

# SVENSK STANDARD

## SS-EN 13261:2009+A1:2010



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### **Järnvägar – Hjulpar och boggier – Produktkrav för hjulaxlar**

### **Railway applications – Wheelsets and bogies – Axles – Product requirements**



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Denna standard ersätter SS-EN 13261:2009, utgåva 2.

The European Standard EN 13261:2009+A1:2010 has the status of a Swedish Standard. This document contains the official version of EN 13261:2009+A1:2010.

This standard supersedes the Swedish Standard SS-EN 13261:2009, edition 2.

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

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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

This European Standard was approved by CEN on 29 November 2008 and includes Amendment 1 approved by CEN on 14 September 2010.

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**Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## Foreword

This document (EN 13261:2009+A1:2010) 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of an identical text or by endorsement, at the latest by April 2011, and conflicting national standards shall be withdrawn at the latest by April 2011.

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 comprises amendment 1 adopted by CEN on 2010-09-14.

This document supersedes EN 13261:2009.

The start and end of the text added or modified by the amendment is indicated in the text by the !" marks.

**A1** 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. **A1**

**A1** For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document. **A1**

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## Introduction

Normative documents which have been used until now in Europe for axle delivery (UIC leaflets, national standards) had, for the main purpose, a complete definition of delivery procedures and axle characteristics that were to be measured.

Product qualification was sometimes mentioned, but the procedures and the characteristics that had to be verified for the qualification were not given.

This standard addresses these issues by:

- a) definition of all axle characteristics; these are verified either during qualification or delivery of the product (see clause 3);
- b) definition of qualification procedures (see Annex I);
- c) definition of delivery conditions (see Annex J); here, a choice is given to the supplier of either:
  - 1) a traditional delivery procedure with a control by batch sampling as in existing documents (see J.5), or;
  - 2) a delivery procedure using quality assurance concepts (see J.6).

## 1 Scope

This European Standard specifies the characteristics of axles for use on European networks.

It defines characteristics of forged or rolled solid and hollow axles, made from vacuum-degassed steel grade EA1N<sup>1</sup> that is the most commonly used grade on European networks. For hollow axles, this standard applies only to those that are manufactured by machining of a hole in a forged or rolled solid axle

In addition, the particular characteristics for axles in grade EA1T<sup>1</sup> and EA4T<sup>1</sup> are given in Annex A.

Two categories of axle are defined, category 1 and category 2. Generally, category 1 is chosen when the operational speed is higher than 200 km/h.

This standard is applicable to axles that are designed in accordance with the requirements of EN 13103 and EN 13104.

NOTE Different values for some characteristics may be agreed if a particular process of fabrication (e.g. cold rolling, shot peening, steel cleanliness, reduction ratio, improved material properties from melting and heat treatment processes, etc.) has an influence on them.

## 2 Normative references

The following referenced documents are indispensable for the application 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 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature*

EN 10045-1, *Metallic materials — Charpy impact test — Part 1: Test method*

EN 13103, *Railway applications — Wheelsets and bogies — Non-powered axles — Design method*

EN 13104, *Railway applications — Wheelsets and bogies — Powered axles — Design method*

EN 13260, *Railway applications — Wheelsets and bogies — Wheelsets — Product requirements*

EN 20898-2:1993, *Mechanical properties of fasteners — Part 2: Nuts with specified proof load values — Coarse thread (ISO 898-2:1992)*

EN 22768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1:1989)*

EN 22768-2, *General tolerances — Part 2: Geometrical tolerances for features without individual tolerance indications (ISO 2768-2:1989)*

EN ISO 643:2003, *Steels — Micrographic determination of the apparent grain size (ISO 643:2003)*

EN ISO 2409:2007, *Paints and varnishes — Cross-cut test (ISO 2409:2007)*

<sup>1</sup> N for a normalized metallurgical condition  
T for a quenched and tempered metallurgical condition