KEGEL-BŁAŻUSIAK Sp. z o. o.
ul. Składowa 26
34-400 Nowy Targ

KEGEL-BŁAŻUSIAK

Instructions for use

Protective clothing, anti-electrostatic, flame retardant, for welders, protecting against hot factors and liquid chemicals, with high visibility, consists of:

Vest art. 2-2012-090	**Jacket art. 2-3799-090**	**Trousers art. 2-5798-090**	**Bib-trousers art. 2-6798-090**
Insulated jacket art. 3-1797-090	**Insulated jacket art. 3-1896-090**	**Insulated bib-trousers art. 3-6797-090**	

Intended use

The clothes have been qualified to the 1st class according to EN ISO 11611:2015. Clothing intended for welding work using manual welding techniques with small amounts of splashes and drops (table 1). It protects the employee against static electricity that may cause ignition in explosive atmosphere, short-term contact with flame, convective and radiation heat, molten iron splashes and contact heat. In case of splash, protects against liquid chemicals (Type PB [6] – table 2). The clothing ensures the user's safety for operators of vehicles or other equipment in any lighting environment, both in daylight and in the dark when illuminated by vehicle headlights. Clothing meets the essential requirements for personal protective equipment contained in the Regulation of the European Parliament and of the EU Council 2016/425 of 9 March 2016 on personal protective equipment and in the standards: EN ISO 13688:2013; EN ISO 13688:2013/A1:2021; EN 1149-5:2018; EN ISO 11611:2015; EN ISO 11612:2015; EN 13034:2005+A1:2009; EN ISO 20471:2013/A1:2016.

 **EN 1149-5:2018**	 **EN ISO 11612:2015 A1+A2 B1 C1 E1 F1**	 **EN ISO 11611:2015 Class 1, A1+A2**	 **EN 13034:2005+A1:2009 Typ PB [6]**	CE **1439**	
Protection against static electricity	**Protection against heat and flame** Resistance to: A1+A2 – limited flame spread – surface and edge ignition B1 – convective heat C1 – radiant heat E1 – iron splash F1 – contact heat	**Protection during welding** Class 1 – protection against less hazardous welding techniques and situations, causing lower level of spatter and radiant heat A1+A2 – limited flame spread – surface and edge ignition	Protection against accidental, small splashing of chemicals with low volume pressure, against which a complete liquid penetration barrier (at the molecular level) is not required. Type PB [6] - partial body protection	Clothing meets the essential requirements for personal protective equipment, contained in the Regulation of the European Parliament and of the Council of the European Union 2016/425 dated 9 March 2016. The PPE is subject to the conformity assessment procedure to type based on internal production control plus supervised product check at random intervals (Module C2) under surveillance of notify body no 1439 – Sieć Badawcza Łukasiewicza – Łódzki Instytut Technologiczny, ul. M. Skłodowskiej-Curie 19/27, 90-570 Łódź.	Before using, read the contents of this instructions for use.

EN ISO 20471:2013/A1:2016 - High visibility clothing – Test methods and requirements

 1	**1 –** indicate class 1, were: - min. of background material is 0,14 m^2; - min. of reflective material is 0,10 m^2	 2	**2 –** indicate class 2, were: - min. of background material 0,50 m^2; - min. of reflective material is 0,13 m^2	 3	**3 -** indicate class 3, were: **-** min. of background material is 0,80 m^2; **-** min. of reflective material is 0,20 m^2

Clothing models in relation to visibility classes according to EN ISO 20471:2013/A1:2016

Class 1:	**Class 2:**	**Class 3:**
- 2-2012 **- 2-5798** **- 2-6798** **- 3-6797**	**- 2-3799** **- 3-1797** **- 3-1896**	**- 3-1797 + 2-5798** **- 3-1797 + 2-6798** **- 3-1797 + 3-6797** **- 3-1896 + 2-6798** **- 3-1896 + 3-6797**

Table 1

Selection criteria for clothing for use in welding or allied processes (reference points)	
Selection criteria relating to the process	**Selection criteria relating to the environmental conditions**
Manual welding techniques with light formation of spatters and drops, e.g.: - gas welding; - TIG welding; - MIG welding (with low current); - Micro plasma welding; - brazing; - spot welding; MMA welding (with rutile-covered electrode).	Operation of machines, e.g.: - oxygen cutting machines; - plasma cutting machines; - resistance welding machines; - machines for thermal spraying; bench welding.

Table 2

Usage requirements	**Test results**
Abrasion resistance	Klasa 6
Tear resistance	Klasa 2
Tensile strength	Klasa 5
Puncture resistance	Klasa 2
Repellency to liquids:	
H_2SO_4 30 %	Klasa 3
NaOH 10%	Klasa 3
o-ksylen	Klasa 2
butan-1-ol (undiluted)	Klasa 3
Resistance to penetration by liquids:	
H_2SO_4 30 %	Klasa 3
NaOH 10%	Klasa 3
o-ksylen	Klasa 2
butan-1-ol (undiluted)	Klasa 2

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Use

Clothing should be used in a set e.g. a jacket with trousers or bib-trousers to protect the user's body as much as possible. Vest art. 2-2012 should be worn only over other clothing indicated above or over other clothing presenting the same levels of protection (excluding the EN ISO 20471 standard). Clothing should always be buttoned during use. For proper protection against static electricity, the user should be properly grounded. The electrical resistance between the human skin and the ground should be less than 108Ω, e.g. by wearing appropriate footwear on distracting or conductive floors. Clothing should not be unzipped and / or removed in flammable or explosive atmospheres and when handling flammable or explosive substances. Clothing is intended to be worn in Zones 1, 2, 20, 21 and 22 in which the minimum ignition energy of each explosive atmosphere is not less than 0.016 mJ. Clothing should not be used in oxygen enriched atmospheres and Zones without the prior approval of the safety engineer. Clothing during normal use (including bending) should completely cover all materials that do not meet the requirements of EN 1149-5:2018. When using clothing, acid or alkaline sprayed areas should be immediately flushed with a water. The effectiveness of the protection provided by clothing can be affected by: wear, damage, washing and possible contamination. For proper protection, it is recommended to use additional personal protective equipment, e.g. protective gloves, eye and face protection equipment, hoods, providing protection against hazards occurring during welding. The level of flame protection will be less if clothes are contaminated with flammable substances. The increase in oxygen content in the air will reduce the considerable protective properties of the garment against the effects of flame. Electrical insulation provided by clothing will be less when clothing is wet, soiled or soaked in sweat. In the event of accidental splashing of clothing with chemicals or flammable liquids, the user should immediately withdraw from the workplace and carefully remove clothing so that no part of the user's skin comes into contact with the chemicals. In the event of molten iron splashes, the user should immediately leave the workplace and remove clothing products, if clothing is worn close to the skin, it may not eliminate the total risk of burns. Protective clothing is only intended to protect against short-term inadvertent contact with active parts of the arc welding circuit and additional layers of electrical insulation will be required when there is an increased risk of electric shock. Clothing is designed to provide only protection against short-term accidental contact with electrical wires with a voltage of approximately 100 V DC.

Maintenance

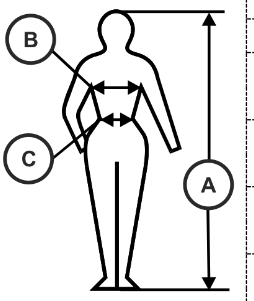
Do not wash clothing with other clothing. Use the following maintenance procedures:

				
Maximum washing temp. 60°C – normal process	Do not bleach	Tumble drying possible – lower temperature. Max. exhaust temp. 60°C	Iron at max. sole-plate temperature of 110°C	Professional dry cleaning in tertachloro-ethene and all solvent listed for the symbol F, normal process

Body dimensions to the size of protective clothing

In order to properly choose the size of clothing, use the information in the size table. Body measurements should be made at the places marked in the figure below.

Size table (dimensions are given in centimeters)



Size		Height (A)	Chest size (B)	Waist size (C)
002/S	46	164-170	88-92	80-84
003/M	48	170-176	92-96	84-88
	50	170-176	96-100	88-92
004/L	52	176-182	100-104	92-96
	54	176-182	104-108	96-104
005/XL	56	182-188	108-112	104-108
	58	182-188	112-116	108-116
006/XXL	60	188-194	116-120	116-120
	62	188-194	120-124	120-128

Storage and transport

The clothing should be transport in original packaging (plastic bags), protecting against dirt, mechanical damage and getting wet. Store the clothing in a dry and well-ventilated place, away from heat sources. Do not store the clothing when it is dirty.

Repair

Each time before use, an employee intending to use clothing should inspect the clothing for damage. Clothing can only be repaired by the manufacturer or specialized facilities. Damaged items of clothing (pleats, flaps, front parts or sleeves) should be replaced. Fabrics and threads as well as missing fasteners (buttons, adhesive tapes) used for repairs should be original, supplied by the clothing manufacturer. Clothing after repair should keep its original shapes and dimensions. ATTENTION: A faulty repair can result in the loss of protective properties of clothing.

Additional information

- Testing the properties of clothing, resulting from the requirements of the declared standards, confirmed after min. 5 maintenance cycles. The number of washes is not the only factor associated with the durability of clothing. The duration of use will depend on the conditions of use, storage conditions etc.
- Partial body protection Type PB [6] - clothing has not been tested according to the complete clothing test (item 5.2 EN 13034:2005+A1: 2009).
- In order to maintain protection against liquid chemicals, it is recommended to re-apply the finish after each maintenance cycle using impregnation agents, ie: Kreussler Hydrob-FC; BurnusHyChem Hydro-Stop; EcoLab Saprit Protect Plus. If a different agent is needed, prior contact with the clothing manufacturer is required.
- The personal protection equipment after use is a waste, which the user should properly classify and then transfer for disposal in accordance with applicable law.
- No allergenic substances have been found in the materials used to manufacture the clothing; however, if any allergic reactions are noticed, especially in the case of sensitive individuals, such a person should leave the working zone, take off the garment and consult a doctor.
- It is advisable to keep this manual for further reference.

EU Type Examination Certificate issued by notified body no **1439 – Sieć Badawcza Łukasiewicza – Łódzki Instytut Technologiczny**, ul. M. Skłodowskiej-Curie 19/27, 90-570 Łódź.

EU Declaration of Conformity at: www.kegel.pl/ce

Composition:

Fabric: Cotton 75%, Polyester 24%, Antistatic fiber 1%
Insulation: Polyester FR 100%
Lining: Cotton 80%, Polyester 20%