# RAUDTEEALASED RAKENDUSED. TELJEPUKSID. VEERELAAGRID

# Railway applications - Axleboxes - Rolling bearings

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

| | |
|---|---|
| See Eesti standard EVS-EN 12080:2025 sisaldab Euroopa standardi EN 12080:2025 ingliskeelset teksti. | This Estonian standard EVS-EN 12080:2025 consists of the English text of the European standard EN 12080:2025. |
| Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. | This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation. |
| Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 10.12.2025. | Date of Availability of the European standard is 10.12.2025. |
| Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest. | The standard is available from the Estonian Centre for Standardisation and Accreditation. |

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 45.040

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 12080

December 2025

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Supersedes EN 12080:2017+A1:2022

English Version

# Railway applications - Axleboxes - Rolling bearings

Applications ferroviaires - Boîtes d'essieux - Roulements

Bahnanwendungen - Radsatzlager - Wälzlager

This European Standard was approved by CEN on 17 November 2025.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**



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## European foreword

This document (EN 12080:2025) 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 June 2026, and conflicting national standards shall be withdrawn at the latest by May 2026.

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 supersedes EN 12080:2017+A1:2022.

EN 12080:2025 includes the following significant technical changes with respect to EN 12080:2017+A1:2022:

— focus is only on rolling bearing related product requirements. As a consequence, product requirements not related to the rolling bearing or requirements connected with conformity assessment of the rolling bearing have been deleted or transferred to EN 12082-2;

— Clause 4 on Technical Specification is revised;

— Annex E Approval Procedures and Annex F Criteria to determine the extent of approval procedures are deleted and respective content transferred to EN 12082-2;

— Annex G is transferred to EN 12082-2;

— with respect to 10.2.3 Soundness of ring surfaces, eddy current testing is more emphasized as an alternative to Magnetic Particle Inspection. A new Annex E is introduced with requirements on how eddy current testing of ring surfaces should be processed;

— concerning Clause 11 Marking, changes are made to harmonize requirements for different rolling bearing types and to address modern practices such as Data Matrix Coding;

— Annex D Cages of polymeric material is reviewed with changes across the annex.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website. 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

# 1 Scope

This document is a part of a package of standards: EN 12080, EN 12081, EN 12082-1 and EN 12082-2. This document specifies the quality parameters of axlebox rolling bearings supporting the load of the vehicle, required for reliable operation of trains on European networks. It covers metallurgical and material properties as well as geometric and dimensional characteristics. It also specifies methods for quality assurance and non-destructive testing of the products.

# 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 10204:2004, *Metallic products - Types of inspection documents*

EN 12081:2025, *Railway applications - Axleboxes - Lubricating greases*

EN 12082-1:2025, *Railway applications - Axleboxes – Part 1: Test procedure*

EN 12082-2:2025, *Railway applications - Axleboxes – Part 2: Deployment Procedure*

EN 13018:2016, *Non-destructive testing - Visual testing - General principles*

EN ISO 178:2019, *Plastics - Determination of flexural properties (ISO 178:2019)*

EN ISO 179-1:2023, *Plastics - Determination of Charpy impact properties - Part 1: Non-instrumented impact test (ISO 179-1:2023)*

EN ISO 307:2019, *Plastics - Polyamides - Determination of viscosity number (ISO 307:2019)*

EN ISO 683-17:2023, *Heat-treated steels, alloy steels and free-cutting steels - Part 17: Ball and roller bearing steels (ISO 683-17:2023)*

EN ISO 1172:2023, *Textile-glass-reinforced plastics - Prepregs, moulding compounds and laminates - Determination of the textile-glass and mineral-filler content using calcination methods (ISO 1172:2023)*

EN ISO 1183-1:2025, *Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1:2025)*

EN ISO 1183-2:2019, *Plastics - Methods for determining the density of non-cellular plastics - Part 2: Density gradient column method (ISO 1183-2:2019)*

EN ISO 3059:2012, *Non-destructive testing - Penetrant testing and magnetic particle testing - Viewing conditions (ISO 3059:2012)*

EN ISO 3451-1:2019, *Plastics - Determination of ash - Part 1: General methods (ISO 3451-1:2019)*

EN ISO 6507-1:2023, *Metallic materials - Vickers hardness test - Part 1: Test method (ISO 6507-1:2023)*

EN ISO 6508-1:2023, *Metallic materials - Rockwell hardness test - Part 1: Test method (ISO 6508-1:2023)*

EN ISO 6508-2:2023, *Metallic materials - Rockwell hardness test - Part 2: Verification and calibration of testing machines and indenters (ISO 6508-2:2023)*

EN ISO 6508-3:2023, *Metallic materials - Rockwell hardness test - Part 3: Calibration of reference blocks (ISO 6508-3:2023)*

EN ISO 9934-1:2016, *Non-destructive testing - Magnetic particle testing - Part 1: General principles (ISO 9934-1:2016)*

EN ISO 9934-2:2015, *Non-destructive testing - Magnetic particle testing - Part 2: Detection media (ISO 9934-2:2015)*

EN ISO 9934-3:2015, *Non-destructive testing - Magnetic particle testing - Part 3: Equipment (ISO 9934-3:2015)*

EN ISO 11357-3:2025, *Plastics - Differential scanning calorimetry (DSC) - Part 3: Determination of temperature and enthalpy of melting and crystallization (ISO 11357-3:2025)*

EN ISO 18203:2022, *Steel - Determination of the thickness of surface-hardened layers (ISO 18203:2016)*

ISO 492:2023, *Rolling bearings — Radial bearings — Geometrical product specifications (GPS) and tolerance values*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12082-2:2025, Annex B and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

**3.1**
**customer**
railway undertaking, rolling stock manufacturer, Entity in Charge of Maintenance (ECM) or buyer of railway rolling stock or subassemblies, or their representative

**3.2**
**railway undertaking**
organization or its representative, whatever status it has, which is responsible for the registration of rolling stock

**3.3**
**manufacturer**
bearing manufacturer of axlebox rolling bearings produced under their responsibility

**3.4**
**network**
infrastructure, on which any railway undertaking can operate rolling stock