

**Raudteealased rakendused.  
Püsipaigaldised. Elektrifitseeritud  
raudtee kontaktvõrk**

Railway applications - Fixed installations - Electric  
traction overhead contact lines

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50119:2002 sisaldab Euroopa standardi EN 50119:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 10.09.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50119:2002 consists of the English text of the European standard EN 50119:2001.</p> <p>This document is endorsed on 10.09.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This European Standard applies for the design and construction of electric traction overhead contact lines in railway and tramway applications (see clause 4). The standard is intended to be used by the system designer for the new construction of electric traction overhead contact lines or for the complete transformation of existing lines according to the client performance objectives. This document does not deal in detail with railway traction electrical supply systems or EMC requirements and is not applicable to feeders which are remote from the track</p>	<p><b>Scope:</b></p> <p>This European Standard applies for the design and construction of electric traction overhead contact lines in railway and tramway applications (see clause 4). The standard is intended to be used by the system designer for the new construction of electric traction overhead contact lines or for the complete transformation of existing lines according to the client performance objectives. This document does not deal in detail with railway traction electrical supply systems or EMC requirements and is not applicable to feeders which are remote from the track</p>
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**Võtmesõnad:** electric loco, erect, execution planning, management, overhead contact lines, overhead power li, planning, rail transport, railway applications, railway electric traction equipment, railway fixed equipment, railways, stationary, traction network, tramway systems

English version

**Railway applications -  
Fixed installations -  
Electric traction overhead contact lines**

Applications ferroviaires -  
Installations fixes -  
Lignes aériennes de contact pour la  
traction électrique

Bahnanwendungen -  
Ortsfeste Anlagen -  
Oberleitungen für den elektrischen  
Zugbetrieb

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# CENELEC

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

This European Standard was prepared by SC 9XC, Electric supply and earthing systems for public transport equipment and ancillary apparatus (fixed installations), of the Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50119 on 2000-11-01.

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) 2002-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2003-11-01

Annexes designated “normative” are part of the body of the standard. Annexes designated “informative” are given for information only. In this standard, annexes A and B are normative.

This European Standard has been prepared under a mandate (M024) given to CENELEC by the European Commission and supports the Public Procurement Directive, 93/38/EEC.

References to definitions in IEC 60050-811 in clause 3 are included for user reference and in some cases may update or modify the current definition.

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## 1 Scope

This European Standard applies for the design and construction of electric traction overhead contact lines in railway and tramway applications (see clause 4).

The standard is intended to be used by the system designer for the new construction of electric traction overhead contact lines or for the complete transformation of existing lines according to the client performance objectives. This document does not deal in detail with railway traction electrical supply systems or EMC requirements and is not applicable to feeders which are remote from the track.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated within it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 50121-5		Railway applications - Electromagnetic compatibility Part 5: Emission and immunity of fixed power supply installations and apparatus
EN 50122	series	Railway applications – Fixed installations
EN 50122-1		Railway applications - Fixed installations Part 1: Protective provisions relating to electrical safety and earthing
EN 50123	series	Railway applications - Fixed installations - DC switchgear
EN 50124	series	Railway applications - Insulation coordination
EN 50124-1		Railway applications - Insulation coordination Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
EN 50125-1		Railway applications - Environmental conditions for fixed installations Part 1: Equipment on board rolling stock
EN 50149		Railway applications - Fixed installations - Electric traction - Copper and copper alloy grooved contact wires
EN 50152	series	Railway applications - Fixed installations - Particular requirements for a.c. switchgear
EN 50163		Railway applications - Supply voltages of traction systems
EN 60099	series	Surge arresters
EN 60168	1994	Tests on indoor and outdoor post insulators of ceramic material or glass for systems with a nominal voltage greater than 1 000 V (IEC 60168:1994)

EN 60383	series	Insulators for overhead lines with a nominal voltage above 1 kV (IEC 60383 series)
EN 60507		Artificial pollution tests on high-voltage insulators to be used on a.c. systems
EN 60672	series	Ceramic and glass insulating materials
EN 61325		Insulators for overhead lines with a nominal voltage above 1 kV - Ceramic or glass insulator units for d.c. systems - Definitions, test methods and acceptance criteria
IEC 60050-466		International electrotechnical vocabulary — Chapter 466: Overhead lines
IEC 60050-811		International electrotechnical vocabulary — Chapter 811: Electric traction
IEC 61109		Composite insulators for a.c. overhead lines with a nominal voltage greater than 1 000 V — Definitions, test methods and acceptance criteria.
IEC 61245		Artificial pollution tests on high-voltage insulators to be used on d.c. systems

### 3 Definitions

For the purposes of this European Standard the following definitions apply:

#### 3.1 Systems

##### 3.1.1

##### **overhead contact line system (OCS)**

supporting network for supplying electrical energy to electromotive power units

NOTE The system may include all overhead wiring, including the catenaries, the grooved contact wires and return wires, earth wires, lightning protection wires, line feeders and reinforcing feeders mounted on the supports, overhead conductor rails, foundations and supporting structures and components, terminating, supporting, registering or insulating the conductor equipment and switching, detecting or protecting equipment.

##### 3.1.2

##### **overhead contact line**

[IEC 60050-811, definition 811-33-02]

contact line placed above (or beside) the upper limit of the vehicle gauge and supplying vehicles with electric energy through roof-mounted current collection equipment

##### 3.1.3

##### **contact line**

[IEC 60050-811, definition 811-33-01]

conductor system for supplying electric energy to vehicles through current-collecting equipment

##### 3.1.4

##### **overhead line**

[IEC 60050-466, definition 466-01-01]

an electric line whose conductors are supported above ground, generally by means of insulators and appropriate supports.

NOTE Certain overhead lines may also be constructed with insulated conductors