Requirements for Lighting in Railway Tunnels

Synopsis
This document mandates requirements for tunnel lighting systems. This document should be read in conjunction with the guidance note on the Safety in Railway Tunnels Technical Specification for Interoperability.
Issue record

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<tr>
<td>One</td>
<td>December 2007</td>
<td>Original document Supersedes section G9 of GI/RT7010, issue one, Lighting of Railway Premises</td>
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<tr>
<td>Two</td>
<td>September 2013</td>
<td>Replaces issue one This document provides an interim means of complying with the requirements of the Safety in Railway Tunnels Technical Specification for Interoperability (SRT TSI) until the SRT TSI is revised to apply to the whole of the GB mainline railway system</td>
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Superseded documents

The following Railway Group documents are superseded, either in whole or in part as indicated:

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<tr>
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Other parts of GI/RT7019 issue one are superseded by GI/GN7619 issue one, Guidance on the Safety in Railway Tunnels Technical Specification for Interoperability

GI/RT7019, issue one ceases to be in force and is withdrawn as of 07 December 2013.

Supply

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Part 1  
Purpose and Introduction

1.1  
Purpose

1.1.1  This document mandates requirements for tunnel lighting systems.

1.2  
Introduction

1.2.1  Background

1.2.1.1  The requirements within GI/RT7019, issue one, formed one of two groups of requirements that were retained as mandatory from GI/RT7010, issue one. This was following a review of GI/RT7010 in accordance with the Strategy for Standards Management. The other group of requirements related to station lighting and were transferred to GI/RT7016, issue four.

1.2.1.2  This document aligns with the requirements of the SRT TSI, in so far as it deals with the lighting of railway tunnels part of the infrastructure sub-system.

1.2.1.3  This document provides an interim means of complying with the requirements of the SRT TSI until the SRT TSI is revised to apply to the whole of the GB mainline railway system.

1.2.2  Related requirements in other documents

1.2.2.1  The following Railway Group Standards contain measures relevant to the safety of railway tunnels:

a)  GO/RT3413 Provision of Information and Signs for Access on the Railway, sets out requirements for provision of information about access to and alongside the railway. It specifies where operational safety signs for personnel on or near the lineside are required.

b)  GK/RT0094 Train Voice Radio Systems, mandates the requirements for the application of train voice radio systems, specifically interface requirements for the infrastructure manager and the railway undertakings.

c)  GI/RT7033 Lineside Operational Safety Signs, mandates the arrangements for the management and specification of lineside operational safety signs in order to provide consistency of form and presentation throughout the network.

d)  GO/RT3118 Incident Response Planning & Management, identifies interface requirements for enabling a consistent, comprehensive and structured process for rail incident response planning and management.

e)  GE/RT8034 Maintenance of Signal Visibility, sets out the requirements necessary to ensure that the visibility and alignment of signals, and signs that perform the function of signals, are not adversely affected during the life of the equipment.
1.2.3 Supporting documents

1.2.3.1 The following documents support this Railway Group Standard:

a) GI/GN7619 Guidance on the Safety in Railway Tunnels Technical Specification for Interoperability, sets out guidance on interpreting the requirements of the SRT TSI.

b) RIS-7702-INS Rail Industry Standard for Lighting at Stations, has background information on the technical requirements for lighting systems.

1.3 Approval and authorisation of this document

1.3.1 The content of this document was approved by Infrastructure Standards Committee on 10 July 2013.

1.3.2 This document was authorised by RSSB on 30 July 2013.
Part 2 Requirements for tunnel lighting systems

2.1 Purpose of tunnel lighting systems

2.1.1 Tunnel lighting systems are required to:

a) Provide sufficient illuminance to enable passengers and staff to detrain and to make their way safely out of the tunnel.

b) Assist train crews in their orientation and improve their visibility of the track.

2.2 Tunnel lighting systems

2.2.1 The minimum maintained illuminance level for the purpose of emergency lighting on escape routes shall comply with the requirements set out in the SRT TSI clause 4.2.2.8.

2.2.2 Guidance on the provision of tunnel lighting systems is given in GI/GN7619.
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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 new tunnels, and tunnels subject to alteration (as defined), greater than 500 m in length.

3.1.1.2  For existing tunnels up to 500 m in length, which are fitted with a lighting system, the requirements of this document apply when an alteration (as defined) is undertaken.

3.1.1.3  It is permissible for the infrastructure manager to designate specific infrastructure projects, on-going when this document comes into force, for which compliance with the requirements of this document applicable to the design, construction and commissioning of new or altered infrastructure is not mandatory. When designating such projects, the infrastructure manager shall consider:

a)  Its responsibilities under its current safety authorisation.

b)  The stage reached by the project at the time this document comes into force (for example, approval in principle).

c)  Whether compliance is necessary to ensure compatibility with other parts of the infrastructure.

d)  Whether compliance is necessary to facilitate safe interworking having regard to changes to related requirements mandated on another infrastructure manager or railway undertaking.

e)  The economic impact of compliance, but subject to its current safety authorisation in relation to the infrastructure in question.

3.1.2  Exclusions from scope

3.1.2.1  There are no exclusions from the scope specified in sub-section 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 07 December 2013, except as specified in sub-section 3.1.4. Where the dates specified in sub-section 3.1.4 are later than the above date, this is to allow infrastructure managers sufficient time to achieve compliance with the specified exceptions.

3.1.3.2  After the compliance dates or the date by which compliance is achieved if earlier, infrastructure managers are to maintain compliance with the requirements set out in this Railway Group Standard. Where it is considered not reasonably practicable to comply with the requirements, authorisation not to comply should be sought in accordance with the Railway Group Standards Code.

3.1.4  Exceptions to general compliance date

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

3.2  Application – railway undertakings

3.2.1  There are no requirements applicable to 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.
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Definitions

**Alteration [of a tunnel]**
For the purpose of this document, the alteration of a tunnel, or its associated infrastructure, in a way which provides a reasonable opportunity to provide lighting.

**Illuminance**
The luminous flux density at a surface in a defined plane. The SI unit of illuminance is the lux, which is equal to one lumen per metre squared (lm/m).

**Maintained illuminance**
The average illuminance over the reference surface at the worst condition of maintenance.

**Tunnel**
An underground, enclosed structure provided to allow the railway to pass under higher land, buildings or water, significantly longer than it is wide.
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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.

RGSC 01 Railway Group Standards Code
RGSC 02 The Standards Manual

Documents referenced in the text

Railway Group Standards
GE/RT8034 Maintenance of Signal Visibility
GI/RT7010 Lighting of Railway Premises
GI/RT7016 Interface between Station Platforms, Track and Trains
GI/RT7033 Lineside Operational Safety Signs
GK/RT0094 Train Voice Radio Systems
GO/RT3118 Incident Response Planning & Management
GO/RT3413 Provision of Information and Signs for Access on the Railway

RSSB documents
GI/GN7619 Guidance on the Safety in Railway Tunnels Technical Specification for Interoperability
RIS-7702-INS Rail Industry Standard for Lighting at stations