

**Railway applications - Current  
collection systems - Validation of  
simulation of the dynamic interaction  
between pantograph and overhead  
contact line**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50318:2003 sisaldab Euroopa standardi EN 50318:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 05.02.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50318:2003 consists of the English text of the European standard EN 50318:2002.</p> <p>This document is endorsed on 05.02.2003 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 specifies functional requirements for the validation of simulation methods to ensure mutual acceptance of input and output parameters, a standardized subset of test results for evaluation of simulation methods, comparison with measurements and comparison between simulation methods. This standard applies to the current from an overhead contact line by pantographs mouted on railway vecicles. It does not apply to trolley bus systems.</p>	<p><b>Scope:</b></p> <p>This European standard specifies functional requirements for the validation of simulation methods to ensure mutual acceptance of input and output parameters, a standardized subset of test results for evaluation of simulation methods, comparison with measurements and comparison between simulation methods. This standard applies to the current from an overhead contact line by pantographs mouted on railway vecicles. It does not apply to trolley bus systems.</p>
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**ICS 29.280**

**Võtmesõnad:** comparative tests, comparison, conversational mode, electric outlets, electric sockets, interaction, measurement, overhead power lines, pantographs, rai, simulation, testing, tests, traction-current-collecting devices

**Railway applications -  
Current collection systems -  
Validation of simulation of the dynamic interaction  
between pantograph and overhead contact line**

Applications ferroviaires -  
Systèmes de captage de courant -  
Validation des simulations de l'interaction  
dynamique entre le pantographe  
et la caténaire

Bahnanwendungen -  
Stromabnahmesysteme -  
Validierung von Simulationssystemen  
für das dynamische Zusammenwirken  
zwischen Stromabnehmer und  
Oberleitung

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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 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 50318 on 2002-04-01.

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) 2003-04-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2005-04-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annex A is normative

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and supports the Interoperability Directive, 96/48/EC.

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## 1 Scope

This European Standard specifies functional requirements for the validation of simulation methods to ensure mutual acceptance of

- input and output parameters;
- a standardized subset of test results for evaluation of simulation methods;
- comparison with measurements;
- comparison between simulation methods.

This standard applies to the current collection from an overhead contact line by pantographs mounted on railway vehicles. It does not apply to trolley bus systems.

## 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 in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 50206-1	Railway applications – Rolling stock – Pantographs: Characteristics and tests – Part 1: Pantographs for main line vehicles
EN 50317	Railway applications – Current collection systems – Requirements for and validation of measurements of the dynamic interaction between pantograph and overhead contact line

## 3 Definitions

For the purpose of this standard the following definitions apply:

### 3.1

#### **contact point**

point of mechanical contact between a contact strip and a contact wire

### 3.2

#### **contact force**

vertical force applied by the pantograph to the overhead contact line. The contact force is the sum of the forces of all contact points

### 3.3

#### **static force**

mean vertical force exerted upward by the collector head on the overhead contact line, and caused by the pantograph raising device, whilst the pantograph is raised and the vehicle is at standstill

[EN 50206-1]

### 3.4

#### **aerodynamic force**

vertical force applied to the pantograph as a result of air flow around the pantograph components