



BSI Standards Publication

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

This is a preview of "BS EN 50153:2014+A1:...". [Click here to purchase the full version from the ANSI store.](#)

National foreword

This British Standard is the UK implementation of EN 50153:2014+A1:2017. It is identical to EN 50153:2014, incorporating amendment 1:2017. It supersedes BS EN 50153:2014, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CENELEC text carry the number of the CEN/CENELEC amendment. For example, text altered by CENELEC amendment A1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee GEL/9/2, Railway Electrotechnical Applications - Rolling stock.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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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

This European Standard was approved by CENELEC on 2014-03-10. CENELEC 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 CENELEC 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 CENELEC 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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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Contents

Foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms, definitions and abbreviations	7
3.1 Terms and definitions	7
3.2 Abbreviations	10
4 Classification of voltage bands	11
4.1 General principles	11
4.2 Connections between circuits	11
4.3 Exceptions	12
5 Protective provisions against direct contact	12
5.1 General	12
5.2 Protection by insulation	12
5.3 Protection by prevention of access	12
5.4 Protection by the use of band I	15
5.5 Warning labels	15
6 Protective provisions against indirect contact	15
6.1 General	15
6.2 Protective bonding	16
6.3 Disconnection of the supply	16
6.4 Main protective bonding	17
6.5 Clarifications and exceptions with reference to indirect contact	18
6.6 Additional requirements – Bearings	20
7 Power circuit	20
7.1 General principles	20
7.2 Power circuit insulated from the vehicle body or bogie	20
7.3 Power circuit using the vehicle body or bogie	20
8 Additional requirements	21
8.1 General	21
8.2 Current collectors	21
8.3 Capacitors	21
8.4 Plug and socket devices	21
8.5 Special sources	22
Annex A (normative) Special national conditions	23
Annex B (normative) List of items where contracting parties shall co-operate	24
Annex C (informative) Proposals for design of main protective connections	25
C.1 General	25
C.2 Example for main earth connections	26
C.3 Examples of technical specification for steel earthing wires	27
Annex D (informative) Operate over 750 V DC third rail electrified lines in Great Britain	28
D.1 Introduction	28
D.2 Bonding between rail vehicle main body to bogie	28
D.3 Inter-vehicle bonding	28

This is a preview of "BS EN 50153:2014+A1:...". [Click here to purchase the full version from the ANSI store.](#)

Annex ZZ (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC	29
Bibliography.....	31
Figure	
Figure C.1 — Earthing wire	26
Tables	
Table 1 — Voltage bands.....	11
Table 2 — Maximum impedance between each vehicle body of a unit and protective conductor of the fixed installation	18
Table ZZ1 — Correspondence between this European Standard, the TSI “Locomotives and Passenger Rolling Stock” (REGULATION (EU) No 1302/2014 of 18 November 2014) and Directive 2008/57/EC	30

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European foreword

This document (EN 50153:2014) has been prepared by CLC/SC 9XB "Electromechanical material on board rolling stock" from CLC/TC 9X "Electrical and electronic applications for railways".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-03-10
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2017-03-10

This document supersedes EN 50153:2002.

EN 50153:2013 includes the following significant technical changes with respect to EN 50153:2002:

- the document now takes into account EN 50122-1:2011 and UIC leaflet 533:2011;
- other normative references and some definitions have been updated;
- Annex D has been added, Annex C has been changed.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Foreword to amendment 1

This document (EN 50153:2014/A1:2017) has been prepared by CLC/SC 9XB "Electrical, electronic and electromechanical material on board rolling stock, including associated software", from CLC/TC 9X "Electrical and electronic applications for railways".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2018-05-29
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2020-05-29

This document has been prepared under a mandate given to CENELEC 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 ZZ, which is an integral part of this document.

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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 of either 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.

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1 Scope

This European Standard defines requirements to be applied in the design and manufacture of electrical installations and equipment to be used on rolling stock to protect persons from electric shocks.

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

This European Standard does not apply to:

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

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 50122-1:2011¹⁾, *Railway applications — Fixed installations — Electrical safety, earthing and the return circuit — Part 1: Protective provisions against electric shock*

EN 50124-1, *Railway applications — Insulation coordination — Part 1: Basic requirements — Clearances and creepage distances for all electrical and electronic equipment*

EN 50388, *Railway applications — Power supply and rolling stock — Technical criteria for the coordination between power supply (substation) and rolling stock to achieve interoperability*

HD 60364-4-41:2007, *Low-voltage electrical installations — Part 4-41: Protection for safety — Protection against electric shock (IEC 60364-4-41:2005, modified)*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 61140, *Protection against electric shock — Common aspects for installation and equipment (IEC 61140)*

EN 61310-1, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1)*

IEC/TS 60479-1, *Effects of current on human beings and livestock — Part 1: General aspects*

¹⁾ This document is currently impacted by the amendment EN 50122-1:2011/A1:2011.