EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 50122-1:2011+A3

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English version

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

Applications ferroviaires - Installations fixes - Sécurité électrique, mise à la terre et circuit de retour - Partie 1: Mesures de protection contre les chocs électriques

Bahnanwendungen - Ortsfeste Anlagen - Elektrische Sicherheit, Erdung und Rückleitung - Teil 1: Schutzmaßnahmen gegen elektrischen Schlag

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 50122-1:2011 E

Foreword

This European Standard was prepared by SC 9XC, Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations), of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways. It was submitted to the formal vote and was approved by CENELEC as EN 50122-1 on 2010-11-16.

This document supersedes EN 50122-1:1997.

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

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) 2011-11-16
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2013-11-16

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directives 96/48/EC (HSR), 2001/16/EC (CONRAIL) and 2008/57/EC (RAIL). See Annex ZZ.

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Foreword to amendment A1

This amendment to the European Standard EN 50122-1:2011 was prepared by SC 9XC, Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations), of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as Amendment A1 to EN 50122-1:2011 on 2011-04-25.

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The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-04-25
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2014-04-25

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Foreword to amendment A2

This document (EN 50122-1:2011/A2:2016) has been prepared by CLC/SC 9XC "Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations)", of 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)	2016-11-23
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2018-11-23

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For the relationship with EU Directive(s) see informative Annex ZZ, included in EN 50122-1:2011.

Foreword to amendment A3

This document (EN 50122-1:2011/A3:2016) has been prepared by CLC/SC 9XC "Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations)".

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)	2016-12-03
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2016-12-03

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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.

Annex ZZ
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex III of the EC Directive 2008/57/EC (also named as New Approach Directive 2008/57/EC Rail Systems: Interoperability).

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the clauses of this standard given in Table ZZ.1 for "Energy" confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZZ.1 - Correspondence between this European Standard, the TSI "Energy" (REGULATION (EU) No 1301/2014 of 18 November 2014) and Directive 2008/57/EC

Clauses of this European Standard	Chapter / § / points / of ENE TSI	Essential Requirements (ER) of Directive 2008/57/EC	Comments
The whole standard is applicable.		1. General Requirements 1.1 Safety 1.5 Technical compatibility	
	4.2.7. Electrical protection coordination arrangements	2. Requirements specific to each sub-subsystem 2.2 Energy 2.2.1 Safety 2.2.3. Technical compatibility	
Clauses directly referenced in the TSI: 5.2.4 5.2.5	4.2.9. Geometry of the overhead contact line 4.2.9.1. Contact wire height		References to the standard EN 50122-1 should be updated in the TSI
5.2.1 5.3.1 5.3.2 6.1.6.2 9.2.2.1 9.2.2.2 9.3.2.1 9.3.2.2	4.2.18. Protective provisions against electric shock		

WARNING: Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

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Tables

1 Scope

This European Standard specifies requirements for the protective provisions relating to electrical safety in fixed installations associated with a.c. and/or d.c. traction systems and to any installations that can be endangered by the traction power supply system.

It also applies to all aspects of fixed installations that are necessary to ensure electrical safety during maintenance work within electric traction systems.

This European Standard applies to all new lines and to all major revisions to existing lines for the following electric traction systems:

a) railways;

b) guided mass transport systems such as

   1) tramways,

   2) elevated and underground railways,

   3) mountain railways,

   4) trolleybus systems, and

   5) magnetically levitated systems, which use a contact line system,

c) material transportation systems.

This European Standard does not apply to:

d) mine traction systems in underground mines;

e) cranes, transportable platforms and similar transportation equipment on rails, temporary structures (e.g. exhibition structures) in so far as these are not supplied directly or via transformers from the contact line system and are not endangered by the traction power supply system;

f) suspended cable cars;

g) funicular railways.

This European Standard does not specify working rules for maintenance.

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 50119:2009, *Railway applications – Fixed installations – Electric traction overhead contact lines*

EN 50122-2, *Railway applications – Fixed installations – Part 2: Protective provisions against the effects of stray currents caused by d.c. traction systems*

EN 50124-1:2001 + A1:2003 + A2:2005, *Railway applications – Insulation coordination – Part 1: Basic requirements – Clearances and creepage distances for all electrical and electronic equipment*

EN 50153:2002, *Railway applications – Rolling stock – Protective provisions relating to electrical hazards*

EN 50163, *Railway applications – Supply voltages of traction systems*

〉A1〈 EN 50345, *Railway applications – Fixed installations – Electric traction – Insulating synthetic rope assemblies for support of overhead contact lines* 〉A1〈

EN 60529:1991 + A1:2000, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989 + A1:1999)*

EN 60898-1:2003 + A11:2005, *Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations – Part 1: Circuit-breakers for a.c. operation (IEC 60898-1:2002, mod.)*

EN 61140:2002 + A1:2006, *Protection against electric shock – Common aspects for installation and equipment (IEC 61140:2001 + A1:2004, mod.)*