

**Raudteealased rakendused. Raudteesõidukite liikumisomaduste aktsepteeritavuse katsetamine välisrööpa kõrgenduskompensatsioonisüsteemi tingimustes ja/või standardis EN 14363:2005 Lisas G sätestatud väärtustest suuremates kõrgendusdefitsiooni tingimustes liikuvate raudteesõidukite katsetamine**

Railway applications - Testing for the acceptance of running characteristics of railway vehicles with cant deficiency compensation system and/or vehicles intended to operate with higher cant deficiency than stated in EN 14363:2005, Annex G

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English Version

**Railway applications - Testing for the acceptance of running characteristics of railway vehicles with cant deficiency compensation system and/or vehicles intended to operate with higher cant deficiency than stated in EN 14363:2005, Annex G**

Applications ferroviaires - Essais en vue de l'homologation du comportement dynamique des véhicules ferroviaires avec système de compensation et/ou véhicules désignés pour circuler avec une insuffisance de dévers plus élevée que définie dans l'EN 14363:2005, Annexe G

Bahnanwendungen - Fahrtechnische Prüfung für die fahrtechnische Zulassung mit Kompensation für Überhöhungsfehlbetrag, um mit höherem Fehlbetrag als in EN 14363:2005, Anhang G zu fahren

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## Foreword

This document (EN 15686:2010) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2010, and conflicting national standards shall be withdrawn at the latest by November 2010.

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

This document has been prepared under a mandate given to CEN/CENELEC/ETSI by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directives, see informative Annex ZA, which is an integral part of this document.

It is intended the requirements of this European Standard will be incorporated into EN 14363 when it is revised.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## Introduction

This European Standard covers the on-track testing for acceptance of the running characteristics of railway vehicles equipped with a cant deficiency compensation system and/or vehicles intended to operate with a higher cant deficiency than stated in EN 14363:2005, Annex G. It was established by Working Group 10 Vehicle/Track Interaction of CEN Technical Committee 256 Railway Applications as a supplement to EN 14363, which is related to the acceptance of railway vehicles with conventional curve speeds. It is foreseen to implement the requirements of this European Standard in a revision of EN 14363.

The establishment of this European Standard was based on existing rules, practices and procedures. The following principles were applied:

- 1) the railway system requires comprehensive technical rules in order to ensure an acceptable interaction of vehicle and track;
- 2) due to the numerous national and international regulations new railway vehicles had to be tested and homologated before putting them into service. In addition, existing acceptance had to be checked when operating conditions were extended;
- 3) in view of the increasing significance of international traffic, in particular of high speed traffic, the standardization of existing regulations is required. In some cases, additional rules are required as well. An update of existing regulations is also needed due to the considerable progress achieved in the field of railway-specific methods for measuring, evaluation and data processing;
- 4) it is of particular importance that the existing level of safety and reliability is not compromised even when changes in design and operating practices are demanded, e.g. by the introduction of higher speeds, higher wheel forces.

This European Standard takes account of the present state of the art which is generally applicable for test procedures and the evaluation of 'on-track' tests.

NOTE This European Standard is derived in essential parts from UIC 518-1 which has not yet been fully validated by experience.

The working group is aware that the combination of the test conditions is not always achievable. In some cases, the existing regulations may require exceptions for which justification will be provided to the acceptance body. In this event, the conditions which are not fulfilled will be identified.

The working group expects that existing shortcomings will be recognized in further investigations and during frequent application of the rules.

# 1 Scope

This European Standard specifies the on-track testing for acceptance of the running characteristics of railway vehicles equipped with a cant deficiency compensation system and/or vehicles intended to operate with a higher cant deficiency than stated in EN 14363:2005, Annex G.

In most cases the procedure is the same as defined in EN 14363, only the differences for the special case are listed.

The testing of the running characteristics applies principally to all vehicles used in public transport which operate without restriction on standard gauge tracks (1 435 mm).

NOTE 1 The testing of the running characteristics of:

- railways with different track layout,
- railways with non-standard gauge tracks

can be conducted by analogy with this European Standard.

The testing of running characteristics is part of the test for the acceptance of running characteristics of vehicles which:

- are newly developed,
- have had relevant design modifications, or
- have changes in their operating regimes.

The testing and acceptance of running characteristics refers to the complete vehicle including the running gear. If a running gear, which has already been tested and accepted, is to be used under a vehicle body of another design, this is considered to be a design modification. The procedure as described in 5.2 is used.

NOTE 2 In addition to the testing of running characteristics for the acceptance of vehicles, the regulations can be generally applied in other technical tasks, e.g.:

- the checking for compliance against development contracts;
- the optimization of components, vehicles or running gear;
- the testing of influences, influencing parameters and relationships of dependence;
- the monitoring of track or vehicles in operational use.

The application of the full method and the stated limit values reflects unrestricted international operation.

Testing for acceptance of vehicles is based on some reference conditions of track. If these are not respected on certain lines, appropriate measures will be taken (speed modifications, additional tests, etc.).

For national or multinational operations, variations may be authorized from the defined conditions. Permissible deviations are indicated in this European Standard.

It is allowed to deviate from the rules laid down if evidence can be furnished that safety is at least the equivalent to that ensured by complying with these rules.

## 2 Normative references

The following referenced document is 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 14363:2005, *Railway applications — Testing for the acceptance of running characteristics of railway vehicles — Testing of running behaviour and stationary tests*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14363:2005 apply.

## 4 Stationary tests

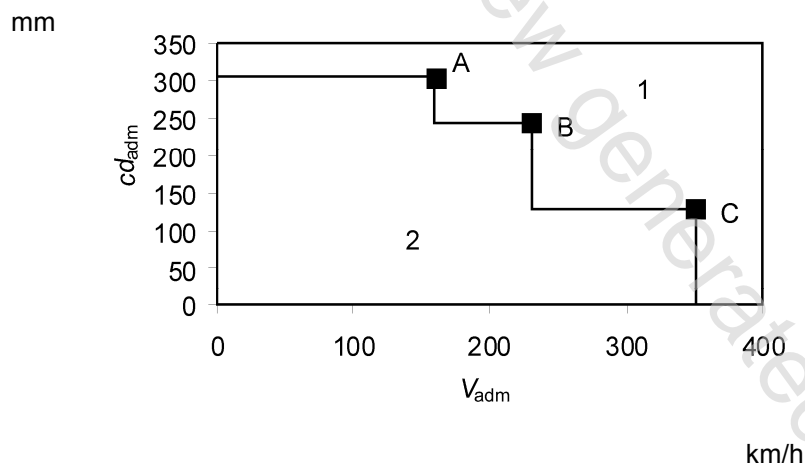
For stationary tests the requirements of EN 14363 shall apply.

## 5 On-track tests

### 5.1 General

When planning on-track tests the operational limiting parameters  $V_{adm}$  and  $cd_{adm}$  for the vehicle have to be selected. The chosen values determine the future use of the vehicle.

It can be necessary to test a vehicle for more than one combination of  $V_{adm}$  and  $cd_{adm}$  as shown in Figure 1. Point A, point B and point C are related to the different test conditions.



### Key

- 1 vehicle not homologated
- 2 vehicle homologated

**Figure 1 — Example of limiting operating conditions achieved during on-track testing**