

PRODUCT: Multinorm protective clothing, Type: „ENERGETIK MULTI“ 9042 II or 9043 II.

Set: jacket + pants to the waist or with a bib

Variants: single color, single color with retroreflective stripes, combined with saddle and retroreflective stripes, pants to the waist or with a bib.

MATERIAL: Fabric MULTI 260 Pro, permanent fire-resistant treatment PROBAN®, surface weight: 260 g/m².

Material composition: 75 % Cotton, 24 % Polyester, 1 % Carbon fiber.

Additional Materials: Striking Material: 3M™ Scotchlite™ Retroreflective Material 8940

LAWS, STANDARDS, DECREES:

In accordance with the requirements of the Regulation (EU) 2016/425 for personal protective equipment of category III.

EN ISO 13688:2013 Protective clothing - General requirements

EN 13034:2005+A1:2009 - Protective clothing against liquid chemicals type 6 and type PB [6]

EN 1149-5:2018 Protective clothing – Electrostatic properties - part 5: Material performance and design requirements

EN ISO 11612:2015 Protective clothing – Clothing to protect against heat and flame

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

APPLICATION: Especially electrotechnical, petrochemical, energy, gas, refinery and ADR workplaces. Wherever there is a risk of fire or explosion due to ignition static discharge. Furthermore, the garment is also suitable for welding work and the like.

Essential property	Measuring unit	Requirement	Assessment
Requirements of EN 13034+A1			
Abrasion resistance	Number of cycles to sample wear out	art. 4.1 EN 13034+A1 Class 4: > 1000 ≤ 1500	> 1000; < 1500
Trapezoidal tear resistance	N	art. 4.1 EN 13034+A1 Class 3: > 40 ≤ 60	lengthwise / crosswise 54,5 / 41,6
Tensile strength	N	art. 4.1 EN 13034+A1 Class 5: > 500 ≤ 1000	lengthwise / crosswise 720 / 560
Puncture resistance	N	art. 4.1 EN 13034+A1 Class 2: > 10 ≤ 50	37,8
Index of repellency R		art. 4.1 EN 13034+A1	
- 30% H ₂ SO ₄	%	Class 3: > 95	97,0
- 10% NaOH		Class 3: > 95	96,8
- o-xylene		-	22,1
- 1-butanol		-	71,9
Index of penetration P		art. 4.1 EN 13034+A1	
- 30% H ₂ SO ₄	%	Class 3: < 1	0,5
- 10% NaOH		Class 3: < 1	0,0
- o-xylene		-	29,9
- 1-butanol		-	13,5
Seam strength whole garment	N	art. 4.2.2 EN 13034+A1 Class 6: > 500	773
Resistance to penetration by liquid in form of light spray (spray test) whole garment	cm ²	art. 5 EN 13034+A1	0 without penetration
Requirements of EN ISO 11612			
Heat resistance (180 °C)	–	art. 6.2.2 EN ISO 11612	pass
Convective heat (HTI₂₄)	s	art. 7.2 EN ISO 11612	5,9
<i>basic material</i>		Performance level B1: 4,0 ≤ HTI ₂₄ < 10,0	
Radiant heat (RHTI₂₄)	s	art. 7.3 EN ISO 11612	13,1
<i>basic material</i>		Performance level C1: 7,0 ≤ RHTI ₂₄ < 20,0	
Contact heat	s	art. 7.6 EN ISO 11612	6,7
<i>basic material</i>		Performance level F1 min. 5,0 max. <10,0	
Limited flame spread - method A		art. 6.3.2 EN ISO 11612	
<i>Outer material as received, after treatment</i>	–	code A1	
<i>Outer material with seam after treatment</i>			
<i>Hardware after treatment</i>			
- spontaneous flaming time	s	≤ 2	0
- afterglow time	s	≤ 2	0

Essential property	Measuring unit	Requirement	Assessment
Molten iron splash <i>basic material</i>	g	art. 7.5 EN ISO 11612 Performance level E1 min. 60 max. <120	min. 60 max. <120
Requirements of EN 1149-5			
Electrostatic properties <i>basic material</i>	-	art. 4.2.1 EN 1149-5	
- half decay time t_{50}	s	$t_{50} < 4$	< 0,01
- shielding factor S	-	$S > 0,2$	0,83
Requirements of EN ISO 11611			
Effects of exposure to small molten metal splash <i>Outer material</i>	number of drops	art. 6.8 EN ISO 11611 Class 1 / Class 2 min. 15 drops / min. 25 drops	20,2
Electrostatic properties <i>Outer material</i>	Ω	art. 6.10 EN ISO 11611 > 10^5	$6,1 \times 10^7$
Limited flame spread - method A <i>Outer material as received, after treatment</i> <i>Outer material with seam after treatment</i> <i>Hardware after treatment</i>	-	art. 6.7.2 EN ISO 11611 code A1	
- spontaneous flaming time	s	≤ 2	0
- afterglow time	s	≤ 2	0
Radiant heat <i>basic material</i> <i>RHTI24</i>	s	art. 6.9 EN ISO 11611 Class 1 / Class 2 RHTI (24 °C) $\geq 7 / \geq 16$	15,4

INTENDED USE: The clothes are meant for protection of users working in areas with increased dustiness, increased concentration of explosive gases, an/or flammable materials, in which the rise of dangerous electrostatic charge is very probable and people must be protected against it and against the hazard of occurrence of fire. The clothes turn into carbon in case of direct contact with flames or little particles of burning material, but the fire does not spread further. This way it is possible to provide protection against serious injuries occurring as a result of direct contact of human body and separately burning clothes.

EN ISO 11612:2015 The clothing is designed to protect against ignition electrostatic discharge and short-term contact with small **A1** flames, ultraviolet radiation and other thermal hazards: **B1** (convective heat), **C1** (radiant heat), **E1** (molten iron spray), **F1** (contact heat).

EN 13034:2005+A1:2009 Protective clothing provides limited protection against liquid chemicals (**type 6**). Type 6 liquid chemical protective clothing is used to protect against potential exposure by light spraying, liquid aerosol or low pressure, low spray volume of small amounts of diluted chemicals.

EN 1149-5:2018 In addition, it serves as an electrostatic charge dispersing clothing used as part of an overall grounded system to prevent ignition discharges. It is intended for use in zones 1, 2, 20, 21 and 22 (see EN 602079-10-1 [7] and EN 60079-10-2 [8]) in which the minimum ignition energy of the explosive atmosphere is not less than 0,016 mJ. The garment must not be used in an oxygen enriched atmosphere or in zone 0 22 (see EN 602079-10-1 [7]) without prior approval by the responsible safety officer.

EN ISO 11611:2015 The protective clothing provides protection against risks in usual welding and similar operations (level **1/A1**).

Instructions for choosing the type of welding clothing (class 1/class 2)

Type of welding clothing	Selection criteria related to the procedure:	Selection criteria related to environmental conditions:
Class 1	Hand welding techniques associated with the generation of light, spatter and drops, eg: - flame welding, - TIG welding, - MIG welding, - micro-plasma welding, - brazing, - spot welding, - MMA (manual electrode coated arc welding) welding (rutile coated electrode).	Machine activities, eg: - oxygen cutting machines, - plasma cutting machines, - resistance welding machines, - thermal coating machines, - welding table.
Class 2	Hand welding techniques associated with the formation of large spatter and drops, eg: - MMA welding (base or cellulose electrode), - MAG welding (with CO ₂ or gas mixture), - MIG welding (high current), - arc welding with a filled electrode without shielding gas, - plasma cutting, - grooving, - oxygen cutting, - metallization.	Machine activities, eg: - in confined spaces, - overhead welding / cutting or comparable unnatural positions.

PRODUCT DESCRIPTION:

This protective clothing not only gives the user protection, but also comfort and convenience. It is airy and breathable. The material is hygienically safe and also provides good resistance to normal mechanical loads. The fabric contains conductive fibers for safe static discharge.

NOTICE FOR USERS:

The clothes may be used in areas with dangerous impacts of electrostatic discharge only in accordance with regulations for protection against dangerous impacts of static electricity.

- The clothes cannot be unfastened or taken off in case the person appears in flammable or explosive areas or when manipulating with flammable or explosive matters.
- The clothes must not be used in areas with excessive quantity of oxygen without previous consent of a responsible safety officer.
- Features of the clothes may be influenced by their wear, wash, or possible dirt.
- Before you start to use the clothes, it is necessary to check, whether they are not damaged. In this case it is necessary to reject the clothes and avoid using them!
- Repairs are allowed only using the materials and fabrics that meet requirements of the respective standards. The clothes are functional only in original composition, i.e. without unprofessional corrections, such as bad patches.
- Protective clothing only fulfills its protective function if it is complete, properly dressed and fastened, including closing all closures. The clothes must be worn completely buttoned / zipped up; buttons / zip fasteners must always be covered. The pockets must be closed during operation (covered).
- It is always necessary to use both parts of the clothes at work! The blouse of the two-piece clothes must be sufficiently long to cover the upper part of trousers at an ordinary body motion or when the user bends over. The clothes must overlap all materials which do not meet the requirements for dissipation of static electricity or flame resistance.
- The person wearing protective clothes with the ability to dissipate static electricity must be properly grounded by means of electric resistance under $10^8 \Omega$, for example by wearing suitable footwear on electrostatic-dissipating floors or conductive floors.
- The electrostatic charge-dissipating protective clothing's scattering performance may be affected by wear and tear, washing and contamination.
- When wearing the clothes, it is necessary to allow direct contact of conductive parts of the clothing material with skin, e.g. on neck and wrist. If the contacting parts of the clothes do not touch the skin directly, they must be grounded.
- The clothes must be always used only with other compatible personal protective equipment.
- In case of accidental spattering with liquid chemicals or flammable liquids when wearing these clothes, the user of such clothes must immediately leave the place and take the protective clothes off while it is necessary to ensure so that the chemicals of the liquid do not get in touch with any part of the skin. Such clothes must be cleaned or put out of operation.
- In case the clothes are spattered with melted metal, the user must immediately leave the work place and take the clothes off.
- Welding clothing is only intended to protect against short, unintentional contact with live parts of the arc welding circuit. In case of increased risk of electric shock, additional layers of electrical insulation are required. The garments are designed to provide protection against accidental contact with live electrical conductors at voltages up to about 100 V d. C.
- Additional partial body protection may be required, for example when welding overhead.

UNSUITABLE USE:

- The flame protection level will be reduced if the protective clothing is contaminated with flammable substances.
- Increasing the oxygen content in the air will significantly reduce the flame protection of the welding clothing. Attention should be paid to welding in confined spaces, e.g. if it is not excluded that the atmosphere can be enriched with oxygen.
- The electrical insulation provided by the garment will be reduced when the garment is wet, dirty or soaked with sweat.

RECOMMENDATIONS: to extend the life of the garment during welding we recommend using protective leather welding accessories (apron, gaiters, muffs ...) together with this garment.

WARNING: In case of spatter with melted metal it is not possible to exclude the risk of burn if the clothes are worn directly on the skin.

When wearing gloves together with the clothes it is necessary to maintain overlap between sleeves and gloves and this overlap must be maintained at work so that penetration of heat and flames or getting a hot particle inside is prevented.

The lower part of trousers should cover the upper part of shoes and this overlap should function also when walking or climbing.

Information about danger from UV radiation

Specification of minimum requirements for clothing that can protect the user against the normal hazards accompanying welding when properly used. These hazards include exposing the skin to ultraviolet (UV) radiation, which is caused by all arc welding operations. This UV radiation includes UVA, UVB and UVC radiation generated by intense pulses.

However, the fabric will degrade and may no longer provide protection. This is especially true when the garment is used in electric arc welding (especially MIG/MAG welding) where damage from intense UV radiation, radiant heat and abundant sparks or droplets of molten metal can very quickly reduce its efficiency. In such situations, it is advisable to use higher levels of protection, such as additional leather sleeves, aprons, etc., which will prolong the effectiveness of the garment and help protect the wearer.

Class 2 garments are designed to be more resistant to degradation caused by these hazards than class 1 garments. Although this cannot be accurately determined from the moment, they are affected by the welding process, the welder's skill, the welding current used, the spray generated and the welding position.

EU legislation requires PPE to be initially selected after a thorough risk assessment, to be regularly checked and maintained or replaced to ensure continued protection. Users exposed to UV radiation must be aware of the dangers and regularly checked.

A simple inspection for further use for UV protection for this type of garment (e.g. once a week) is carried out by holding the garment against the light of a 100 W tungsten lamp for arm length (approximately 1 m distance); if light is visible through the substance, then UV radiation also penetrates.

We also recommend that users, when they are found to be sunburnt (signs of UVB penetration) to have the garments repaired (if possible) or replaced with others, and consideration should be given in the future to use an additional, more durable protective layer.

Before using the clothes, the user should check (based on marks on tags on the clothes) that this type of clothes meets the required levels of protection in accordance with hazard assessment for which only the employer of the user is responsible. Considering the fact that the classes of workmanship based on the results of laboratory tests may not unconditionally apply for real conditions in a workplace, protective clothes should be then selected based on a complete assessment of the conditions and activities for which the end user is going to use the clothes taking into account the hazards and data provided by the manufacturer in respect of the workmanship of the protective clothes with the properties protecting against the respective danger or hazard. The respective standards define many classes of workmanship in which a higher number defines a higher degree of effectiveness.

The manufacturer bears no responsibility for any damages on persons or property incurred by incorrect use of the clothes.

It is necessary to note that in many accidents a man may be affected by such forces that no known clothes may avert heavy injury or death.

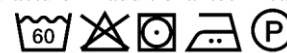
STORING: In dry, shady, and well-ventilated place at the temperature ranging from 10°C to 30°C. They must be protected against damage and also against impact of solar radiation, against radiating heat of heating units, stored not closer than 1m from heating units. If the clothes are wet, leave them to dry out at room temperature. Do not store wet clothes. They should be stored in original packages.

WHEN TRANSPORTED: the products are packed in PE bags. The products must not be damaged during their transportation.

MAINTENANCE: Close the zip fastener and all Velcro fasteners before washing. Use normal liquid detergents without bleaching effects, plasticizers or other additives should not be used as they can reduce the effectiveness of non-flammable finishes. In order to increase the efficiency of the treatment, it is necessary that no flammable residues adhere to the surface of the fabric, the filling ratio should not be less than 1:20 to ensure optimum washing process and minimize withdrawal. Two-step washing is recommended, in case of excessive contamination we recommend prewash at 40 °C and wash at 60 °C with gentle process, the product can be tumble dried. After washing, rinse thoroughly and spin to lower speed /max. 600 rpm. Iron off reflective stripes. The best way to reactivate a surface finish is drying in a tunnel finisher, with a temperature not exceeding 160 °C (recommended temperature = 130-160 °C). The drying process should be set so that the material reaches a dry state about 30-90 seconds before leaving the tunnel finisher so that its surface temperature does not drop below 120 °C. If the clothes are dried in a tumble dryer, the temperature of the inlet air in the dryer should be at least 120 °C. This ensures "reactivation" of the coating and increases the repellency efficiency. Low temperature drying and cord drying should be avoided. Ironing at a maximum ironing temperature of 150 °C, professional chemical cleaning with tetrachlorethene and all solvents listed under the symbol F., normal procedure or chemical cleaning. In order to best preserve the protective properties of Hydrofoil™ coated fabrics throughout the entire lifetime of the clothing and after repeated washing, we recommend following: Hydrofoil™ coated clothing should be washed separately from clothing with standard finishes to extend the FC finish. Restore the FC treatment after 5 wash cycles with HYDROB FC eg Hydrop „product rang“ when accompanied by appropriate drying conditions to reactivate the fluorocarbon surface properly. Hydrofoil™ has excellent washing durability and outperforms other fluorocarbon finishes on the market - Hydrofoil™ surface finish can be further enhanced by flushing with a fluorocarbon based rinse cycle.

NOTES: Keep clothing clean, dirty clothing may lead to reduced protection. Pay close attention to clothing care and regular regeneration of its FC treatment. The manufacturer assumes no liability for any damage resulting from the use of the product other than as specified and also disclaims any liability if the product is handled incorrectly without following the instructions herein. Please contact the manufacturer if additional technical information, uncertainties or questions are required.

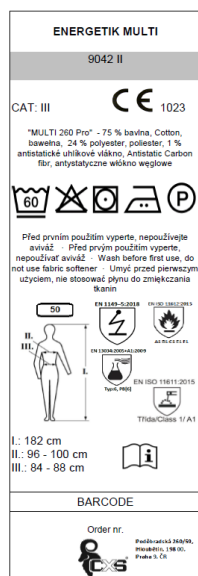
SIZES: they are marked with 3 control sizes in accordance with EN ISO 13688:2013.



DISPOSAL: Disposal of clothes is regulated by legislation of individual countries or by local regulations. Disposal by burning.


Identification of the Notified Body that carried out the conformity assessment: NB 1023, Institut pro testování a certifikaci, a.s. /Institute for Testing and Certification/, Tr. Tomáše Bati 299, Louky, 763 02 Zlín, CZ.

The Declaration of Conformity can be found here: www.canis.cz; for individual products, in the bar "Dokumenty pro stažení" /Documents to download/.



MARKING: sewn label - pattern:

- Type of product
- Code of product
- Category of product
- Conformity mark + the notification number of the test room that carries out annual checks
- Material composition
- Pictograms for maintenance in accordance with EN ISO 3758:2012
- Marking of size with 3 control sizes
- Pictogram of protection including harmonized standard
- Pictogram of protection including harmonized standard and categories of protection
- Notice on the necessity to read the instructions for use
- Batch
- Identification of manufacturer

MANUFACTURER:  contact address: Poděbradská 260/59, Hloubětín, 198 00, Prague 9, Czech Republic.