



**BSI Standards Publication**

## **Railway applications — Structural requirements of railway vehicle bodies**

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Part 2: Freight wagons

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## National foreword

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The UK participation in its preparation was entrusted to Technical Committee RAE/3/-/11, Railway Applications - Structural requirements and Welding.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Published by BSI Standards Limited 2023

ISBN 978 0 539 17850 0

ICS 45.060.20

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2010.

### Amendments/corrigenda issued since publication

Date	Text affected
31 October 2023	Implementation of CEN amendment A1:2023

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**EUROPÄISCHE NORM**

October 2023

ICS 45.060.20

Supersedes EN 12663-2:2010

English Version

## Railway applications - Structural requirements of railway vehicle bodies - Part 2: Freight wagons

Applications ferroviaires - Prescriptions de dimensionnement des structures de véhicules ferroviaires - Partie 2 : Wagons de marchandises

Bahnanwendungen - Festigkeitsanforderungen an Wagenkästen von Schienenfahrzeugen - Teil 2: Güterwagen

This European Standard was approved by CEN on 23 January 2010 and includes Amendment approved by CEN on 14 August 2023.

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

<b>Contents</b>	<b>Page</b>
European foreword.....	4
Introduction .....	5
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	7
4 Coordinate system .....	7
5 Load cases .....	8
5.1 Categories of freight wagons.....	8
5.2 Load cases .....	8
5.2.1 General.....	8
5.2.2 Longitudinal static loads for the vehicle body in buffer and/or coupling area.....	9
5.2.3 Vertical static loads for the vehicle body.....	10
5.2.4 Static loads at interfaces.....	12
5.2.5 Fatigue load cases .....	13
6 Design validation of vehicle body .....	14
6.1 General.....	14
6.2 Design validation of vehicle bodies made of steel.....	15
6.2.1 Characteristics and requirements with regard to the test setup, measuring and evaluation techniques .....	15
6.2.2 Permissible test threshold values for material tension – Permissible stresses for proof tests .....	18
6.2.3 Static tests to prove the fatigue strength of vehicle bodies .....	19
6.2.4 Assignment of load cases and permissible stresses .....	24
6.3 Design validation link to crashworthy buffer.....	26
7 Design validation of associated specific equipment.....	26
7.1 General.....	26
7.2 Static tests on the flaps of flat wagons.....	26
7.2.1 Side wall flap.....	26
7.2.2 End flap .....	28
7.2.3 Results.....	30
7.3 Strength of side and end walls.....	30
7.3.1 Strength of side and end walls at covered wagons.....	30
7.3.2 Strength of side walls at wagons with full opening roof (roller roof and hinged roof) .....	31
7.3.3 Strength of side walls at high sided open wagons and wagons for the transport of heavy bulk goods.....	32
7.3.4 Strength of the fixed side wall flaps at flat wagons and composite flat/high sided wagons .....	34
7.4 Strength of the roofs.....	34
7.5 Stresses imposed on the wagon floor by handling trolleys and road vehicles .....	34
7.6 Attachment of containers and swap bodies.....	34
7.6.1 General.....	34
7.6.2 Strength requirements for the container/swap body retention devices.....	35

This is a preview of BS EN 12663-2:2010+A1:2023. [Click here to purchase the full version from the ANSI store.](#)

<b>7.7</b>	<b>Special wagons for the conveyance of containers.....</b>	<b>35</b>
<b>7.7.1</b>	<b>Resistance tests on the securing equipment .....</b>	<b>35</b>
<b>7.7.2</b>	<b>Wagons equipped with impact damping systems, test for checking the efficiency of the damping device.....</b>	<b>36</b>
<b>7.8</b>	<b>Strength of side doors .....</b>	<b>36</b>
<b>7.8.1</b>	<b>Strength of sliding doors at covered wagons.....</b>	<b>36</b>
<b>7.8.2</b>	<b>Strength of the side doors at high-sided open wagons .....</b>	<b>37</b>
<b>7.9</b>	<b>Strength of drop sides and ends at flat wagons and interchangeable flat/open wagons.....</b>	<b>37</b>
<b>7.10</b>	<b>Strength of stanchions .....</b>	<b>38</b>
<b>7.10.1</b>	<b>General .....</b>	<b>38</b>
<b>7.10.2</b>	<b>Strength of the side stanchions.....</b>	<b>38</b>
<b>7.10.3</b>	<b>Strength of the end stanchions .....</b>	<b>38</b>
<b>7.11</b>	<b>Strength of lockable partitions of sliding wall wagons .....</b>	<b>38</b>
<b>8</b>	<b>Buffing impact testing.....</b>	<b>40</b>
<b>8.1</b>	<b>General .....</b>	<b>40</b>
<b>8.2</b>	<b>Implementation.....</b>	<b>40</b>
<b>8.2.1</b>	<b>General .....</b>	<b>40</b>
<b>8.2.2</b>	<b>Buffing tests with empty wagons .....</b>	<b>41</b>
<b>8.2.3</b>	<b>Buffing tests with loaded wagons .....</b>	<b>41</b>
<b>8.2.4</b>	<b>Procedure for the tests .....</b>	<b>42</b>
<b>8.2.5</b>	<b>Special case of wagons .....</b>	<b>45</b>
<b>8.3</b>	<b>Assessment of the results .....</b>	<b>46</b>
<b>9</b>	<b>Validation programme.....</b>	<b>46</b>
<b>9.1</b>	<b>Objective .....</b>	<b>46</b>
<b>9.2</b>	<b>Validation programme for new design of vehicle body structures – Testing.....</b>	<b>47</b>
<b>9.2.1</b>	<b>Tests specified in this standard.....</b>	<b>47</b>
<b>9.2.2</b>	<b>Fatigue testing .....</b>	<b>47</b>
<b>9.2.3</b>	<b>Service testing.....</b>	<b>47</b>
<b>9.3</b>	<b>Validation programme for evolved design of vehicle body structures.....</b>	<b>48</b>
<b>9.3.1</b>	<b>General .....</b>	<b>48</b>
<b>9.3.2</b>	<b>Structural analyses .....</b>	<b>48</b>
<b>9.3.3</b>	<b>Testing.....</b>	<b>48</b>
	<b>Bibliography .....</b>	<b>49</b>

## European foreword

This document (EN 12663-2:2010+A1:2023) 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 2024, and conflicting national standards shall be withdrawn at the latest by April 2024.

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 2023-08-14.

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**A1** Deleted text **A1**

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 methods for freight wagons)*
- *Part 2: Freight wagons*

This document supersedes **A1** EN 12663-2:2010 **A1**.

**A1** Deleted text **A1**

**A1** Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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## **Introduction**

The structural design and assessment of freight wagon bodies depend 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 and assessment of the vehicle body.

The loading requirements for the vehicle body structural design and assessment 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 optimize his design whilst maintaining requisite levels of safety considered for the assessment.

## 1 Scope

This European Standard specifies minimum structural requirements for freight wagon bodies and associated specific equipment such as: roof, side and end walls, door, stanchion, fasteners and attachments. It defines also special requirements for the freight wagon bodies when the wagon is equipped with crashworthy buffers.

It defines the loads sustained by vehicle bodies and specific equipment, gives material data, identifies its use and presents principles and methods to be used for design validation by analysis and testing.

For this design validation, two methods are given:

- one based on loadings, tests and criteria based upon methods used previously by the UIC rules and applicable only for vehicle bodies made of steel;
- one based on the method of design and assessment of vehicles bodies given in [EN 12663-1:2010+A2:2023 <sup>A1</sup>](#). For this method, the load conditions to be applied to freight wagons are given in this European Standard. They are copied in the [EN 12663-1:2010+A2:2023 <sup>A1</sup>](#) in order to facilitate its use when applied to freight wagons.

The freight wagons are divided into categories which are defined only with respect to the structural requirements of the vehicle bodies.

Some freight wagons do not fit into any of the defined categories; the structural requirements for such freight wagons should be part of the specification and be based on the principles presented in this European Standard.

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

## 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 12663-1:2010+A2:2023, \*Railway applications - Structural requirements of railway vehicle bodies - Part 1: Locomotives and passenger rolling stock \(and alternative method for freight wagons\)\*](#)

[EN 13749:2021, \*Railway applications - Wheelsets and bogies - Method of specifying the structural requirements of bogie frames\*](#)

[EN 15551:2022, \*Railway applications - Railway rolling stock - Buffers\*](#)

[EN 15663:2017+A1:2018, \*Railway applications - Vehicle reference masses\*](#)

[EN 15663:2017+A1:2018](#)