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Railway applications - Wheelsets and bogies - Method of specifying the structural requirements of bogie frames

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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 13749:2011 sisaldab Euroopa standardi EN 13749:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 13749:2011 consists of the English text of the European standard EN 13749:2011.
Standard on kinnitatud Eesti Standardikeskuse 30.04.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 30.04.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 30.03.2011.	Date of Availability of the European standard text 30.03.2011.
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English Version

Railway applications - Wheelsets and bogies - Method of specifying the structural requirements of bogie frames

Applications ferroviaires - Essieux montés et bogies - Méthode pour spécifier les exigences en matière de résistance des structures de châssis de bogie

Bahnanwendungen - Radsätze und Drehgestelle - Festlegungsverfahren für Festigkeitsanforderungen an Drehgestellrahmen

This European Standard was approved by CEN on 26 February 2011.

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Foreword

This document (EN 13749:2011) 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of an identical text or by endorsement, at the latest by September 2011, and conflicting national standards shall be withdrawn at the latest by September 2011.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 will supersede EN 13749:2005.

The general scope and requirements of EN 13749 are unaltered by this revision. Changes were necessary to make the standard compatible with more recent Euronorms. Certain areas of the normative text had to be revised to make correct reference to the structural analysis and validation processes now specified in the new bogie and running gear standard EN 15827. Other new normative references are to EN 15085 and EN 15663.

The other main changes that have been made concern the informative annexes and are summarized as follows:

a) to comply with CEN rules, the symbols and units have been removed from the normative text and added as informative Annex A, as they apply only to the other informative annexes;

b) the old informative Annex C has been removed and reference made to EN 15663, which now covers vehicle mass data;

c) the informative Annex E has been re-written to present the structural analysis and acceptance process as specified in EN 15827;

d) a number of errors in the example load case equations in informative Annex C have been corrected;

e) the guidance on component loads in informative Annex D has been revised to better reflect present practice;

f) the limitations of the example load case data in informative Annexes C, D, F and G have been given greater emphasis and it has been stressed that the loads should be used as presented only when it can be shown that they are applicable to the specific design.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to support 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 this document.

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 United Kingdom.

1 Scope

This European Standard specifies the method to be followed to achieve a satisfactory design of bogie frames and includes design procedures, assessment methods, verification and manufacturing quality requirements. It is limited to the structural requirements of bogie frames including bolsters and axlebox housings. For the purpose of this European Standard, these terms are taken to include all functional attachments, e.g. damper brackets.

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 15085-1, *Railway applications — Welding of railway vehicles and components — Part 1: General*

EN 15085-2, *Railway applications — Welding of railway vehicles and components — Part 2: Quality requirements and certification of welding manufacturer*

EN 15085-3, *Railway applications — Welding of railway vehicles and components — Part 3: Design requirements*

EN 15085-4, *Railway applications — Welding of railway vehicles and components — Part 4: Production requirements*

EN 15085-5, *Railway applications — Welding of railway vehicles and components — Part 5: Inspection, testing and documentation*

EN 15663, *Railway applications — Definition of vehicle reference masses*

EN 15827:2011, *Railway applications — Requirements for bogies and running gear*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15827:2011 and the following apply.

NOTE Annex A identifies the symbols, units, co-ordinate system and bogie categories used in the informative annexes to this European Standard.

3.1
axlebox
assembly comprising the box housing, rolling bearings, sealing and grease

3.2
bogie frame
load-bearing structure generally located between primary and secondary suspension

3.3
bolster
transverse load-bearing structure between vehicle body and bogie frame

3.4
static force
force which is constant with time

NOTE Force due to gravity is an example of static force.