

**RAUDTEEALASED RAKENDUSED. STAATILISE
TELJEKOORMUSEGA 225 KN KUNI 250 KN
KAUBAVAGUNITE SÕIDUOMADUSTE KATSETAMINE
TÜÜBIKINNITUSEKS**

**Railway applications - Testing for the acceptance of
running characteristics of freight vehicles with static
axle loads higher than 225 kN and up to 250 Kn**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 15687:2010 sisaldab Euroopa standardi EN 15687:2010 ingliskeelset teksti.	This Estonian standard EVS-EN 15687:2010 consists of the English text of the European standard EN 15687:2010.
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English Version

Railway applications - Testing for the acceptance of running characteristics of freight vehicles with static axle loads higher than 225 kN and up to 250 kN

Applications ferroviaires - Essais en vue de l'homologation du comportement dynamique des wagons pour charges statiques d'essieu de plus de 225 kN et jusqu'à 250 kN

Bahnanwendungen- Fahrtechnische Prüfung für die fahrtechnische Zulassung von Güterfahrzeugen mit statischer Radsatzlast von 225 kN bis 250 kN

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Foreword

This document (EN 15687:2010) 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of an identical text or by endorsement, at the latest by November 2010, and conflicting national standards shall be withdrawn at the latest by November 2010.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.

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

It is intended that 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 freight vehicles with static axle loads higher than 225 kN and up to 250 kN. It was established by Working Group 10 Vehicle/Track Interaction of CEN Technical Committee 256 Railway Applications as a supplement to EN 14363:2005, which is related to the acceptance of railway vehicles with static axle loads up to 225 kN. It is planned to implement the requirements of this European Standard in a revision of EN 14363:2005.

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 have to be tested and homologated before putting them into service. In addition, existing acceptance has to be checked when operating conditions are extended;
- 3) in view of the increasing significance of international traffic, the standardisation 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 518-2 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 testing for acceptance of the running characteristics of freight vehicles with static axle loads higher than 225 kN and up to 250 kN.

All requirements of EN 14363 are applicable with some adaptations concerning:

- the conditions of line tests;
- limit values for some assessment quantities.

Only differences for the special cases are listed.

The testing of the running characteristics applies principally to all freight vehicles, 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 used under a vehicle body of another design, this is considered a design modification. The procedure as described in EN 14363:2005, 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.

NOTE 3 For vehicles other than freight wagons with static axle loads higher than 225 kN and up to 250 kN it is possible to use the limit values stated in this European Standard together with the specified track conditions and operational conditions as a basis for proof of the same safety level.

2 Normative references

The following referenced documents are 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*

EN 15528:2008, *Railway applications — Line categories for managing the interface between load limits of vehicles and infrastructure*

3 Terms and definitions

For the purposes of this European Standard, the symbols of quantities and characteristics given in Annex F of EN 14363:2005 and the following apply.

3.1
factor for track loading parameters
lowest ratio between limit value and estimated value of maximum and quasi-static wheel force is expressed as follows:

$$\lambda' = \min(Q_{\text{qst,lim}}/Q_{\text{qst}}; Q_{\text{lim}}/Q_{\text{max}})$$

4 Stationary tests

For stationary tests the requirements of EN 14363 shall apply.

5 On-track tests

5.1 General

For the acceptance of a freight vehicle with static wheel force higher than 225 kN and up to 250 kN the following modifications of the procedure defined in EN 14363 shall be respected:

- for extension of acceptance the choice of the on-track test type and the measuring method is dependent on parameter χ of the loaded vehicle. It respects the wheel forcing of the outer rail in curves due to the height of the centre of gravity and the permissible cant deficiency (see Table 1 to Table 3 of EN 14363:2005).
- extension of acceptance requires compliance to factor λ' ;
- the simplified measuring methods are only applicable for extensions of acceptance with the exception of extension of cant deficiency;