Allmaa kaevandamise masinad. Allmaatööde liikurmasinad. Ohutusnõuded. Osa 2: Rööbasliikurid KONSOLIDEERITUD TEKST

Machines for underground mines - Mobile machines working underground - Safety - Part 2: Rail locomotives CONSOLIDATED TEXT

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1889-2:2003+A1:2009 sisaldab Euroopa standardi EN 1889-2:2003+A1:2009 ingliskeelset teksti.	This Estonian standard EVS-EN 1889-2:2003+A1:2009 consists of the English text of the European standard EN 1889-2:2003+A1:2009.
Standard on kinnitatud Eesti Standardikeskuse 29.05.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 29.05.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 01.04.2009.	Date of Availability of the European standard text 01.04.2009.
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Võtmesõnad: portable equipment, protective mea, railroad vehicles, railway vehicle components, railway vehicles, safety, safety devices, safety engineering, safety requirements, specification (approval), specifications, testing, transportable, underground, underground mining

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English Version

Machines for underground mines - Mobile machines working underground - Safety - Part 2: Rail locomotives

Machines pour l'exploitation de mines souterraines - Machines mobiles souterraines - Sécurité - Partie 2: Locomotives sur rails

Maschinen für den Bergbau unter Tage - Bewegliche Maschinen für die Verwendung unter Tage - Sicherheit - Teil 2: Lokomotiven

This European Standard was approved by CEN on 13 February 2003 and includes Amendment 1 approved by CEN on 24 February 2009.

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Foreword

This document (EN 1889-2:2003+A1:2009) has been prepared by Technical Committee CEN/TC 196, "Machines for underground mines - Safety", 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of an identical text or by endorsement, at the latest by October 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2009-02-24.

This document supersedes EN 1889-2:2003.

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 EC Directive(s).

⟨A1⟩ For relationship with EC Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. ⟨A1⟩

Annexes A, B, C, D and E are normative.

This document includes a Bibliography.

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.

Introduction

This European Standard is a type C standard as stated in EN 1070.

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

The standard takes into account the current state of the art and technical facilities to use in order to exclude or prevent, as far as possible, hazards when rail locomotives are used underground.

When compiling this standard it has been assumed that:

— components are:

a) designed in accordance with good engineering practice, taking account of expected shocks and vibrations and calculation codes, including all failure modes;

b) of sound mechanical and electrical construction;

c) made of materials with adequate strength and of suitable quality; and

d) free of defects.

e) harmful materials, such as asbestos are not used;

f) components are kept in good repair and working order, so that the required dimensions remain fulfilled despite wear;

g) negotiations have taken place between the manufacturer or authorised representative, purchaser and/or user (e.g. for fire resistant fluids, safety equipment and load restraining devices).

1 Scope

This European standard specifies the safety requirements and tests for rail locomotives for use in underground mining (i.e. mine locomotives) and other underground workings (e.g. tunnelling locomotives).

1.1 This European standard deals with the technical requirements to minimise the hazards listed in clause 4 which can arise during the commissioning, the operation and the maintenance of locomotives when carried out in accordance with the specifications given by the manufacturer or his authorised representative.

1.2 This European standard does not address the special hazards associated with the rack drive of rack and pinion locomotives.

1.3 This European standard does not deal with radiation and vibration. It does not address remote control locomotives or operation in potentially explosive atmospheres. Hazards due to noise are excluded from this standard, but a separate standard is in preparation where hazards due to noise will be addressed.

1.4 This European standard applies to locomotives which are manufactured after the date of issue of this standard.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 292-1:1991, *Safety of machinery — Basic concepts, general principles for design - Part 1: Basic terminology, methodology*

EN 292-2:1991 + EN 292-2:1991/A1:1995, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications*

EN 294, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

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

EN 418:1992, *Safety of Machinery — Emergency stop equipment, functional aspects — Principles for design*

EN 457, *Safety of machinery — Auditory danger signals — General requirements, design and testing (ISO 7731:1986, modified)*

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 563, *Safety of machinery — Temperatures of touchable surfaces — Ergonomics data to establish temperature limit values for hot surfaces*

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

EN 894-2, *Safety of machinery — Ergonomic requirements for the design of displays and control actuators — Part 2: Displays*

EN 894-3, *Safety of Machinery — Ergonomic requirements for the design of displays and control actuators — Part 3: Control actuators*

EN 953, *Safety of machinery — Guards — General requirements for the design and construction of fixed and moveable guards*

EN 954-1, *Safety of machinery — Safety related parts of control systems — Part 1: General principles for design*

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 1070:1998, *Safety of machinery — Terminology*

EN 1679-1, *Reciprocating internal combustion engines — Safety — Part 1: Compression ignition engines*

EN 13202:2000, *Ergonomics of the thermal environment — Temperatures of touchable hot surfaces - Guidance for establishing surface temperature limit values in production standards with the aid of EN 563*

EN 60204-1:1998, *Safety of Machinery — Electrical equipment of machines — Part 1: General requirements*

EN ISO 3411, *Earth-moving machinery — Human physical dimensions of operators and minimum operator space envelope (ISO 3411:1995)*

EN ISO 8030, *Rubber and plastic hoses — Method of test for flammability*

ISO 1813, *Belt drives — V-ribbed belts, joined V-belts and V-belts including wide section belts and hexagonal belts — Electrical conductivity of antistatic belts: Characteristics and methods of test*

ISO 3864, *Safety colours and safety signs*

ISO 6405-1, *Operation and maintenance of earth moving machinery — Specification for common symbols for operator controls and other displays*

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

ISO 6805, *Rubber hoses and hose assemblies for underground mining — Wire-reinforced hydraulic types for coal mining — Specification*

IEC 60332-1, *Tests on electric cables under fire conditions — Part 1: Test on a single vertical insulated wire or cable*