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

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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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

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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of an identical text or by endorsement, at the latest by April 2024, and conflicting national standards shall be withdrawn at the latest by April 2024.

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This document includes Amendment 1 approved by CEN on 2023-08-14.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟦A1⟩ ⟨A1⟧.

⟦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 A1 EN 12663-1:2010+A2:2023 A1. For this method, the load conditions to be applied to freight wagons are given in this European Standard. They are copied in the A1 EN 12663-1:2010+A2:2023 A1 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.

A1

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*

A1