

**Raudteealased rakendused. Rattapaarid ja  
pöördvankrid. Rattapaarid. Tootenõuded  
KONSOLIDEERITUD TEKST**

Railway applications - Wheelsets and bogies -  
Wheelsets - Product requirements CONSOLIDATED  
TEXT

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 13260:2009+A1:2010 sisaldb Euroopa standardi EN 13260:2009+A1:2010 ingliskeelset teksti.  Standard on kinnitatud Eesti Standardikeskuse 31.12.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.  Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kätesaadavaks tegemise kuupäev on 20.10.2010.  Standard on kätesaadav Eesti standardiorganisatsionist.	This Estonian standard EVS-EN 13260:2009+A1:2010 consists of the English text of the European standard EN 13260:2009+A1:2010.  This standard is ratified with the order of Estonian Centre for Standardisation dated 31.12.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.  Date of Availability of the European standard text 20.10.2010.  The standard is available from Estonian standardisation organisation.
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ICS 45.040

### Standardite reproduutseerimis- ja levitamisoigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, koppeerimine, salvestamine elektronilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:  
Aru 10 Tallinn 10317 Eesti; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

## Contents

	Page
<b>Foreword.....</b>	<b>4</b>
<b>Introduction .....</b>	<b>5</b>
<b>1 Scope .....</b>	<b>6</b>
<b>2 Normative references .....</b>	<b>6</b>
<b>3 Product definition.....</b>	<b>6</b>
<b>3.1 Assembly of components .....</b>	<b>6</b>
<b>3.1.1 General.....</b>	<b>6</b>
<b>3.1.2 Interference between axle wheel seat and wheel hub bore .....</b>	<b>7</b>
<b>3.1.3 Press-fitting diagram .....</b>	<b>7</b>
<b>3.2 Wheelset characteristics .....</b>	<b>8</b>
<b>3.2.1 Mechanical resistance of the assemblies .....</b>	<b>8</b>
<b>3.2.2 Fatigue characteristics .....</b>	<b>8</b>
<b>3.2.3 Electrical resistance .....</b>	<b>9</b>
<b>3.2.4 Imbalance .....</b>	<b>9</b>
<b>3.2.5 Dimensions and tolerances .....</b>	<b>10</b>
<b>3.2.6 Residual stresses .....</b>	<b>14</b>
<b>3.2.7 Protection against corrosion and impact .....</b>	<b>14</b>
<b>3.2.8 Marking .....</b>	<b>14</b>
<b>Annex A (normative) Characteristics of the press-fitting curve .....</b>	<b>16</b>
<b>Annex B (normative) Fatigue characteristics for a wheelset with an axle of steel grade EA1T or EA4T .....</b>	<b>18</b>
<b>Annex C (informative) Information on the test pieces for fatigue tests.....</b>	<b>19</b>
<b>Annex D (informative) Documents for the identification of wheelset components .....</b>	<b>21</b>
<b>Annex E (informative) Product qualification.....</b>	<b>25</b>
<b>E.1 General.....</b>	<b>25</b>
<b>E.2 Requirements .....</b>	<b>25</b>
<b>E.2.1 Requirements to be met by the supplier .....</b>	<b>25</b>
<b>E.2.2 Qualification of personnel .....</b>	<b>25</b>
<b>E.2.3 Requirements to be met by the product .....</b>	<b>26</b>
<b>E.3 Qualification procedure .....</b>	<b>26</b>
<b>E.3.1 General.....</b>	<b>26</b>
<b>E.3.2 Documentation required .....</b>	<b>26</b>
<b>E.3.3 Evaluation of the manufacturing plant and processes.....</b>	<b>26</b>
<b>E.3.4 Laboratory tests.....</b>	<b>27</b>
<b>E.3.5 Testing of finished products .....</b>	<b>27</b>
<b>E.4 Qualification certificate .....</b>	<b>27</b>
<b>E.4.1 Condition of validity .....</b>	<b>27</b>
<b>E.4.2 Modification and extension .....</b>	<b>27</b>
<b>E.4.3 Transference .....</b>	<b>28</b>
<b>E.4.4 Lapsed certification .....</b>	<b>28</b>
<b>E.4.5 Cancellation.....</b>	<b>28</b>
<b>E.5 Qualification file .....</b>	<b>28</b>
<b>Annex F (informative) Product delivery.....</b>	<b>29</b>
<b>F.1 General.....</b>	<b>29</b>
<b>F.2 Specific verifications .....</b>	<b>29</b>
<b>F.3 Optional checks .....</b>	<b>30</b>
<b>F.3.1 Dimensional check .....</b>	<b>30</b>

F.3.2	Ultrasonic examination .....	30
F.4	Allowable rectification .....	30
F.5	Documents .....	31
F.5.1	Shrink-fitting .....	31
F.5.2	Press-fitting.....	31
F.5.3	Components.....	31
F.6	Quality plan .....	32
F.6.1	General .....	32
F.6.2	Objectives .....	32
F.6.3	Validity .....	32
Annex ZA (informative)  Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC  .....		33
Bibliography .....		37

This document is a preview generated by EVS

## 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.

Ⓐ1 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. Ⓩ1

Ⓐ1 For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document. Ⓩ1

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.