Railway applications - Axleboxes - Part 1: Test procedures

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12082-1:2025 sisaldab Euroopa standardi EN 12082-1:2025 ingliskeelset teksti.	This Estonian standard EVS-EN 12082-1:2025 consists of the English text of the European standard EN 12082-1:2025.
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 12082-1

December 2025

ICS 45.040

Supersedes EN 12082:2017+A1:2021

English Version

Railway applications - Axleboxes - Part 1: Test procedures

Applications ferroviaires - Boîtes d'essieux - Partie 1: Méthodes d'essai

Bahnanwendungen - Radsatzlager - Teil 1: Prüfverfahren

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

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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 United Kingdom.

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

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

Ref. No. EN 12082-1:2025 E

Contents

Page

European foreword

This document (EN 12082-1:2025) 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 12082:2017+A1:2021.

EN 12082-1:2025 includes the following significant technical changes with respect to EN 12082:2017+A1:2021:

— document split into EN 12082-1 on Test procedures and EN 12082-2 on Deployment procedure;

— EN 12082-1 contains requirements for tests which are referred to in EN 12082-2 as part of the axlebox deployment procedure. These test requirements focus on test preparation, test execution and post-test actions including the test report. Main addressees of EN 12082-1 are testing institutes which carry out the tests;

— requirements on test specifications and test reports are revised and separated for each test;

— tightness tests are now mentioned with water tightness test as one example;

— modified requirements on water tightness test with respect to test procedure and test conditions;

— modifications to rig performance test with respect to results obtained after the test, definition of grease sampling areas, test report and test procedure;

— modifications to field test requirements with respect to acceptance criteria.

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(s).

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 principles and methods for a rig performance test of the system of axlebox rolling bearing(s), housing, seal(s) and grease, required for reliable operation of trains on European networks. The necessary type and extent of testing are specified by the deployment procedure specified in EN 12082-2, with respect to design requirements on the axlebox and its components.

This document covers a rig performance test, principles for a field test and a possible example for a water tightness test. Test parameters and minimum performance requirements for vehicles in operation on main lines are specified. Different test parameters and performance requirements may be selected for vehicles in operation on other networks (e.g. urban rail).

This document is historically developed for outboard applications with rotating inner rings, but can be used for vehicles with inboard bearing arrangements with rotating inner rings.

It gives some possible examples where a sequenced rig performance test addresses the broad range of different service conditions within a specific application or vehicle platform.

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.

ASTM D7303:2023, *Standard Test Method for Determination of Metals in Lubricating Greases by Inductively Coupled Plasma Atomic Emission Spectrometry*

DIN 51460-1:2007, *Testing of petroleum products — Method for sample preparation — Part 1: Microwave incineration*

DIN 51829:2013, *Petroleum products — Determination of additive and wear elements in greases — Analysis by wavelength dispersive X-ray fluorescence spectrometry*

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

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

EN 15663, *Railway applications — Definition of vehicle reference masses*

EN ISO 11885:2009, *Water quality - Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (ISO 11885:2007)*

ISO 15243:2017, *Rolling bearings — Damage and failures — Terms, characteristics and causes*