
D	liquid aluminium splash	EN ISO 9185		D1	D3
E	molten iron splash	EN ISO 9185		E1	E3
F	contact heat $T_c = 250^\circ\text{C}$	EN ISO 12127-1		F1	F3

WARNING: The clothing is not designed for continuous flex applications.

In addition, a leather apron should be worn for continuous flex applications.

The wearer bears full responsibility as a last resort!

In the event of chemical or flammable liquids on clothing covered by this International Standard, the wearer should immediately withdraw and carefully remove the garments to ensure that the chemical or liquid does not come into contact with any part of the skin. The clothing should then be cleaned or disposed of.

Should exposure to splashes of molten metal occur, leave the workplace immediately and remove the garment. Molten metal splashes can cause burns if the garment is worn next to the skin.



5. EN ISO 11611:2015 Protective clothing for use in welding and allied processes

This protective clothing provides protection against the dangers during welding operations, e.g. by exposure of radiant heat and small molten metal spatter. Depending on the type of welding work, this protective clothing is divided into two classes:

Inspection test	Test method	Lowest class Class 1	Highest Class Class 2
Small hot metal drops after pre-treatment	ISO 9150	≥ 15 drops	≥ 25 drops
Heat transfer radiation after pre-treatment	EN ISO 6942 $q_0 = 20 \text{ kW/m}^2$	RHTI $\geq 7\text{s}$	RHTI $\geq 16\text{s}$

Class 1: is foreseen for manual welding machines with slight formation of spatters and drops e.g. gas welding, TIG welding, MIG welding, micro plasma welding, brazing, spot welding, MMA welding and for the operation of machines of oxygen cutting machines, plasma cutting machines, resistance welding machine, machines for thermal spraying and bench welding.

Class 2: is for manual welding techniques with heavy formation of spatters and drops e.g. MMA welding, MAG Welding, MIG welding, self-shielded flux cored arc welding, plasma cutting, gouging, oxygen cutting, thermal spraying and for operation of machined e.g. in confined spaces, for overhead welding/cutting or in comparable constrained positions.

For operational reasons, all welding voltage carrying parts of the arc welding equipment are not protected against direct contact. The garments are designed to provide protection against short term, accidental contact with live electric conductors at voltages up to approximately 100 V d.c. Additional partial body protection may be required, e.g. for welding overhead. If users experience sunburn-like symptoms, UVB is penetrating. In either case, the garment should be repaired (if practicable) or replaced and consideration given to the use of additional, more resistant, protective layers in future.

Additional layers of electrical insulation are required for arc welding!

The level of protection against flame is reduced when clothing is contaminated with flammable materials!

The electrical insulation of clothing is reduced when the clothes are wet, dirty or sweaty.

An increase in the oxygen content of the air considerably reduces the flame protection of the protective clothing. Care must be taken when welding in confined spaces, e.g. if it is possible for the atmosphere to be enriched with oxygen.

The welding protective clothing must be cleaned at regular intervals and in accordance with the manufacturer's recommendations. After cleaning, the clothing must be visually inspected for signs of damage.



6. EN 1149-5:2018 Protective clothing - Electrostatic properties

The person wearing the electrostatic dissipative protective clothing must be properly earthed. The electrical resistance between the person and the earth shall be less than $10^8 \Omega$, e.g. by wearing adequate footwear.

Electrostatic dissipative protective clothing shall not be opened or removed in presence of flammable or explosive atmospheres or while handling flammable or explosive substances.

WARNING

To ensure that the wearer of the protective clothing is protected, the clothing must be worn closed. Also the press button on the cuffs must always be closed. The zipper and snaps close completely. Contamination may affect the electrostatic properties. Therefore, any residue on the clothing must be removed and the clothing must be washed if necessary.

Electrostatic dissipative protective clothing shall not be used in oxygen enriched atmospheres or in zone 0 without prior approval of the responsible safety engineer;

The electrostatic dissipative performance of the electrostatic dissipative protective clothing can be affected by wear and tear, laundering and possible contamination;

Electrostatic dissipative protective clothing shall permanently cover all non-compliant materials during normal operation (including bending and movements).

The garment is intended to be worn in Zones 1, 2, 20, 21 and 22 (see EN 60079-10-1 and EN 60079-10-2) in which the minimum ignition energy of any explosive atmosphere is not less than 0,016 mJ.



7. EN 13034:2005+A1:2009 Type 6 Protective clothing against liquid chemicals

The EN 13034 - Protective clothing against liquid chemicals - specifies the performance requirements for chemical protective clothing offering limited protective performance, type 6. It provides limited protection against the effects of liquid aerosols, sprays and light splashes of chemicals. The protective effect against specific chemicals must be tested in advance.

A visual test of a qualitative nature was carried out, which does not provide proof of impermeability to liquids after abrasion. Re-impregnation is required after each wash to maintain the chemical repellent properties against chemicals.

The type, i.e. Type 6 for chemical protective suits or Type PB [6] for partial body protection, is differentiated as follows:

Type 6 chemical protection suits were tested using the mist test (5.2).

Type PB [6] partial body protection was not tested to the mist test (5.2).

Inspection	Test Norm	Performance level		lowest	highest
		R	P		
Abrasion resistance	EN 530	Class 3		Class 1	Class 6
Tear resistance	EN ISO 9073-4	Class 2		Class 1	Class 6
Seam strength	EN ISO 13934-1	Class 5		Class 1	Class 6
Maximum tensile strength	EN ISO 13034-1	Class 5		Class 1	Class 6
Puncture resistance	EN 863	Class 2		Class 1	Class 6
Penetration resistance and repellency against liquid chemicals	EN ISO 6530	Classes		Class 1	Class 3
	Repellency index - R	R	P		
	H ₂ SO ₄ 30%	3	2		
	NaOH 10%	3	3		
	o-xylene undiluted	0	0		
butan-1-ol undiluted		0	0		

Before each use, the clothing must be checked for damage or alterations.

Work gloves must be worn, with the cuffs covering the sleeve ends of the jacket. To fulfil the requirements, the 20 045 jacket must always be worn with the 21 045 waistband trousers or the 22 045 dungarees. The durability of the garment is longer than 25 months!



8. IEC 61482-2:2018 Live working - Protective clothing against the thermal hazards of an electric arc

This standard regulates the safety requirements for the design of clothing and the labeling of different protection levels (ATPV value and/or APC, Class 1 and 2). Clothing for protection against electric arcs, tested according to the arc rating test, must meet at least an ATPV value of 167.5 kJ / m² (4 cal / cm²) or, tested according to the box test, at least APC 1. The higher the ATPV value or the higher the APC classification, the higher the protective effect.

The clothing was tested in the box test and achieved thermal arc protection class APC 1.

Fabrics and protective clothing that has been tested and certified in accordance with IEC 61482-1-2 are exposed to a directional arc, generated in a low-voltage circuit. Two protection classes are tested and marked in accordance with IEC 61482-2.

The following performance parameters are used for classification:

Test class	Average arc energy (kJ)	Test current (kA)	Arc time (ms)
APC 1	158	4	500
APC 2	318	7	500

When using arc fault protective clothing in accordance with IEC 61482-2:2018, ensure that this protective clothing is not electrically insulating protective clothing, e.g. in accordance with EN 50286:1999 'Electrically insulating protective clothing for low-voltage work'.

No garments such as shirts, undergarments or underwear should be used which melt when exposed to an electric arc, e.g. made of polyamide, polyester or acrylic fibres.

Full personal protection also requires additional suitable safety equipment such as safety helmet / visor and gloves.

Furthermore, the ambient conditions and the hazards at the workplace must be taken into account.

Deviations from the parameters of this standard can lead to higher hazards.

The clothing does not provide protection against electric shock.



9. EN ISO 20471:2013 + A1:2016 High visibility clothing

The EN ISO 20471 standard is the European standard for visibility warning clothing. Based on the minimum areas of fluorescent background material and reflective material, the following classes arise:

Material	Class 1	Class 2	Class 3
fluorescent material	0,14 m ²	0,50 m ²	0,80 m ²
reflective material	0,10 m ²	0,13 m ²	0,20 m ²

Here, the class 3 represents the highest class, as it provides the largest area of fluorescent background material and reflective material.

Chromaticity was tested after 5 washing cycles. The stated maximum number of cleaning cycles is not the only factor related to the lifetime of the garment. The lifetime will also depend on usage, care storage etc.!

10. Washing and care instructions



Max. 60°C

The tests were performed after 5 wash cycles.

Test have shown that the clothing even after 5 washes meets all requirements

Do not use bleach, chlorine bleach or fabric softener.

Select a short spin program! Do not soak, wash separately! Store dry and dark!

Reapplication of fluorocarbon has to be executed after every 5 washing cycles in order to guarantee the liquid repellency.

11. Instructions for use

Check the garment for wear and tear before wearing it. In case the garment shows signs of wear and tear, have the garment repaired or discarded. Repairs to the clothing must be performed by professionals and with identical materials.

The garment does not provide protection for head, hands and feet. You will need additional protective equipment for full protection.

The garment does not cause any allergies or cancer. There is no impairment in reproduction.

The clothing should be stored dry and dark.

The protection levels are not subjected to age and remain fully maintained.

After use, you can return the clothes to us.

The garment then will be recycled and decomposes into its constituent parts.

12. Aging factors

- a. Strong mechanical effects on the clothing (scrubbing, crawling, etc.) exert stress on the material used and weaken the integrity of the protective function. Visible, severe changes (chafing, thinning, cracks, holes, etc.) are indicators that the clothing has a reduced or no protective effect. The clothing must be disposed of.
- b. If repeated thermal effects (e.g. contact with open flames, metal splashes, drops of sweat, etc.) lead to visible permanent changes to the material of the clothing (burn marks, scorch marks, burn holes, etc.), a reduction in the protective function in these areas must be expected. The clothing must be disposed of.
- c. If chemical substances (acids, alkalis, solvents, etc.) attack the clothing, subsequent damage to the material due to long-term exposure cannot be ruled out. Indicators of chemical damage can be strong visual changes (incipient pitting) in the area of contamination, which can lead to a reduction in the protective function. The clothing must be disposed of.
- d. Contaminations, particularly with combustible impurities (grease, oil, tar, etc.) have a significant impact on the protective function and must therefore be removed immediately. If heavy soiling remains despite professional and proper care, a reduction in the protective performance cannot be excluded. The clothing must be disposed of.
- e. Improper care or prolonged exposure to sunlight may also lead to visible changes in the feeds. Extreme changes in color may indicate that the feedstock in these areas no longer has the initial protection.

A possible reduction of the protection performance cannot be excluded in the case of:

- damaged zippers
- open, frayed or otherwise damaged seams
- reflective strips that are extensively and heavily rubbed off, heavily frayed or peeled off

Correct storage of the products has a significant influence on the aging of the product.

Currently, there are no indications that the clothing cannot retain its properties for many years if properly stored (original packaging, dry, dust-free, dark, no major temperature fluctuations, etc.).

13. Pictograms



Protective clothing to protect against heat and flames

EN ISO 11612:2015
A1+A2 B1 C1 E2 F1



Protective clothing for welding and related processes

EN ISO 11611:2015
Class 1 A1+A2



Protective clothing – electrostatic properties

EN 1149-5:2018



Protective clothing against liquid chemicals

EN 13034:2005+A1:2009
Type 6



Protective clothing against the thermal hazards of an electric arc

IEC 61482-2:2018
APC 1



High visibility clothing

EN ISO 20471:2013+A1:2016
Class 3 only if jacket and trousers are worn in combination with each other

Note:

The declaration of conformity can be downloaded from our website www.sontex.de. Please find the link below:

<https://www.sontex.de/media/pdf/Declaration%20of%20Conformity%20SONTEX%20HIVIS%20POWER%20Article%2020045%2021045%2022045.pdf>