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Standards

Irish Standard  
I.S. EN 13977:2011

# Railway applications - Track - Safety requirements for portable machines and trolleys for construction and maintenance

## I.S. EN 13977:2011

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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English Version

## Railway applications - Track - Safety requirements for portable machines and trolleys for construction and maintenance

Applications ferroviaires - Voie - Prescriptions de sécurité pour machines portables et lorries pour la construction et la maintenance

Bahnanwendungen - Oberbau - Sicherheitsanforderungen an tragbare Maschinen und Rollwagen für Bau und Instandhaltung

This European Standard was approved by CEN on 24 December 2010.

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.

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## Foreword

This document (EN 13977:2011) 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of an identical text or by endorsement, at the latest by August 2011, and conflicting national standards shall be withdrawn at the latest by August 2011.

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 13977:2005+A1:2007.

The main changes compared to the previous version are:

- change of scope;
- change of definition;
- addition of 5.20, Vibration;
- addition of 5.21, Environmental conditions;
- editorial modification of Annex ZA.

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.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## **Introduction**

This document is a type C standard as stated in EN ISO 12100-1:2003 and EN ISO 12100-2:2003.

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

When the provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

Technical characteristics, deviations or special national conditions may be the subject of special requirements of the infrastructure manager controller and/or negotiation between the user and the manufacturer, see Annex F.

## 1 Scope

### 1.1 General

This European Standard deals with the technical requirements to minimise the railway specific significant hazards of portable machines and trolleys intended for work on tracks as listed in Clause 4 which can arise during the commissioning, operation and maintenance of portable machines and trolleys when used as intended and under the conditions foreseen by the manufacturer. It does not deal with the performance of the machines, e.g. cutting, drilling, grinding.

This European Standard applies to portable machines and trolleys with rail wheels or rollers designed for work whilst on the track with nominal track gauges of 1 435 mm and 1 668 mm and clearance gauge as defined in Annex B<sup>1)</sup> including, e.g. cutting and drilling machines.

This European Standard does not apply to the additional hazards that may exist due to:

- the coupling together of trolleys;
- the towing or pushing of trolleys by other vehicles;
- the use of trolleys for the transportation of persons;
- self propelled rail wheeled machines, trolleys coupled to another towing vehicle;
- hazards due to laser systems.

Other special vehicles used on railway tracks are dealt with in other European Standards, see Annex H.

This European Standard does not apply to the following:

- requirements for quality of the work or performance of the machine;
- regulations defined by each infrastructure controller for portable machine and trolley operation which shall be the subject of negotiation between the user and the manufacturer;
- portable machines used from railway vehicles.

This European Standard establishes the additional requirements for electromagnetic compatibility due to e.g. electronic components as well as for hazards due to vibration.

This European Standard does not establish the additional requirements for the following:

- operation in severe conditions, e.g. extreme environmental conditions such as: high temperatures, corrosive environment, tropical environment, contaminating environments, strong magnetic fields;
- operation subject to special rules such as potentially explosive atmospheres;
- hazards occurring during decommissioning and/or recycling;
- hazards due to wind speed;
- hazards due to natural causes, e.g. earthquake, lightning, flooding, etc.

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1) For portable machines and trolleys used on railway lines with a different clearance gauge to that defined in Annex B, special requirements concerning the clearance gauge are permitted to be applied.



## 1.2 Validity of this document

This European Standard applies to portable machines and trolleys that are ordered after the date of publication of this standard.

## 2 Normative references

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

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 982, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

EN 1032, *Mechanical vibration — Testing of mobile machinery in order to determine the vibration emission value*

EN 1837, *Safety of machinery — Integral lighting of machines*

EN 13309, *Construction machinery — Electromagnetic compatibility of machines with internal power supply*

EN 13674-1:2003+A1:2007, *Railway applications — Track — Rail — Part 1: Vignole railway rails 46 kg/m and above*

EN 13715, *Railway applications — Wheelsets and bogies — Wheels — Tread profile*

EN 15273-2, *Railway applications — Gauges — Part 2: Rolling stock gauge*

EN 15746-1:2010, *Railway applications — Track — Road-rail machines and associated equipment — Part 1: Technical requirements for running and working*

EN 28662-1, *Hand-held portable power tools — Measurement of vibrations at the handle — Part 1: General (ISO 8662-1:1988)*

EN 50121-3-1:2006, *Railway applications — Electromagnetic compatibility — Part 3-1: Rolling stock — Train and complete vehicle*

EN 50121-3-2:2006, *Railway applications — Electromagnetic compatibility — Part 3-2: Rolling stock — Apparatus*

EN 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

EN ISO 3744:2009, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane (ISO 3744:1994)*

EN ISO 3746:2009, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:1995, including Cor 1:1995)*

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