



NSAI
Standards

Irish Standard
I.S. EN 14033-3:2017

Railway applications - Track - Railbound construction and maintenance machines - Part 3: General safety requirements

I.S. EN 14033-3:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN 14033-3:2017 is the adopted Irish version of the European Document EN 14033-3:2017, Railway applications - Track - Railbound construction and maintenance machines - Part 3: General safety requirements

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14033-3

May 2017

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Supersedes EN 14033-3:2009+A1:2011

English Version

**Railway applications - Track - Railbound construction and
maintenance machines - Part 3: General safety
requirements**

Applications ferroviaires - Voie - Machines de
construction et de maintenance empruntant
exclusivement les voies ferrées - Partie 3 :
Prescriptions générales pour la sécurité

Bahnanwendungen - Oberbau - Schienengebundene
Bau- und Instandhaltungsmaschinen - Teil 3:
Allgemeine Sicherheitsanforderungen

This European Standard was approved by CEN on 20 February 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN 14033-3:2017 (E)**European foreword**

This document (EN 14033-3:2017) 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 shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14033-3:2009+A1:2011.

Amended clauses compared to EN 14033-3:2009+A1:2011:

General	All references updated to latest issue
3.2 to 3.4	Different modes of machine defined
3.5	Definition added
4	New paragraph added as a reminder about risk assessment
5.2.3	Minimum width of walkways increased to 800mm with additional consideration for fire escape routes
5.4.7	Ventilation air requirements made per person, extra requirements deleted
5.7	Maximum pressure at which non-mesh guards are to be provided reduced to 50kPa
5.8	Additional requirements added for communication between work places
5.11	Requirements for visibility of track amended to reflect differing requirements of working and travelling modes
5.12.2	Emergency stopping devices now only required where movement presents a danger to personnel
5.12.3	New section added for emergency stopping of power sources
5.15	New section added for control systems and minimum performance level requirements
5.16.1	Additional requirement added concerning single point failures
5.22	Additional requirements added for corrosion and protective devices for fuel and hydraulic systems
5.23	Minimum noise level requirement added for travelling mode and additional requirements for working mode
5.25	Material requirements for fire protection standardised with EN 14033 parts 1 and 2; additional requirements added for fire detection and suppression systems
5.27.3	More detailed requirements added for external illumination on machines

5.28	New section added on lasers
5.29.2	Clarity added for existing requirement on warning horns
5.30	New section added on temperature range
5.33	New section added on moveable components
6.3	New requirements added for portal cranes
6.7	New section added on ballast chains
6.8	New section added on ballast dust
6.9	New section added on rail profiling
8	Information for use updated to reflect changes in standard
Annex B	Annex updated to reflect changes in standard
Annex C	Noise test code updated
Annex D	New annex for camera monitor systems
Annex E	New annex for close range surveillance systems
Annex F	New annex for vibration test code

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

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*

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

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Introduction

This document is a type C standard as stated in EN ISO 12100:2010.

This document is the third 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, 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 railway specific 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.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous events are covered are indicated in the scope of this document.

When provisions of this type C standard are different from those, which are stated in type B standards, the provisions of this type C standard take precedence over the provisions of the other standards.

1 Scope

This European Standard specifies the significant hazards, hazardous situations and events common to rail bound machines and arising due to the adaptation for their use on railways. These machines are intended for construction, maintenance and inspection of track, structures, infrastructure and fixed electric traction equipment, when they are used as intended or under conditions of misuse which are reasonably foreseeable by the manufacturer, see Clause 4.

This European Standard applies to railbound machines and other vehicles - referred to as machines - working exclusively on the railway (utilizing friction adhesion between the rail and rail wheels) but including machines that in working position are partly supported on the ballast or the formation 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 G.

This European Standard specifies the common hazards, in normal circumstances, during running, assembly and installation, commissioning, use (including setting, programming, and process changeover), operation, cleaning, fault finding, maintenance and de-commissioning of the machines. Additional safety measures can be required by exceptional circumstances, such as extreme ambient temperatures highly corrosive or contaminating environment; e.g. due to the presence of chemicals, and potentially explosive atmospheres.

Specific measures for exceptional circumstances are not dealt with in this European Standard. The specific measures for exceptional circumstances introduced by a railway infrastructure manager and requirements introduced by the manufacturer and/or machine operator as referred to in the scope are not dealt with in this European Standard. When such additional measures are necessary, they should be agreed between the manufacturer and the machine operator. The manufacturer will be responsible independently of this European Standard, for the provision of risk reduction measures for additional hazards created by any additional or alternative requirements.

NOTE This European Standard deals only with the additional hazards from the adaptation of a machine for its use on rail. Other standards specific to the particular machine as far as available will need to be used in addition to this European Standard to give the complete requirements.

The common hazards specified include the general hazards presented by the machines, and also the hazards presented by the following specific machine functions, common to two or more machine types:

- ballast excavation, ballast cleaning, ballast regulating, ballast consolidating;
- tamping;
- track renewal;
- craning;
- maintenance of the components of the infrastructure;

during commissioning, use, maintenance and servicing.

This European Standard does not deal comprehensively with specific machine functions other than the common functions listed in the previous paragraph, or with all possible hazards presented by complete machines or by the combination of functions.

For such specific functions or hazards, the use of specific European Standards is recommended.

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This European Standard does not deal with:

- requirements with regard to the quality of work and the performance of the machine;
- machines that utilize the overhead contact line for traction purposes;
- specific requirements introduced by a railway infrastructure manager;
- additional or alternative requirements introduced by the manufacturer and/or operator.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2, *Classification of fires*

EN 3 (all parts), *Portable fire extinguishers*

EN 280, *Mobile elevating work platforms — Design calculations — Stability criteria — Construction — Safety — Examinations and tests*

EN 349, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body*

EN 474-1:2006+A4:2013, *Earth-moving machinery - Safety - Part 1: General requirements*

EN 547-1, *Safety of machinery — Human body measurements — Part 1: Principles for determining the dimensions required for openings for whole body access into machinery*

EN 547-2, *Safety of machinery — Human body measurements — Part 2: Principles for determining the dimensions required for access openings*

EN 547-3, *Safety of machinery — Human body measurements — Part 3: Anthropometric data*

EN 614-1, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 614-2, *Safety of machinery — Ergonomic design principles — Part 2: Interactions between the design of machinery and work tasks*

EN 618, *Continuous handling equipment and systems — Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors*

EN 619, *Continuous handling equipment and systems — Safety and EMC requirements for equipment for mechanical handling of unit loads*

EN 620, *Continuous handling equipment and systems — Safety and EMC requirements for fixed belt conveyors for bulk materials*

EN 842, *Safety of machinery — Visual danger signals — General requirements, design and testing*

EN 894-1, *Safety of machinery — Ergonomics requirements for the design of displays and control actuators — Part 1: General principles for human interactions with displays and control actuators*

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