Manufacturer information

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EU-type examination carried out by one of the Notified Bodies listed in the sewn-in label:
Sächsisches Textil Forschungsinstitut e.V. – STFI, D - 09072 Chemnitz, NoBo no.: 0516
Finnish Institute of Occupational Health FIOH, Topelinksenkatu 41 B, FI-00250 Helsinki, NoBo no.: 0403
SGS Fimko Ltd, Takomotie 8, FI-00380 Helsinki, ID. No. 0598
Centexbel, Technolgiepark 7, B-9052 Zwijnaarde, Belgium, NoBo no.: 0493
British Textile Technology Group, BTTG Ltd, Wira House, West Park Ring Road, UK LS16 6QL, Leeds, NoBo no.: 0339
DEKRA Testing and Certification GmbH, Handwerkstraße 15, 70565 Stuttgart, NoBo no.: 0158
SATRA Technology Centre, Wyndham Way, Telford Way, Kettering, Northamptonshire, NN16 8SD, NoBo no. 0321
Hohenstein Laboratories GmbH & Co.KG, Schlosssteige 1, 74357 Bönnigheim, NoBo no.: 0555
ÖTI – Institut für Ökologie, Technik und Innovation GmbH, Siebenhirtenstraße 12A, Objekt 8, 1230 Wien, NoBo. no.: 0534
ÖP-Öffentliche Prüfstelle für das Textilwesen der HS Niederrhein GmbH, Richard-Wagner-Straße 97, 41065 Mönchengladbach, NoBo no. 2762
DGUV Test – Prüf- und Zertifizierungsstelle Fachbereich Persönliche Schutzausrüstungen der Deutschen Gesetzlichen Unfallversicherung, Zwengenbergerstr. 68; D-42781 Haan; NoBO no.: 0299
ASOCIACION DE INVESTIGACION DE LA INDUSTRIA TEXTIL, (AITEX),Plaza Emilio Sala 1, 03801 ALCOY (ALICANTE), NoBO no. 0161

The manufacturer information refers to REGULATION (EU) 2016/425 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 9 March 2016 on personal protective equipment. The PPE complies with the essential requirements of Regulation (EU)2016/425, Annex II. The protective clothing meets the performance requirements of Cat. I–III in accordance with Annex I, Regulation (EU) 2016/425. The actual performance level is based on certain standards and is stated on the clothing label.

PPE Cat. I comprises products that protect the user against minor risks. The user is able to assess the effectiveness of the personal protective equipment for themselves.
PPE Cat. III comprises complex personal protective equipment that protects against risk of death and irreversible damage to health. The PPE should protect against hazards that the user is unable to assess for themselves.
PPE Cat. II PPE that does not fit into Category I or Category III is assigned to this category.

Identifying the categories on the label:
Personal protective equipment in Category III has the number of the notified body printed on the clothing label next to the CE marking. Personal protective equipment in Categories I and II only has the CE marking printed on the label. Personal protective equipment in Category I does not require an EC type examination certificate.

It is essential to read through this manufacturer information carefully before wearing the clothing for the first time. This pictogram on the clothing label informs the wearer that the information provided by the manufacturer must be observed before the clothing is worn for the first time.

Selection of clothing

Before selecting the appropriate protective work clothing, the potential hazards associated with the relevant place of use must be analysed. The protective clothing to be used should be selected by trained safety engineers only. The user is not relieved from their obligation to test products and procedures with regard to their suitability for their particular application purposes. The user must choose PPE that, under the intended, foreseeable conditions of use, allows the user to perform the activity associated with the respective risks without hindrance and provides adequate protection. The protective function of the PPE is indicated by the relevant tested harmonised standards, which can be found on the product label. Even if garments are in striking colours (e.g. orange or yellow) or feature reflective elements (e.g. inserts), this does not mean that they offer enhanced day and/or night visibility as defined by EN ISO 20471 or EN 17353. Only products that are labelled accordingly meet the requirements for high visibility in accordance with EN ISO 20471 or for enhanced visibility in accordance with EN 17353 (Type A, B, AB). Make sure that the product is labelled accordingly if enhanced visibility is required.

As the wearer bears the ultimate responsibility for their own safety, it is recommended that they carry out their own washing tests with the garments to ensure that the washing process is optimally matched to the garment.

The user must always check that the PPE fulfils its protective function and is appropriate for the respective task before putting the clothing on.

Protective clothing must always be chosen to fit correctly: the corresponding body measurements are indicated on the pictogram on the label.

Important information:

The functionality of the clothing can be impaired and reduced by a wide variety of factors, for example, soiling, washing/care procedures and their residue, wear and tear, the way in which it is worn, an improper clothing combination. Significant mechanical influences on clothing (abrasion, crawling, etc.) exert stress on the raw material and weaken the extent of protective function. Visible, major changes (chafe marks, thinning, tears, holes, etc.) indicate that the clothing can only fulfil its protective function to a reduced extent or not at all in these areas.

If the clothing is contaminated with any type of chemical, it should be immediately changed, as its protective function may be compromised.

Defective or damaged clothing must be replaced by suitable new products without delay.
The protective clothing is designed to protect the wearer's upper and lower body, neck, arms and legs.
When wearing single items of clothing (e.g. vest, jacket only, trousers only), it must be borne in mind that uncovered parts of the body are not protected.

Sewn-on knee pads or knee pockets on bib trousers, overalls or trousers do not constitute knee protection within the meaning of EN 14404 and do not offer protection during kneeling work and activities if protection in the kneeling position in accordance with EN 14404:2024 is not indicated on the label.
Damaged zips, clearly frayed or otherwise damaged seams, as well as reflective strips that are extensively and significantly abraded, frayed or detached, may reduce the level of protection provided. Any necessary repairs may only be carried out by a specialist company using original materials.

The following points must be observed with respect to the application and use of protective clothing:

- No certification-relevant modifications or repairs may be made to the clothing after the EC type examination.
- It must be worn closed, be the right length for the arms and legs (it is important that the clothing is neither too short nor too long), fit well and not cause any ergonomic restrictions.
- A significant overlap must be ensured for a two-part clothing system; the wearer must wear the correct clothing size and fit, and the overlap must be guaranteed for any movement and position.
- The protective effect of the clothing is only provided if the entire ensemble (including the underclothing) complies with the relevant standards and performance levels and is combined as follows:

1. Jacket with waistband trousers
2. Waistband jacket with bib trousers
3. Jacket with bib trousers
4. One-piece overall
5. Coat with waistband trousers
6. Coat with bib trousers

7. Shirt with waistband trousers and jacket
8. Shirt with bib trousers and jacket or blouson
9. metallising/aluminising clothing (partial body protection and suit system) of any kind combined with underclothes/head cover combined with helmet and eye protection (combination possibilities 1–8)

- In addition, we recommend only wearing suitable shirts/T shirts/polo shirts underneath the outer clothing.

If a waistcoat or other article of clothing is worn over the proposed protective clothing/PPE or in combination with other protective clothing, the function of the certified personal protective equipment must not be impaired.

The wearer must make sure that:

- No parts of the skin come into contact with contaminated and/or soiled clothing
- Tops are always worn closed right up
- Hoods that are not actually being worn are generally rolled away or removed
- Hoods that cannot be rolled away or removed must be worn
- Pockets with flaps are kept closed at all times
- Sleeve and trouser leg closures are always closed to fit tightly
  It is not permitted to fold/roll up sleeves and trouser legs
- Metal elements are fully covered
- In the case of pockets without a flap, any work equipment that is being carried (e.g. tools) also meets requirements for use in the workplace

It is important to remember that all the protection ratings given are only guaranteed for complete body coverage, i.e. upper and lower parts worn in combination must offer the same level of protection. For each selected combination, the user must ensure that the body cover (sleeves, trouser legs, minimum overlap, etc.) is maintained during movement. The user must check this in accordance with the applied standards before selecting the clothing composition.

There is no direct relationship between the maximum number of cleaning cycles which may be specified and the clothing service life. The service life depends on how the products are used, cared for and stored, etc.

Ageing

The Clothing should be withdrawn from use after approximately ten years following the date of sale, depending on the amount of use, level of care and storage.

Transportation/storage/disposal

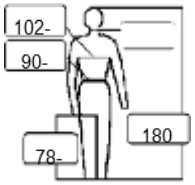
Clothing must be transported and stored at normal room temperature (approx. 20–21 degrees Celsius). Protect clothing from UV light. For disposal, please contact your local waste disposal company.

Declaration of conformity

The relevant declaration of conformity for your product can be found at the following link: https://www.hb-online.com/de/service/konformitatserklarungen/. There you enter the 13-digit item number, followed by an underscore and the 2, 3 or 4-digit colour code, e.g. 0100410028004_2027.

Explanation of labelling in the clothing using example of labels:

<table>
<tr><td>CE xxxx</td><td>Code of the Monitoring Notified Body
(Cat. III only)</td><td>Outer fabric 1+2</td><td>Material composition</td></tr>
<tr><td rowspan="3">10049 000</td><td rowspan="3">Tested cut number</td><td>…% modacrylic</td><td rowspan="3">…of the outer fabric</td></tr>
<tr><td>…% cotton</td></tr>
<tr><td>…% carbon</td></tr>
<tr><td>HB-ComFlex®</td><td>Collection name</td><td>Lining</td><td></td></tr>
<tr><td rowspan="3">  </td><td>Standards, pictograms</td><td>…% modacrylic
…% cotton</td><td rowspan="2">…of the lining</td></tr>
<tr><td rowspan="2">Book pictogram
QR code Manufacturer’s information</td><td>…% carbon</td></tr>
<tr><td>  </td><td>Ginetex care recommendations</td></tr>
<tr><td>IEC 61482-2 APC 1
EN ISO 20471</td><td>European standard + performance level achieved</td><td>Do not use fabric softeners.</td><td>Additional information</td></tr>
</table>

07/2017	Date of manufacture, here as example July/2017		Pictogram in body dimensions [cm]
01004 10049 000	Manufacturer product number		
2027	+ colour number		
52	Size information	Designation of the notified body (example)	Certified by: Hohenstein NB 0555
		106273	Manufacturer's production number (PA)

The material composition and care instructions are indicated on the sewn-in label in every garment and must be strictly observed.

Labelling

Labels in type-examined protective clothing contain the following information:

- CE marking + number of the notified body
- Cut number
- If specified, the description/brand name of the fabric
- Number of the European standard (with associated pictograms) + the performance levels achieved
- Full sales item number
- Size information
- Fibre content
- Care recommendations
- Size converted into body dimensions as per EN 13688
- Additional information
- Information about which institute carried out the certification
- Manufacturer's production number

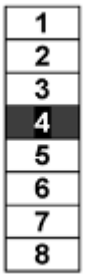
This pictogram on the clothing label informs the wearer of the month and year the garment was manufactured. The date of manufacture (month/year) is printed behind the pictogram.

Example: 07/2017 This garment was produced in July 2017.

The label in the garment recommends a care treatment for the item based on Ginetex or ISO 30023 labelling. Each product must always be subjected to a wash test in advance in order to prevent visual and mechanical problems occurring after an industrial, commercial or domestic wash.
We therefore recommend carrying out test laundering prior to industrial laundering.

ISO 30023 care symbols for industrial laundering

Pictogram for professional industrial laundering
Square box containing the word “PRO” in capital letters in negative font indicates the suitability for care in a professional laundry



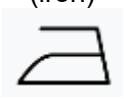
Symbol for the laundering process
Example of a laundry symbol; the selected laundering process is displayed inversely. The figure in the small box of the laundry symbol correlates to one of the eight laundry processes described in ISO 15797

1	Table 1/1
2	Table 1/2
3	Table 2/1
4	Table 2/2
5	Table 3/1
6	Table 3/2
7	Table 4/1
8	Table 4/2

Symbol for the drying process
Drum dryer
Drying in the tumbler is indicated by a hexagon in a square

Tunnel finisher/drying cabinet
Use of a tunnel finisher or drying cabinet is represented by a square divided into three equally sized rectangles.

INTERNATIONAL TEXTILE CARE SYMBOLS

WASHING (wash tub) 											
	Normal wash cycle	Normal wash cycle	Mild wash cycle	Normal wash cycle	Mild wash cycle	Very mild wash cycle	Normal wash cycle	Mild wash cycle	Very mild wash cycle	Hand wash	Do not wash
	The figures in the wash tub correspond to the maximum washing temperatures, which must not be exceeded. 1 bar below the wash tub = mild treatment with reduced washing quantity and low speed during spinning. 2 bars = very mild treatment with reduced mechanics (e.g. wool washing).										
BLEACHING (Triangle) 											
	Chlorine and oxygen bleach allowed		Only oxygen bleach allowed / no chlorine bleach		Do not bleach						
DRYING (Square with a circle) 											
	Tumble drying possible, normal drying process		Tumble drying possible, gentle drying process		Do not tumble dry						
	The dots indicate the severity of the temperature in the tumble dryer.										
IRONING (iron) 											
	Hot iron (200°C)		Iron at moderate temperature (150°C)		Iron at low temperature (110°C). Caution when using steam irons		Do not iron				
	The dots indicate the temperature ranges for the iron.										
PROFESSIONAL CARE (Circle) 											
	Professional dry-cleaning, normal cleaning process		Professional dry cleaning, gentle cleaning process		Professional dry-cleaning, normal cleaning process		Professional dry cleaning, gentle cleaning process		Do not dry-clean		
	This symbol is used for articles that may be treated in water by a professional wet-cleaning process. The letters in the circle (P, F) indicate the solvents used in dry cleaning. The bar(s) under the symbol indicates a milder treatment.										
											
	Professional dry-cleaning, normal cleaning process		Mild professional wet-cleaning		Very mild professional wet-cleaning		Do not wet-clean				
	This symbol (W) is used for articles that may be treated in water by a professional wet-cleaning process. It appears in a second line below the symbol for dry cleaning. 1 bar under the symbol = milder treatment (delicate cycle). 2 bars = care levels with especially gentle treatment.										

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The following must also be observed for all products:

- Care must follow the specifications on the care label. If indicated on the care label, we usually recommend industrial washing procedures for our clothing.
- Before wearing for the first time, treatment should be carried out according to the care label.
- Do not use water softeners, fabric softeners, brighteners, bleaching agents of any type or starch and do not treat the clothing with agents that have a strong oxidative effect.
- Wash white fabrics separately from coloured ones; do not handle together with other materials that could bleed or stain significantly.
- Wash flame-resistant clothing separately.
- Avoid over-drying the clothing. Observe the care labelling (tumbler or finisher) on the respective label. The clothing must always have sufficient residual moisture content to prevent it from shrinking excessively.
- Iron at the temperature specified on the care label.
- Do not overload the washing machine. Excessive loading can subject the clothing to increased wear and

tear, have an adverse effect on its appearance and stop it being cleaned correctly.
- We recommend checking the protective function of the clothing before each wear.
- To prevent significant wrinkling, a significant drop in the temperature during the care procedure should be avoided.
- There must be no detergents or auxiliary agents whatsoever left behind in the clothing after washing. Warning: If this instruction is not observed, the protective effect may be impaired.
- PH values in the care process that are too high or too low can have a negative impact on the material and its protective effect.
- The clothing must be re-impregnated after every wash and continually checked with regard to the EN 13034 properties. Furthermore, you should check with the manufacturer that you are using the correct dosage of a suitable re-impregnation agent.
- Wash items of clothing inside out and do not package them when damp or wet.
- Exposure to extreme heat can cause temporary and partial changes to the colours of fabrics.

Please observe the following information on the specific standards.

Please note that not all the standards listed below are applicable to your protective clothing. The standard(s) applicable to your protective clothing can be found on the sewn-in label.

If the wearer is still unclear about anything, they should contact the safety officer in their company.

EN 61482-2 / IEC 61482-2

The information contained in the general instructions must be observed.

Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Protective clothing against the thermal hazards of an electric arc EN 61482-2/IEC 61482-2:

The protective clothing meets the requirements of the European standards IEC 61482-2:2018 *(DIN EN 61482-2:2020)* Protective clothing against the thermal hazards of an electric arc in conjunction with *IEC 61482-1-2 Ed.2:2014* (DIN EN 61482-1-2:2015-08) and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective clothing – General Requirements.

Special clothing for protecting the upper and lower part of the body, the arms, and the legs of the wearer; head, hands, and feet are excluded. This protective clothing protects the wearer against the thermal hazards of a defined electric arc and prevents further burning. This clothing protects the wearer against heat. The heat can be caused by convection, radiation, liquid metal spatters or a combination of these. The environmental conditions and risks in the workplace must be noted. Conditions with higher energy levels and longer exposure times than the test parameters can lead to more serious injuries. For full personal protection, additional suitable protective equipment such as a safety helmet/visor, protective gloves etc. are also needed. No shirts and/or underwear made from synthetic fibres (e.g. polyester, polyamide) should be worn under the clothing.
However, the use of flame-retardant undergarments cannot exclude the possibility of injury, e.g. burns. Metal splashes can penetrate open pockets. Care must therefore be taken that no welding or cutting work is carried out behind the carrier. After contamination with e.g. grease, oil or flammable substances, the protective performance may be reduced. In case of contamination, the wearer must withdraw immediately and carefully remove the garment, then replace the garment immediately. In the case of jointly tested clothing systems (e.g. shirt and jacket worn over the top), the protection rating is only guaranteed for combinations being named on the garment label and if the body is completely covered, i.e. in combination with certified trousers of the same level of protection.

Important information on intended use

The protective clothing presented here is not insulating protective clothing and does not provide protection against accidental contact with live parts, e.g. according to EN 50286:1999 “Electrical insulating protective clothing for low-voltage installations”.
Before use, it is recommended to determine the required protection level of the clothing e.g. by means of DGUV I-203-077.

Performance Classes

Test method "box test" (determination of the arc protection class of the clothing using directed test arc).

Protective clothing tested according to **EN 61482-1-2** is assigned an **arc protection class** which differ with regard to the test current intensity:

Arc protection class	Prospektive test current [kA]	Arc time [ms]	Mean value of the arc energy W_{arc} [kJ]
APC 1	4	500	168
APC 2	7	500	320

Class 1 (APC=1) is the lowest class and class 2 (APC=2) the highest. The achieved performance class, APC (Arc Protection Class), is indicated below the pictogram.

"Open arc" test method (determination of the arc rating of clothing with the aid of an open arc)

Protective clothing tested in accordance with **EN IEC 61482-1-1** is assigned an **arc performance value (cal/cm²)**. The arc performance value can be the arc thermal performance value (ATPV), the energy break open threshold (EBT) or the incident energy limit (ELIM).

The incident energy limit (ELIM) reached is shown under the pictogram.

Indication

Example! The respective performance class of the protective clothing is indicated on its label.		
Arc Protection Class APC **Test method** **EN 61482-1-2**	 EN 61482-2:2020 APC y	Protective clothing produced with double layer material on jacket front, sleeves and front of trousers and tested in accordance with EN 61482-1-2/ IEC 61482-2 Arc protection class 2 is marked "single-layer area APC = 1 / double-layer area APC=2".
Arc Performance Value ELIM (cal/cm²) **Test method EN 61482-1-1**	 EN 61482-2:2020 ELIM = xxx cal/cm²	In addition, the ELIM value can be supplemented with one of the lower of the two values ATPV or EBT.
Combination	 EN 61482-2:2020 APC y ELIM = xxx cal/cm² ATPV=xxx cal/cm²	Depending on the test procedure carried out (Box Test EN 61482-1-2/Open Arc EN 61482-1-1), it is possible to label any combination of the above-mentioned achieved protective performances.

EN ISO 11612

The information contained in the general instructions must be observed.

Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Protective clothing to protect against heat and flame

The protective clothing meets the requirements of the European standards EN ISO 11612:2015 (DIN EN ISO 11612:2015-11) or EN ISO 11612:2008 (DIN EN ISO 11612:2009-05) – Clothing to protect against heat and flame, and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective Clothing – General Requirements.

Clothing certified in accordance with EN ISO 11612 is special clothing for protecting the upper and lower part of the body, the arms, the legs and, depending on the collection, the head of the wearer; hands, feet and eyes are excluded. This protective clothing protects the wearer from brief contact with flames and radiant heat.

Defined performance levels

EN ISO 11612 may cover the following individual tests:

- limited flame spread (code letter A1 = surface ignition, A2 = edge ignition)
- Convective heat (code letter B; three performance levels)
- Radiant heat (code letter C; four performance levels)

- Liquid aluminium spatters (code letter D; three performance levels)
- Liquid iron spatters (code letter E; three performance levels)
- Contact with heat (code letter F; three performance levels)

For the specified performance levels, 1 is the lowest performance level and 3 or 4 is the highest.

The clothing still has a protective effect if

partial body protection such as a flame-retardant vest is additionally worn along with a jacket or waistband jacket, provided that it is certified accordingly.

The clothing does not have a protective effect if

- an item of clothing that is only certified according to code letter A, B or C is used to protect against liquid metals
- it is not worn closed right up at the neck
- Shirts with a protective function are tucked into the trousers and so the required overlap is not given.

Caution: if clothing is contaminated with flammable or highly flammable substances, the wearer must move back at once and carefully take off the clothing. The clothing must then be replaced immediately. Metal spatters can get into open pockets. Therefore, make sure no welding or cutting work is done behind the wearer.

Important information on intended use

This protective clothing is intended to protect its wearer against brief contact with flames and at least one further kind of heat. Clothing that has been tested according to EN ISO 11612:2015, is always tested with respect to limited flame spread.
Even if clothing has been rated under code D and/or code E in accordance with DIN EN ISO 11612, in case of splashes of molten metal, the wearer must immediately leave the workplace and remove the clothing items.

In addition, risks of burns from splashes of molten metal cannot be ruled out if a clothing item is worn next to the skin.

Information on aluminised goods:

Due to the wear of metallised coatings, the wearer, when putting on the clothing, must make sure that the material shows no damage at any point on the garment, and that the aluminised coating is not damaged or impaired in any way.

Metallized / aluminised partial body protection (trousers, neck protection, hoods, arm protectors, overshoes, aprons and gaiters) may only be worn in conjunction with appropriately certified underwear (with the fundamental requirements according to DIN EN ISO 11612) and a suitable suit system if this corresponds to the level determined by the risk assessment. Please note that the headgear belonging to the collection must be worn with a suitable helmet. Any windows must be combined with eye protection offering characteristics that meet the requirements of the workplace.

EN ISO 11611

The information contained in the general instructions must be observed.

Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Protective clothing for use in welding and related processes

The protective clothing meets the requirements of the European standards EN ISO 11611:2015 (DIN EN ISO 11611:2015-11) or EN ISO 11611:2007 (DIN EN ISO 11611:2008-01) – Protective clothing for welding and allied processes – and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective Clothing – General Requirements.

This type of protective clothing is intended to protect the wearer against weld spatter (small splashes of molten metal only) and brief contact with flames.

Performance classes

The protective clothing is divided into two classes that differ in terms of their resistance to very small weld spatter and their heat transfer.
Class 1: ≥15 drops, $RHTI_{24}$ ≥ 7 s, tear-propagation resistance 15 N
Class 2: ≥25 drops, $RHTI_{24}$ ≥ 16 s, tear-propagation resistance 20 N
Both requirements must be met for a class to be achieved. Class 1 is the lower class and class 2 the higher.

After the hazard analysis, Annex A of EN ISO 11611 will provide you with an initial guide to selecting the correct clothing:

Class 1 – Criteria for choice based on the type of process: Manual welding operations during which small amounts of spatter or droplets of molten metal are formed, e.g.: gas welding, TIG welding, MIG welding (low voltage), micro plasma welding, soldering brass, spot welding, shielded electrode MMA welding (with a rutile-coated electrode).

Criteria for choice based on the type of work: operation of machines, e.g.: oxygen cutting machines, plasma cutting machines, resistance pressure welding machines, thermal spraying, welding tables
Class 2 – Criteria for choice based on the type of process: Manual welding operations during which large amounts of spatter or droplets of molten metal are formed, e.g.: MMA welding (using alkaline or cellulose electrodes), MAG welding (with CO_2 or mixed gasses), MIG welding (high-voltage), flux-cored arc welding, plasma cutting, gouging, oxygen cutting, thermal spraying.

Criteria for choice based on the type of work: operating machines, e.g.: in enclosed spaces, when welding/cutting operations require reaching above head height or take place in comparable difficult positions

The limited flame spread of the clothing after washing is always tested as part of EN ISO 11611.
Surface ignition is identified by code A1 and edge ignition by code A2.
Definition of ignition procedures according to EN ISO 15025
EN ISO 15025 Procedure A – surface ignition, corresponds to code A1
EN ISO 15025 Procedure B – bottom edge ignition, corresponds to code A2

The clothing does not have a protective effect if

- it is not worn closed right up at the neck
- the protective performance of clothes is reduced by contamination on the clothing, such as that caused by unintentionally coming into contact with live conductors
- there is an electrically conductive connection between the outside and inside of the clothing, for example, through metal closures
- the oxygen content in the air has increased, e.g. during welding in confined spaces
- the clothing is wet, dirty or soaked with sweat
- Shirts with a protective function are tucked into the trousers and so the required overlap is not given.

Important information on intended use
This protective clothing is intended to protect the wearer against very small metal spatters and brief contact with flames. During arc welding, the clothing will only provide protection against brief accidental contact with the live elements of a circuit. In the event of increased electrical risk, additional insulating layers are required. When selecting the necessary protection class, it is important to take into account the working environment and the welding procedure used in order to achieve the required protection level. Class 1 protective clothing can only offer limited protection in some cases. We thus recommend also taking into account the specific conditions of use when selecting the clothing.
If repeated thermal exposure (e.g. contact with open flames, metal spatters, penetration beads, etc.) leads to visible, lasting changes to the raw material of the clothing (scorch marks, traces of smoke residue, burn holes, etc.), a reduced protective function is to be expected in these areas.
Additional partial body protection must be worn for overhead welding and similar tasks.

The tested protective clothing does not provide electrical insulation like clothing that meets the requirements of EN 50286:1999 “Electrical insulating protective clothing for low-voltage installations”.

EN 1149-5
The information contained in the general instructions must be observed.

Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Protective clothing – Electrostatic properties
The protective clothing meets the requirements of the European standards EN 1149-5:2018 (DIN EN 1149-5:2018-11) or EN 1149-5:2008 (DIN EN 1149-5:2008-04) Protective Clothing – Electrostatic properties – Part 5: Material performance and design requirements in conjunction with EN 1149-1:2006 (DIN EN 1149-1:2006-

09) Protective Clothing – Electrostatic properties – Part 1: Test method for measuring surface resistivity or EN 1149-3:2004 (DIN EN 1149-3:2004-07) Protective Clothing – Electrostatic properties – Part 3: Test method for measuring charge decay and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective Clothing – General Requirements.

This electrostatic dissipative protective clothing is intended to protect against incendiary discharge in potentially explosive atmospheres where the minimum ignition energy is not less than 0.016 mJ and the wearer is earthed with a system connected to earth via a resistance of less than 10^8 Ω.

The protective clothing is designed to protect against incendiary discharges and not as electro-insulating clothing.

General performance requirements
The performance requirements for electrostatic dissipative protective clothing designed to avoid incendiary discharges are described in EN 1149-5:2018 / EN 1149-5:2008.

Test methods
- Surface resistance in Ohm Ω (EN 1149-1: 2006)
- Measurement of charge decay in seconds (EN 1149-3:2004)

Well-fitting, electrostatic dissipative protective clothing must be put on and closed completely before entering explosion-prone areas (zones 1, 2, 20, 21 & 22) , and every wearer must check the functionality of the closures before putting it on.

The clothing only has a protective effect if
- all non-antistatic components are covered at all times
- the person is definitely earthed, for example, by means of antistatic footwear
- it is worn closed right up to the top

The clothing does not have a protective effect if
- objects are poking out of the pockets.
- the clothing does not fit properly.

Caution: additional elements that are attached to the electrostatic dissipative protective clothing for safety reasons must be permanently attached to the electrostatic dissipative base material (e.g. glued/stitched). If the clothing features tabs, only ATEX-certified accessories may be attached to them. Name badges and other badges fixed to Velcro fastening strips attached to the outside of the clothing are not permitted. Optional accessories, such as belts, that do not have electrostatic dissipative properties, must always be covered by a closed jacket when worn and must not be worn over clothing, e.g. a coverall. Work clothing or protective clothing must not be worn in an oxygen-enriched atmosphere or in Zone 0 without the prior consent of the responsible safety officer and must not be changed, put on or taken off in explosion-prone areas and when handling flammable and explosive substances. **Please note**: standard clothing and protective clothing can become charged. However, when worn it does not present an explosion hazard in general, provided the person is earthed by means of appropriate footwear and suitable flooring, for example. Nevertheless, in certain cases, such as with PU-coated weather protection clothing, dangerous charges may occur. If constant contact between the skin and clothing is not ensured, additional measures must be taken to dissipate the possible electrical charge of the clothing, or the entire clothing system worn should comply with EN 1149-5 (underwear, shirts, jackets, trousers and shoes). When handling explosives, the suitability of the clothing should be assessed separately. The dissipative property of the clothing must not be impaired by washing, for example, the clothing must be re-treated or entirely replaced if applicable. The use of softening agents in the washing and cleaning process is strictly prohibited. **Please note:** If the dissipative property of the textile surface is achieved via integrated conductive threads, it must be ensured that these threads do not break or become damaged during the service life. Too much mechanical stress should be avoided, to avoid damaging the antistatic elements.

Important information on intended use
This protective clothing does not provide protection against mains voltage and cannot meet requirements in a combustible atmosphere enriched with oxygen. If the volume resistivity is below 100 kilo-ohms, the minimum level of protection against electric shock from current-carrying elements is not present. It must also be ensured that adequate earthing is available.

EN 13034 (equipment type 6 or type PB [6])

The information contained in the general instructions must be observed.
Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Protective clothing against liquid chemicals EN 13034 (type 6 or type PB [6]) equipment)
The protective clothing meets the requirements of the European standards EN 13034:2005+A1:2009 (DIN EN 13034:2005+A1:2009-08) – Protective clothing against liquid chemicals – Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (type 6 and type PB [6] equipment) and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective Clothing – General Requirements.

Type 6 and Type PB (6) protective clothing against liquid chemicals represent the lowest performance level of chemical protection and are suitable where there may be exposure to minor chemical spraying, liquid aerosols or low-pressure spattering.

Type 6 protective suits against liquid chemicals cover and protect at least the torso and haunches.
The clothing offers limited protective performance against liquid chemicals (Type 6 and Type PB [6]).
After chemical action, the item of clothing should be changed immediately.
The protective effect is mainly due to the dense texture and acid-repellent properties of the fabric.

The clothing does not have a protective effect if
- it is contaminated with flammable or highly flammable substances.
- Shirts with a protective function are tucked into the trousers and so the required overlap is not given.

Caution: We recommend wearing the appropriate clothing underneath the protective clothing.
Acids and bases can get into open pockets. Therefore, always ensure that pockets are closed. If chemical substances (acids, bases, solvents, etc.) affect the clothing, subsequent damage of the raw material due to long-term exposure cannot be ruled out, even if the protective function of the clothing is fully guaranteed for the wearer. Indicators of chemical damage can be significant, visual changes (the beginning of pitting) in the area of the contamination that can result in reduced protective functionality. If residual contamination cannot be removed beyond doubt during the care treatment, the garment should be replaced and immediately thrown away.

Test methods for EN 13034 Type 6 or type PB (6)(core tests):
- Chemical resistance is primarily determined and classified by the repellency index (R) (minimum requirement R > 80%) and the penetration index (P) (minimum requirement P < 10%).

Class 1 corresponds to the lowest and class 3 the highest value.

The following chemicals can be used for this test: 30% sulphuric acid (H_2SO_4) / 10% sodium hydroxide (NaOH) / o-Xylene (undiluted) / Butan-1-ol (undiluted). The chemicals and the values achieved are stated on a separate label on the product. If other chemicals or concentrations are used, these must be explicitly tested.

EN 13034 stipulates a number of requirements for chemical protection. These include requirements regarding the material, seams and joins. One of these many requirements is resistance to chemicals. The standard is met regarding this point when one of four chemicals passes the test. In the worst-case scenario, this means that resistance is only guaranteed for a single chemical, at a single concentration, at a single temperature and for a single period of time. Chemical resistance is defined by a number of factors, however: chemical, concentration, temperature, duration, type and manner of the chemical's impact on the protective clothing, and the mechanical stress to which the protective clothing is exposed.
The confirmation of chemical protection corresponding to type 6 can therefore only be seen as an initial indication.
The suitability of protective clothing must be individually checked for each workplace under its specific conditions.

Important information on intended use
The impregnating agent used to re-impregnate the FC clothing must be adapted to the respective product and its protective functions, and its application should be carried out by an industrial launderer. All items of clothing certified to EN 13034 Type 6 offer only partial body protection.

The repellency index, penetration index and the attained strength values of the outer material can be read off an additional label on the clothing, e.g. EN 13034 type 6 and type PB (6):

Sulphuric acid 30%
Repellency index (R) Class x
Penetration index (P) Class x
Sodium hydroxide 10%

Repellency index (R)	Class x	Penetration index (P)	Class x
Penetration index (P)	Class x	Abrasion resistance	Class x
o-Xylene		Tear-propagation resistance	Class x
Repellency index (R)	Class x	Tensile strength	Class x
Penetration index (P)	Class x	Puncture resistance	Class x
Butan-1-ol		Seam resistance	Class x
Repellency index (R)	Class x		

x
x

EN 343

The information contained in the general instructions must be observed.
Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Protective clothing – Protection against rain
The protective clothing meets the requirements of the European standards EN 343:2003+A1:2007+AC:2009 (DIN EN 343:2010-05) or EN 343:2019 (DIN EN 343:2019-06) – Protective Clothing – Protection against rain and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective Clothing – General Requirements.

This European standard specifies requirements and test methods for materials and seams used in clothing to protect against precipitation (e.g. rain, snowflakes), fog and ground humidity.

According to PPE Regulation (EU) 2016/425, Annex I, weather-protection clothing assessed according to EN 343:2010 falls under Category I, point e): atmospheric conditions that are not of an extreme nature. An internal production control according to module A can be carried out.

Performance classes
Both performance classes achieved are always printed on the label, next to the EN 343 pictogram.
- Water penetration resistance class [Pa; WP value]. Determines the protective effect of the clothing against the penetration of rain water. Class 1 is the lowest class and class 4 the highest class
- Resistance to water vapour penetration class [m²Pa/W; R_{et} value]. This indicates how much resistance the material offers to the penetration of water vapour. The lower the RET value of a garment, the more breathable it is. Here, too, class 1 is the lowest class and class 4 the highest.
- Finished garment R tested in the rain tower (optional)

Y	Resistance to water penetration class
Y	Resistance to water vapour presentation class
R	Garment tested in the rain tower (optional)

EN 343:2019

The performance levels can be found on the label.
An **X** on the label indicates that this point was not tested.

An initial indication of the recommended maximum wear period can be found in this table from EN 343:

Ambient temp. **°C**	**Class/period of wear in min**			
	1 R_{et} > 40 m²Pa/W	**2** 25 < R_{et} ≤ 40 m²Pa/W	**3** *15* < R_{et} ≤ 25 m²Pa/W	*4* R_{et} ≤ 15 m²Pa/W
25	60 min	105 min	180 min	-
20	75 min	250 min	-	-
15	100 min	-	-	-
10	240 min	-	-	-
5	-	-	-	-
" – " = no limitation on the period of wear.				

The clothing does not have a protective effect if
- pointed objects are attached to or transported in pockets;
- the garment is punctured.

EN 14058

The information contained in the general instructions must be observed.

Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Garments for protection against cool environments

The protective clothing meets the requirements of the European standards EN 14058:2017+A1:2023 (DIN EN 14058:2023-07) Protective clothing and garments for protection against cool environments and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective Clothing – General Requirements.
This protective clothing is capable of providing protection against cool environments (-5°C and above) for a specific period of time subject to a specific temperature limit. However, the protective effect depends on the wearer's physical condition and level of activity, the other clothing worn and environmental conditions such as wind speed, temperature or humidity. It does not include specific requirements regarding headgear, shoes and gloves for preventing localised hypothermia. The insulation effect can be reduced by cleaning procedures.

The clothing does not have a protective effect if

- the wearer perspires profusely

Pictogram and performance level for cold protection clothing

EN 14058

Y Thermal resistance class, R_{ct}
Y Air permeability class, AP
Y Measured resulting basic thermal insulation I_{cler} in m² x K/W (optional)
Y Water penetration resistance, WP (optional)

The performance levels can be found on the label.
An **X** on the label indicates that this point was not tested.

Performance classes (core tests indicated on the label):

- Thermal resistance [m²K/W; Rct value]. Determines the flow of dry heat through the material
- Classification in 4 classes; class 1 corresponds to the lowest and class 4 the highest insulation value. The higher the class, the higher the clothing's heat insulation.
- Air permeability [mm/s; AP value]. Divided into 3 classes, class 1 is the lowest class and class 3 the highest class. The higher the class, the lower the air permeability
- Resulting basic thermal insulation I_{cler} of the clothing (tested with reference clothing R) (optional)
- Water penetration resistance [Pa; WP value] (optional)

Important information on intended use

The clothing should be worn in a cool environment that is generally characterised by a potential combination of air moisture and wind at temperatures of -5°C and above. If no WP value is indicated on the label, the garment is not designed to protect against water penetration.

Basic thermal insulation I_{cler} for the clothing and ambient temperatures in °C for heat compensation with different load durations

Insulation	**Wearer with standing activity, 75 W/m²**			
I_{cler}m² · K/W	**Air speed**			
	0.4 m/s		**3 m/s**	
	8 h	**1 h**	**8 h**	**1 h**
0.170	21	9	24	15
0.265	13	0	19	7
0.310	10	-4	17	3

Resulting basic thermal insulation I_{cler} for the clothing and ambient temperatures in °C for heat compensation with different load levels and periods of use

Insulation	**Wearer with activity in movement**	
I_{cler}	**Light 115 w/m²**	**Medium 170 W/m²**
m² · K/W	**Air speed**	

	0.4 m/s		3 m/s		0.4 m/s		3 m/s	
	8 h	1 h	8 h	1 h	8 h	1 h	8 h	1 h
0.170	13	0	18	7	1	-12	8	-4
0.265	3	-12	9	-3	-12	-28	-2	-16
0.310	-2	-18	6	-8	-18	-36	-7	-22

X

EN ISO 20471

The information contained in the general instructions must be observed.

Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case: .

High visibility clothing -- Test methods and requirements

The protective clothing meets the requirements of the European standards EN ISO 20471:2013 / EN ISO 20471:2013+A1:2016 – High-visibility clothing – and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective Clothing – General Requirements.

High visibility clothing – Test methods and requirements according to EN ISO 20471

The high visibility clothing is intended to provide conspicuity of the wearer in any light condition when viewed by operators of vehicles or other mechanized equipment during daylight conditions and under illumination of headlights in the dark.

Guidance on the selection of PPE taking into account the risk to be met:

The following influencing factors can be used in a risk assessment:

- Passive behaviour of the wearer when working in traffic flowing at a speed >60km/h = high risk = clothing design high-visibility class 3.
- Passive / active behaviour of the wearer when working in traffic flowing at a speed ≤60km/h = high risk = clothing design as per high-visibility class 2.
- Passive behaviour of the wearer when working in traffic flowing at a speed ≤30km/h = high risk = clothing design as per high-visibility class 1.

Despite the guidance given, the wearer bears the ultimate responsibility for their own safety. It is therefore essential to prepare a hazard analysis.

The highest level of protection is generally achieved by wearing clothing (jacket alone or jacket and trousers) from high-visibility class 3. Upper and lower parts of the clothing certified according to this standard must, if certified as single pieces, always be evaluated separately. The assessment of a clothing combination of jacket and trousers according to the high-visibility class must also be checked by an independent testing agency. The clothing must be worn closed in the danger area.

Performance classes:

- Minimum surface of visible material [m²]

The different high-visibility clothing classes (1–3) indicate the different surface areas of the visible fluorescent background material (e.g. orange-red) and the retroreflective (reflective) material (reflective strips). The larger the surface, the higher the classification, which means that class 3 meets the maximum requirements.

Important: in the pictogram, X specifies the high-visibility protection class. Class 3 high-visibility clothing must surround the torso (upper body) and cover one pair of limbs – either legs or arms – which means that high-visibility vests can never meet class 3 criteria. Trousers worn alone do not meet high-visibility class 3 criteria, either.

The clothing does not have a protective effect if

- the clothing items are defective or soiled (e.g. wear and tear, holes, closures)
- High-visibility clothing must not be shortened or turned up.
- No sew-on badges, embroidery appliqués, patch emblems or similar accessories may be added to the clothing.
- It is not permitted to separate or remove clothing elements (e.g. pockets or reflective strips).

Repairs may only be carried out by a specialist company using original material.

Important information on intended use

The protective clothing must be chosen based on a risk assessment and according to the place and the day or

night-vision conditions and categorised according to the risk classes of the standard. The garment's fit, as well as the clothing size, wearing comfort and freedom of movement of the wearer, must also be taken into consideration. The protective function of the fluorescent material and the retroreflective material (for example, reflective strips) must be checked each time the clothing is washed and put on.
Fluorescent and retroreflective materials must not be worn covered up.
If a waistcoat or other article of clothing is worn over the proposed high-visibility clothing/high-visibility PPE or in combination with other protective clothing or carrying straps/harnesses, the function of the certified personal protective equipment must not be impaired. The clothing must maintain the minimum surface of fluorescent or retroreflective material serving as a basis for the required safety class.
An eventually mentioned maximum number of washing and/or cleaning cycles specified is not the only factor influencing the clothing's service life. The service life and visual conspicuousness by day and night depend on use (e.g. dirt), care (e.g. cleaning product, repairs) and storage (e.g. storing away from light). Therefore, it must be possible to see clothing in high-visibility materials from all sides (360°). If the maximum number of cleaning cycles is not stated on the care label, the material was tested after at least 5 care cycles. Subsequent repair work must be carried out using original materials and only in consultation with the manufacturer or distributing company.

EN ISO 20471:2013 + A1:2016, RIS-3279-TOM Issue 2 (2019) Railway Industry Standard
Clothing tested in accordance with the requirements of RIS-3279-TOM is marked accordingly on the label. Class 1 (RIS 3279) trousers must be worn together with tops from the required class RIS 3279.

DGUV-Information 205-020 - Visibility and recognisability for high-visibility vest exemption

Clothing with reflective strips can fulfil the requirements of DGUV-Information 205-020 'Visibility and recognisability for high-visibility vest exemption' – Firefighter protective clothing - Tips for procurers and users – (high-visibility vest exemption). Clothing tested according to the requirements of DGUV-Information 205-020 is indicated accordingly on the label. In any case, the label is to be checked carefully as to whether *the garment/the product fulfils the requirements alone* or in combination with another product (jacket, trousers) and in what size range

Hohenstein Test Principle 2019/1 – Version 0 – Protective clothing – Personal protective equipment with signalling of the user in daylight and/or darkness - Test methods and requirements

Clothing with reflective strips can also meet the requirements of Hohenstein Test Principle 2019/1 – **Version 0** – Protective clothing – Personal protective equipment with signalling of the user in daylight and/or darkness - Test methods and requirements. The following pictogram informs the user that the product has been tested in accordance with Hohenstein **Version 0**:

Additional markings can be found on the respective label.

EN 17353

The information contained in the general instructions must be observed.
Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Protective clothing – Enhanced visibility equipment for medium risk situations – Test methods and requirements.
The protective clothing meets the requirements of the European standards EN 17353:2020 (DIN EN 17353:2020) – Enhanced visibility equipment for medium risk situations – and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective Clothing – General Requirements.

The enhanced visibility features are provided to make the wearer's presence noticeable in medium-risk situations, in all possible daylight conditions and/or when illuminated by vehicle headlights or searchlights in the dark.

Guidance on the selection of PPE taking into account the risk to be met:

Despite the guidance given, the wearer bears the ultimate responsibility for their own safety. It is therefore essential to prepare a hazard analysis. Clothing suitable for a medium risk is not to be used for high-visibility equipment in high-risk situations, which is covered by EN ISO 20471. After the hazard analysis, Annex A of EN 17353:2020 will provide you with an initial guide on selection. The following influencing factors can be used in a risk assessment:

Risk level	**Factors influencing the risk level [a]**		**Risk level**
	Speed of the vehicle	Road users	
High risk EN ISO 20471, Class 3	>60km/h	Passive	High visibility
High risk EN ISO 20471, Class 2	≤60km/h	Passive	
High risk EN ISO 20471, Class 1	≤30km/h	Passive	
Medium risk EN 17353, Type A, B, AB	≤60km/h	Active	Increased visibility
	≤15km/h	Passive	
Low risk	-	-	Visibility

Performance classes:

-  **Type A daylight**: Equipment using fluorescent material. Is worn if the risk of not being seen exists only in daylight.
-  **Type B darkness**: Equipment using retroreflective material. Is worn if the risk of not being seen exists only in the dark. Type B is divided into three levels: B1 (free hanging), B2 (limbs), B3 (on torso or on torso and limbs).
-  **Type AB daylight, twilight, darkness**: Equipment using fluorescent and retroreflective material, or material with combined properties. Is worn if the risk of not being seen exists in daylight, twilight or the dark. Type AB is divided into 2 levels: AB2 (limbs), AB3 (on torso or on torso and limbs)

The clothing does not have a protective effect if

the clothing items are defective or soiled (e.g. wear and tear, holes, closures).
Clothing must not be shortened or turned up, influencing the amount of fluorescent or reflective material.
It is not permitted to separate or remove clothing elements (e.g. pockets or reflective strips).

Important information on intended use

The protective clothing must be chosen based on a risk assessment and according to the place and the day or night-vision conditions and categorised according to the types of the standard. The garment's fit, as well as the clothing size, wearing comfort and freedom of movement of the wearer, must also be taken into consideration. Fluorescent and retroreflective materials must not be worn covered up.

The protective function of the fluorescent material and the retroreflective material (for example, reflective strips) must be checked each time the clothing is washed and put on. The maximum number of washing and/or cleaning cycles specified is not the only factor influencing the clothing's service life. The service life and visual conspicuousness by day and night depend on use (e.g. dirt), care (e.g. cleaning product, repairs) and storage (e.g. storing away from light). Therefore, it must be possible to see clothing in high-visibility materials from all sides (360°). If the maximum number of cleaning cycles is not stated on the care label, the material was tested after at least 5 care cycles. Subsequent repair work must be carried out using original materials and only in consultation with the manufacturer or distributing company. Any changes to the product, such as printing logos, may affect the minimum areas and the performance of the product.

 **EN 510**

The information contained in the general instructions must be observed.

Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Specifications for protective clothing for use where there is a risk of entanglement in moving parts

The protective clothing meets the requirements of the European standards EN 510:1993 (DIN EN 510:1993-03) – Specification for protective clothing for use where there is a risk of entanglement with moving parts – and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective clothing – General Requirements.

Protective clothing to be worn if the risk of entanglement with moving parts cannot be fully eliminated by means of design safety measures.
The clothing designed to protect the wearer's upper and lower body, neck, arms and legs against the risk of becoming entangled and pulled in by moving machine parts.

The clothing does not have a protective effect if

- the closure elements used make it impossible to take the clothing off quickly in an emergency
- button holes, buttons, press studs, zips, clips or other types of closures are chemically or mechanically damaged

EN 13758-2

The information contained in the general instructions must be observed.
Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

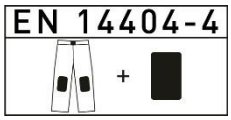
Textiles – Clothing with solar UV protective properties
The protective clothing meets the requirements of the European standards EN 13758-2:2003+A1:2006 (EN 13758-2:2003+A1:2006-06) – Textiles – Solar UV protective properties – Part 2: Classification and marking of apparel – and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) – Protective Clothing – General Requirements.

European Standard **EN 13758-1 defines the process** for determining the solar UV protective properties of textiles. **The labelling** required for the clothing is specified in **EN 13758-2**.

Test method
The UV protection factor (UPF value) specifies the degree of protection. The lowest UV protection factor value must be at least 40. The label always indicates UPF 40+ together with the sun pictogram.

The clothing does not have a protective effect if
the area of the body to be protected is not fully covered
(e.g. if the upper and lower body are to be protected but they are not covered properly)

Important information on intended use
Solar radiation causes skin damage. Areas are only protected against UVA and UVB rays if they are covered. The level of protection afforded by textiles and garments changes with use and as a result of stretching or the effects of moisture.



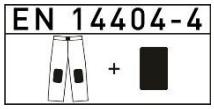
EN 14404-4

The information contained in the general instructions must be observed.
Product development, tests and assessments were performed based on the PPE Regulation (EU) 2016/425, Annex II, in conjunction with the following standards listed in each case:

Personal protective equipment - Knee protectors for work in the kneeling position
The protective clothing meets the requirements of the European standards EN 14404-4:2024 - Personal protective equipment - Knee protectors for work in the kneeling position - Part 4: Requirements for the combination of interoperable knee pads and garments (type 2) in conjunction with EN 14404-1:2024 Part 1: Test methods and EN ISO 13688:2013+A1:2021 (DIN EN ISO 13688: 2022-04) - Protective clothing - General Requirements.

European Standard **EN 14404-4** defines the process and requirements for the combination of interoperable

knee pads and garments. There are four types of knee protectors for work in a kneeling position: Here, it concerns **knee pads in combination with garments (type 2); garments with interoperable pockets.** (*The other types are: portable knee pads (type 1); knee mats (type 3); knee protection systems (type 4*)). The appropriate knee protector type and the performance level should be selected by means of a risk assessment based on the location and working conditions (e.g. surface type). For type 2, separately tested and certified interoperable knee pads can be sold/purchased individually as removable protectors. If the garment is labelled with the symbol below, **only the ability to combine interoperable pockets with an interoperable knee pad has been tested.**



Use

- The length of the trouser legs should be selected so that the middle of the knee pad pocket is at knee height. The figure on the garment label serves as a guide for the dimensions.
- To ensure that the interoperable knee pads fit securely, it is essential to pay attention to any product-specific manufacturer's information from the respective knee pad manufacturer.
- Position of the interoperable knee pad; the knee pads should sit securely in the pocket. The labels shown on the interoperable knee pad should be taken into account as a guide. Any fasteners present should be closed.
- The knee pads should be removed from the trousers before washing and reinserted into the pockets before wearing.
- Knee pads should be examined for damage or cracks before being inserted into the trousers. A damaged knee pad should be replaced.

Performance levels for knee protection (interoperable knee pads)

The appropriate performance level for the knee pad is selected based on the respective certification and testing of the specific interoperable knee pad. The decision regarding the suitable level lies exclusively with the user.

Level 0: Knee protectors that offer no protection against puncture and achieve pressure distribution of less than 30 N when tested on a smooth, flat surface.
Level 1: Knee protectors that offer protection against puncture with a force of at least 100 N and also ensure pressure distribution of less than 30 N when tested on a smooth, flat surface.
Level 1U: Knee protectors that offer protection against puncture with a force of at least 100 N and achieve pressure distribution of less than 30 N when tested on an uneven surface.
Level 2: Knee protectors that offer protection against puncture with a force of at least 250 N and ensure pressure distribution of less than 30 N when tested on an uneven surface.

Important information on intended use and limits of use

- Only the ability to combine the respectively labelled garment with interoperable pockets and interoperable knee pads has been assessed. The necessary level of protection is selected solely based on the performance level of the knee pad used/inserted.
- The puncture risks are only covered if an interoperable knee pad according to EN14404-4 is used.
- The garment offers no resistance against water penetration in the knee area
- To prevent venous congestion in the legs and ensure normal blood circulation, the wearer should frequently change their position or stand up when kneeling. Kneeling should take place with a straight back, not in a hunched position sitting on your heels.
- Workers without knee protectors can suffer direct injuries due to hard surfaces, small stones and similar objects lying on the ground. However, no knee protectors can ensure that workers do not suffer any medical complications from prolonged kneeling.
- **When selecting interoperable knee pads, it is essential to check whether they are also suitable for other hazards that may be present. In certain high-risk areas – such as those requiring heat protection or in "live-line working" areas – the knee pads may have to be removed before entering the danger zone if they are not designed for such conditions.**