

**Railway Group Standard**

**GO/RT3279**

**Issue** 8

**Date** December 2013

## **High Visibility Clothing**

### **Synopsis**

This document sets out the minimum specification for high visibility clothing.

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## High Visibility Clothing

### Issue record

Issue	Date	Comments
One	December 1994	Original document (emergency standard)
Two	April 1995	Superseded issue one
Three	October 1995	Superseded issue two, giving limits to the background colour and altering permitted marked designations
Four	August 1996	Amended in respect of hot work and implementation statement reinstated
Five	December 1999	Amended in respect of markings required for Railway Incident Officer on high visibility clothing
Six	August 2008	Amended following filtering under Strategy for Standards Management – decision to retain and revise presentation
Seven	September 2012	Amended following proposal 11/040: Clause 2.1.1.4 Hot Work and B.6.1 Fasteners were withdrawn. Other current requirements were retained and moved to Appendix A. This is to make a clear difference between the operational requirement in Part 2 (concerning the provision of high visibility clothing) and the technical requirements in Appendix A (concerning the specifications for the high visibility clothing).
Eight	December 2013	Amended as part of the 12 monthly review to incorporate a title and reference change to document BS EN 471:2003 +A1:2007. New reference is BS EN ISO 20471:2013 and the new title is High visibility clothing – Test methods and requirements (ISO 20471:2013).

Amended or additional parts and/or sections of revised pages have been marked by a vertical black line in the adjacent margin.

### Superseded documents

The following Railway Group documents are superseded, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
GO/RT3279 Issue seven	all	01 March 2014.

GO/RT3279 Issue seven ceases to be in force and is withdrawn as of 01 March 2014.

### Supply

The authoritative version of this document is available at [www.rgsonline.co.uk](http://www.rgsonline.co.uk).  
 Uncontrolled copies of this document can be obtained from Communications, RSSB, Block 2, Angel Square, 1 Torrens Street, London EC1V 1NY, telephone 020 3142 5400 or e-mail [enquirydesk@rssb.co.uk](mailto:enquirydesk@rssb.co.uk). Other Standards and associated documents can also be viewed at [www.rgsonline.co.uk](http://www.rgsonline.co.uk).

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## Part 1 Purpose and Introduction

### 1.1 Purpose

- 1.1.1 This document mandates minimum requirements for high visibility clothing that is to be provided for wearing by people when on the lineside or on or near the line. It applies to all high visibility clothing worn in order to meet the requirements of GE/RT8000 Rule Book.

### 1.2 Introduction

#### 1.2.1 Background

- 1.2.1.1 High visibility clothing is an essential item of personal protective equipment, providing drivers of rail movements with a conspicuous warning of the presence of people within view on the lineside or on or near the line. Similar benefits accrue to those managing the safety of workgroups, by improving visibility of people when needing to account for them having moved to a place of safety.
- 1.2.1.2 In addition to the importance of lineside visibility, it is also useful, in certain defined circumstances, for some role titles (for example of staff engaged in incident management or rendering first aid) to be added to high visibility clothing. This will assist in clearly identifying staff with critical responsibilities in certain situations.
- 1.2.1.3 Where reference is made to the BSI Standards Publication it refers to the version in force. Stakeholders should refer to the most up to date version of that publication.

#### 1.2.2 Principles

- 1.2.2.1 The requirements of this document are based on the following principles:
- a) High visibility clothing worn by people on the lineside or on or near the line should conform to a single standard for the colour and luminance of background material and that this standard will accord with the detail contained within BS EN ISO 20471:2013 High visibility clothing -Test methods and requirements (ISO 20471:2013). The colour specific requirements within this standard conform to the range specified within BS EN ISO 20471:2013 clause 5.1.2. In order to confine this to a specific orange colour, and to prevent the selection of colour at the red end of the spectrum, the precise chromaticity co-ordinates for the colour are specified in Appendix A.
  - b) High visibility clothing worn by people on the lineside or on or near the line should conform to a single standard for the photometric and physical performance of retro-reflective material to aid conspicuousness in darkness or poor visibility. This standard will accord with the detail contained within BS EN ISO 20471:2013.
  - c) Limits should be established regarding additional markings or words that identify the employing company or particular roles eg Rail Incident Officer (RIO), to maximise the impact of a restricted number of titles, assist in recognition of incident management roles to members of the emergency services and avoid information overload.
  - d) There are circumstances, where material to cover a large surface area is not considered necessary, where use of a high visibility mini-vest is permitted.

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### **1.2.3 Related requirements in other documents**

- 1.2.3.1 The following Railway Group Standard contains requirements that are relevant to the scope of this document: GE/RT8000 Rule Book.

### **1.2.4 Supporting documents**

- 1.2.4.1 There are no Rail Industry Guidance Notes or Rail Industry Approved Codes of Practice supporting this Railway Group Standard.

### **1.3 Approval and authorisation of this document**

- 1.3.1 The content of this document was approved by Traffic Operation and Management Standards Committee on 17 September 2013.
- 1.3.2 This document will be authorised by RSSB on 01 November 2013.

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## **Part 2 Requirement for high visibility clothing**

### **2.1 Requirement applicable to infrastructure managers and railway undertakings**

#### **2.1.1 Technical specification for high visibility clothing**

2.1.1.1 Infrastructure managers and railway undertakings shall provide high visibility clothing that meets, as a minimum, the technical requirements specified in Appendix A of this standard.

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## Part 3 Application of this document

### 3.1 Application - infrastructure managers

#### 3.1.1 Scope

3.1.1.1 The requirements of this document apply to all new and existing high visibility clothing worn on the lineside or on or near the line.

#### 3.1.2 Exclusions from scope

3.1.2.1 There are no exclusions from the scope specified in 3.1.1 for infrastructure managers.

#### 3.1.3 General compliance date for infrastructure managers

3.1.3.1 This Railway Group Standard comes into force and is to be complied with from 01 March 2014. There are no changes to technical specifications.

#### 3.1.4 Exceptions to general compliance date

3.1.4.1 There are no exceptions to the general compliance date specified in 3.1.3 for infrastructure managers.

### 3.2 Application - railway undertakings

#### 3.2.1 Scope

3.2.1.1 The requirements of this document apply to all new and existing high visibility clothing worn on the lineside or on or near the line.

#### 3.2.2 Exclusions from scope

3.2.2.1 There are no exclusions from the scope specified in 3.2.1 for railway undertakings.

#### 3.2.3 General compliance date for railway undertakings

3.2.3.1 This Railway Group Standard comes into force and is to be complied with from 01 March 2014. There are no changes to technical specifications.

#### 3.2.4 Exceptions to general compliance date

3.2.4.1 There are no exceptions to the general compliance date specified in 3.2.3 for railway undertakings.

### 3.3 Health and safety responsibilities

3.3.1 Users of documents published by RSSB are reminded of the need to consider their own responsibilities to ensure health and safety at work and their own duties under health and safety legislation. RSSB does not warrant that compliance with all or any documents published by RSSB is sufficient in itself to ensure safe systems of work or operation or to satisfy such responsibilities or duties.

## Appendix A Design requirements for high visibility clothing

The content of this appendix is mandatory.

### A.1 Minimum areas of visible material

- A.1.1 High visibility clothing shall meet, as a minimum, with the requirements for Class 2 garments set out in Table 1 of BS EN ISO 20471:2013.
- A.1.2 Where duties require the use of high visibility clothing, but the nature of the work does not involve possible obscuring of the high visibility clothing, a high visibility mini-vest having a reduced area of visible material, conforming to section A.4 of this Appendix, is permitted.

### A.2 Background material colour characteristics

- A.2.1 The target colour of new background material shall be fluorescent orange with chromaticity and luminance defined as follows:

Colour	Chromaticity co-ordinates		Minimum luminance factor $\beta_{min}$
	x	y	
Fluorescent orange	0.588	0.371	0.4

**Table A.1** Target colour for background material

- A.2.2 The tolerance of the fluorescent orange target colour shall be in accordance with Table 2 in Section 5 of BS EN ISO 20471:2013 but within the following limits with the luminance factor of 0.4 remaining unchanged:

Chromaticity co-ordinates	
x	y
0.610	0.390
0.560	0.380
0.585	0.355
0.640	0.360

**Table A.2** Tolerance of target colour for background material

- A.2.3 The change in chromaticity after light exposure and colourfastness shall conform to the requirements of BS EN ISO 20471:2013.

### A.3 Retro-reflective material characteristics

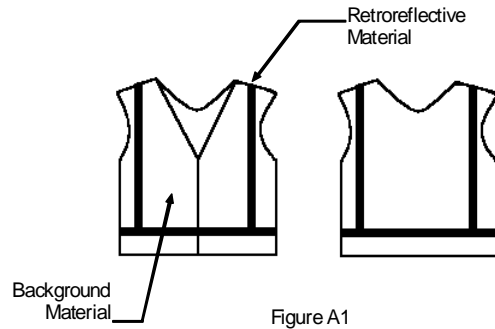
- A.3.1 The photometric and physical performance requirements for the retro-reflective material shall conform to the requirements stipulated in BS EN ISO 20471:2013, Section 6, Table 4 for separate performance material, level 2.



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## A.4 Technical requirements for high visibility mini-vests

A.4.1 High visibility mini-vests shall consist of background material and retro-reflective material, ie combined performance material shall not be used. Figure A1 shows an example of the general arrangement of the high visibility mini-vest illustrating the disposition of background and retro-reflective material.



**Figure A.1** Disposition of background and retro-reflective material for high visibility mini-vests

A.4.2 High visibility mini-vests shall conform to the following minimum areas of visible material:

Background material	0.26 m <sup>2</sup>
Retro-reflective material	0.12 m <sup>2</sup>

**Table A.3** Minimum area of visible material for high visibility mini-vests

- A.4.3 The background material shall encircle the torso and any markings shall be in accordance with limitations stated in Appendix A.4.2 of this standard.
- A.4.4 Bands of retro-reflective material shall be not less than 50 mm wide.
- A.4.5 High visibility mini-vests shall have one horizontal band of retro-reflective material around the torso. The bottom of the band shall not be less than 50 mm above the bottom edge of the mini-vests. High visibility mini-vests shall have bands of retro-reflective material joining the horizontal torso band from the front to the back over each shoulder.
- A.4.6 The high visibility mini-vest background material colour characteristics shall conform to the requirements of Appendix A.2 of this Standard.
- A.4.7 The high visibility mini-vest retro-reflective material shall conform to the requirements of Appendix A.3 of this Standard.

## A.5 Identification and company markings on high visibility clothing

- A.5.1 Except in the case of the high visibility clothing worn by a Rail Incident Officer (RIO) or First Aider, the background material shall not be obscured by the addition of any other features, unless provision has been allowed for in the specification such that the minimum areas of background and retro-reflective material have been preserved.
- A.5.2 The only permitted features are the company or project name and logo that identify who an individual is working for and titles or designations associated with the management of incidents, as listed:

- a) Rail Incident Officer (RIO).
- b) Press Officer.
- c) Recovery Engineer.
- d) First Aider.
- e) Train Operators' Liaison Officer (TOLO).

A.5.3 In the case of the high visibility clothing worn by a Rail Incident Officer the visible background material area of the Class 2 jacket shall accommodate the special markings illustrated in Figure A2.

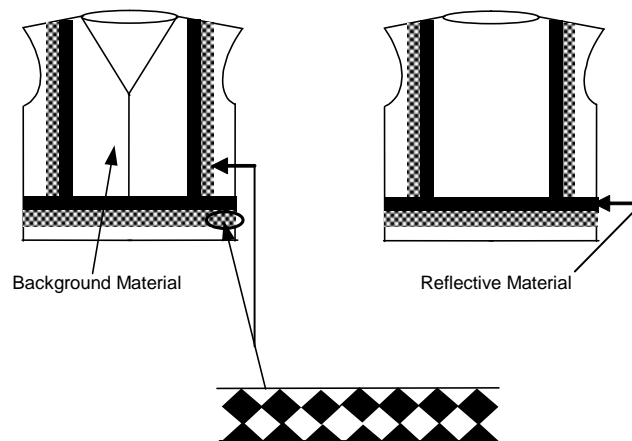


Figure A2

### Figure A.2 Special markings on high visibility clothing

- A.5.4 The special markings shall consist of 50 mm wide fluorescent lime high brightness garment tape with a black diamond pattern across the surface consisting of one full diamond and one half diamond as detailed in Figure A2.
- A.5.5 A similar pattern of special markings to those illustrated for a RIO in Figure A2, consisting of green and white chequered tape, is permitted for high visibility vests marked 'First Aider'.

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## Definitions

### **Background material**

Coloured fluorescent material intended to be highly conspicuous, but not intended to comply with the requirements of this standard for retro-reflective material.

### **Combined performance material**

Material intended to exhibit both background and retro-reflective properties.

### **Fluorescent material**

Material that emits optical radiation at wavelengths longer than absorbed.

### **High visibility clothing**

Warning clothing intended to provide conspicuousness.

### **Lineside**

The area between the boundary fence and the point that is called 'on or near the line', and where someone would be within view of the driver of an approaching train or movement. A person is not on the lineside if they are on a station platform.

### **On or near the line**

Within 3 metres of the nearest rail of any line, and on the line itself. On a platform, the term 'on or near the line' applies only to the part of the platform within 1.25 metres of the platform edge and only when an engineering or technical activity is taking place.

### **Retro-reflective material**

Material which is a retroreflector, but which is not intended to comply with the requirements of this standard for background material.

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## References

The Catalogue of Railway Group Standards gives the current issue number and status of documents published by RSSB. This information is also available from [www.rgsonline.co.uk](http://www.rgsonline.co.uk).

RGSC 01	Railway Group Standards Code
RGSC 02	The Standards Manual

## Documents referenced in the text

### Railway Group Standards

GE/RT8000	Rule Book
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### Other references

BS EN ISO 20471:2013	High visibility clothing - Test methods and requirements (ISO 20471:2013)
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