BSI Standards Publication

Fixed installations for railway applications — Electrical safety, earthing and the return circuit

Part 1: Protective provisions against electric shock

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National foreword

This British Standard is the UK implementation of EN 50122-1:2022+A1:2025. It supersedes BS EN 50122-1:2022, which is withdrawn.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 CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee GEL/9/3, Railway Electrotechnical Applications - Fixed Equipment.

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

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English Version

[A1] Fixed installations for railway application - Electrical safety, earthing and the return circuit - Part 1: Protective provisions against electric shock [A1]

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

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This document (EN 50122-1:2022) 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) 2023-07-25
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2025-07-25

This document supersedes EN 50122-1:2011 and all of its amendments and corrigenda (if any).

EN 50122-1:2022 includes the following significant technical changes with respect to EN 50122-1:2011:

— some definitions were modified;

— the dimensions for protection by clearance were modified, and there are now voltage dependent differences for high voltage electric traction power supply systems;

— methods for the use of protective obstacles were significantly changed.

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 Standardization Request given to CENELEC by the European Commission and the European Free Trade Association.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

European foreword to Amendment 1

This document (EN 50122-1:2022/A1:2025) has been prepared by 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”.

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1 Scope

This document specifies requirements for the protective provisions relating to electrical safety in fixed installations associated with AC and/or DC traction systems and to any installations that can be endangered by the electric traction power supply system. This also includes requirements applicable to vehicles on electrified lines.

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

This document applies to new electric traction power supply systems and major revisions to electric traction power supply systems for:

a) railways;

b) guided mass transport systems such as

   1) tramways,

   2) elevated and underground railways,

   3) mountain railways,

   4) trolleybus systems,

   5) electric traction power supply systems for road vehicles, which use an overhead contact line system, and

   6) magnetically levitated systems, which use a contact line system;

c) material transportation systems.

This document does not apply to:

a) electric traction power supply systems in underground mines,

b) 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 electric traction power supply system,

c) suspended cable cars,

d) funicular railways,

e) existing vehicles.

This document does not specify working rules for maintenance.

The requirements within this document related to protection against electric shock are applicable to persons only.