



RIS

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Rail Industry Standard for the Design of On-track Machines in Working and Travelling Modes

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Rail Industry Standard

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Issue record

Issue	Date	Comments
One	September 2013	Original document The requirements related to working and travelling modes in GM/RT2400 issue four and GM/RT2307 issue one have been transferred to this document.

Superseded or replaced documents

The following Railway Group documents are superseded or replaced, either in whole or in part as indicated:

Superseded documents	Sections superseded	Date when sections are superseded
GM/RT2400 issue four, September 2011 Engineering Design of On-Track Machines [requirements related to working mode]	All	December 2013
GM/RT2307, issue one, April 1995 Self Contained Electrical Power Supply Systems Fitted to Infrastructure Support Vehicles	All	December 2013

GM/RT2400 issue four and GM/RT2307 issue one cease to be in force and are withdrawn as of 07 December 2013.

Supply

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Part 1 Introduction

1.1 Purpose of this document

- 1.1.1 This document provides a standard for the design of on-track machines in working and travelling modes, for the rail industry to use if it so chooses.
- 1.1.2 Specific requirements for the design of on-track machines in running mode are set out in GM/RT2400.

1.2 Application of this document

- 1.2.1 A member of RSSB may choose to adopt all or part of this document through company procedures or contract conditions. Where this is the case the member of RSSB will specify the nature and extent of application.
- 1.2.2 Specific compliance requirements and dates have therefore not been specified since these will be the subject of the internal procedures or contract conditions of the companies which choose to adopt this standard.

1.3 Health and safety responsibilities

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1.4 The structure of this document

- 1.4.1 This document is set out as a series of requirements, in some cases followed by relevant guidance. The guidance is indicated by prefixing the paragraph number with the letter 'G'.

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1.6 Approval and authorisation of this document

- 1.6.1 The content of this document was approved by Plant Standards Committee on 12 June 2013.
- 1.6.2 This document was authorised by RSSB on 23 July 2013.

Rail Industry Standard for the Design of On-track Machines in Working and Travelling Modes

Part 2 Requirements for On-track Machines in Working Mode

2.1 General

- 2.1.1 On-track machines shall comply with BS EN 14033-2:2008+A1:2011.

2.2 Working limit contour

- 2.2.1 Where movement of components of the on-track machine in working mode exceeds the running and travelling mode(s) swept envelope(s), then the extent by which the swept envelope is exceeded shall be stated in the operating instructions. The operating instructions shall state 'This on-track machine may be used with adjacent railway lines open to traffic only if the safe system of work to be adopted has taken account of swept envelope exceedance'.

- 2.2.2 All control systems designed to control exceedance of the running and travelling mode(s) swept envelope(s), in compliance with BS EN 14033-2:2008+A1:2011 clause 5.3.2.3 and clause 5.3.4 shall meet the requirements of BS EN ISO 13849-1:2008. The combined effect of correct use by an operator, the control system, the operating system and the safety system shall be to achieve a performance level of at least d.

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- G 2.2.2.1 The validation of the safety functions and categories in 2.2.2 is set out in BS EN ISO 13849-2:2008.
- G 2.2.2.2 Software within systems should be validated as set out in BS EN ISO 13849-1:2008 clause 4.6 and also software and electro technical solutions should be validated as set out in BS EN ISO 61508 series.
- G 2.2.2.3 To demonstrate compliance with 2.2.2, the manufacturer should have completed an analysis, for example, using failure modes and effects analysis (FMEA), failure modes, effects and criticality analysis (FMECA), safety integrity level (SIL) or decision tree, which could also be supported by physical testing as appropriate. See also G 4.1.2.1 of this document.
- G 2.2.2.4 The manufacturer should consider the load to be lifted and where practicable an engineering means to control the position of the load.
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2.3 Working cab and operator-machine interface

2.3.1 Working cabs

- 2.3.1.1 Where the on-track machine does not comply with BS EN 14033-3:2009+A1:2011 clause 5.11, this shall be stated in the operating instructions.

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- G 2.3.1.1.1 When it is not reasonably practicable to comply with BS EN 14033-3:2009+A1:2011 clause 5.11 and it is possible for the movement of the on-track machine to be limited to 4 mph (or less), instructions should be included in the operating instructions to describe a means to locally supervise the movement along the track.
- G 2.3.1.1.2 Where the speed of the on-track machine permits a person walking with the on-track machine, the means of supervising the movement along the track is permitted to include operational rules such as radio communication with personnel on the ground.
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