

RAUDTEEALASED RAKENDUSED. TELJEPUKSID.
VEERELAAGRID

Railway applications - Axleboxes - Rolling bearings

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12080:2017+A1:2022 sisaldab Euroopa standardi EN 12080:2017+A1:2022 ingliskeelset teksti.	This Estonian standard EVS-EN 12080:2017+A1:2022 consists of the English text of the European standard EN 12080:2017+A1:2022.
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English Version

Railway applications - Axleboxes - Rolling bearings

Applications ferroviaires - Boîtes d'essieux -
Roulements

Bahnanwendungen - Radsatzlager - Wälzlager

This European Standard was approved by CEN on 19 June 2017 and includes Amendment 1 approved by CEN on 6 June 2022.

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Contents	Page
European foreword.....	5
Introduction	7
1 Scope.....	8
2 Normative references.....	8
3 Terms and definitions	9
4 Technical specification.....	11
4.1 General requirements	11
4.2 Technical specification content	11
5 Quality systems.....	12
6 Manufacture	12
6.1 Steel manufacturing.....	12
6.2 Heat treatment.....	12
6.3 Traceability	13
6.4 Coatings	14
6.4.1 General.....	14
6.4.2 Permanent coating.....	14
6.4.3 Non-permanent coating.....	14
7 Material properties	14
7.1 General.....	14
7.2 Steel for rings and rolling elements	14
7.2.1 Grades.....	14
7.2.2 Inclusion content.....	15
7.3 Materials of other components (cages, spacers, seals etc.)	15
8 Geometry and dimensions.....	15
8.1 Dimensions and tolerances	15
8.2 Rolling bearing internal clearance	15
8.2.1 Rolling bearing clearance before mounting.....	15
8.2.2 Rolling bearing clearance after mounting	16
9 Mechanical properties — inner ring expanding ability	16
10 Physical properties.....	16
10.1 Visual aspect	16
10.1.1 Rings and rolling elements	16
10.1.2 Cages	16
10.2 Soundness of rings and rolling elements.....	16
10.2.1 General rules.....	16
10.2.2 Internal soundness of rings.....	17
10.2.3 Soundness of ring surfaces	17
10.2.4 Soundness of roller raceway surfaces	17
10.2.5 Grinding burns	17
10.3 Case depth.....	17
10.4 Surface hardness	18

11	Marking	18
11.1	General	18
11.2	Marking of rings for cylindrical roller bearings (CRB)	19
11.3	Marking of cartridge bearings for axleboxes	19
11.4	Marking of spherical roller bearings (SRB)	20
11.5	Prefix and postfix	20
12	Inspection	20
12.1	Inspection plan	20
12.2	Sampling	21
13	Quality records	22
14	Approval	22
15	Delivery and packing	22
15.1	Greasing of rolling bearings	22
15.2	Corrosion protection	22
15.3	Packaging	22
	Annex A (normative) Ultrasonic inspection of rolling bearing rings	24
A.1	Purpose	24
A.2	Principle	24
A.3	Equipment	24
A.4	Operating procedure	24
A.4.1	General rules	24
A.4.2	Preparation of rings	24
A.4.3	Examination	25
A.4.4	Calibration	25
	Annex B (normative) Magnetic particle inspection of ring surfaces	29
B.1	Purpose	29
B.2	Principle	29
B.3	Equipment	29
B.4	Operation procedure	30
B.4.1	Preparation of rings	30
B.4.2	Examination	30
B.4.3	Demagnetisation	30
	Annex C (normative) Eddy current inspection of the raceways of the rollers	31
C.1	Purpose	31
C.2	Principle	31
C.3	Equipment	31
C.4	Operating procedure	31
C.4.1	Preparation of rollers	31
C.4.2	Examination	31
C.4.3	Calibration	32

Annex D (normative) Cages of polymeric material.....	34
D.1 Purpose.....	34
D.2 Material.....	34
D.2.1 General.....	34
D.2.2 Base material.....	34
D.2.3 Additives.....	34
D.2.4 Conditioning.....	34
D.3 Cage requirements.....	34
D.3.1 Inspection plan.....	34
D.3.2 Moisture content.....	36
D.3.3 Fibre glass diameter and length measurement procedure	36
D.3.4 Surface quality.....	37
D.3.5 Sub-surface quality.....	37
D.4 Mechanical tests	39
D.4.1 Test conditions.....	39
D.4.2 Bending test procedures	40
D.4.3 Tension test procedures.....	41
D.5 Thermal ageing in grease or oil bath	43
Annex E (normative) Approval procedures.....	44
E.1 General.....	44
E.2 Complete procedure, type C	44
E.2.1 General.....	44
E.2.2 Stage 1	44
E.2.3 Stage 2	44
E.2.4 Stage 3	44
E.2.5 Stage 4	45
E.2.6 Decision	45
E.3 Reduced procedure, type R.....	45
Annex F (normative) Criteria to determine the extent of approval procedures.....	46
Annex G (informative) Examples of axlebox assemblies	48
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of Directive (EU) 2016/797 aimed to be covered	50
Bibliography.....	52

European foreword

This document (EN 12080:2017+A1:2022) 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 March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

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 includes Amendment 1 approved by CEN on 6 June 2022.

This document supersedes A1 EN 12080:2017 A1.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

The main changes with respect to the previous edition are listed below:

- A1 The use of conditioning for polymer cages is no longer mandatory and is specified in 4.2
- A clarification of deviations in marking of cylindrical roller bearings is new in 11.2 and 11.3
- The inspection plan for inclusion content in 12.1 (footnote h in Table 3) has been made clearer and now also includes specifications for sample preparations
- The sensor definition in C.3 is now more relevant
- Conditioning can now be performed also at the bearing manufacturer (see D.2.4)
- The sample frequency for polymeric cages in D.3.1.1 is now more relevant and the terms “Approval” and “Series” are better defined
- Table D.1 has been renamed for clarity and the requirements for “Viscosity index” and “Length of glass fibres” have been relaxed to be more relevant
- The requirement for “Mechanical test for material approval” in Table D.1 have been changed so that it is clear that the Charpy impact test is on “un-notched” samples and made according to the relevant norm, the requirement for the “Bending strength on the test specimen” is changed and a clarification on how “Thermal ageing in grease or oil bath” is performed has been added
- Footnote d in Table D.1 now allows for use of inspection certificate 3.1 and a new footnote “h” is added to specify sampling frequency
- ISO 15512 can be used for moisture content determination in D.3.2 and a clarification on the use of desiccator is added
- In D.3.4.3 some additions are made on how to address burrs on the edge and outside of functional areas
- D.3.5 is rewritten to address “void clusters” and Figure D.1 is replaced
- The Annex ZA has been revised to take into account EU Directive (EU) 2016/797 A1

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

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, 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

This standard is part of a set of standards: EN 12080, EN 12081 and EN 12082.

This European Standard has been drawn up with the purpose of aiming at optimum performance in rail transportation. Performance implies a certain quality level of the vehicle running gear, which every railway undertaking may require, notably by imposing procedures in approval and requesting the existence of a quality assurance system for the supply of rolling bearings intended for rolling stock operating on its network or other networks in Europe.

1 Scope

This European Standard 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 defines methods for quality assurance and conditions for approval of the products.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 12081:2017, *Railway applications - Axleboxes - Lubricating greases*

EN 12082:2017, *Railway applications - Axleboxes - Performance testing*

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

EN 15663:2017, *Railway applications - Definition of vehicle reference masses*

EN ISO 178:2010, *Plastics - Determination of flexural properties (ISO 178:2010)*

EN ISO 179-1:2010, *Plastics - Determination of Charpy impact properties - Part 1: Non-instrumented impact test (ISO 179-1:2010)*

EN ISO 307:2007, *Plastics - Polyamides - Determination of viscosity number (ISO 307:2007)*

EN ISO 683-17:2014, *Heat-treated steels, alloy steels and free-cutting steels - Part 17: Ball and roller bearing steels (ISO 683-17:2014)*

EN ISO 1172:2003, *Textile-glass-reinforced plastics - Prepregs, moulding compounds and laminates - Determination of the textile-glass and mineral-filler content - Calcination methods (ISO 1172:1996)*

EN ISO 1183-1:2012, *Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1:2012)*

EN ISO 1183-2:2004, *Plastics - Methods for determining the density of non-cellular plastics - Part 2: Density gradient column method (ISO 1183-2:2004)*

EN ISO 2639:2002, *Steels - Determination and verification of the depth of carburized and hardened cases (ISO 2639:2002)*

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

EN ISO 3451-1:2008, *Plastics - Determination of ash - Part 1: General methods (ISO 3451-1:2008)*

EN ISO 6507-1:2005, *Metallic materials - Vickers hardness test - Part 1: Test method (ISO 6507-1:2005)*

EN ISO 6508-1:2016, *Metallic materials - Rockwell hardness test - Part 1: Test method (ISO 6508-1:2016)*

EN ISO 6508-2:2015, *Metallic materials - Rockwell hardness test - Part 2: Verification and calibration of testing machines and indenters (ISO 6508-2:2015)*

EN ISO 6508-3:2015, *Metallic materials - Rockwell hardness test - Part 3: Calibration of reference blocks (ISO 6508-3:2015)*

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 11357-3:2013, *Plastics - Differential scanning calorimetry (DSC) - Part 3: Determination of temperature and enthalpy of melting and crystallization (ISO 11357-3:2011)*

ISO 281:2007, *Rolling bearings — Dynamic load ratings and rating life*

ISO 492:2014, *Rolling bearings — Radial bearings — Geometrical product specifications (GPS) and tolerance values*

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

ISO 15512:2016, *Plastics — Determination of water content*

ASTM E45:2014, *Standard Test Methods for Determining the Inclusion Content of Steel*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply (see also Annex G for more information).

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

manufacturer of axlebox rolling bearings produced under their responsibility

3.4

network

infrastructure, on which any railway undertaking can operate rolling stock