BS EN 14033-2:2017

BSI Standards Publication

# Railway applications — Track — Railbound construction and maintenance machines

Part 2: Technical requirements for travelling and working

bsi.

# National foreword

This British Standard is the UK implementation of EN 14033-2:2017. It supersedes BS EN 14033-2:2008+A1:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee RAE/2, Railway Applications - Track.

A list of organizations represented on this committee can be obtained on request to its secretary.

The UK committee draws users' attention to the distinction between normative and informative elements, as defined in Clause 3 of the CEN/CENELEC Internal Regulations, Part 3.

Normative: Requirements conveying criteria to be fulfilled if compliance with the document is to be claimed and from which no deviation is permitted.

Informative:Information intended to assist the understanding or use of the document. Informative annexes do not contain requirements, except as optional requirements, and are not mandatory. For example, a test method may contain requirements, but there is no need to comply with these requirements to claim compliance with the standard.

When speeds in km/h require unit conversion for use in the UK, users are advised to use equivalent values rounded to the nearest whole number. The use of absolute values for converted units should be avoided in these cases. Please refer to the table below for agreed conversion figures:

| INS, RST and ENE speed conversions | |
|---|---|
| km/h | mph |
| 5 | 3 |
| 10 | 5 |
| 20 | 10 |
| 30 | 20 |
| 80 | 50 |
| 160 | 100 |
| 190 | 120 |

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.


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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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**Amendments/corrigenda issued since publication**

| Date | Text affected |
|---|---|

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 14033-2

May 2017

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Supersedes EN 14033-2:2008+A1:2011

English Version

# Railway applications - Track - Railbound construction and maintenance machines - Part 2: Technical requirements for travelling and working

Applications ferroviaires - Voie - Machines de construction et de maintenance empruntant exclusivement les voies ferrées - Partie 2 : Prescriptions techniques pour le déplacement et le travail

Bahnanwendungen - Oberbau - Schienengebundene Bau- und Instandhaltungsmaschinen - Teil 2: Technische Anforderungen an die Versetzfahrt und die Arbeitsstellung

This European Standard was approved by CEN on 3 September 2016.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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## European foreword

This document (EN 14033-2:2017) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2017, and conflicting national standards shall be withdrawn at the latest by November 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14033-2:2008+A1:2011.

This series of standards EN 14033, *Railway applications — Track — Railbound construction and maintenance machines*, consists of the following parts:

— *Part 1: Technical requirements for running*;

— *Part 2: Technical requirements for travelling and working*;

— *Part 3: General safety requirements*.

Amended clauses compared to EN 14033-2:2008+A1:2011:

| | |
|---|---|
| General | Addition of travelling mode for machines, when moving between sites and not in running mode |
| General | All references updated to latest issue |
| 5.1.2 | Additional diagram added to clarify stress points |
| 5.2.1.1 | Devices attached to rail to prevent overturning have been forbidden |
| 5.2.1.2 | No longer permitted to exempt proof of stability by testing |
| 5.2.2 | New subclause for prevention of derailment in running mode |
| 5.2.3.2.1 | New Table 6 to show comparison between track parameters in EN 14363 and degraded working track |
| 5.2.3.3 | Rules for deviating from prevention of derailment extended for rail cranes |
| 5.3.1 | Requirements for gauge in travelling mode added |
| 5.3.2.2.1 | Lateral limit conditions in working mode clarified |
| 5.3.2.2.2 | More than one lateral working limit now permitted |
| 5.3.2.2.4 | Warning light colour changed from red to orange |
| 5.3.3 | Previous requirement for working limit in lower area withdrawn and replaced by general requirement about exceeding gauge |
| 5.4.2 | New requirement for work surface added |
| 5.5.2 | Requirement for steps and handrails added |

| | |
|---|---|
| 5.8.2 | Reminder for size of electrical bonding added |
| 5.8.6 | New section for pantographs added |
| 5.9.1 | Material requirements updated |
| 5.9.2 | New section for fire detection and extinguishing systems added |
| 5.11 | Additional requirements for marker lights added |
| 5.12.1 | Additional requirement for travelling and working brake added |
| 5.12.2 | Relaxation permitted for stopping distance at slow speed, with additional requirements for brake architecture |
| 5.12.3 | Requirement for all potentially independent vehicles to have parking brake |
| 5.13.2 | Additional requirement for warning horn in travelling mode added |
| 5.14 | Recovery conditions deleted because duplicate to running mode |
| 5.15 | New section on data recorders added |
| 5.16 | New section on compatibility with ground based systems added |
| 5.17 | New section on traction equipment added |
| 5.18 | New section on laser equipment added |
| 5.19 | New section on remote control added |
| Clause 8 | Service number requirements deleted because duplicate to running mode |
| Annexes | All annexes reviewed and updated |
| | Annex for certification withdrawn |
| Annex L | New annex on earthing pantographs added |

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

# Introduction

This European Standard was prepared to meet the basic requirements of EU Directives to facilitate an open market for goods and services.

This document is the second of a series of three parts of the European Standard: *Railway applications — Track — Railbound construction and maintenance machines*:

— Part 1 covers the safety and technical requirements for the machines in running mode; this is a harmonized standard with the Technical Specification for Interoperability (TSI) for Locomotives and Passenger Rolling Stock Commission decision 2011/291/EU, which itself meets the essential requirements to ensure the interoperability of the rail system as described in Article 1 of European Directive 2008/57/EC;

— Part 2 covers the technical requirements for the machines in working and travelling modes;

— Part 3 covers the safety requirements for the machines in working and travelling modes; this is a harmonized standard with the European Machinery Directive 2006/42/EC.

For deviations or special national conditions, see Annex A.

The risks that exist in all mechanical, electrical, hydraulic, pneumatic and other components of machines and that are dealt with in the relevant European Standards are not within the scope of this European Standard. If necessary, references are made to appropriate standards of this type.

# 1 Scope

## 1.1 General

This European Standard defines the specific technical railway requirements for travelling and working with machines and other vehicles used for construction, maintenance and inspection of track, structures, track formation and fixed electric traction equipment as specified in EN 14033-1.

This European Standard applies to all railbound machines and other vehicles – referred to as machines – working exclusively on the railway (utilizing adhesion between the rail and rail wheels) and used for construction, maintenance and inspection of track, structures, infrastructure and fixed electric traction equipment.

This European Standard applies to machines that are intended to operate signalling and control systems. Other similar machines are dealt with in other European Standards, see Annex M.

This European Standard is applicable to 1 435 mm nominal track gauge. Some requirements may be applicable for working on infrastructures with nominal narrow track gauge or nominal broad track gauge lines, tramways, railways utilizing other than adhesion between the rail and rail wheels and underground infrastructures.

This European Standard covers the safety requirements for the railway specific problems for travelling and working on different infrastructures. The application of these requirements is the object of a verification procedure, which does not form part of this European Standard, but an Annex I is included for information. In all cases an authorization to work is needed to access the infrastructure.

This European Standard is also applicable for machines that in working position are partly supported on the ballast or the formation.

This European Standard does not apply to:

— the requirements with regard to the quality of work, including the related measuring methods, and the performance of the machine;[1)]

— the specific requirements established by each railway infrastructure manager for the use of machines which will be the subject of negotiation between the manufacturer and the machine keeper.

This European Standard does not deal with the following additional requirements:

— working methods;

— operation in severe working conditions requiring special measures (e.g. work in tunnels or in cuttings, extreme environmental conditions such as high or low temperatures, corrosive environment, tropical environment, contaminating environments, strong magnetic fields);

— operation subject to special rules (e.g. potentially explosive atmospheres);

— hazards due to errors in software;

— hazards occurring when used to handle suspended loads which may swing freely;

1) Parameters for the measurement of track quality are dealt with in EN 13848-3.