SVENSK STANDARD
SS-EN 13260:2009+A1:2010

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Järnvägar – Hjulpar och boggier – Produktkrav för hjulpar

Railway applications – Wheelsets and bogies – Wheelsets – Product requirements

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Europastandarden EN 13260:2009+A1:2010 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 13260:2009+A1:2010.

Denna standard ersätter SS-EN 13260:2009, utgåva 2.

The European Standard EN 13260:2009+A1:2010 has the status of a Swedish Standard. This document contains the official version of EN 13260:2009+A1:2010.

This standard supersedes the Swedish Standard SS-EN 13260:2009, edition 2.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Järnvägar, SIS/TK 254.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13260:2009+A1

October 2010

ICS 45.040

Supersedes EN 13260:2009

English Version

Railway applications - Wheelsets and bogies - Wheelsets - Product requirements

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

Bahnanwendungen - Radsätze und Drehgestelle - Radsätze - Produktanforderungen

This European Standard was approved by CEN on 26 December 2008 and includes Amendment 1 approved by CEN on 14 September 2010.

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 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 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

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Contents

Page

Foreword

This document (EN 13260:2009+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 13260:2009.

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

The main purpose of normative documents used until now for the delivery of wheelsets (UIC leaflets, national standards) was a complete definition of the acceptance procedures and of the wheelset characteristics which were to be verified.

Product qualification was sometimes mentioned but the procedures used and the product characteristics to be verified during qualification were not given.

This standard addresses these points by:

a) definition of all the wheelset characteristics that are assembly characteristics and finished product characteristics and do not arise from a choice of design parameters such as diameters, interferences, materials etc. They are verified during either qualification or delivery of the product (see clause 3);

b) definition of qualification procedures (see Annex E);

c) definition of delivery conditions (see Annex F). They are based on quality assurance concepts.

1 Scope

This European Standard specifies the characteristics of new wheelsets for use on European networks:

This standard is applicable to wheelsets comprising elements that conform to the following European Standards:

— EN 13262 for wheels;

— EN 13261 for axles;

This standard is not fully applicable to wheelsets undergoing maintenance.

Some characteristics are given as a function of a category 1 or of a category 2. Category 2 can be divided into sub-categories (2a and 2b) to specify certain characteristics. Category 1 is generally chosen when the operating speed exceeds 200 km/h. The wheelset then comprises wheels and axle of category 1 as specified in EN 13262 for the wheels and EN 13261 for the axles.

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

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

EN 13261 *Railway applications — Wheelsets and bogies — Axles — Product requirements*

EN 13262 *Railway applications — Wheelsets and bogies — Wheels — Product requirements*

3 Product definition

3.1 Assembly of components

3.1.1 General

Before being assembled, all elements which comprise the wheelset shall meet the geometric requirements of the documents which define them. In particular, the wheels and the axle shall be in the "ready for assembly" state defined in EN 13262 for the wheels and EN 13261 for the axles.

The elements comprising the wheelset may be shrink-fitted or press-fitted.

The interferences to be used for fitting shall be defined by the designer of the element to be fitted and are a function of the characteristics of the element material and the forces and torque to be transmitted by the fitting. This interference shall be defined according to the geometric tolerances of the axle seats specified in EN 13261.

For the wheel fittings, unless otherwise specified by the wheel designer, the interference values to be used are given in 3.1.2.

In the case of shrink-fitting, the whole wheel should be heated and its temperature shall not exceed 250 °C. If a different heating method is used, proof shall be provided that there has been no effect on the wheel characteristics as defined in EN 13262.

If a different fitting method is used, this shall be the subject of an agreement between the customer and the supplier. In this agreement, the supplier shall demonstrate at least that the axle and wheel characteristics as defined in EN 13261 and EN 13262 are not modified by the fitting. Then, the mechanical resistance of the assembly (see 3.2.1) shall be demonstrated and the traceability documents for each fitting shall be defined so as to give the same type of information as specified in F.5.

The static imbalance of the two wheels of each wheelset shall be within the same diametric plane and on the same side of the axle. The static imbalance of the gear wheels and brake discs shall be in the same plane as those of the wheels, but on the opposite side of the axle.

3.1.2 Interference between axle wheel seat and wheel hub bore

Unless otherwise specified by the wheel designer, the interference values "*j*" to be adhered to are, in mm:

— for shrink-fitting: $0{,}0009\ dm \leq j \leq 0{,}0015\ dm$

— for press-fitting: $0{,}0010\ dm \leq j \leq 0{,}0015\ dm + 0{,}06$

where *dm* is the mean diameter in mm.

3.1.3 Press-fitting diagram

3.1.3.1 Results to be achieved

For press fitting, the force-displacement curve gives confidence that the fitting has not damaged the contact surfaces and that the specified interference has been effective.

The shape of the curve to be obtained is defined in Annex A.

The final fitting force, in MN, is a function of the force *F* defined in 3.2.1 and shall be within the range:

$$0{,}85\ F < \text{final fitting force} < 1{,}45\ F$$

3.1.3.2 Measurement method

The press used for the assemblies shall have a calibrated system to plot the diagram of the force value at each position of the element to be fitted, obtained during the displacement of the latter on the axle. The abscissa scale of displacement shall be at least equal to 0,5 times the actual displacement of the element to be fitted. The ordinate scale of force shall allow the force to be read at each point of the curve with an accuracy of 0,025 MN. The accuracy of the force sensor shall be 0,01 MN. The abscissae and ordinates may be reversed.

In the case of point recording, at least one point shall be plotted per millimetre of relative displacement of the elements to be fitted and per 0,025 MN variation in force.