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Railway applications - Axleboxes - Lubricating greases

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

Railway applications - Axleboxes - Lubricating greases

Applications ferroviaires - Boîtes d'essieux - Graisses pour lubrification

Bahnanwendungen - Radsatzlager - Schmierfette

This European Standard was approved by CEN on 19 June 2017.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 12081:2017) 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of an identical text or by endorsement, at the latest by March 2018, and conflicting national standards shall be withdrawn at the latest by March 2018.

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

This document supersedes EN 12081:2007+A1 2010.

The main changes compared to the previous edition are the following:

— Clause 1: revised scope of the standard;

— Clause 2: revised and updated normative references;

— Clause 4: added REACH legislation;

— Clause 8: new definition of speed classes;

— Clause 9: revised for quality batch control and traceability;

— Clause 10: revised pack marking;

— Clause 11: revised storage prescriptions;

— Annex A: revised topic, now Approval Procedure;

— Annex B: Revised topic, now contains requirements for initial grease approval and quality batch control in Table B.1;

— Annex C (informative): added.

This document has been prepared under a mandate given to CEN/CENELEC/ETSI by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document

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 European Standard has been drawn up with the purpose to define the minimum requirements of greases used for the lubrication of rolling bearings in railway axleboxes. The purpose is to ensure a certain performance level in the interest of operating safety in international traffic. Performance implies a certain quality level of the vehicle running gear, which every railway undertaking may require, notably by imposing procedures in approval and quality assurance for the supply of axleboxes.

Lubricating greases intended for use in axlebox bearing application need to fulfil the requirements of this European Standard, complying with Table B.1.

This European Standard has been written so that it reflects the typical performance of, e.g. an NLGI grade 2 simple lithium soap grease, based on a mineral oil with a base oil viscosity of 100 mm^2/s at 40 °C such as would be found in current use. However, this European Standard does not restrict or limit grease evolution for more demanding applications of today and in the future, hence several parameters are left open for agreement.

1 Scope

This European Standard specifies the quality requirements of greases intended for the lubrication of axlebox rolling bearings according to EN 12080, required for reliable operation of trains on European networks. It covers the approval procedure for a not-yet-approved grease, the management of modification for an approved grease and the method of quality batch control of the grease. The grease requirements are given for two speed classes.

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 12080:2017, *Railway applications — Axleboxes — Rolling bearings*

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

EN 14865-1:2009+A1:2010, *Railway applications — Axlebox lubricating greases — Part 1: Method to test the ability to lubricate*

EN 14865-2:2017+A2:2010, *Railway applications — Axlebox lubricating greases — Part 2: Method to test the mechanical stability to cover vehicle speeds up to 200 km/h*

EN ISO 3104:1996, *Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity (ISO 3104:1994)*

ISO 1817:2015, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 2137:2007, *Petroleum products and lubricants — Determination of cone penetration of lubricating greases and petrolatum*

ISO 2176:1995, *Petroleum products — Lubricating grease — Determination of dropping point*

ISO 11007:1997, *Petroleum products and lubricants — Determination of rust-prevention characteristics of lubricating greases*

ISO 13737:2004, *Petroleum products and lubricants — Determination of low-temperature cone penetration of lubricating greases*

ASTM D1831:2011, *Standard Test Method for Roll Stability of Lubricating Grease*

DIN 51777-2:1974, *Testing of mineral oil hydrocarbons and solvents; determination of water content according to Karl Fischer; indirect method*

DIN 51811:2017, *Testing of lubricants — Testing of corrosiveness to copper of greases — Copper strip tarnish test*

DIN 51817:1998, *Testing of lubricants — Determination of oil separation from greases under static conditions*

DIN 51820:1989, *Testing of lubricants; analysis of greases by infrared spectrometry; taking and evaluating an infrared spectrum*

NF F 19-502:1989, *Railway rolling stock — Test method of greases for axle-boxes to rolling bearings — Vibrations and shocks enduring test on machine « ROPECS »*

NF F 19-503:1989, *Railway rolling stock — Test method of greases for axle-boxes to rolling bearings — Dynamic test for stability to oxydation of grease*

NF F 19-504:21993, *Railway rolling stock — Test method of greases for axle-boxes to rolling bearings — Grease suitability test on the « R2F » machine*

NF T 60-190:2011, *Petroleum products — rolling stability of lubricating greases*

NF T60-191:2011, *Petroleum products and lubricating greases — Oil separation on storage of lubricating greases — Method under pressure — Static conditions*

NF T60-627:2006, *Petroleum products and lubricants — Dropping point of lubricating greases — Automatic apparatus method*

NF T 60-637:2017[1], *Water content in grease by Karl Fischer after purging after final survey*)