SLOVENSKI STANDARD
oSIST prEN 15085-2:2019

01-april-2019

Železniške naprave - Varjenje železniških vozil in komponent - 2. del: Zahteve za proizvajalce varilnih naprav

Railway applications - Welding of railway vehicles and components - Part 2: Requirements for welding manufacturers

Bahnanwendungen - Schweißen von Schienenfahrzeugen und -fahrzeugteilen - Teil 2: Qualitätsanforderungen an Schweißbetriebe

Applications ferroviaires - Soudage des véhicules et des composants ferroviaires - Partie 2 : Exigences de qualité du constructeur

Ta slovenski standard je istoveten z: prEN 15085-2

ICS:

25.160.10	Varilni postopki in varjenje	Welding processes
45.060.01	Železniška vozila na splošno	Railway rolling stock in general

oSIST prEN 15085-2:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 15085-2

January 2019

ICS 25.160.01; 45.060.01

Will supersede EN 15085-2:2007

English Version

Railway applications - Welding of railway vehicles and components - Part 2: Requirements for welding manufacturers

Applications ferroviaires - Soudage des véhicules et des composants ferroviaires - Partie 2 : Exigences de qualité du constructeur

Bahnanwendungen - Schweißen von Schienenfahrzeugen und -fahrzeugteilen - Teil 2: Qualitätsanforderungen an Schweißbetriebe

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 256.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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-CENELEC 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. prEN 15085-2:2019 E

Contents

Page

European foreword

This document (prEN 15085-2:2018) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15085-2:2007.

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: Requirements for welding manufacturers;*

— *Part 3: Design requirements;*

— *Part 4: Production requirements;*

— *Part 5: Inspection, testing and documentation;*

— *Part 6: Maintenance welding requirements.*

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 are the basic technical welding standards in respect of the special requirements for the construction of railway vehicles.

This document is aimed at defining the terms of enforcement applicable to European standards, it should not be construed as a substitute to these standards.

This document can also be used by internal and external parties, including accredited certification bodies, to assess the organization's ability to meet customer, regulatory and the organization'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 components.

This part of the series defines the classification levels as well as the requirements for manufacturers of welded railway vehicles and components.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 15085-1:2007, *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 15085-4:2007, *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 ISO 3834 (all parts), *Quality requirements for fusion welding of metallic materials*

EN ISO 14731:2006, *Welding coordination - Tasks and responsibilities (ISO 14731:2006)*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
safety relevance
description of the consequences of a failure of a welded component in respect to the effects on persons, facilities and the environment

Note 1 to entry: The safety relevance of a welded component is differentiated as follows:

Low: Failure of the welded component does not lead to any direct impairment of the overall function. Consequential events with personal injuries are unlikely

Medium: Failure of the welded component leads to an impairment of the overall function or may lead to consequential events with personal injuries

High: Failure of the welded component leads to consequential events with personal injuries and breakdown of the overall function

4 Classification Levels and Activities of Manufacturers

4.1 Classification Level

Three classification levels (CL) are laid down for the manufacturers and their welded components. Level 1 to Level 3 depends on the safety relevance of the welded component specified in 3.1.

The classification levels are defined as follows:

— **CL 1** For welded railway vehicles and their welded components with high safety relevance.

— **CL 2** For welded components of railway vehicles with medium safety relevance. (Welded joints with high safety category are not allowed.)

— **CL 3** For welded components of railway vehicles with low safety relevance. (Welded joints with high or medium safety category are not allowed.)

Table 1 gives the allocation for the most common parts and components of railway vehicles.

Deviations from the classification given in Table 1 are permitted, if the definition of the classification level, which is given above, is respected and the explanation of the deviation is documented.

Table 1 — Allocation of components to their classification level

CL	Component classification
CL 1	New build, conversion and repair of rail vehicles and their components Examples for components: — bogies (headstocks, solebars, cross bearers, bogie frames); — underframes (extensions, solebars, cross bearers, assembly); — vehicle body (front walls, side walls, roof); — draw and buffing gear; — supporting frames for external equipment parts (e.g. tanks, electrical, air-conditioning and compressed air containers); — wheelset mountings, axleboxes, spring supports, shock absorbers, vibration dampers; — brake equipment (magnetic track brake, brake rods, brake triangles, brake cylinders, brake cross beams); — supporting frames for heavy duty vehicles including road/rail vehicles; — welded components for drag transmission from bogie to vehicle (bolster); — fuel tanks of vehicles; — finishing welding of castings within components indicated above; — pressure gas tanks, tanks and tank containers of rail vehicles with test pressure a; — containers for dangerous materials [a]; — entrance doors, end doors; — steps, hand rails and railings on the outside of the vehicle or in entry areas; — self-supporting equipment boxes and underfloor containers (fresh water and waste-water containers); — external machine equipment parts (transformer, engine, transmission suspension); — roof construction (pantograph, panelling); e.g. equipment (CL 2) Frames (CL 1) — machine room equipment (transformer casing, transformer suspension, engine suspension, transmission suspension, attachment for traction motor, instrument racks), if

CL	Component classification
	they are assembled outside of the carbody; — power transmission parts (traction coupling, cardan shafts); — traversers (e.g. car transport wagon); — turning and tipping equipment (e.g. freight wagon); — obstacle deflectors (“cow catcher”); — stanchions and lashing rings; — compressed-air reservoirs for rail vehicles [a].
CL 2	New build, conversion and repair of non-pressurized containers without special test pressure, e.g.: — payload container for non-dangerous materials; — other transport containers. New build, conversion and repair of structural parts for rail vehicles, e.g.: — parts inside of passenger coaches (partitions, walls, doors, panelling); — supporting frame for internal parts (electrical, air-conditioning and compressed air installations); — driving cab equipment; — lavatory parts and water containers with installations; — sliding doors in vehicles including runways; — fastenings for brake pipes; — non-self-supporting equipment boxes underneath the base frame (without supporting frame); — gearboxes and consoles for hand brake operation; — machine room equipment (transformer casing, transformer suspension, engine suspension, transmission suspension, attachment for traction motor, instrument racks), if it is implemented inside the car-body; — exhaust pipes, — pressurized air pipes.
CL 3	New build, conversion and repair production of simple attached parts for rail vehicles, e.g: — cranks and levers for various operations; — striking plates; — equipment boxes and switch cabinets in rail vehicles (including gearboxes and consoles for hand brake operation, without supporting frame); — holders for index plates; — wheel scotches; — covers for freight wagons (heat protection on tank wagons); — steps, handrails, railings inside of the vehicle. New build, conversion and repair of parts or trade supply parts for rail vehicles, for instance: — seating frames; — window frames; — ventilation grilles.
a The requirements of this standard will be superseded by specific product standards, e.g. EN 286, air reservoirs.	

For welded joints between components with different classification levels the higher classification level shall be the classification level of the new designed component.

4.2 Type of activity of the manufacturer

A manufacturer of welded railway vehicles or components can undertake different types of activity with different requirements.

Table 2 — Type of activity of manufacturers of welded railway vehicles or components

Type of Activity	Indicator	Description
Design	D	Calculation, design and documentation for the production and maintenance of welded railway vehicles and components
Production	P	Manufacturing, modification and testing of welded railway vehicles and components (including replacement parts).
Maintenance	M	Repair of welded railway vehicles and components by welding (including testing).
Purchase and Supply	S	Purchase and supply of welded components for new fabrication or maintenance activities without carrying out welding operations

Manufacturers can operate in one or more of these types of activity.

5 Requirements for the manufacturer

5.1 General

The quality requirements for manufacturers, which carry out work on welded rail vehicles, components and sub-assemblies, are specified by the standard series EN ISO 3834. Dependant on the classification level, the requirements of EN ISO 3834-2 for CL 1, EN ISO 3834-3 for CL 2 or EN ISO 3834-4 for CL 3 shall be fulfilled in principle.

A manufacturer, which fulfils the requirement for CL 1, may work for welded components with CL 1, CL 2 or CL 3 in the same type of activity.

A manufacturer, which fulfils the requirement for CL 2, may work for welded components with CL 2 or CL 3 in the same type of activity.

A manufacturer, which just fulfils the requirement for CL 3, may work for welded components only with CL 3 in the same type of activity.

5.2 Welders and welding operators

The manufacturer shall have sufficient qualified welders and operators like it is explained and required in EN 15085-4.

5.3 Welding Coordination

5.3.1 General

It is the responsibility of the manufacturer to demonstrate that welding coordination tasks are fulfilled where welding activities are carried out.

The manufacturer shall have an adequate number of suitably qualified welding coordinators, with the relevant technical knowledge and experience, for the tasks they undertake according to EN ISO 14731,

The manufacturer shall clearly prove and document that the technical knowledge and experience of the welding coordinator(s) is at the required level. Tasks and areas of competence of welding coordinators are given in Annex A.

For the purpose of this standard three levels of welding coordinators are distinguished:

— **Level A**:Personnel with comprehensive technical knowledge according to EN ISO 14731 and adequate professional experience for the relevant scope of application.

— **Level B**:Personnel with specific technical knowledge according to EN ISO 14731 and adequate professional experience for the relevant scope of application.

— **Level C**: Personnel with basic technical knowledge according to EN ISO 14731 and adequate professional experience for the relevant scope of application.

Further requirements for professional knowledge and experience are given in Annex D.

The manufacturer shall have a written procedure how to qualify and establish welding coordinators according to this standard.

5.3.2 Welding coordinators with comprehensive technical knowledge (Level A)

Personnel shall have comprehensive technical knowledge according to EN ISO 14731 and about the relevant part of the EN 15085 series. An education level as engineer or technologist should exist.

As guidelines, to demonstrate comprehensive technical knowledge the following qualification may be used:

— Personnel with qualification according to Doc. IAB-252/EWF-416 – International Welding Engineer (IWE) or European Welding Engineer (EWE);

— Personnel with qualification according to Doc. IAB-252/EWF-416 – International Welding Technologist (IWT) or European Welding Technologist (EWT) and proof of comprehensive technical knowledge.

5.3.3 Welding coordinators with specific technical knowledge (Level B)

Personnel shall have specific technical knowledge according to EN ISO 14731 and aabout the relevant part of the EN 15085 series.

As guidelines, to demonstrate specific technical knowledge the following qualification may be used:

— Personnel with qualification according to Doc. IAB-252/EWF-416 – International Welding Technologist (IWT) or European Welding Technologist (EWT);

— Personnel with qualification according to Doc. IAB-252/EWF-416 – International Welding Specialist (IWS) or European Welding Specialist (EWS) and proof of specific technical knowledge.

5.3.4 Welding coordinators with basic technical knowledge (Level C)

Personnel shall have basic technical knowledge according to EN ISO 14731 and about the relevant part of the EN 15085 series.

As guidelines, to demonstrate basic technical knowledge the following qualification may be used:

— Personnel with qualification according to Doc. IAB-252/EWF-416 – International Welding Specialist (IWS) or European Welding Specialist (EWS);