BS EN 50153:2014+A2:2020

BSI Standards Publication

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

bsi.

National foreword

This British Standard is the UK implementation of EN 50153:2014+A2:2020. It supersedes BS EN 50153:2014+A1:2017, which is withdrawn.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 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, Railway Electrotechnical Applications.

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.

Published by BSI Standards Limited 2020

ISBN 978 0 539 13033 1

ICS 45.060.01

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2014.

Amendments/corrigenda issued since publication

Date	Text affected
30 November 2017	Implementation of CENELEC amendment A1:2017
29 February 2020	Implementation of CENELEC amendment A2:2020: Annex ZZ replaced

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50153:2014+A2

February 2020

ICS 45.060.01

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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 50153:2014 E

Contents

Figure

Tables

European foreword

This document (EN 50513:2014) 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 A2

This document (EN 50153:2014/A2:2020) has been prepared by CLC/SC 9XA "Communication, signalling and processing systems".

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)	2020-08-07
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2020-08-07

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.

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 the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

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.

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 50122-1:2011[1)], *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.