



**BSI Standards Publication**

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

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Part 1: Locomotives and passenger rolling stock (and alternative method for freight wagons)

This is a preview of BS EN 12663-1:2010+A2:2023. [Click here to purchase the full version from the ANSI store.](#)

## National foreword

This British Standard is the UK implementation of EN 12663-1:2010+A2:2023. It supersedes BS EN 12663-1:2010+A1:2014, which is withdrawn.

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

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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)

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## European foreword

This document (EN 12663-1:2010+A2:2023) 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of an identical text or by endorsement, at the latest by May 2024, and conflicting national standards shall be withdrawn at the latest by May 2024.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 2014-09-23.

This document includes Amendment 2 approved by CEN on 2023-08-14.

**A2** This document supersedes EN 12663-1:2010+A1:2014. **A2**

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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**

**A2** 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 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.

## 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.

Ⓐ<sub>2</sub>

EN 13749:2021, *Railway applications - Wheelsets and bogies - Method of specifying the structural requirements of bogie frames*

EN 15663:2017+A1:2018, *Railway applications - Vehicle reference masses*

EN 16404:2016, *Railway applications - Re-railing and recovery requirements for railway vehicles*

EN ISO 6892-1:2019, *Metallic materials - Tensile testing - Part 1: Method of test at room temperature (ISO 6892-1:2019)*

Ⓐ<sub>2</sub>

## 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.