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KONSOLIDEERITUD TEKST**

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13977:2005+A1:2007 sisaldab Euroopa standardi EN 13977:2005+A1:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 14.09.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13977:2005+A1:2007 consists of the English text of the European standard EN 13977:2005+A1:2007.</p> <p>This document is endorsed on 14.09.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This document deals with the technical requirements to minimise the railway specific significant hazards of portable machines and trolleys used for work on tracks as listed in clause 4 and annex A which can arise during the commissioning, the operation and the maintenance of portable machines and trolleys when used as intended and under the conditions foreseen by the manufacturer. It does not deal with the general function of the machines (e.g. cutting, drilling, grinding).</p>	<p>Scope:</p> <p>This document deals with the technical requirements to minimise the railway specific significant hazards of portable machines and trolleys used for work on tracks as listed in clause 4 and annex A which can arise during the commissioning, the operation and the maintenance of portable machines and trolleys when used as intended and under the conditions foreseen by the manufacturer. It does not deal with the general function of the machines (e.g. cutting, drilling, grinding).</p>
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Võtmesõnad:

English Version

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

Applications ferroviaires - Voie - Prescriptions de sécurité pour machines et lorries portables 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 20 August 2004 and includes Amendment 1 approved by CEN on 26 May 2007.

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Foreword

This document (EN 13977:2005+A1:2007) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2008 and conflicting national standards shall be withdrawn at the latest by January 2008.

This document includes Amendment 1 approved by CEN on 2007-05-26.

This document supersedes EN 13977:2005.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

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.

For relationship with EU Directive, 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, 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 United Kingdom.

0 Introduction

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

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.

Because the EU Directive "Machines" does not consider railway specific problems of construction and maintenance machines, additional requirements and verifications are necessary and these are dealt with in this document (see 6.2). Portable machines and trolleys for track construction and maintenance, which comply with these requirements, receive a special marking in accordance with 6.5.3, in addition to the CE mark.

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

1 Scope

1.1 General

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

This document applies to portable machines and portable trolleys designed for work on the track with nominal track gauges of 1 435 mm and 1 668 mm and clearance gauge as defined in annex B including cutting machines and those designed for working on wooden sleepers.

This document does not apply to portable trolleys coupled together, whether or not self propelled, and trolleys used for transporting personnel.

For portable machines and trolleys used on railway lines with a different clearance gauge to that defined in annex B specific requirements concerning the clearance gauge may apply¹⁾.

This document 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 document does not establish the additional requirements for the following:

- operation in severe conditions (e.g. extreme environmental conditions such as: freezing applications, high temperatures, corrosive environment, tropical environment, contaminating environments, strong magnetic fields);
- operation subject to special rules as potentially explosive atmospheres;
- electromagnetic compatibility, due to e.g. electronic components;
- hazards occurring during decommissioning and/or recycling;
- hazards due to vibration;
- hazards due to wind speed greater than 35 m/s;
- hazards due to natural causes e.g. earthquake, lightning, flooding etc.
- noise.

NOTE Noise of machines which are dealt with by this document is regarded as a significant hazard. Noise is not covered by this document but will be dealt with in an Amendment to the first edition of this standard. This Amendment will give:

- clauses dealing with noise emission according to EN 1746.
- a noise test code using as a basis for preparation the designation of noise-emission according to the requirements of the Machinery-Directive 98/37/EC, annex I, clause 1.7.4f.

1.2 Validity of this document

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

1) E.g. the specific rules of the infrastructure manager.

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 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 1050:1996, *Safety of machinery — Principles for risk assessment*

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

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

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

EN ISO 3744:1995, *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 3746:1995, *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)*

EN ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 7731, *Ergonomics - Danger signals for public and work areas - Auditory danger signals (ISO 7731:2003)*

EN ISO 9614-2:1996, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning (ISO 9614-2:1996)*

EN ISO 11202:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Survey method in situ (ISO 11202:1995)*

EN ISO 11204:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Method requiring environmental corrections (ISO 11204:1995)*

EN ISO 11688-1:1998, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12001:1996, *Acoustics — Noise emitted by machinery and equipment — Rules for the drafting and presentation of a noise test code (ISO 12001:1996)*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*

EN ISO 15744:2002, *Hand-held non-electric power tools — Noise measurement code — Engineering method (grade 2) (ISO 15744:2002)*

ISO 3864-1:2002, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs in workplaces and public areas*

ISO 3864-2 ^[A1], Graphical symbols — *Safety colours and safety signs — Part 2: Design principles for product safety labels*

ISO 6405-1, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 6405-2, *Earth-moving machinery — Symbols for operator controls and other displays — Part 2: Specific symbols for machines, equipment and accessories*

UIC 505-1:1997, *Railway transport stock — Rolling stock construction gauge*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1:2003, EN ISO 12100-2:2003 and the following apply.

3.1

portable machine

machine designed or adapted to be worked on the track, transportable by hand with or without trolleys or separate supports for movement on rail(s), and be operated by internal combustion, electrical, mechanical, hydraulic, pneumatic energy sources or from an external supply. It is designed so that the machine and/or its separate component parts may be manually placed on or off the track

3.2

portable trolley

equipment for transport of materials, tools and/or various equipment moving on wheels or runners and operated either by human force or by an energy source. It is designed so that it can be manually placed on or off the track

3.3

type verification

procedure for verification of the conformity of the type of portable machine or trolley to the requirements of this standard

3.4

declaration of type verification

document issued after tests, which certifies suitability of the technical design for the operation of a portable machine or trolley

3.5

conformity to type

procedure for verification of the conformity of the individual portable machine or trolley to the machine or trolley which underwent type verification

3.6

stability coefficient

ratio of restoring moment to overturning moment

4 List of significant hazards

The risks referred to in this document are listed in annex A.

5 Safety requirements and/or safety measures

5.1 General

Portable machines and trolleys shall conform to the requirements and/or safety measures of this clause.