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Railway applications - Wheelsets and bogies - Axles - Product requirements

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. 02/21

Obsahuje: EN 13261:2020

Oznámením tejto normy sa ruší
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# EUROPEAN STANDARD
# NORME EUROPÉENNE
# EUROPÄISCHE NORM

# EN 13261

September 2020

ICS 45.040 Supersedes EN 13261:2009+A1:2010

English Version

# Railway applications - Wheelsets and bogies - Axles - Product requirements

Applications ferroviaires - Essieux montés et bogies - Essieux-axes - Prescription pour le produit

Bahnanwendungen - Radsätze und Drehgestelle - Radsatzwellen - Produktanforderungen

This European Standard was approved by CEN on 5 July 2020.

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

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## European foreword

This document (EN 13261:2020) was prepared by the CEN/TC 256 "Railway Applications" Technical Committee, the secretariat of which is held by the DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, by March 2021 at the latest, and all conflicting national standards shall be withdrawn no later than March 2021.

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

This document supersedes EN 13261:2009+A1:2010.

This document has been prepared within the framework of a mandate given to CEN by the European Commission and the European Free Trade Association and supports the essential requirements of Directive 2016/797/EC.

For the relationship with Directive 2016/797/EC, see informative Annex ZA, which forms an integral part of this document.

For a description of the technical changes made in this new edition, see the Introduction.

The informative annexes to this document provide additional guidance that is not mandatory but that helps to understand or use the document.

NOTE The informative annexes may contain optional requirements. For example, a test method that is optional, or presented as an example, may contain requirements, but it is not necessary to meet these requirements to be in compliance with the document.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are required 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, the Netherlands, Norway, Poland, Portugal, the Republic of North Macedonia, the Republic of Serbia, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

# Introduction

After several years of using the first two editions of this document (EN 13261: 2003 and EN 13261:2009), this new edition incorporates further improvements and data, such as the results of European projects.

The product requirements have been harmonised across all three standards for wheelsets, wheels and axles.

In addition, the annexes concerning the qualification of the product and the conditions of supply of the product, which were previously informative, have been modified taking the feedback into account and have become normative.

Also, the "freight wagon" and "locomotive and passenger vehicle" TSIs require the existence of a production verification process.

# 1 Scope

This document specifies the characteristics of the axles for all track gauges.

This document applies to heavy railway vehicles but may also apply to other vehicles such as light railway vehicles, trams or undergrounds.

It defines the characteristics of axles manufactured by forging or rolling, in vacuum-degassed steel, grade EA1N[1], EA1T1 and EA4T1. For hollow axles, this document only applies to those obtained by machining the hole in a solid forged or rolled axle.

The requirements defined in this standard apply to cylindrical wheel seats. Most of the requirements also apply to wheelsets with conical wheel seats. Specific requirements for conical wheel seats (e.g. geometric dimensions) are defined in the technical specification.

Some characteristics are given according to category 1 or category 2.

This document applies to axles whose design complies with the rules defined in EN 13103-1.

This document also allows variations in material characteristics in relation to alternative manufacturing processes (e.g. cold forging, shot peening, thermal spraying, steel cleanliness, reduction ratio, improvement of material properties through fusion or heat treatment processes, etc.).

# 2 Normative references

The following documents referred to in the text constitute, for all or part of their content, requirements of this document. For dated references, only the cited edition applies. For undated references, the last edition of the reference document applies (including any amendments).

EN 13103-1, *Railway applications – Wheelsets and bogies – Non-powered axles – Part 1: Design method for axles with external journals*

EN 22768-1, *General tolerances – Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1)*

EN 22768-2, *General tolerances – Part 2: Geometrical tolerances for features without individual tolerance indications (ISO 2768-2)*

EN ISO 148-1, *Metallic materials – Charpy pendulum impact test – Part 1: Test method (ISO 148-1)*

EN ISO 643:2012, *Steels - Micrographic determination of the apparent grain size (ISO 643:2012)*

EN ISO 11997-1:2006, *Paints and varnishes - Determination of resistance to cyclic corrosion conditions - Part 1: Wet (salt fog)/dry/humid (ISO 11997-1:2006)*

EN ISO 2409:2013, *Paints and varnishes – Cross-cut test (ISO 2409:2013)*

EN ISO 2808, *Paints and varnishes – Determination of film thickness (ISO 2808)*

EN ISO 4624:2016, *Paints and varnishes - Pull-off test for adhesion (ISO 4624:2016)*

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1 N for a standardised metallurgical state;

T for a quenched and tempered metallurgical state.

EN ISO 6507-1, *Metallic materials – Vickers hardness test – Part 1: Test method (ISO 6507-1)*

EN ISO 6892-1, *Metallic materials – Tensile testing – Part 1: Method of test at room temperature (ISO 6892-1)*

EN ISO 9227, *Corrosion tests in artificial atmospheres – Salt spray tests (ISO 9227)*

EN ISO 14284:2002, *Steel and iron - Sampling and preparation of samples for the determination of chemical composition (ISO 14284:1996)*

EN ISO 16276-2, *Corrosion protection of steel structures by protective paint systems – Assessment of, and acceptance criteria for, the adhesion/cohesion (fracture strength) of a coating – Part 2: Cross-cut testing and X-cut testing*

ISO 4967:2013, *Steel - Determination of content of non-metallic inclusions - Micrographic method using standard diagrams*

ISO 5948:2018, *Railway rolling stock material - Ultrasonic acceptance testing*

ISO 6933:1986, *Railway rolling stock material - Magnetic particle acceptance testing*

ISO/TR 9769[2)], *Steel and iron – Review of available methods of analysis*



[2)] See also CEN/TR 10261.