Raudteealased rakendused. Raudteeveeremi ja veeremidetailide keevitamine. Osa 3: Konstruktsiooninõuded

Railway applications - Welding of railway vehicles and components - Part 3: Design requirements

EESTI STANDARDIKESKUS
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EESTI STANDARDI EESSÕNA	NATIONAL FOREWORD
See Eesti standard EVS-EN 15085-3:2007 sisaldab Euroopa standardi EN 15085-3:2007 ingliskeelset teksti.	This Estonian standard EVS-EN 15085-3:2007 consists of the English text of the European standard EN 15085-3:2007.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 24.10.2007.	Date of Availability of the European standard is 24.10.2007.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Railway applications - Welding of railway vehicles and components - Part 3: Design requirements

Applications ferroviaires - Soudage des véhicules ferroviaires et des pièces - Partie 3 : Exigences de conception

Bahnanwendungen - Schweißen von Schienenfahrzeugen und -fahrzeugteilen - Teil 3: Konstruktionsvorgaben

This European Standard was approved by CEN on 26 August 2007.

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Foreword

This document (EN 15085-3:2007) 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of an identical text or by endorsement, at the latest by April 2008, and conflicting national standards shall be withdrawn at the latest by April 2008.

This series of European Standards EN 15085 "Railway applications — Welding of railway vehicles and components" consists of the following parts:

— Part 1: General

— Part 2: Quality requirements and certification of welding manufacturer

— Part 3: Design requirements

— Part 4: Production requirements

— Part 5: Inspection, testing and documentation

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.

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, 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.

Introduction

Welding is a special process in the manufacture of railway vehicles and their parts. The required provisions for this process are laid down in the standards series EN ISO 3834. The basis of these provisions is the basic technical welding standards in respect of the special requirements for the construction of railway vehicles.

This European Standard is aimed at defining the terms of enforcement applicable to European Standards; it is not construed as a substitute to these standards.

This European Standard can also be used by internal and external parties, including certification bodies, to assess the organisation's ability to meet customer, regulatory and the organisation's own requirements.

1 Scope

This series of standards applies to welding of metallic materials in the manufacture and maintenance of railway vehicles and their parts.

This part of the series specifies design and classification rules applicable to the manufacture and maintenance of railway vehicles and their parts. Upon agreement with the customer, drawings issued prior to this European Standard may be subject to the provisions of this European Standard.

This European Standard does not define parameters for the dimensioning (refer to other standards e.g. on fatigue testing).

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 1011-2, *Welding — Recommendations for welding of metallic materials — Part 2: Arc welding of ferritic steels*

EN 1708-2, *Welding — Basic weld joint details in steel — Part 2: Non internal pressurized components*

EN 10025-2, *Hot rolled products of structural steels — Part 2: Technical delivery conditions for non-alloy structural steels*

EN 12663, *Railway applications — Structural requirements of railway vehicle bodies*

EN 13749, *Railway applications — Wheelsets and bogies — Methods of specifying structural requirements of bogie frames*

EN 15085-1:2007, *Railway applications — Welding of railway vehicles and components — Part 1: General*

EN 15085-2:2007, *Railway applications — Welding of railway vehicles and components — Part 2: Quality requirements and certification of welding manufacturer*

EN 15085-4:2007, *Railway applications — Welding of railway vehicles and components — Part 4: Production requirements*

EN 15085-5:2007, *Railway applications — Welding of railway vehicles and components — Part 5: Inspection, testing and documentation*

EN 22553, *Welded, brazed and soldered joints — Symbolic representation on drawings (ISO 2553:1992)*

EN ISO 4063, *Welding and allied processes — Nomenclature of processes and reference numbers (ISO 4063:1998)*

EN ISO 5817, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections (ISO 5817:2003)*

EN ISO 6520-1, *Welding and allied processes — Classification of geometric imperfections in metallic materials — Part 1: Fusion welding (ISO 6520-1:2007)*

EN ISO 6520-2, *Welding and allied processes — Classification of geometric imperfections in metallic materials — Part 2: Welding with pressure (ISO 6520-2:2001)*

EN ISO 9692-1, *Welding and allied processes — Recommendation for joint preparation — Part 1: Manual metal-arc welding, gas-shielded metal-arc welding, gas welding, TIG welding and beam welding of steels (ISO 9692-1:2003)*

EN ISO 9692-2, *Welding and allied processes —Joint preparation — Part 2: Submerged arc welding of steels (ISO 9692-2:1998)*

EN ISO 9692-3, *Welding and allied processes — Recommendation for joint preparation — Part 3: Metal inert gas welding and tungsten inert gas welding of aluminium and its alloys (ISO 9692-3:2000)*

EN ISO 10042, *Welding — Arc-welded joints in aluminium and its alloys — Quality levels for imperfections (ISO 10042:2005)*

EN ISO 13919-1, *Welding — Electrons and laser beam welded joints — Guidance on quality levels for imperfections — Part 1: Steel (ISO 13919-1:1996)*

EN ISO 13919-2, *Welding — Electron and laser beam welded joints — Guidance on quality levels for imperfections — Part 2: Aluminium and its weldable alloys (ISO 13919-2:2001)*

EN ISO 14555, *Welding — Arc stud welding of metallic materials (ISO 14555:2006)*

EN ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1:2004)*

EN ISO 15614-12, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 12: Spot, seam and projection welding (ISO 15614-12:2004)*

EN ISO 17653, *Destructive tests on welds in metallic materials — Torsion test of resistance spot welds (ISO 17653:2003)*

ISO 10447, *Resistance welding — Peel and chisel testing of resistance spot, projection and seam welds*

CEN ISO/TR 15608, *Welding — Guidelines for a metallic materials grouping system (ISO/TR 15608:2005)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15085-1:2007 apply.

4 Design requirements

4.1 General

As regards welds forming an integral part of items of rolling stock, except for specific provisions laid down within the framework of the project or in the product specification, design and requirements shall be defined as follows.

4.2 Joint static dimensioning

Calculated stresses shall be less than or equal to the admissible strength of the assembly considered which are proposed in the specification or by the manufacturer and accepted by the acceptance authority.

Examples of welding bead static dimensioning: “effective cross-sections a_R” are given in Annex B and Annex C.