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STN	**Železnice** **Meranie zvislých síl na kolesách a dvojkolesiach** **Časť 2: Skúšanie nových, zmenených a udržiavaných vozidiel v dieľňach**	**STN** **EN 15654-2** 28 0310

Railway applications - Measurement of vertical forces on wheels and wheelsets - Part 2: Test in workshop for new, modified and maintained vehicles

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/19

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English Version

Railway applications - Measurement of vertical forces on wheels and wheelsets - Part 2: Test in workshop for new, modified and maintained vehicles

Applications ferroviaires - Mesurage des forces verticales à la roue et à l'essieu - Partie 2 : Essai en atelier des véhicules neufs, modifiés ou maintenus

Bahnanwendungen - Messung von vertikalen Rad- und Radsatzkräften - Teil 2: Test im Werk für neue, umgebaute und instandgesetzte Fahrzeuge

This European Standard was approved by CEN on 28 February 2019.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 15654-2:2019) 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of an identical text or by endorsement, at the latest by October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

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

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

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

This document is the second part of a three-part standard collectively referred to as *Railway applications — Measurement of vertical forces on wheels and wheelsets* and which covers:

— static and quasi-static wheel force measurements of new, modified or maintained rail vehicles in workshops and

— the evaluation of derived quantities such as the vertical wheelset forces, axle loads and other quantities that describe the vertical wheel force distribution of a vehicle.

Part 1: On-track measurement sites for vehicles in service deals with the measurement of wheel forces and axle loads of in-service rail vehicles.

Part 3: Approval and verification of on-track measurement sites for vehicles in service (CEN/TR) is in preparation and deals with the approval and verification of local measuring sites in-service.

A migration rule is specified in Annex G.

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

Introduction

There are many national and local procedures and methods for the measurement of wheel forces of new, modified and maintained vehicles in use across Europe.

The existing multiplicity of different procedures and methods of calculating parameters can lead to confusion in the interpretation of test data. By having a common set of defined assessment quantities the possibility of confusion and misinterpretation is reduced.

To achieve comparable results for the same vehicle, when the wheel forces are measured at different sites the uncertainty of the whole measurement process needs to be assessed.

The current situation leads in some cases to non-comparable results from different sites. The normative requirements of this standard are based on current experience but these will not necessarily lead to comparable results, being obtained, when a vehicle is measured on two or more different systems. In order to improve this situation, methods are described in the informative part of this standard, to assess the relevant uncertainties of the whole measuring process.

EN 15654-2:2019 (E)

1 Scope

This document applies to the measurement of vertical wheel forces of railway vehicles in maintenance workshops and at manufacturing sites. It also deals with derived quantities that are used to describe the vehicle's vertical wheel force distribution.

The document defines the assessment and acceptance criteria for the measurement process. The requirements for this assessment support the specification, the design and the operation of the measurement process. It is considered that the measurements are made either statically or quasi-statically. This document is applicable to all railway vehicles.

The commercial weighing of vehicles is not covered by the scope of this document, nor does it define in which cases the wheel forces of a vehicle will be measured.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 13848-1, *Railway applications – Track - Track geometry quality – Part 1: Characterisation of track geometry*

EN 14363, *Railway applications - Testing and Simulation for the acceptance of running characteristics of railway vehicles - Running Behaviour and stationary tests*

EN 15663, *Railway applications - Vehicle reference masses*

EN ISO 1101, *Geometrical product specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out (ISO 1101)*

EN ISO 7500-1:2015, *Metallic materials - Calibration and verification of static uniaxial testing machines - Part 1: Tension/compression testing machines - Calibration and verification of the force-measuring system (ISO 7500-1:2015)*

EN ISO 10012, *Measurement management systems - Requirements for measurement processes and measuring equipment (ISO 10012)*

ISO/IEC Guide 99:2007, *International vocabulary of metrology - Basic and general concepts and associated terms (VIM)*