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Railway applications - Structural requirements of
railway vehicle bodies - Part 1: Locomotives and
passenger rolling stock (and alternative method for
freight wagons)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12663-1:2010+A1:2014 sisaldab Euroopa standardi EN 12663-1:2010+A1:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 12663-1:2010+A1:2014 consists of the English text of the European standard EN 12663-1:2010+A1:2014.
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English Version

Railway applications - Structural requirements of railway vehicle bodies - Part 1: Locomotives and passenger rolling stock (and alternative method for freight wagons)

Applications ferroviaires - Prescriptions de dimensionnement des structures de véhicules ferroviaires - Partie 1 : Locomotives et matériels roulants voyageurs (et méthode alternative pour wagons)

Bahnanwendungen - Festigkeitsanforderungen an Wagenkästen von Schienenfahrzeugen - Teil 1: Lokomotiven und Personenzüge (und alternatives Verfahren für Güterwagen)

This European Standard was approved by CEN on 23 January 2010 and includes Amendment 1 approved by CEN on 23 September 2014.

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Contents

Page

Foreword.....	4
Introduction.....	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Coordinate system.....	7
5 Structural requirements	7
5.1 General.....	7
5.2 Categories of railway vehicles	8
5.2.1 Structural categories.....	8
5.2.2 Locomotives.....	8
5.2.3 Passenger vehicles	9
5.2.4 Freight wagons	9
5.2.5 Other types of vehicles	9
5.3 Uncertainties in railway design parameters	9
5.3.1 Allowance for uncertainties.....	9
5.3.2 Loads	9
5.3.3 Material	10
5.3.4 Dimensional tolerances	10
5.3.5 Manufacturing process	10
5.3.6 Analytical accuracy	10
5.4 Demonstration of static strength and structural stability	10
5.4.1 Requirement.....	10
5.4.2 Yield or proof strength	11
5.4.3 Ultimate failure	11
5.4.4 Instability	12
5.5 Demonstration of stiffness	12
5.6 Demonstration of fatigue strength.....	13
5.6.1 General.....	13
5.6.2 Methods of assessment	13
6 Design load cases.....	14
6.1 General.....	14
6.2 Longitudinal static loads for the vehicle body	15
6.2.1 General.....	15
6.2.2 Longitudinal forces in buffers and/or coupling area	15
6.2.3 Compressive forces in end wall area.....	16
6.3 Vertical static loads for the vehicle body.....	17
6.3.1 Maximum operating load	17
6.3.2 Lifting and jacking	17
6.3.3 Lifting and jacking with displaced support.....	18
6.4 Superposition of static load cases for the vehicle body	19
6.5 Static proof loads at interfaces	20
6.5.1 Proof load cases for body to bogie connection	20
6.5.2 Proof load cases for equipment attachments.....	20
6.5.3 Proof load cases for joints of articulated units	21
6.5.4 Proof load cases for specific components on freight wagons	21

6.6	General fatigue load cases for the vehicle body	21
6.6.1	Sources of load input.....	21
6.6.2	Payload spectrum.....	21
6.6.3	Load/unload cycles	22
6.6.4	Track induced loading	22
6.6.5	Aerodynamic loading	23
6.6.6	Traction and braking	23
6.7	Fatigue loads at interfaces	24
6.7.1	General requirements	24
6.7.2	Body/bogie connection.....	24
6.7.3	Equipment attachments.....	24
6.7.4	Couplers	24
6.7.5	Fatigue load cases for joints of articulated units	24
6.8	Combination of fatigue load cases	24
6.9	Modes of vibration	25
6.9.1	Vehicle body	25
6.9.2	Equipment	25
7	Permissible stresses for materials	25
7.1	Interpretation of stresses	25
7.2	Static strength	25
7.3	Fatigue strength	25
8	Requirements of strength demonstration tests	26
8.1	Objectives	26
8.2	Proof load tests	26
8.2.1	Applied loads	26
8.2.2	Test procedure.....	27
8.3	Service or fatigue load tests.....	28
8.4	Impact tests.....	28
9	Validation programme	28
9.1	Objective.....	28
9.2	Validation programme for new design of vehicle body structures	29
9.2.1	General	29
9.2.2	Structural analyses	29
9.2.3	Testing.....	29
9.3	Validation programme for evolved design of vehicle body structures	30
9.3.1	General	30
9.3.2	Structural analyses	30
9.3.3	Testing.....	30
Annex A (informative) Treatment of local stress concentrations in analyses		32
Annex B (informative) Examples of proof load cases at articulation joints		34
Annex ZA Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC		37
Bibliography		40

Foreword

This document (EN 12663-1:2010+A1:2014) 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 June 2015, and conflicting national standards shall be withdrawn at the latest by June 2015.

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 includes Amendment 1 approved by CEN on 2014-09-23.

A1 This document supersedes EN 12663-1:2010. **A1**

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of **A1** EU Directive 2008/57/EC **A1**.

For relationship with **A1** EU Directive 2008/57/EC **A1**, see informative Annex ZA, which is an integral part of this document.

This European Standard is part of the series EN 12663, *Railway applications — Structural requirements of railway vehicle bodies*, which consists of the following parts:

- *Part 1: Locomotives and passenger rolling stock (and alternative method for freight wagons)*
- *Part 2: Freight wagons*

A1 *deleted text* **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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The structural design of railway vehicle bodies depends on the loads they are subject to and the characteristics of the materials they are manufactured from. Within the scope of this European Standard, it is intended to provide a uniform basis for the structural design of the vehicle body.

The loading requirements for the vehicle body structural design and testing are based on proven experience supported by the evaluation of experimental data and published information. The aim of this European Standard is to allow the supplier freedom to optimise his design whilst maintaining requisite levels of safety.

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1 Scope

This European Standard specifies minimum structural requirements for railway vehicle bodies.

This European Standard specifies the loads vehicle bodies should be capable of sustaining, identifies how material data should be used and presents the principles to be used for design validation by analysis and testing. This European Standard applies to locomotives and passenger rolling stock. EN 12663-2 provides the verification procedure for freight wagons and also refers to the methods in this standard as an alternative for freight wagons.

The railway vehicles are divided into categories which are defined only with respect to the structural requirements of the vehicle bodies. Some vehicles may not fit into any of the defined categories; the structural requirements for such railway vehicles should be part of the specification and be based on the principles presented in this European Standard.

The standard applies to all railway vehicles within the EU and EFTA territories. The specified requirements assume operating conditions and circumstances such as are prevalent in these countries.

In addition to the requirements of this European Standard the structure of all vehicles associated with passenger conveyance may generally be required to have features that will protect occupants in the case of collision accidents. These requirements are given in EN 15227.

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 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature*

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

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



EN 16404:2014, *Railway applications — Re-railing and recovery requirements for railway vehicles* Ⓐ

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
railway vehicle body
 main load carrying structure above the suspension units including all components which are affixed to this structure which contribute directly to its strength, stiffness and stability

NOTE Mechanical equipment and other mounted parts are not considered to be part of the vehicle body though their attachments to it are.