

**This document is a NOTIFIED STANDARD
in the context of the European directives
for interoperability of railway systems**

Railway Group Standard

GE/RT8015

Issue One

Date October 2002

Electromagnetic Compatibility between Railway Infrastructure and Trains

Synopsis

This document mandates requirements for the management of **electromagnetic** compatibility between railway infrastructure and trains. It also mandates the processes to enable compatibility between infrastructure and trains to be demonstrated in order to meet the requirements of route acceptance.

Signatures removed from electronic version

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Part A

A1 Issue record

Issue	Date	Comments
One	October 2002	Original Document

This document will be updated when necessary by distribution of a complete replacement.

A2 Implementation of this document

The publication date of this document is 5 October 2002.

This document comes into force on 7 December 2002.

The dates by which compliance with the requirements of this document is to be achieved are set out in Part B2. Where those dates are later than the date on which this document comes into force, this is to give Railway Group members additional time to plan and commence implementation so as to achieve full compliance by the dates set out in Part B2.

This document supersedes the following Railway Group Standards, either in whole or in part as indicated:

Railway Group Standard	Issue No.	Title	RGS sections superseded by this document	Date(s) as of which sections are superseded
GM/RT1031	1	Electromagnetic Compatibility Between Railway Infrastructure and Trains	All	7 Dec 2002 (document withdrawn as of this date)
GS/ES1914	1	Electromagnetic Susceptibility Data for Track Circuits and AWS	All	7 Dec 2002 (document withdrawn as of this date)

A3 Scope of Railway Group Standards

The overall scope of Railway Group Standards is set out in Appendix A of [GA/RT6001](#). The specific scope of this document is set out in Part B2.

A4 Responsibilities

Railway Group Standards are mandatory on all members of the Railway Group* and apply to all relevant activities that fall into the scope of each individual's Railway Safety Case. If any of those activities are performed by a contractor, the contractor's obligation in respect of Railway Group Standards is determined by the terms of the contract between the respective parties. Where a contractor is a duty holder of a Railway Safety Case then Railway Group Standards apply directly to the activities described in the Safety Case.

* The Railway Group comprises Railtrack PLC, Railway Safety, and the train and station operators who hold railway safety cases for operation on or related to infrastructure controlled by Railtrack PLC.

Railtrack PLC is known as Railtrack.

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A5 Health and safety responsibilities

In issuing this document, Railway Safety makes no warranties, express or implied, that compliance with all or any documents published by Railway Safety is sufficient on its own to ensure safe systems of work or operation. Each user is reminded of its own responsibilities to ensure health and safety at work and its individual duties under health and safety legislation.

A6 Technical content

The technical content of this document has been approved by:

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A7 Supply

Controlled and uncontrolled copies of this document may be obtained from the Industry Safety Liaison Dept, Railway Safety, Evergreen House, 160 Euston Road, London NW1 2DX.

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Part B

B1 Purpose

This document (issue one of GE/RT8015) mandates requirements for the management of **electromagnetic** compatibility (**EMC**) between railway infrastructure and trains to enable safe operation to be assured. In particular, it defines responsibilities and sets out requirements for:

- a) the infrastructure controller to characterise the **susceptibility** of the infrastructure, and to determine maximum allowable train emission levels
- b) the provision of that infrastructure information when required
- c) processes to enable compatibility between infrastructure and trains to be demonstrated in order to meet the requirements of the route acceptance process set out in Railway Group Standard [GO/RT3270](#) (to be superseded by GE/RT8270).

See also section B4.8.

B2 Application of this document

B2.1 To whom the requirements apply

This document contains requirements that are applicable to duty holders of the following categories of Railway Safety Case:

- a) infrastructure controller
- b) train operator.

B2.2 Compliance requirements for infrastructure

B2.2.1 Provision of **susceptibility** and emissions data

The infrastructure controller shall identify the information that is already available which will contribute to meeting the requirements of section B6, and publish it no later than 7 December 2002.

Also by 7 December 2002, the infrastructure controller shall publish a staged plan setting out the dates when the remaining data will be made available. Priority shall be given to data required for routes affected by proposals for:

- a) introduction of new or modified trains
- b) introduction of trains which are new to the route
- c) changes to the infrastructure.

The plan shall define staged targets for the progressive publication of the required data, and the infrastructure controller shall regularly report progress to Railway Safety against these defined targets.

All of the data required to meet the requirements of section B6 shall be made available by the infrastructure controller no later than 6 December 2003.

B2.2.2 Infrastructure systems

The infrastructure design requirements in this document are mandatory for new Railtrack controlled infrastructure and for alterations to existing Railtrack controlled infrastructure for which Approval in Principle is given on or after 6 December 2003.

When Approval in Principle is given before 6 December 2003, but the infrastructure has not yet been brought into service, the design shall be reviewed and, where reasonably practicable, brought into line with the requirements of this document. Where it is not reasonably practicable to do so, the situation shall be regularised by means of a non-compliance or derogation (see section B2.2.3).

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Action to bring existing infrastructure systems into compliance with the design requirements set out in sections B5.3.2, B5.3.3, B5.3.4 and B5.4.2 of this document is not required.

B2.3 Compliance requirements for trains

B2.3.1 General

The requirements of this document are applicable to all rail vehicles intended to operate on Railtrack controlled infrastructure, except for vehicles which are permitted to be on Railtrack controlled infrastructure only within possessions.

B2.3.2 Design

The vehicle design requirements mandated in this document are to be complied with by all vehicles of previously uncertificated designs with a Certificate of Conformance for Vehicle Design signed on or after 6 December 2003. In addition to this the design requirements shall be complied with by any future vehicles, built to the same design as a vehicle already having Engineering Acceptance, which enter service on Railtrack controlled infrastructure on or after 2 December 2007.

Action to bring existing trains and train systems into compliance with these requirements is not required.

B2.3.3 Assessment

All assessments of **electromagnetic** compatibility (**EMC**) forming part of a Route Acceptance Safety Case (RASC) shall make use of all relevant **EMC susceptibility** and emissions data which has been published by the infrastructure controller. As far as practicable the latest data shall be used.

Where it is required prior to 6 December 2003 to demonstrate compatibility, in accordance with section B7.2, with infrastructure systems for which all the information required by section B6 has not yet been made available, the train operator shall submit his proposals and assumptions to the infrastructure controller in respect of **susceptibility** parameters and the methodology to be used. If accepted by the infrastructure controller these can be used to demonstrate compatibility. For this purpose it is permissible for the train operator to make use of any information relating to **susceptibility** parameters and acceptable methodologies which has been provided by the infrastructure controller even though the form in which this information has been developed and provided is not fully compliant with section B6. If the infrastructure controller does not accept the train operator's proposals for **susceptibility** parameters and methodology, the infrastructure controller shall specify the basis on which compatibility is to be demonstrated.

All assessments for an RASC submitted for route acceptance on or after 3 December 2005 shall be based fully on the data published by the infrastructure controller in accordance with this document.

B2.3.4 General

All other requirements mandated in this document, including the responsibility to manage immunity and emission levels of existing trains set out in sections B5.1 and B5.2.1, shall be complied with from 7 December 2002.

The requirements of section B5.1 a) and B5.2.2 are within the scope of Vehicle Acceptance Body approval.

B2.4 General compliance requirements

Until the compliance dates, or the date by which compliance is achieved (if earlier), the applicable requirements of the predecessor documents shall continue to be met (see Part A for details).

After the compliance dates, or after the date by which compliance is achieved (if earlier), Railway Group members shall not deviate from the requirements set out in this document.