Raudteealased rakendused. Veerem. Elektriohuga seotud kaitsemeetmed

Railway applications - Rolling stock - Protective provisions relating to electrical hazards

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 50153:2005 sisaldab Euroopa standardi EN 50153:2002 ingliskeelset teksti.	This Estonian standard EVS-EN 50153:2005 consists of the English text of the European standard EN 50153:2002.
Standard on kinnitatud Eesti Standardikeskuse 05.02.2003 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 05.02.2003 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 25.06.2002.	Date of Availability of the European standard text 25.06.2002.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

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English version

Railway applications - Rolling stock - Protective provisions relating to electrical hazards

Applications ferroviaires - Matériel roulant - Mesures de protection vis-à-vis des dangers d'origine électrique

Bahnanwendungen - Fahrzeuge - Schutzmaßnahmen in Bezug auf elektrische Gefahren

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

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Foreword

This European Standard was prepared by SC 9XB, Electromechanical material on board of rolling stock, of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

This European Standard represents the second edition of the standard and is technically based on the International Standard IEC 61991 which is the adaptation of EN 50153:1996 into IEC format. IEC 61991 was submitted successfully to a parallel vote in 1999. The European references, special national conditions and A-deviations have been restored in this European Standard.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50153 on 2002-05-01.

This European Standard supersedes EN 50153:1996.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2003-05-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2005-05-01

Annexes designated “normative” are part of the body of the standard.
Annexes designated “informative” are given for information only.
In this standard, annexes A and B are normative and annex C is informative.

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Introduction

It is generally accepted that safety depends on human factors, based on the normal behaviour of the operators involved, as well as upon technical factors.

For these reasons, this European Standard, in several instances, leaves a choice to the contracting parties between two alternatives. These alternatives consist either in the provision of operating rules, regulations and procedures, or in the application of technical measures such as mechanical or electrical *interlocking devices*.

A list of the cases for which the contracting parties (e.g. user and manufacturer) should reach agreement before signing the contract is included in annex B.

1 Scope

This European Standard offers a set of rules that are applied in the design and manufacture of electrical installations and equipment to be used on rolling stock so as to protect the persons from *electric shocks*.

The methods used to satisfy the rules may differ, in accordance with the procedures and practices of the operating organization.

This European Standard is applicable to vehicles of rail transport systems, road vehicles powered by an external supply (e.g. trolley buses), magnetic levitated vehicles and to the electrical equipment installed in these vehicles.

This European Standard does not apply to

- mine railways in underground mines,
- crane installations, moving platforms and similar transport systems on rails,
- funicular railways,
- temporary constructions.

Testing of vehicles against the requirements of this European Standard is not included. For this, refer to EN 50215.

2 Normative references

This European Standard incorporates, by dated or undated references, provisions from other publications. These normative references are cited at the appropriate place 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 50122-1	1997	Railway applications - Fixed installations Part 1: Protective provisions relating to electrical safety and earthing
EN 50124-1	2001	Railway applications - Insulation coordination Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
EN 50126	1999	Railway applications - The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS)

EN 50163	1995	Railway applications - Supply voltages of traction systems
EN 50215	1999	Railway applications - Testing of rolling stock after completion of construction and before entry into service
EN 60439	Series	Low-voltage switchgear and controlgear assemblies (IEC 60439 series, modified)
EN 60529 + corr. May	1991 1993	Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)
EN 61310-1	1995	Safety of machinery - Indication, marking and actuation Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995)
HD 366 S1	1977	Classification of electrical and electronic equipment with regard to protection against electric shock (IEC 60536: 1976)
HD 384	Series	Electrical installations of buildings (IEC 60364 series, modified)
HD 384.4.41 S2	1996	Electrical installations of buildings Part 4: Protection for safety Chapter 41: Protection against electric shock (IEC 60364-4-41:1992, modified)
IEC 60050-191	1990	International Electrotechnical Vocabulary (IEV) Chapter 191: Dependability and quality of service
IEC 60050-441	1984	Chapter 441: Switchgear, controlgear and fuses
IEC 60050-811	1991	Chapter 811: Electric traction
IEC 60050-826	1982	Electrical installations of buildings (harmonized as HD 384.2)
IEC 60479-1	1994	Effects of current on human beings and livestock Part 1: General aspects

3 Definitions

For the purpose of this European Standard, the following definitions apply. For more information relating to definitions of parts of the fixed installations, refer to EN 50122-1 from which these definitions are derived.

NOTE In order to avoid risks of misunderstanding, definitions used in the text are written in italics.

3.1 Definitions concerning persons

3.1.1
skilled person
a person who can judge the work assigned to him and recognize possible dangers on the basis of his professional training, knowledge and experience and of his knowledge of the relevant requirements [IEV 826-09-01]