SPECIAL HAZARD WORKWEAR
Safety Standards Guide

Garment Classifications
Garment types are grouped into three classes based on the conspicuity provided, with the classes dictating the minimum quantities of background and retroreflective materials to be used.

CLASS 3: Highest Protection Level:
Bands of retroreflective material shall not be less than 50mm wide. Minimum background material 0.80m². Minimum retroreflective material 0.20m². Horizontal reflective bands can now have an incline of _+20º_.

EN20471 was introduced in 2013 which clarifies and increases the performance levels of the original Standard and applies to “New Model” garments launched since October 2013.

CLASS 2: Intermediate Protection Level:
Bands of retroreflective material shall not be less than 50mm wide. Minimum background material 0.50m². Minimum retroreflective material 0.13m².

CLASS 1: Lowest Protection Level:
Where enhanced visibility is an advantage, but for minimal risk/off road purposes only. Bands of retroreflective material shall not be less than 50mm wide. Minimum background material 0.14m². Minimum retroreflective material 0.10m².

On 21st April 2018 the old PPE Directive 89/686/EEC was repealed by the new “PPE Regulation (EU) 2016/425”: so what changes will we experience as it becomes applicable?

Some of the major items that are affected or new are:

• The Scope and Exclusions are more clearly defined.
• It includes significantly increased obligations on Importers and Distributors of PPE and Safety Equipment.
• Surveillance Testing of PPE in production will be enhanced to include auditing of Production Control, Product Verification, and Production Quality Assurance where applicable, dependent upon PPE Categories I, II or III.
• PPE Product Categories (I, II and III) are defined, and some product types will change Category from Cat II to Cat III; for example those protecting against Biological Risks, Bullet Wounds and Knife Stabs, Cuts by Hand-Held Chainsaws, High-Pressure Jet Cutting, Risk of Drowning (Lifejackets), and Harmful Noise (Hearing Protectors).
• A suppliers EC Declaration of Conformity (or a web link to it) shall accompany each product.
• New EU Type Examination Certificates will have a maximum validity of 5 years.
• Current EC Type Examination Certificates are required to be renewed by 21st April 2023.
• All PPE Products will need to meet the latest versions of their relevant Standard.

Obligations on “Economic Operators”
The Regulation (EU) 2016/425 uses a new term “Economic Operators” which it defines as anyone “intervening in the supply and distribution chain of PPE Products”: so it includes manufacturers, authorised representatives, importers and distributors (including on-line vendors for the first time), as well as requiring them to take appropriate actions to ensure their PPE products are fully in conformity with the Standard claimed.

There will be new obligations upon manufacturers, importers and distributors to hold copies of PPE Technical Files, Product Type Examination Certificates, and Declarations of Conformity, and keep records of these documents for at least 10 years. They should also ensure User Instructions are provided with each product and in the correct language, ensure that transport and storage do not harm the PPE’s efficacy or conformity, and indicate on the PPE their Product Code or I.D. and postal address where they may be contacted.

Note: Distributors and Importers who place PPE on the market under their own Name or Brand take on ALL the obligations of the manufacturer.

Conclusion
We are fully cognisant of our responsibilities and obligations to you in respect of the new PPE Regulation (EU) 2016/425 and – working closely with the BSIF in ensuring that we will be fully compliant at every stage of its implementation on your behalf – we will always be ahead of the game in keeping you, our customers, safe at work.
The workforce and supervisory staff should wear high-visibility warning clothing at all times when on site. Clothing shall comply with EN20471:2016 Class 2 or 3 (Class 3 on motorways and other high speed roads) and shall comply with the requirements of paragraph 4.2.3(b) of the Standard. The colour of the clothing shall normally be fluorescent yellow or fluorescent orange-red complying with Table 2 of the Standard.

The retroreflective material shall be to Class 2 as defined in Table 5 of the Standard. In addition, on motorways and other high-speed roads, high-visibility jackets or coveralls shall have full length sleeves meeting the requirement of paragraph 4.2.4 of EN20471:2016. This requirement may be varied to three-quarter-length sleeves where a risk assessment shows full-length sleeves would present increased risk due to the activity being undertaken.

Staff should also wear high-visibility trousers complying with Class 1 of EN20471:2016 where the carrying of large items of equipment or other activities may at any time obscure the visibility of the high visibility jacket or vest.

All Retroreflective Materials used in our High-Visibility Clothing exceed the highest brightness category of EN20471:2016. Retroreflective Materials greatly enhance your visibility in low light situations. This reflective material returns light to a light source – such as vehicle headlights – creating a bright image that motorists are more likely to see from a distance. As a result, motorists and pedestrians have more time to react.

**Buying Guide**

**High-Visibility Garments – The requirements and the facts**

Being struck by a moving vehicle is the second most common cause of death in the workplace. It is therefore essential that any high-visibility garments issued to employees conform to all relevant performance standards (EN20471:2016, European Standard for High-Visibility Clothing) and are worn and maintained correctly for maximum protection.

**So what does this mean to you?**

In order to comply with all UK and European legislation, you need to ensure that the high-visibility garments you buy comply with the following: ‘High-visibility clothing conforming to EN20471:2016 which must be worn at all times.’

**Safety Symbols Guide**

To aid selection, garments in this catalogue now carry icons denoting the EN safety standards to which they comply.

‘All newly Certificated High-Visibility Garments must comply with EN ISO 20471:2016’

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**EN20471: 2016 – High-Visibility Warning Clothing**

3 classes of protection

**EN342 – Protection against cold**

(Temperatures <5ºC)

**EN343 – Protection against Rain**

3 classes of waterproofness and breathability

**RIS-3279-TOM – Approved Garments for Railway Workers**

Railway Group Standard GO/RT 3279 has been replaced by the Rail Industry Standard RIS-3279-TOM, High Visibility Clothing, which reproduces the content of GO/RT in its entirety as Annex“A” of that document.
**FLAME RETARDANT CLOTHING**

Safety Standards & Safety Symbols Guide

### Flame-Retardant Standards

<table>
<thead>
<tr>
<th>EN 11611</th>
<th>Tensile strength</th>
<th>Tear strength</th>
<th>Burst strength</th>
<th>Seam strength</th>
<th>Dimensional change</th>
<th>Requirements of leather</th>
<th>Limited flame spread</th>
<th>Molten droplets</th>
<th>Heat transfer (radiation)</th>
<th>Electrical resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 11612</td>
<td>As above plus:</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
<td>Heat resistance</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Limited flame spread (A)</td>
<td></td>
<td>Convective heat (B)</td>
<td></td>
<td>Radiant heat (C)</td>
<td></td>
<td>Molten aluminium splash (D)</td>
<td></td>
<td>Molten iron splash (E)</td>
<td></td>
</tr>
<tr>
<td>EN 14116</td>
<td>Flame spread</td>
<td>Tensile strength</td>
<td>Tear strength</td>
<td>Seam strength</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Anti-Static Standards

<table>
<thead>
<tr>
<th>EN 1149</th>
<th>Protective clothing – Electrostatic properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anti-static clothing suppresses static charge, thereby preventing sparks, which might cause a fire or explosion.</td>
</tr>
<tr>
<td></td>
<td>EN1149-5 is a part of a larger system</td>
</tr>
<tr>
<td></td>
<td>EN 1149 consists of the following parts:</td>
</tr>
<tr>
<td></td>
<td>EN1149-1: Test methods for the measurement of surface resistance</td>
</tr>
<tr>
<td></td>
<td>EN1149-2: Test methods for the measurement of the electrical resistance through a material (vertical resistance)</td>
</tr>
<tr>
<td></td>
<td>EN1149-3: Test methods for the measurement of charge decay</td>
</tr>
<tr>
<td></td>
<td>EN1149-4: Garment test method (under development)</td>
</tr>
<tr>
<td></td>
<td>EN1149-5: Performance requirements</td>
</tr>
</tbody>
</table>

### Water Penetration and Breathability

<table>
<thead>
<tr>
<th>EN 343</th>
<th>Protection against weather elements</th>
</tr>
</thead>
</table>

### Cold Weather

<table>
<thead>
<tr>
<th>EN 14058</th>
<th>Protection against extreme weather</th>
</tr>
</thead>
</table>

### Chemical

<table>
<thead>
<tr>
<th>EN 13034</th>
<th>Protection against chemicals</th>
</tr>
</thead>
</table>

### High-Visibility

<table>
<thead>
<tr>
<th>EN 20471</th>
<th>Reflective materials used in Hi-Visibility clothing</th>
</tr>
</thead>
</table>

### Arc Standard

<table>
<thead>
<tr>
<th>EN 61482-2:2009</th>
<th>Live working-protective clothing against the thermal hazards of an electric arc – Part 2</th>
</tr>
</thead>
</table>

### Buying Guide

In partnership with specialist suppliers of flame-resistant and flame-retardant clothing, we offer a complete solution for customers requiring protection from heat, flame and dangerous substances: from identifying workplace hazards and the required protective clothing, to taking into account wearer comfort and value throughout the garment’s life.

### Types of fabric used in Flame-Resistant and Retardant Clothing

Adequate protective clothing provides escape time, reduces burn injury, and increases the wearer’s chances of survival.

### Flame-Resistant Fabrics

Inherently flame-resistant fabrics are made of fibres with naturally flame-resistant properties (i.e. not through chemical treatment). The fabric’s effectiveness will not be reduced by repeated washing or wear, ensuring optimum protection throughout the garment’s life.

### Flame-Retardant Fabrics

Flame-retardant treated fabrics are produced by applying a finish to a fabric to reduce its flammability, or by incorporating a flame-retardant chemical into the fibre prior to spinning. Flame-retardant treatment chemicals are ‘activated’ by intense heat, producing char and gases that briefly inhibit combustion. As this chemical treatment is washed out over time, the fabrics will only conform to heat and flame standards for a limited number of washes.

### Arc Flash

Essentially an electric arc is the spark that jumps between any gap created in an electrical system, such as the tiny spark that can occur when a light switch is flicked on or off (which is why you should not use any switches if you suspect a gas leak or an electrical explosion or discharge, also known as a ‘flashover’ from a low impedance connection through air to ground or to another voltage phase).
Safety Standards Guide

When a flame or spark comes into contact with the surface of the FR fabric, it forms a charred area which helps to insulate the wearer from the heat. Within 2 seconds any flame or glow will extinguish and the charred area will turn brittle as it cools. Repeat occurrence of charred areas will deteriorate the garment and compromise the safety of the wearer.

It should therefore be replaced immediately.

It is recommended that primary PPE such as aprons and gauntlets must be used during welding operations. Welding garments are considered secondary protection.

Buying Guide

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It is recommended that primary PPE such as aprons and gauntlets must be used during welding operations. Welding garments are considered secondary protection.

Safety Symbols Guide

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


Class 1: For protection against less hazardous welding techniques and situations, causing lower levels of spatter and radiant heat.

Class 2: For protection against more hazardous welding techniques and situations, causing higher levels of spatter and radiant heat.

### Type of welders clothing

<table>
<thead>
<tr>
<th>REQUIREMENT</th>
<th>CLASS 1</th>
<th>CLASS 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact of Spatter</td>
<td>15 drops</td>
<td>25 drops</td>
</tr>
<tr>
<td>Heat transfer (radiation)</td>
<td>RHTI 24≥7 seconds</td>
<td>RHTI 24≥16 seconds</td>
</tr>
</tbody>
</table>

### Selection criteria relating to the process

<table>
<thead>
<tr>
<th>TYPE OF WELDERS CLOTHING</th>
<th>SELECTION CRITERIA RELATING TO THE PROCESS</th>
<th>SELECTION CRITERIA RELATING TO THE ENVIRONMENTAL CONDITIONS</th>
</tr>
</thead>
</table>
| CLASS 1 | Manual welding techniques with light formation of spatters and drops, e.g.:
- Gas Welding
- TIG welding
- MIG welding
- Micro plasma welding | Operation of machines, e.g. of:
- Oxygen cutting machines
- Plasma cutting machines
- Resistance welding machines
- Machines for thermal spraying
- Bench welding |
| CLASS 2 | Manual welding techniques with heavy formation of spatters and drops, e.g.:
- MMA Welding (with basic or cellulose-covered electrode)
- MAG welding (with CO2 or mixed gases)
- MIG welding (with high current)
- Self shielded flux core arc welding | Operation of machines, e.g. of:
- In confined spaces
- At overhead welding/cutting or in comparable constrained positions
- Plasma cutting
- Gouging
- Oxygen cutting
- Thermal spraying |
**Buying Guide**

**Chemical Protective Clothing – Category III**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 3</td>
<td>Protection against pressurised liquid chemicals</td>
<td>EN 14605</td>
</tr>
<tr>
<td>Type 4</td>
<td>Protection against aerosols</td>
<td>EN 14605</td>
</tr>
<tr>
<td>Type 5</td>
<td>Protection against airborne solid particulate chemicals</td>
<td>EN ISO 13982-1</td>
</tr>
<tr>
<td>Type 6</td>
<td>Limited protection against liquid mist</td>
<td>EN 13034</td>
</tr>
</tbody>
</table>

**Other types of protection**

<table>
<thead>
<tr>
<th>Description</th>
<th>Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection against particulate radioactive contamination</td>
<td>EN 1073-2*</td>
</tr>
<tr>
<td>Biological protection (Infective Agents)</td>
<td>EN 14126</td>
</tr>
<tr>
<td>Electrostatic discharge if properly grounded (Anti-Static)</td>
<td>EN 1149-5: 2008*</td>
</tr>
</tbody>
</table>

*Gives no protection against radioactive radiation.

The EC PPE Directive, now the EC PPE Regulation has identified six levels of protection (Types) to facilitate the choice of chemical protective clothing. To carry the CE marking, chemical protective equipment (category III) must pass one or more of the garment “Type” tests, meet or exceed the minimum requirements for the materials’ physical and chemical properties, and be correctly identified and labelled. In addition, the products must be manufactured to a consistent quality, and the manufacturer must either hold a quality certificate such as ISO 9000, or be subject to regular inspections by the notified laboratory.

Along with our Nebosh trained staff, and our preferred supply partners, we can provide site surveys to customers in order to evaluate their requirements and identify the most suitable solutions for their needs, taking into consideration the following:

- Chemicals and Processes in the Workplace
- The Working Environment
- Exposure Conditions
- Comfort and Value

Please contact your local service centre for further details.

**WORK SAFELY WITH HARMFUL CHEMICALS**

**Safety Standards Guide**

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It is recommended that primary PPE such as aprons and gauntlets must be used during welding operations. Welding garments are considered secondary protection.
A comprehensive range of Colour Coded Catersafe Disposable Workwear is available, ideally suited to the food processing and catering industries, which includes hats, caps, coats, beard masks, aprons, sleeves, overshoes and gloves.

Also available is a range of complementary personal protection which includes Thermal & Insulated Gloves to EN388 & EN511, Insulated Safety Footwear & Safety Wellingtons to EN20345 & Thermal Under- & Outerwear to mix & match for all environmental conditions.

HACCP
The Hazard Analysis and Critical Control Point (HACCP) system is internationally accepted as the system of choice for food safety management. It is a preventative approach to food safety based on the following 7 principles:

- Identify any hazards that must be prevented, eliminated or reduced;
- Identify the critical control points (CCPs) at the steps at which control is essential;
- Establish critical limits at CCPs;
- Establish procedures to monitor the CCPs;
- Establish corrective actions to be taken if a CCP is not under control;
- Establish procedures to verify whether the above procedures are working effectively;
- Establish documents and records to demonstrate the effective application of the above measures.

The HACCP approach provides a systematic way of identifying food safety hazards and making sure that they are being controlled day-in, day-out. In short this involves the following steps:

- Plan what needs to be done to maintain food safety and write it down;
- Minimise the likelihood of food poisoning bacteria contaminating meat and associated products;
- Avoid physical and chemical contamination of meat;
- Reduce the potential for growth of food poisoning bacteria on meat and associated products;
- Minimise the potential for cross-contamination of ready-to-eat foods by food poisoning bacteria on meat during further processing or in the kitchen.