

RAUDTEEALASED RAKENDUSED. RATTAPAARID JA  
PÖÖRDVANKRID. RATTAD. TOOTENÕUDED

Railway applications - Wheelsets and bogies - Wheels -  
Product requirements

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 13262:2020 sisaldab Euroopa standardi EN 13262:2020 ingliskeelset teksti.	This Estonian standard EVS-EN 13262:2020 consists of the English text of the European standard EN 13262:2020.
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EUROPEAN STANDARD

**EN 13262**

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English Version

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

Applications ferroviaires - Essieux montés et bogies -  
Roues - Prescriptions pour le produit

Bahnanwendungen - Radsätze und Drehgestelle -  
Räder - Produktanforderungen

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

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## European foreword

This document (EN 13262:2020) has been prepared by the CEN/TC 256 “Railway applications” Technical Committee, 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of an identical text or by endorsement, by March 2021 at the latest, and all conflicting national standards shall be withdrawn no later than March 2021.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 13262:2004+A2:2011.

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

Since its first edition in 2004, the use of this document has shown the need for clarification and improvements.

The most important changes are due to the difficulties encountered in product testing.

Some parameters were not sufficiently precise and could be misinterpreted (e.g. collection of test pieces, conditions of use, interpretation of measurement).

Another development is the introduction of a new material, ERS8, which can provide increased resistance to contact fatigue (RCF).

In order to anticipate requests for the introduction of other grades, an evaluation process for the acceptance of new materials has been added.

The product requirements have been harmonised in the three documents concerning the 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 European scope

This document specifies the characteristics of railway wheels, used for all track gauges.

This document applies to heavy railway vehicles but may also apply to other applications such as light railway vehicles, trams or underground systems. Five steel grades, ER6, ER7, ER8, ERS8 and ER9, are defined in this document.

NOTE 1 Steel grade ERS8 has been introduced in this document as an optimisation of steel grades ER8 and ER9 due to contact fatigue (RCF), taking into account service feedback from Europe, for example, BS 5892-3 in force in the United Kingdom.

Some features are provided as a Category 1 or Category 2 function.

The requirements defined in this standard apply to cylindrical bores. Most requirements also apply to wheels with tapered bores. Specific requirements for tapered bores (e.g. geometrical dimensions, etc.) are defined in the technical specification.

This document applies to monobloc wheels in vacuum degassed steel, forged and rolled, with surface treated rims, which have already been the subject of extensive commercial applications on a European network or have complied with a technical approval procedure according to EN 13979 – 1: 2019 to validate their design.

Annex A describes the evaluation process for accepting new materials that are not included in this document.

This document defines the requirements to be met for wheels; the technical approval procedure is not part of the scope of this document.

NOTE 2 A "surface-treated rim" is achieved by heat treatment which aims to harden the rim and create compressive residual stress.

## 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 10020:2000, *Definition and classification of grades of steel*

EN 13979-1:2020, *Railway Applications – Wheelsets and bogies – Monobloc wheels – Technical approval procedure – Part 1: Forged and rolled wheels*

EN ISO 148-1:2018, *Metallic materials – Charpy pendulum impact test – Part 1: Test method (ISO 148-1)*

EN ISO 1101:2017, *Geometrical product specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out (ISO 1101)*

EN ISO 6506-1:2014, *Metallic materials - Brinell hardness test – Part 1: Test method (ISO 6506-1:2005)*

EN ISO 6892-1:2016, *Metallic materials – Tensile testing – Part 1: Method of test at room temperature (ISO 6892-1)*

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

ASTM E399-19, *Standard test method for linear-elastic plane-strain fracture toughness  $K_{Ic}$  of metallic materials*

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 9769:2018<sup>1)</sup>, *Steel and iron - Review of available methods of analysis*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for standardisation, which can be accessed at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1

##### **Technical specification**

A document describing specific parameters and/or product requirements in addition to the requirements of this document

#### 3.2

##### **Batch**

Batch consisting of wheels assumed to have the same characteristics

Note 1 to clause: A batch consists of wheels of the same design, forged with the raw material from a single cast with the same warm forging process and a single heat treatment process. If the raw material is obtained from several casts with the expected chemical composition, the resulting wheels can be combined in a batch. In this case, it is necessary to demonstrate in the product qualification that the wheels manufactured from these different casts meet the requirements for product qualification.

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<sup>1)</sup> See also CEN/TR 10261.