BSI Standards Publication

Railway applications — Wheelsets and bogies — Axles — Product requirements

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National foreword

This British Standard is the UK implementation of EN 13261:2024. It supersedes BS EN 13261:2020, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee RAE/3/-/1, Railway Applications - Wheels and Wheelsets.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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English Version

Railway applications - Wheelsets and bogies - Axles - Product requirements

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

Bahnanwendungen - Radsätze und Drehgestelle - Radsatzwellen - Produktanforderungen

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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 13261:2024) 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of an identical text or by endorsement, at the latest by May 2025, and conflicting national standards shall be withdrawn at the latest by May 2025.

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 13261:2020.

The main changes compared with EN 13261:2020 are as follows:

— an improved definition of the product groups submitted to qualification;

— improved requirements to assess product qualification after changes made in the manufacturing process;

— additional possibilities to carry out tests with axle journal extensions;

— an improved definition of the aim of the full-size fatigue test;

— an improved definition of the requirements regarding material microstructure;

— some additional information or requirements on the qualification and NDT tests of hollow-bore axles;

— the replacement of the historical test to check the resistance of the paint to bending stress by more pragmatic and cheaper tests;

— new requirements on the traceability of the qualification and of the batch control.

The informative annexes to this document provide additional guidance that is not mandatory but that helps to understand or use the document.

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.

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.

For the relationship with EU Legislation, 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.

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1 Scope

This document specifies the characteristics of axles for all heavy rail track gauges.

This document applies to heavy rail vehicles and applies, in principle, to other vehicles such as urban rail vehicles.

It specifies characteristics of forged or rolled solid and hollow axles, made from vacuum-degassed steel grade EA1N[1)], EA1T[1)] and EA4T[1)]. For hollow axles, this document applies only to those that are manufactured by machining of a hole in a forged or rolled solid axle.

The requirements specified in this document are applicable for cylindrical seats. Most of the requirements are also applicable for axles with conical seats. Specific requirements for conical seats (e.g. geometrical dimensions of the seats…) are defined in the technical specification.

Some characteristics are given as a function of a category 1 or of a category 2.

This document is applicable to axles that are designed in accordance with the requirements of EN 13103-1:2017+A1:2022.

This document also permits variations of the material characteristics linked to alternative manufacturing processes (e.g. cold rolling, shot blasting, thermal spraying, steel cleanliness, reduction ratio, improved material properties from melting and heat treatment process, etc.).

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 13103-1:2017+A1:2022, *Railway applications — Wheelsets and bogies — Part 1: Design method for axles with external journals*

EN ISO 148-1:2016, *Metallic materials — Charpy pendulum impact test — Part 1: Test method (ISO 148-1:2016)*

EN ISO 643:2012, *Steels — Micrographic determination of the apparent grain size (ISO 643:2012)*

EN ISO 1519:2011, *Paints and varnishes — Bend test (cylindrical mandrel) (ISO 1519:2011)*

EN ISO 1520:2006, *Paints and varnishes — Cupping test (ISO 1520:2006)*

EN ISO 2409:2020, *Paints and varnishes — Cross-cut test (ISO 2409:2020)*

EN ISO 2808:2019, *Paints and varnishes — Determination of film thickness (ISO 2808:2019)*

EN ISO 4624:2023, *Paints and varnishes — Pull-off test for adhesion (ISO 4624:2023)*

EN ISO 6892-1:2019, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2019)*

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1) N for a normalized metallurgical condition

T for a quenched and tempered metallurgical condition