A Guide to PPE on the Railway
Introduction

Welcome to Safeaid’s guide to PPE on the Railway.

This guide will provide you with details of the relevant standards your PPE must conform to when working on the Railway.

Within the guide we have included an explanation of the standards and then provided our recommendations for what should be worn when working in different conditions.

Safeaid have been supplying PPE and Safety Critical Equipment for 40 years and are a recognised Rail Industry specialist.

We hope you find this guide useful.

Information in this guide is given in good faith, but Safeaid LLP cannot be held responsible for any omissions or errors.

The company reserves the right to change specifications of products at any time and without prior notice.

This guide is intended to be an aid to users of PPE on the Railway. It is not to be used as a substitute for the standards which should be read in full.
Contents

PPE minimum requirements:
   When near or on the line, or on
   the line side ....................... 5
   When using authorised walking route/
   Signallers/Crossing-keepers ........ 6
Hi-Vis Standard Explained .............. 7
Foul Weather Standard Explained ......... 8
Expert Opinion - Choosing the correct PPE:
   Warm Weather ....................... 9
   Cold Weather ....................... 10
   Working near Electricity ............ 11
   Working with Dust ................... 12
   Working at Height ................... 14
   DC Isolations ....................... 15
   Working with or near sparks ......... 16
Eyewear
   Understanding EN Product Marking .... 18
   Types of Lens ....................... 19
FAQ’s .................................. 20
Network Rail Lifesaving Rules ........... 22
PPE ON THE RAILWAY

A
Workers on authorised walking route

B

C
Signallers/Crossing-keepers

Working on or within 3m of the line

3m
Worker A

PPE minimum requirements:

When near or on the line, or on the line side

- White Safety Helmet*
  - G03_HC300VELW
- Polo Shirt
  - R.SHV50
- Waistcoat
  - R.SHV13
- Trousers
  - R.SHV56
- Safety Footwear which complies with EN ISO 20345
  - B.6620

*Except where the wearer is under:
  - A Track Visitors Permit (TVP)
  - A Personal Track Safety (PTS) Card with a ‘green square’ symbol on it
  - Network Rail Standard Maintenance Procedure NR/PRC/MTC/SE0089,
  - New Starters Mentoring (passport scheme)
Worker B & C

**PPE minimum requirements:**

When using authorised walking route

- **B** High visibility upper body clothing which complies to EN ISO 20471 Class 1* and GO/RT 3279

- **C** High visibility upper body clothing which complies to EN ISO 20471 Class 2 and GO/RT 3279

**PPE minimum requirements:**

For Signallers/ Crossing-keepers

- Waistcoat: R.SHV13
- Workwear Trousers: C02.2500
- Safety Footwear: B.6500

*Although it is not a requirement, Safeaid recommend Class 2 garments are worn to ensure compliance in other areas.*
Hi-Visibility Standard Explained

All high visibility clothing shall meet:

EN ISO 20471

The standard maintains a three-class system for garments, which is based on minimum areas of high visibility materials present in a garment, where class 3 provides the highest level and class 1 the minimum level.

N.B A class 2 jacket and a class 2 pair of trousers can be combined to provide the same level of protection as class 3.

As well as meeting EN ISO 20471 all garments need to comply with GO/RT 3279, this standard sets out the requirement for the colour characteristics of garments.

NOTE: Rail workers are to wear the fluorescent orange colour.

You can easily identify what class a garment is by checking the label of each garment.

This number denotes the class that the garment meets.
Foul Weather Standard Explained

Foul weather clothing shall be provided to any persons who hold Personal Track Safety certification. This shall consist of the following:

Hi visibility jacket or coat and Hi visibility over trouser or leggings

Which meet the requirements of EN ISO 20471 and GO/RT 3279 and of BS EN 343 class 3:3 for water vapour resistance and water penetration.

The material would need to conform to the highest level of water proofness and water vapour permeability.

**Water proofness:**
Class 3 – which means it has been tested to be more than 13000 Pa (Exact Pa ratings can be sourced from your supplier)

**Water vapour permeability:**
Class 3 – which means it has a Ret value of 20 or less.

*It is down to each individual to decide when to wear the foul weather garments, recommended wearing times are outlined in the standard.*

safeaidsupplies.com
Expert Opinion - Choosing the correct PPE

Follow this guide to choose the right PPE for your job and the conditions you may be working in.

Selecting the correct PPE can impact on productivity and protect your workforce from injury or more seriously fatal accidents.

Warm weather conditions

In warm weather usually between May – September Safeaid would recommend:

- White Safety Helmet
- Short Sleeve Polo Shirt (with UV rating)
- Cargo Rail Jogging Trouser
- Tinted safety glasses (with UV rating)
- Spectacle Case
- FIRST AID

Safeaid recommends carrying with you a - High risk 1 person first aid kit – N01.1002 and suncream in the warm Spring/Summer months.

t: 023 9225 4442   e: sales@safeaidsupplies.com
Colder weather conditions

In the cold weather typically between October and March, Safeaid would recommend:

- Thermal base layers C30.443
- Thermal socks C30.415
- Ice shoes B25.SIS01

In extreme wet conditions a risk assessment may identify that Wellington boots are more suitable.

**Don't forget:**
- Thermal base layers C30.443
- Thermal socks C30.415
- Ice shoes B25.SIS01

*Ladies Activeplus coat also available R.SHV61
† Ladies Activeplus trouser also available R.SHV69

---

Safeaid recommended products

safeaidsupplies.com
Expert Opinion - Choosing the correct PPE

Working with or near electricity

When working with electricity a suitable risk assessment should be carried out.

To minimise the impact of an electric arc flash ensure the garment you choose is:

- Anti Arc
- Anti Static
- Flame retardant

When working with or near electricity Safeaid would recommend:

- Vented Hard Hat
- Safety Glasses
- Multisafe Coverall
- Gloves
- Waterproof Safety Boots

Don’t forget for full body protection:
- Visor
- Flame retardant under garments
- Electrician’s gauntlets

Speak to Safeaid regarding your requirements*.

The garment shown here is fully compliant with the Flame Retardant standard - EN ISO 11612 and Electric arc standard - IEC 61482

*A risk assessment should be carried out to confirm if further protective equipment is required, for example electrician’s gauntlets or insulated tools.
Expert Opinion - Choosing the correct PPE

Working with dust

This may include:
Ballast dropping
Cutting concrete
Tamping

When working with dust
Safeaid would recommend:

All tight-fitting (negative pressure) masks need to be face fit tested – Ensure you have your face fit report card with you at all times – D20.FFT. PC1. Only qualitative and quantitative test methods are approved by HSE as suitable methods of face fit testing.

In some instances a seal cannot be achieved on a negative pressure face mask, and it may be appropriate to use a positive pressure powered air filtration system. This is usually a belt mounted power unit attached to a “hood” which prevents the hazardous material from being ingested by the operative.

This type of system does not need a tight face seal, and if operatives cannot achieve a face fit test pass on negative pressure equipment this is the first option that should be pursued to provide protection to the wearer.

*Must be clean shaven to wear this product or any other negative pressure product.

Safeaid can provide Facefit testing and training

safeaidsupplies.com
Respiratory Standards

All respirators must be CE marked to show that the design has been tested to a recognised standard. They must also be marked with that standard.

For Disposable respirators this is EN149.

Additional markings, such as FFP1, FFP2 or FFP3, indicate the protection level that you can get if the respirator is a good fit and you use it correctly. The higher the number, the better the protection.

For Full Face Respirators the standard is EN136

There are three classes of Full Face Masks:

Class 1 Light duty and low maintenance
Class 2 General duty, with maintainable parts
Class 3 Heavy duty fire fighters

Full Face respirators masks can come with a variety of different types of filter conforming to various standards:

EN 141 Gas filters
there are three classes – Class 1, Class 2 & Class 3

EN143 Particle filters
these are classified according to their filtering efficiency, there are also three classes of filter P1, P2 & P3.

EN371 AX filters
these filters are classified in only one type and class, AX.

The maximum weight of filters that is allowed under the standards is 500grams

Filters should be selected according to the risk assessment carried out prior to commencing the task.
Expert Opinion - Choosing the correct PPE

Working at height

Work at height means work in any place where, if there were no precautions in place, a person could fall a distance liable to cause personal injury. (www.hse.gov.uk)

When working at height Safeaid would recommend:

Don’t forget:
GO/RT3279 approved PPE:
Combat Rail trousers: R.SHV56
Breathable Rail jacket: R.SHV60
Waterproof Safety boots: B.6620

Speak to Safeaid about Tool Arrest products
Expert Opinion - Choosing the correct PPE

DC Isolations/Strapping

When carrying out DC Isolations or Strapping work Safeaid would recommend:

Other Equipment that would be required:
- Live line tester – R.LLT
- Proving unit – R.PRUT
- Insulated short circuit bar – T03.RS002
- Short circuit strap – T03.RS001
- Wire Brush – T01.5002
- Site marker board – R.CSMB

All the required equipment can be safely stored and carried in the Strapmans bag

If working in Southern Shield areas extra requirements might be enforced.

t: 023 9225 4442  e: sales@safeaidsupplies.com
Expert Opinion - Choosing the correct PPE

Working with or near sparks

E.g. Welding, grinding or cutting

Safeaid recommend the following specialist equipment:

- Double layer fabric (waist down)
- Twin stitched FR tape
- Racing collar
- Zip front with poppers over the top
- Welders Helmet*
- Flame Retardant Rail Coverall
- Welding Gauntlets
- Fireman’s Safety Boot
- Flame Retardant Rail Coverall
- Welding Gauntlets
- Fireman’s Safety Boot

*Contact Safeaid for Stockist information

safeaidsupplies.com
Choosing the correct PPE

When working in these conditions it is essential that your garments conform to the following standards:

**EN ISO 11612 – Heat & Flame Protection**

This standard specifies the performance requirements for garments that protect the body from heat and flame (except the hands).

There are 6 categories:

1. **A 1**  
   A1 = Surface Ignition,  
   B = Bottom Edge Ignition
2. **B 1**  
   3 Convective Heat
3. **C 1**  
   4 Radiant Heat
4. **D 1**  
   3 Molten Aluminium Splash
5. **E 1**  
   3 Molten Iron Splash
6. **F 1**  
   2 Contact Heat

Note that the lower the denominator, the poorer the performance.

**EN ISO 11611 – Protective Clothing for use in Welding and allied processes**

This standard specifies minimum basic safety requirements and test methods for protective clothing including hoods, aprons, sleeves, and gaiters that are designed to protect the wearer's body including head (hoods) and feet (gaiters) and that are to be worn during welding and allied processes with comparable risks.

There are two classes with specific performance requirements:

**Class 1:** (lower level) less hazardous welding situations. Tested with 15 molten metal drops

**Class 2:** (higher level) more hazardous welding situations. Tested with 25 molten metal drops

**EN1149**

This standard specifies requirements for clothing that conducts electricity. This clothing forms part of a completely earthed system. The clothing prevents sparks and therefore explosions.

**EN 1149 consists of the following parts:**

- **EN1149-1** test methods for the measurement of surface resistance
- **EN1149-2** test methods for the measurement of the electrical resistance through a material (vertical resistance)
- **EN1149-3** test methods for the measurement of charge decay
- **EN1149-4** garment test method
- **EN1149-5** performance requirements.

**ENISO 14116**

This standard specifies the performance requirements for the limited flame spread properties of all materials, all material assemblies, and protective clothing in order to reduce the possibility of the clothing burning when in occasional and brief contact with small flames and thereby constituting a hazard.

When protection against heat hazards is necessary, in addition to protection against flame, this International Standard is not appropriate. International Standards such as ISO 11612 are to be used instead.

Demands for mechanical strength and for flame and heat resistance are defined according to three Index levels, with Index 3 being the highest.

Index 1, Index 2 and Index 3
Eyewear – Understanding EN Product Marking

If the markings on the frame and the lens are different, the lowest rating should be used to identify the protective rating.

EN Standards

- EN166 General Specifications
- EN169 Welding Filters
- EN170 Ultraviolet Filters
- EN171 Infrared Filters
- EN172 Sunglare Filters for Industrial Use

Microfibre Pouch to Protect and Store

safeaidsupplies.com
Eyewear – Understanding EN Product Marking

<table>
<thead>
<tr>
<th>Code</th>
<th>Filter Type</th>
<th>Shade</th>
<th>Shown after Code Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>UV filter, colour recognition may be affected</td>
<td>1.2</td>
<td>Clear or Amber</td>
</tr>
<tr>
<td>2C or 3</td>
<td>UV filter with good colour recognition</td>
<td>1.4</td>
<td>Blue</td>
</tr>
<tr>
<td>4</td>
<td>Infrared filter</td>
<td>1.7</td>
<td>Light Green (Anti-Flash)</td>
</tr>
<tr>
<td>5</td>
<td>Sunglare filter without IR specification</td>
<td>2.5</td>
<td>Smoke, Silver Mirror, Blue Mirror</td>
</tr>
<tr>
<td>6</td>
<td>Sunglare filter with IR specification</td>
<td>3.1</td>
<td>Dark Smoke</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.0</td>
<td>Dark Green*</td>
</tr>
</tbody>
</table>

*gas welding filter only

**Optical Class**

1. ±0.06 dioptres – can be worn at all times
2. ±0.12 dioptres – should only be worn for occasional use
3. ±0.25 dioptres – should not be worn for long periods

**Mechanical Resistance**

<table>
<thead>
<tr>
<th>Impact Level</th>
<th>Max Speed</th>
<th>Type of Eye Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>B (T) Medium Energy Impact</td>
<td>120 m/s</td>
<td>Faceshields/Goggles</td>
</tr>
<tr>
<td>F (T) Low Energy Impact</td>
<td>45 m/s</td>
<td>Faceshields/Goggles/Spectacles</td>
</tr>
<tr>
<td>S Increased Robustness</td>
<td>5.1 m/s</td>
<td>Spectacles (Generally Prescription)</td>
</tr>
</tbody>
</table>

(T) frame/lens has had additional extreme temperature test -5°C and +55°C

**Understanding Types of Lens**

<table>
<thead>
<tr>
<th>Lens Type</th>
<th>VLT*</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear</td>
<td>91%</td>
<td>All general conditions that require impact protection.</td>
</tr>
<tr>
<td>Amber</td>
<td>83%</td>
<td>For use in low light areas and in artificial light conditions.</td>
</tr>
<tr>
<td>Smoke Grey</td>
<td>22%</td>
<td>Use in sunny conditions and general outside use.</td>
</tr>
<tr>
<td>Silver Mirror</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue Mirror</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*VLT = Visible Light Transmission
FAQ’s

Am I required to wear gloves whilst working?

It is down to individual sponsors and risk assessments, however, when gloves are required on the railway they need to be a Category 2 rated intermediate hazard product. This information can be found on the user information sheet which will be found within the gloves packaging or can be sourced from your supplier.

In addition to this it may also need to meet specific requirements within EN388 – specific details can be found on the label of the glove.

What is classified as working at height?

Work at height means work in any place where, if there were no precautions in place, a person could fall a distance liable to cause personal injury. For example you are working at height if you:

- are working on a ladder or a flat roof;
- could fall through a fragile surface;
- could fall into an opening in a floor or a hole in the ground.

Take a sensible approach when considering precautions for work at height. There may be some low-risk situations where common sense tells you no particular precautions are necessary and the law recognises this.


Is my employer responsible for providing me with PPE?

Every employer shall ensure that suitable personal protective equipment is provided to their employees who may be exposed to a risk to their health or safety while at work except where and to the extent that such risk has been adequately controlled by other means which are equally or more effective.

For full details visit www.hse.gov.uk

Employers are required to provide the minimum of level of PPE without employees incurring any costs. Some employers may give workers a budget which the employees can top up if they wish to purchase more expensive items – this is down to the employer’s discretion.

Where can PPE be purchased from?

Unless your employer has stipulated a particular clothing supplier, ensure your PPE provider supplies clothing that conforms to GO/RT 3279 and ENISO 20471 or other appropriate standard and is RISQS approved.
**Does my clothing need to be anti-entanglement?**

It is advisable when working in close proximity to moving trains to have garments conforming to standard EN510 particularly vests or waistcoats. All PPE should be worn fastened up to minimise the risk of it catching on protruding obstacles or hazards.

**Do I need to have a long sleeve upper body garment?**

Some contractors stipulate this depending on the risks involved on that particular site but this is not legislated yet.

**Can I wear shorts?**

No, shorts do not meet the requirements of the ENISO 20471 rail standard.

**Can I wear clothing that was supplied to me from a previous sponsor?**

Ultimately this is down to your current sponsor, however all branded clothing must be displaying your current sponsors logo.

**Are there any rules on washing my PPE?**

For exact washing instructions refer to the label of each garment. Your employer may have laundry arrangements in place but uncontaminated PPE can simply be washed in your household washing machine.

Safeaid recommend that waterproof garments are washed with a suitable cleaner for wet weather clothing and re waterproofed after washing.

**How often should I replace my PPE?**

Safeaid recommend that all PPE should be replaced after a maximum of 25 washes or before this if the garments have been damaged or contaminated.

Ensure you report any damaged PPE to your Health and Safety manager to ensure you are compliant at all times.

If steel toe cap boots are damaged and the steel toe cap is showing do not go near the railway until you have sourced alternative footwear.

**Can I wear yellow hi visibility clothing on the railway?**

Under no circumstances can any other colour clothing be worn – the rail standard stipulates that only Orange hi visibility clothing that meets GORT 3279 is to be worn when working on the railway.

**Can I wear my safety trainers on site?**

No, all safety footwear must offer ankle support which is usually achieved by wearing a safety boot.
Our Lifesaving Rules

Safe behaviour is a requirement of working for Network Rail. These Rules are in place to keep us safe and must never be broken. We will all personally intervene if we feel a situation or behaviour might be unsafe.

**Working responsibly**

- Always be sure the required plans and permits are in place, before you start a job or go on or near the line.
- Always use equipment that is fit for its intended purpose.
- Never undertake any job unless you have been trained and assessed as competent.
- Never work or drive while under the influence of drugs or alcohol.

**Driving**

- Never use a hand-held or hands-free phone, or programme any other mobile device, while driving.
- Always obey the speed limit and wear a seat belt.

**Working at height**

- Always use a safety harness when working at height, unless other protection is in place.

**Working with electricity**

- Always test before applying earths or straps.
- Never assume equipment is isolated – always test before touch.

**Working with moving equipment**

- Never enter the agreed exclusion zone, unless directed to by the person in charge.
Stay Safe with Safeaid