# SLOVENSKI STANDARD
# oSIST prEN 50562-1:2025

**01-julij-2025**

---

**Fiksni postroji za železniške naprave - Varnost napajalnih sistemov električne vleke - 1. del: Splošni pristop za konvencionalne načine uporabe, funkcije in lastnosti**

Fixed installations for railway applications - Safety of electric traction power supply systems - Part 1: Generic approach for conventional applications, functions and properties



**Ta slovenski standard je istoveten z:** **prEN 50562-1:2025**



---

**ICS:**

| | | |
|---|---|---|
| 29.280 | Električna vlečna oprema | Electric traction equipment |

**oSIST prEN 50562-1:2025** **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

**DRAFT**
**prEN 50562-1**

May 2025

ICS 29.280

Will supersede EN 50562:2018 (PART)

English Version

# Fixed installations for railway applications - Safety of electric traction power supply systems - Part 1: Generic approach for conventional applications, functions and properties

To be completed

To be completed

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2025-08-22.

It has been drawn up by CLC/SC 9XC.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.



Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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**

# Contents

Page

# European foreword

This document (prEN 50562-1:2025) 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”.

This document is currently submitted to the Enquiry.

The following dates are proposed:

| | | |
|---|---|---|
| • latest date by which the existence of this document has to be announced at national level | (doa) | dav + 6 months |
| • latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | dav + 12 months |
| • latest date by which the national standards conflicting with this document have to be withdrawn | (dow) | dav + 36 months (to be confirmed or modified when voting) |

This document will partially supersede EN 50562:2018.

prEN 50562-1:2025 includes the following significant technical changes with respect to EN 50562:2018:

— The standard has been supplemented by a second part. Part 1 covers conventional applications, functions and properties by the application of codes of practice. Part 2 covers non-conventional applications, functions and properties by application of codes of practice of other provenance, comparison with reference systems and explicit risk estimation.

— Annex B “Documents related to EN 50562” has been removed. The content has been shifted to the Bibliography.



— The content of Annex C “Combination of risk acceptance principles” has been integrated in Part 2.

— The content of Annex D “Guidance of software for safety functions on system level” has been integrated in Part 2.

The prEN 50562 series consists of the following parts:

— Part 1: Generic approach for conventional applications, functions and properties

— Part 2: Generic approach for non-conventional applications, functions and properties

This document has been prepared under a standardization request addressed to CENELEC by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZZ, which is an integral part of this document.

# Introduction

This document supports the application of both parts of EN 50126 with the focus on safety but can also be used independently as a standard for the process, protective measures and demonstration of safety for the electric traction power supply systems. Within this document “safety” is used with respect to harm to people and environment. Safety in terms of harm to assets is covered in the relevant product and application standards.

This document has been developed specifically to support the realization of EN 50126-1:2017 and EN 50126-2:2017 within the context of safety for electric traction power supply systems. It provides generic building blocks which assist the fulfilment of the requirements of life cycle steps given in EN 50126-1:2017 and EN 50126-2:2017. Product and application standards are traditionally applied in fixed installations to ensure safety and performance in terms of e.g. reliability and cost efficiency. Within this document the link between existing product and application standards, technical specifications for interoperability and EN 50126-1:2017 and EN 50126-2:2017 is given.

This document complies with the principles of the life cycle modelling according to EN 50126-1:2017 and EN 50126-2:2017 by tailoring the risk assessment process, but it does not define the life cycle itself. The relation between the process steps and the life cycle proposed in EN 50126-1:2017 and EN 50126-2:2017 is indicated in prEN 50562-1:2025, Clause 5. This means that this document encompasses major parts of the EN 50126-1:2017 and EN 50126-2:2017 life cycle ranging from the concept and system description, hazard identification to the demonstration of the implemented protective measures according to EN 50126-1:2017 and EN 50126-2:2017. It is not intended to summarize any product and application standard but to supplement and ease their application also within the framework of EN 50126-1:2017 and EN 50126-2:2017.

During the preparation of this document, it became obvious that the residual risks associated with conventional electric traction power supply systems are acceptable. This conclusion is based on long term experience from several European railways. The technical systems used by these European railways in their conventional electric traction power supply systems are equivalent to the generic reference system described in this document. In 2006, confidential field data that were taken into account represent more than 1 200 000 year km operational experience. To exemplify, the equivalent would be a network size of about 80 000 km and the operational experience laid down in traceable field data would cover a period of 15 years of service. No fatality was reported caused by a product property or a failure of a specified function of the conventional electric traction power supply systems.



Publications and public surveys from the European Union support the conclusions above even up today.

The document is split into two parts. Part 1 establishes the code of practice for electric traction power supply systems. It provides a generic approach that is intended to serve for conventional applications, functions and properties. It includes a systems description for the generic reference system (see Figure 1) and the related subsystems. The interfaces with respect to safety at the system borders and the respective aspects to be coordinated are described. Based on the list of top-level hazards and protective measures for risk mitigation and hazard control are derived and indications for the verification and validation procedures are given.

prEN 50562-2:2025 covers the specific approach that supports the implementation of non-conventional applications, functions and properties in electric traction power supply systems in the sense of Part 1. It includes the two risk acceptance principles that are not considered in Part 1. It describes the basic procedure for the comparison with a similar system and an explicit risk estimation at the functional level including SIL determination. In this way it is possible to use codes of practice or accepted solutions not listed in this document.