



**INSTITUT PRO TESTOVÁNÍ A CERTIFIKACI, a.s.**  
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## EVALUATION REPORT

Ref. No.: 723302928/2025

**Customer:** **Holík International s.r.o.**  
**Za Dvorem 612**  
**763 14 Zlín 12**  
**Czech Republic**

**Product:** **Operating Gloves for Firefighters**  
**Type:**  
**Diamond Flexi 8111-01, Diamond Evo 8111-02, Diamond Easy 8111-03, Diamond Long 8111-04, Diamond Short 8111-05, Diamond Compact 8111-06**  
**Crystal Flexi 8110-01, Crystal Evo 8110-02, Crystal Easy 8110-03, Crystal Long 8110-04, Crystal Short 8110-05, Crystal Compact 8110-06**

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**Issued on:** **2025-09-29**



**Mgr. Jiří Heš**  
**Representative of Notified Body No. 1023**



## Introduction

This Evaluation Report was issued on the basis of Application No. 723302928 for the assessment of conformity of personal protective equipment (PPE) with the basic requirements of Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC.

This assessment should prove the fulfilment of EU legislation requirements for the purpose of the access of the assessed products to the EU market.

This is a change procedure for the already issued certificate No. 23 0006 T/NB/a dated December 15, 2023, due to the extension of the Short cuff type to include pre-treatment by washing for 40 cycles.

### 1. Identification of assessed personal protective equipment

A detailed description of the design and structure, including the drawing documentation and specifications of materials used, is given in the file of technical documentation of the product Operating Gloves for Firefighters, Type: Diamond Flexi 8111-01, Diamond Evo 8111-02, Diamond Easy 8111-03, Diamond Long 8111-04, Diamond Short 8111-05, Diamond Compact 8111-06 / Crystal Flexi 8110-01, Crystal Evo 8110-02, Crystal Easy 8110-03, Crystal Long 8110-04, Crystal Short 8110-05, Crystal Compact 8110-06.

The submitted documentation covers the following models and alternatives of the product:

Sample No. 723302928/A

#### **Operating Gloves for Firefighters**

##### **Type:**

**Diamond Flexi 8111-01, Diamond Evo 8111-02, Diamond Easy 8111-03, Diamond Long 8111-04, Diamond Short 8111-05, Diamond Compact 8111-06  
Crystal Flexi 8110-01, Crystal Evo 8110-02, Crystal Easy 8110-03, Crystal Long 8110-04, Crystal Short 8110-05, Crystal Compact 8110-06**

In the following, the name of the product type will be used as a short form: Diamond / Crystal.

#### Material composition:

##### Palm part:

Upper material – Aramid knit with silicone coating, colour: black

Intermediate layer – Membrane Polyurethan

Lining – Aramid knit with one-sided comb, colour: yellow

Reinforcement – without reinforcement alternatively Nomex with ceramic coating

##### Back part:

Upper material – Nomex fabric, colour: blue, red, beige

Intermediate layer – Non-woven aramid textile

Intermediate layer – Membrane Polyurethan

Lining – Aramid knit with one-sided comb, colour: yellow

Reinforcement - Aramid knit with coating

*Type Crystal – reinforcement on the fingers and thumb in the knuckle area*



**Cuff Flexi:**

Face – knit 30% modified acrylic fibre type F / 30% viscose / 20% cotton / 19% polyamide / 1% antistatic fibre, colour: black

Reverse – knit 30% modified acrylic fibre type F / 30% viscose / 20% cotton / 19% polyamide / 1% antistatic fibre, colour: black

**Cuff Easy:**

Face – Nomex fabric, colour: blue, red, beige

Reverse – Cotton fabric with Proban treatment, colour: dark blue

**Cuff Evo:**

Face – Nomex fabric, colour: blue, red, beige  
knit 30% modified acrylic fibre type F / 30% viscose / 20% cotton / 19% polyamide / 1% antistatic fibre, colour: black

Reverse – Aramid knit with one-sided comb, colour: yellow  
knit 30% modified acrylic fibre type F / 30% viscose / 20% cotton / 19% polyamide / 1% antistatic fibre, colour: black

**Cuff Long:**

Face – Nomex fabric, colour: blue, red, beige, polyamide belt, strap with flame retardant treatment

Reverse – Cotton fabric with Proban treatment, colour: dark blue

**Cuff Short:**

Composition: Aramid knit with elastane, colour: yellow

**Cuff Compact:**

Face – Nomex fabric, colour: blue, red, beige  
Aramid knit with coating

Reverse – Cotton fabric with Proban treatment, colour: dark blue

**Construction:**

These products are a five-finger glove in 3D design, with identical basic material composition. The Nomex fabric on the back is available in Nomex colour dark blue, Nomex NXT in colour beige or red. The difference between the types is the cuff design. The Flexi cuff is a combination of flame retardant materials with stable internal elastic, the Easy cuff is a basic Nomex fabric cuff with an added internal knit material barrier, and the Long cuff is a long Nomex fabric cuff. Other alternatives are the Short cuff, which is made of aramid knitted fabric, and the Compact cuff. A detailed description is given above in the material composition. The Crystal type has reinforcements on the back of the knuckles and thumb area. Individual types can also be manufactured with the option of silicone palm reinforcement and RFID chip.

**Intended use of the personal protective equipment**

Gloves are designed to protect hands against thermal and mechanical risks. They permit work in wet environments and protection against liquid chemicals. They are especially designed for routine firefighting operations for rescue and emergency firefighting forces.

Classification of the Personal Protective Equipment

Operating Gloves for Firefighters, Type: Diamond / Crystal where classified as PPE **Category III** by the manufacturer.

Design:

<p style="text-align: center;">Crystal EASY</p> 	<p style="text-align: center;">Diamond FLEXI</p> 
<p style="text-align: center;">Diamond EVO</p> 	<p style="text-align: center;">Diamond Long</p> 
<p style="text-align: center;">Diamond Short</p> 	<p style="text-align: center;">Diamond Compact</p> 

silicone reinforcement in the palm



## 2. Technical documentation

Technical documentation was submitted in the Czech language to assess the conformity of - Operating Gloves for Firefighters, Type: Diamond / Crystal - in September 2025. The file of technical documentation contains the items according to Annex III of the Regulation (EU) 2016/425 of the European Parliament and of the Council.

## 3. Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment

### 3.1 Basic requirements for the product and its specification in technical specifications

Basic requirements are set by Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment.

Tables No. 1 through 3 state the analysis of applicability of basic requirements according to Annex II of Regulation (EU) 2016/425 in the right column, supplemented in case of applicable requirements by articles of harmonised standards stated in their harmonisation annex ZA or other technical specifications used for proving the conformity with respective partial requirement. "A" letter in the third column of the tables means that these requirements has been used for the given PPE, the "N/A" abbreviation (not applicable) means the requirement does not apply to the given PPE because it is irrelevant for the given intended use and/or the material used.

Column 4 of Tables No. 1 – 3 states the articles of harmonised standards which are linked, by means of cross links in the harmonisation annex ZA, to the respective basic requirement of Regulation (EU) 2016/425. Meeting these articles of the harmonised standard proves the conformity of the product with the given basic requirement stated in the right column.

The fifth column of Tables No. 1 – 3 states the articles of non-harmonised technical specifications by which the manufacturer proves the conformity with the respective basic requirement which is not included in harmonisation. These can be articles of non-harmonised national or international standards as well as articles of harmonised standards which are not

connected with the given requirement by a link in the harmonisation annex ZA. In extraordinary cases, the respective basic requirement can be set quite specifically by the Regulation so the conformity can be assessed directly with this article of the Regulation without any necessity to specify the required by means of a harmonised standard or other technical specification.

In case of applicable requirements, the last column of Tables No. 1– 3 states the assessment of the given requirement, whether PPE passes or does not pass. "P" letter means PPE passes the given requirement, "N/P" means it does not pass it.

*Table 1: Overview of basic requirements and technical specifications used in the PPE design. General requirements applicable to all PPE*

Requirement number in Annex II	Requirement description	Application A – N/A	Article of the harmonised/non-harmonised standard specifying the requirement (according to Annex ZA)	other technical specification or the manner of proving the compliance with the requirement	Assessment P – N/P
1.1	Design principles	A		EN ISO 21420 art. 4.1	P
1.1.1	Ergonomics	A	EN 659+A1 art. 3.1 to 3.8	EN ISO 21420 art. 5	P
1.1.2	Levels and classes of protection	A		See requirements 1.1.2.1, 1.1.2.2 below	P
1.1.2.1	Optimum level of protection	A	EN 659+A1 art. 3.3 to 3.15, 3.18		P
1.1.2.2	Classes of protection appropriate to different levels of risks	A		EN 388+A1 art. 4	P
1.2	Innocuousness of PPE	A		See requirements 1.2.1, 1.2.1.1, 1.2.1.2 and 1.2.1.3 below	P
1.2.1	Absence of risks and other inherent nuisance factors	A	EN 659+A1 art. 3.1, 3.15		P
1.2.1.1	Suitable constituent materials	A	EN 659+A1 art. 3.1, 3.11	EN ISO 21420 art. 4.2	P
1.2.1.2	Satisfactory surface condition of all PPE parts in contact with the user	A	EN 659+A1 art. 3.1	EN ISO 21420 art. 4.2, 5	P
1.2.1.3	Maximum permissible user impediment	A	EN 659+A1 art. 3.2, 3.13, 3.15 EN ISO 21420 art. 5.2		P
1.3	Comfort and effectiveness	A		See requirements 1.3.1, 1.3.2 below	P
1.3.1	Adaptation of PPE to user morphology	A	EN 659+A1 art. 3.2	EN ISO 21420 art. 5.1	P
1.3.2	Lightness and design strength	A	EN 659+A1 art. 3.14	EN ISO 21420 art. 4.1	P
1.3.3	Compatibility of different classes or types of PPE designed for simultaneous use	N/A			
1.3.4	Protective clothing containing removable protectors	N/A			



Requirement number in Annex II	Requirement description	Application A – N/A	Article of the harmonised/non-harmonised standard specifying the requirement (according to Annex ZA)	other technical specification or the manner of proving the compliance with the requirement	Assessment P – N/P
1.4	Manufacturer's instructions and information	A	EN 659+A1 art. 5, 6 EN ISO 21420 art. 7.3		P

*Table 2: Overview of basic requirements and technical specifications used in the PPE designing. Additional requirements common to several classes or types of PPE*

Requirement number in Annex II	Requirement description	Application A – N/A	Article of the harmonised/non-harmonised standard specifying the requirement (according to Annex ZA)	other technical specification or the manner of proving the compliance with the requirement	Assessment P – N/P
2.1	PPE incorporating adjustment systems	A	EN 659+A1 art. 3.2		P
2.2	PPE enclosing the parts of the body to be protected	A	EN 659+A1 art. 3.1	EN ISO 21420 art. 5.3	P
2.3	PPE for the face, eyes and respiratory system	N/A			
2.4	PPE subject to ageing	A	EN 659+A1 art. 3.1		P
2.5	PPE which may be caught up during use	A	EN ISO 21420 art. 7.3.7		P
2.6	PPE for use in potentially explosive atmospheres	N/A			
2.7	PPE intended for rapid intervention or to be put on or removed rapidly	A	EN 659+A1 art. 3.15		P
2.8	PPE for intervention in very dangerous situations	A		EN 659+A1 art. 1, Annex B	P
2.9	PPE incorporating components which can be adjusted or removed by the user	N/A			
2.10	PPE for connection to complementary equipment external to the PPE	N/A			
2.11	PPE incorporating a fluid circulation system	N/A			
2.12	PPE bearing one or more identification markings or indicators directly or indirectly relating to health and safety	A	EN 659+A1 art. 5 EN ISO 21420 art. 7.2.1.1 d), 7.2.2 e), 7.3.5		P
2.13	PPE capable of signalling the user's presence visually	N/A			
2.14	'Multi-risk' PPE	A	EN 659+A1 art. 3.3 to 3.8		P



*Table 3: Overview of basic requirements and technical specifications used in the PPE designing. Additional requirements specific to particular risks*

Requirement number in Annex II	Requirement description	Application A – N/A	Article of the harmonised/non-harmonised standard specifying the requirement (according to Annex ZA)	other technical specification or the manner of proving the compliance with the requirement	Assessment P – N/P
3.1	Protection against mechanical impact	N/A			
3.1.1	Impact caused by falling or ejected objects and collision of parts of the body with an obstacle	N/A			
3.1.2	Falls	N/A			
3.1.2.1	Prevention of falls due to slipping	N/A			
3.1.2.2	Prevention of falls from a height	N/A			
3.1.3	Mechanical vibration	N/A			
3.2	Protection against static compression of part of the body	N/A			
3.3	Protection against mechanical injuries	A	EN 659+A1 art. 3.3 to 3.6		P
3.4	Protection in liquids	N/A			
3.4.1	Prevention of drowning	N/A			
3.4.2	Buoyancy aids	N/A			
3.5	Protection against the harmful effects of noise	N/A			
3.6	Protection against heat and/or fire	A	EN 659+A1 art. 3.7 to 3.12		P
3.6.1	PPE constituent materials and other components	A	EN 659+A1 art. 3.7, 3.8, 3.9		P
3.6.2	Complete PPE ready for use	A	EN 659+A1 art. 3.18		P
3.7	Protection against cold	N/A			
3.7.1	PPE constituent materials and other components	N/A			
3.7.2	Complete PPE ready for use	N/A			
3.8	Protection against electric shock	N/A			
3.8.1	Insulating equipment	N/A			
3.8.2	Conductive equipment	N/A			
3.9	Radiation protection	N/A			
3.9.1	Non-ionising radiation	N/A			
3.9.2	Ionising radiation	N/A			
3.9.2.1	Protection against external radioactive contamination	N/A			
3.9.2.2	Protection against external irradiation	N/A			
3.10	Protection against substances and mixtures which are hazardous to health and against harmful biological agents	N/A			
3.10.1	Respiratory protection	N/A			
3.10.2	Protection against cutaneous and ocular contact	N/A			
3.11	Diving equipment	N/A			

When designing the product, the manufacturer applied the following standard harmonised to Regulation (EU) 2016/425:

**ČSN EN 659+A1:2008/Correction 1:2009 (EN 659:2003+A1:2008/AC:2009-06)**

Protective gloves for firefighters

and technical standard:

**ČSN EN ISO 21420:2021/A1:2025 (EN ISO 21420:2020/A1:2024)**

Protective gloves - General requirements and test methods

### **3.2 Indicators specifying basic requirements and test methods**

Indicators specifying applicable basic requirements (marked with "A" in the third column of Tables No. 1 through 3):

- general requirement
  - innocuousness, design, ergonomics, comfort and construction
  - pH value
  - azo dyes
  - sizes
  - dexterity
  - dimethylformamide (DMFa)
  - time for the removal of gloves
- mechanical risks
  - abrasion resistance
  - blade cut resistance
  - tear strength
  - puncture resistance
  - TDM: cut resistance
- thermal risks
  - burning behaviour
  - convective heat resistance
  - radiant heat resistance
  - contact heat resistance
  - heat resistance of the lining material
  - heat shrinkage
- chemical risks
  - resistance to liquid chemical penetration
- resistance to water penetration
- integrity test
- marking, information for use

### 3.3 Test methods

Table No. 4: Overview of test methods used for evaluating the materials

Properties – materials	Test method
Design, ergonomics, comfort and construction	Visual assessment / Wearing test
Innocuousness – general	Visual assessment / Declaration about Innocuousness issued by the manufacturer
pH value	EN ISO 3071:2020
Azo dyes	EN ISO 17234-1:2021, EN ISO 17234-2:2011, LC-MS according ZP ITC A-12-104
Dimethylformamide (DMFa)	IZP A-14-109
Sizes	ČSN EN ISO 21420:2021, art. 6.1, Annex B, minimum length according ČSN EN 659+A1:2008, art. 3.2
Dexterity	ČSN EN ISO 21420:2021, art. 6.2
Time for the removal of gloves	ISO 15383:2001 (without the use of pressure 3,5 kPa)
Abrasion resistance	ČSN EN 388+A1:2019, art. 6.1
Blade cut resistance	ČSN EN 388+A1:2019, art. 6.2
Tear resistance	ČSN EN 388+A1:2019, art. 6.4
Puncture resistance	ČSN EN 388+A1:2019, art. 6.5
TDM: cut resistance	ČSN EN ISO 13997:1999
Burning behaviour	ČSN EN 407 ed.2, art. 6.2, EN ISO 15025:2016, method A (apply the flame for: 15 s)
Convective heat resistance	EN ISO 9151:2016, method B
Radiation heat resistance	EN ISO 6942:2002, method B, heat flux $Q_0 = 40 \text{ kW/m}^2$
Contact heat resistance	EN ISO 12127-1:2015, contact heat 250 °C
Heat resistance of the lining material	ČSN ISO 17493:2016, minimum temperature 180 °C
Heat shrinkage	ISO 17493:2016, at temperature 180°C
Seam strength	EN ISO 13935-2:2014
Resistance to water penetration	ČSN EN ISO 811
Integrity test	ISO 15383:2001
Resistance to penetration of liquid chemicals	ČSN EN ISO 6530 temperature 20 °C, time 10 s - 30 % H <sub>2</sub> SO <sub>4</sub> - 40 % NaOH - 36 % HCl - heptane
Marking	Visual assessment
Information for use	Visual assessment

Notes:

All tests (except for the Water penetration resistance test, which was performed in new condition (original) and after pre-treatment by 5 cycles according to ČSN EN ISO 6330 procedure 6N/A) were performed in new condition (original) and after pre-treatment by 40 cycles of washing according to EN ISO 6330 procedure 6N/A (washing temperature 60° C, drying by hanging).

### 3.4 Place and scope of sampling

Samples of the assessed product were delivered by the Customer on 2025-08-29 in compliance with instructions of the designated worker of the Notified Body NB 1023. The samples were delivered at the quantity of 12 pairs of gloves type Short cuff. With regard to the fact that this is the EU type examination by a notified body, the Customer asking for assessing the conformity is responsible for selecting a sample (or prototype). The test examination does not include inspection activity focused on the conformity of properties of all products introduced to the market with the assessed (proto)type.

### 3.5 Place of performing the tests and assessment

Tests were performed in the accredited testing laboratory Institute for testing and certification, Zlín, Czech Republic; AITEX Textile Research Institute, Alcoy, Spain; IFTH, Lyon, France.

The documentation was examined and visual inspection and product type assessment were performed in Institute for testing and certification.

### 3.6 Results of tests and assessment

Results of the personal protective equipment evaluation are summarised in Table No. 5. Test methods stated in respective part of Tables No. 4 were used.

Table 5: Results of evaluation of the Operating Gloves for Firefighters, Type: Diamond / Crystal

Essential property	Measuring unit	Requirement	Assessment / Document No.
<b>Design, ergonomics, comfort and construction</b>	-	art. 4.1, 5 ČSN EN ISO 21420	<b>pass / D1</b>
<b>Innocuousness – general</b>	-	art. 4.2 ČSN EN ISO 21420	<b>pass / D1</b>
<b>pH value</b>			<b>pass / D1</b>
- lining			6,86
- cotton fabric with Proban treatment			6,96
- Nomex fabric colour blue	-	art. 4.2 ČSN EN ISO 21420	5,20
- PU membrane		> 3,5 < 9,5	6,55
- cuff knit Short			5,78
- aramide knit with coating			7,09
- cuff knit Flexi			5,78
<b>Azo dyes</b>			<b>pass / D1</b>
- lining			undetectable
- cuff knit Short			undetectable
- Nomex fabric colour blue, red, beige	mg/kg	art. 4.2 ČSN EN ISO 21420	undetectable
- cotton fabric with Proban treatment		undetectable	undetectable
- cuff knit Flexi			undetectable

**Table 5 – continues from the page 11: Results of evaluation of the Operating Gloves for Firefighters, Type: Diamond / Crystal**

Essential property	Measuring unit	Requirement	Assessment / Document No.
<b>Dimethylformamide (DMFa)</b> - aramide knit with coating - PU membrane	mg/kg	art. 4.2 ČSN EN ISO 21420 < 1000 mg/kg	<b>pass / D1</b> < 5 mg/kg < 5 mg/kg
<b>Sizes</b>			<b>pass / D1, D2</b>
- glove circumference <b>Diamond Flexi</b> Size 6 Size 7 Size 8 Size 9 Size 10 Size 11 Size 12 Size 13	mm	-	<i>original / after washing</i> - / 224 242 / 240 254 / 252 - / 270 - / 280 - / 290 - / 306 326 / 320
- glove length <b>Diamond Flexi</b> Size 6 Size 7 Size 8 Size 9 Size 10 Size 11 Size 12 Size 13	mm	art. 3.2 ČSN EN 659+A1 Table 1 minimum dimension size 6 > 260 size 7 > 270 size 8 > 280 size 9 > 290 size 10 > 305 size 11 > 315 - -	<i>original / after washing</i> - / 260 289 / 275 306 / 286 - / 300 - / 305 - / 315 - / 317 350 / 320
- glove circumference <b>Diamond Evo</b> Size 6 Size 8 Size 9 Size 10 Size 11 Size 12 Size 13	mm	-	<i>original / after washing</i> - / 230 266 / 254 - / 270 276 / 278 - / 288 - / 306 320 / 310
- glove length <b>Diamond Evo</b> Size 6 Size 8 Size 9 Size 10 Size 11 Size 12 Size 13	mm	art. 3.2 ČSN EN 659+A1 Table 1 minimum dimension size 6 > 260 size 8 > 280 size 9 > 290 size 10 > 305 size 11 > 315 - -	<i>original / after washing</i> - / 265 310 / 290 - / 299 305 / 305 - / 315 - / 317 355 / 325

Table 5 – continues from the page 12: Results of evaluation of the Operating Gloves for Firefighters, Type: Diamond / Crystal

Essential property	Measuring unit	Requirement	Assessment / Document No.
<b>Sizes</b>			<b>pass / D1, D2</b>
- glove circumference <b>Diamond Easy</b>			<i>original / after washing</i>
Size 6	mm	-	- / 226
Size 8			254 / 250
Size 9			- / 262
Size 10			- / 280
Size 12			- / 300
Size 13			324 / 310
- glove length <b>Diamond Easy</b>		art. 3.2 ČSN EN 659+A1 Table 1 minimum dimension	<i>original / after washing</i>
Size 6	mm	size 6 > 260	- / 260
Size 8		size 8 > 280	293 / 280
Size 9		size 9 > 290	- / 290
Size 10		size 10 > 305	- / 305
Size 12		-	- / 315
Size 13		-	350 / 320
- glove circumference <b>Diamond Long</b>			<i>original / after washing</i>
Size 6	mm	-	232 / -
Size 8			252 / -
Size 9			- / 262
Size 11			292 / 290
Size 12			306 / -
Size 13			- / 316
- glove length <b>Diamond Long</b>		art. 3.2 ČSN EN 659+A1 Table 1 minimum dimension	<i>original / after washing</i>
Size 6	mm	size 6 > 260	333 / -
Size 8		size 8 > 280	350 / -
Size 9		size 9 > 290	- / 347
Size 11		size 11 > 315	365 / 360
Size 12		-	375 / -
Size 13		-	- / 381



*Table 5 – continues from the page 13: Results of evaluation of the Operating Gloves for Firefighters, Type: Diamond / Crystal*

Essential property	Measuring unit	Requirement	Assessment / Document No.
<b>Sizes</b>			<b>pass / D1, D2</b>
- glove circumference <b>Diamond Short</b> Size 9 Size 10	mm	-	original / after washing  258 / - 280 / 280
- glove length <b>Diamond Short</b>  Size 9 Size 10	mm	art. 3.2 ČSN EN 659+A1 Table 1 minimum dimension size 9 > 290 size 10 > 305	original / after washing  295 / - 310 / 310
- glove circumference <b>Diamond Compact</b> Size 9	mm	-	original / after washing  266 / -
- glove length <b>Diamond Compact</b>  Size 9	mm	art. 3.2 ČSN EN 659+A1 Table 1 minimum dimension size 9 > 290	original / after washing  309 / -
- glove circumference <b>Crystal Short</b> Size 9 Size 10 Size 11	mm	-	original / after washing  268 / - 270 / - 290 / 290
- glove length <b>Crystal Short</b>  Size 9 Size 10 Size 11	mm	art. 3.2 ČSN EN 659+A1 Table 1 minimum dimension size 9 > 290 size 10 > 305 size 11 > 315	original / after washing  305 / - 320 / - 310 / 310
- glove circumference <b>Crystal Compact</b> Size 9 Size 10	mm	-	original / after washing  276 / - 280 / -
- glove length <b>Crystal Compact</b>  Size 9 Size 10	mm	art. 3.2 ČSN EN 659+A1 Table 1 minimum dimension size 9 > 290 size 10 > 305	original / after washing  322 / - 322 / -

Table 5 – continues from the page 14: Results of evaluation of the Operating Gloves for Firefighters, Type: Diamond / Crystal

Essential property	Measuring unit	Requirement	Assessment / Document No.
<b>Dexterity</b> - the smallest diameter of the pin for which the test conditions are met	mm	art. 3.13 ČSN EN 659+A1  <b>Level 5:</b> min. 5	<b>pass / D1</b> original / after washing 5 / 5
<b>Abrasion resistance</b> palm part	the number of cycles to throughout	art. 3.3 ČSN EN 659+A1 min. level 3 <b>Level 4:</b> ≥ 8000	<b>pass / D1</b> original / after washing > 8000 / > 8000
<b>Blade cut resistance</b> - Index palm part	-	art. 3.4 ČSN EN 659+A1 min. level 2 <b>Level 5:</b> ≥ 20	<b>pass / D1</b> original / after washing 63,0 / - *)
<b>Blade cut resistance</b> - Index back part	-	art. 3.4 ČSN EN 659+A1 min. level 2 Level 4: ≥ 10 < 20 <b>Level 3:</b> ≥ 5 < 10	<b>pass / D1</b> original / after washing 13,2 / 8,24
<b>Tear resistance</b> palm part	N	art. 3.5 ČSN EN 659+A1 min. level 3 Level 4: > 75 <b>Level 3:</b> ≥ 50 < 75	<b>pass / D1</b> original / after washing 118,0 / 57,0
<b>Puncture resistance</b> palm part	N	art. 3.6 ČSN EN 659+A1 min. level 3 <b>Level 3:</b> ≥ 100 < 150	<b>pass / D1</b> original / after washing 108,0 / 108,1
<b>TDM: cut resistance</b> palm part	N	art. 4.1 ČSN EN 388+A1 <b>Level E:</b> ≥ 22 < 30	<b>pass / D1</b> after washing 22
<b>Burning behaviour</b> gloves - after-flame time - after-glow time	s	art. 3.7 ČSN EN 659+A1 min. level 4 ≤ 2,0 ≤ 5,0 <b>Level 4</b>	<b>pass / D1</b> original / after washing 0 / 0 0 / 0
- burning behaviour	-	Surface of the innermost layer of the glove shall be inspected; it shall show no sign of melting. No hole shall appear on all layers of the tested area. The seam shall not come apart after the ignition time. If the outermost layer melts, the material shall not produce molten or flaming debris.	without damage
<b>Convective heat resistance</b> HTI <sub>24</sub> palm part	s	art. 3.8 ČSN EN 659+A1 min. level 3: HTI <sub>24</sub> ≥ 13 <b>Level 4:</b> HTI <sub>24</sub> ≥ 18	<b>pass / D1</b> original / after washing 19,7 / 19,4
<b>Convective heat resistance</b> HTI <sub>24</sub> back part	s	art. 3.8 ČSN EN 659+A1 min. level 3: HTI <sub>24</sub> ≥ 13 <b>Level 4:</b> HTI <sub>24</sub> ≥ 18	<b>pass / D1</b> original / after washing 24,5 / 21,1



*Table 5 – continues from the page 15: Results of evaluation of the Operating Gloves for Firefighters, Type: Diamond / Crystal*

Essential property	Measuring unit	Requirement	Assessment / Document No.
<b>Radiant heat resistance RHTI<sub>24</sub></b> <i>back part</i> <i>time RHTI<sub>24</sub> – average value</i> <i>time RHTI<sub>24</sub> – minimum value</i>	s	art. 3.9 ČSN EN 659+A1  min. 20 min. 18	<b>pass / D1</b> <i>original / after washing</i> 29 / 27 29 / 26
<b>Contact heat resistance t<sub>c</sub></b>  after dry conditioning after wet conditioning	s	art. 3.10 ČSN EN 659+A1  ≥ 10	<b>pass / D1</b> <i>original / after washing</i> 23,4 / 21,4 15,9 / 14,3
<b>Heat resistance of the lining material</b> <i>aramid knit with one-sided comb</i>	-	art. 3.11 ČSN EN 659+A1  the lining materials shall neither melt not drip, not catch fire	<b>pass / D1</b> <i>original / after washing</i> they do not melt, drip, catch fire
<b>Heat shrinkage behaviour during the test</b>  <b>Diamond Short</b> <b>Diamond Compact</b> <b>Diamond Evo</b> <b>Diamond Flexi</b> <b>Diamond Easy</b> <b>Diamond Long</b>	-	art. 3.12 ČSN EN 659+A1  after the test and 25 flex cycles shall be gloves without damage	<b>pass / D1, D3</b> <i>original / after washing</i>  without damage / without damage without damage / - without damage / without damage without damage / without damage without damage / without damage without damage / without damage
<b>Heat shrinkage change of width and length</b>  <b>Diamond Short</b> <b>Diamond Compact</b> <b>Diamond Evo</b> <b>Diamond Flexi</b> <b>Diamond Easy</b> <b>Diamond Long</b>	%	art. 3.12 ČSN EN 659+A1  max. 5	<b>pass / D1, D3</b> <i>original / after washing</i>  0 / 0 0 / - 0 / 0 0 / 0 0 / 0 0 / 0
<b>Seam breaking strength</b>  <i>Nomex + Nomex</i> <i>Nomex + aramid knit with silicone coating</i> <i>aramid knit with silicone coating + aramid knit with silicone coating</i>	N	art. 3.14 ČSN EN 659+A1  min. 350	<b>pass / D1</b> <i>original / after washing</i> 505 / 354 495 / 433  635 / 638

Table 5 – continues from the page 16: Results of evaluation of the Operating Gloves for Firefighters, Type: Diamond / Crystal

Essential property	Measuring unit	Requirement	Assessment / Document No.
<b>Time for the removal of gloves</b> <i>after dry conditioning</i> Diamond Short Diamond Compact Diamond Evo Diamond Flexi Diamond Easy Diamond Long	s	art. 3.15 ČSN EN 659+A1 max. 3	<b>pass / D1, D3</b> <i>original / after washing</i>  1,5 / 0,8 2,0 / - 0,9 / 1,6 0,9 / 1,7 0,7 / 1,4 2,0 / 1,8
<b>Time for the removal of gloves</b> <i>after wet conditioning</i> Diamond Short Diamond Compact Diamond Evo Diamond Flexi Diamond Easy Diamond Long	s	art. 3.15 ČSN EN 659+A1 max. 3	<b>pass / D1, D3</b> <i>original / after washing</i>  2,5 / 1,0 2,0 / - 1,3 / 1,5 1,1 / 1,6 1,3 / 1,0 2,0 / 1,2
<b>Resistance to water penetration</b> <i>back part</i>	kPa	art. 3.16 ČSN EN 659+A1	<b>D1</b> <i>original / after washing</i> 198 / 154
<b>Whole glove integrity test</b>	-	art. 3.17 ČSN EN 659+A1 when tested accordingly, there shall be no penetration	<b>pass / D1</b> <i>original / after washing</i> no penetration
<b>Resistance to liquid chemical penetration</b> PU membrane 30 % H <sub>2</sub> SO <sub>4</sub> 40 % NaOH 36 % HCl heptane	-	art. 3.18 ČSN EN 659+A1  when tested accordingly, there shall be no penetration	<b>pass / D1</b> <i>original / after washing</i> no penetration no penetration no penetration no penetration
<b>Marking</b>	-	art. 7 ČSN EN ISO 21420 art. 5 ČSN EN 659+A1	<b>pass / D1, D3</b>
<b>Instruction for users</b>	-	art. 7 ČSN EN ISO 21420 art. 6 ČSN EN 659+A1	<b>pass / D1, D3</b>

\*) according to the requirements of ČSN EN 388+A1, article 6.2 Blade cut resistance, the number of cycles  $C_{n+1}$  was three times greater than  $C_n$  on one of the tested samples. For this reason, the reference method for cut resistance according to EN ISO 13997:1999, article 6.3 TDM: cut resistance after pre-treatment by washing was used.

Notes:

Cuff Compact, were tested in new condition (original) only.



The bases for the evaluations stated in Table No. 5 are test results specified in the following documents:

- D1: Evaluation Report No. 723302570/2023 issued by Institute for testing and certification, Zlín, Czech Republic on 2023-12-15
- D2: Record of assessment No. 723302928 issued by Institut pro testování a certifikaci, a. s. Zlín on 2025-09-26
- D3: Test Report of accredited laboratory Ref. No. 723302928-01 issued by Institute for Testing and Certification, Zlín on 2025-09-25

### **3.7 Assessment of product conformity with technical specifications and basic requirements**

The assessed product – Operating Gloves for Firefighters, Type: Diamond / Crystal - specified in Item 1 hereof – complies with the requirements set by the following technical standards with regard to its design and submitted documentation:

**ČSN EN 659+A1:2008/Correction 1:2009 (EN 659:2003+A1:2008/AC:2009-06)**

Protective gloves for firefighters

and technical standard:

**ČSN EN ISO 21420:2021/A1:2025 (EN ISO 21420:2020/A1:2024)**

Protective gloves - General requirements and test methods

Results of the evaluation of the personal protective equipment stated in Table No. 5 hereof prove the conformity of all indicators specifying general basic requirements of Regulation (EU) 2016/425, additional basic requirements common for more types of PPE and additional basic requirements for special risks applicable to the evaluated type of product.

## **4. Conclusion**

Notified Body NB 1023 performed EU Type-Examination of the personal protective equipment

### **Operating Gloves for Firefighters,**

**Type: Diamond Flexi 8111-01, Diamond Evo 8111-02, Diamond Easy 8111-03, Diamond Long 8111-04, Diamond Short 8111-05, Diamond Compact 8111-06**

**Crystal Flexi 8110-01, Crystal Evo 8110-02, Crystal Easy 8110-03, Crystal Long 8110-04, Crystal Short 8110-05, Crystal Compact 8110-06.**

Technical specifications used by the manufacturer are in compliance with basic requirements of Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC.

The sample of the personal protective equipment was produced in compliance with the technical documentation of the manufacturer and can be fully safely used for its intended purpose.



The sample of the personal protective equipment meets all the provisions of the Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC.

Notified Body NB 1023 decided to issue the EU Type-Examination Certificate No. 23 0006 T/NB/b.

#### **5. List of documents used for the preparation of the Evaluation Report**

- Application for the EU Type - Examination issued by Holík International s.r.o. on 2025-08-29
- Technical documentation issued by Holík International s.r.o. in September 2025
- Check list issued by Holík International s.r.o. on 2025-09-29
- Evaluation Report No. 723302570/2023 issued by Institute for testing and certification, Zlín, Czech Republic on 2023-12-15
- Record of assessment No. 723302928 issued by Institut pro testování a certifikaci, a. s. Zlín on 2025-09-26
- Test Report of accredited laboratory Ref. No. 723302928-01 issued by Institute for Testing and Certification, Zlín on 2025-09-25