

RAUDTEEALASED RAKENDUSED. VEEREMI  
LÄHTEKAALUD

Railway applications - Vehicle reference masses

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 15663:2017+A1:2018 sisaldab Euroopa standardi EN 15663:2017+A1:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 15663:2017+A1:2018 consists of the English text of the European standard EN 15663:2017+A1:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 19.12.2018.	Date of Availability of the European standard is 19.12.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 45.060.01

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:

Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Railway applications - Vehicle reference masses

Applications ferroviaires - Masses de référence des  
véhicules

Bahnanwendungen - Fahrzeugreferenzmassen

This European Standard was approved by CEN on 11 May 2017 and includes Amendment 1 approved by CEN on 25 September 2018.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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.



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

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

<b>Contents</b>	Page
<b>European foreword</b> .....	3
<b>Introduction</b> .....	4
<b>1 Scope</b> .....	5
<b>2 Normative references</b> .....	5
<b>3 Terms, definitions and abbreviations</b> .....	5
<b>3.1 Terms and definitions</b> .....	5
<b>3.2 Abbreviations</b> .....	6
<b>4 Derivation of vehicle reference masses</b> .....	7
<b>4.1 General</b> .....	7
<b>4.2 Vehicle categories</b> .....	8
<b>4.3 Dead mass</b> .....	8
<b>4.4 Payload states</b> .....	9
<b>4.5 Reference masses</b> .....	10
<b>4.6 Additional or alternative mass definitions and payload states</b> .....	11
<b>5 Consumables, staff and wear allowance</b> .....	12
<b>6 Standing area calculation</b> .....	12
<b>7 Payloads</b> .....	13
<b>7.1 General</b> .....	13
<b>7.2 Payloads for M-I (high speed and long distance units)</b> .....	14
<b>7.3 Payloads for M-II (passenger vehicles other than high speed and long distance units) ...</b>	16
<b>7.4 Payloads for M-III (freight vehicles)</b> .....	17
<b>Annex A (informative) Densities</b> .....	18
<b>Annex B (informative) Application standards</b> .....	19
<b>Annex C (informative) Application of EN 15663:2009 reference masses in TSI</b> .....	26
<b>C.1 TSI LOC&amp;PAS Locomotives and Passenger Rolling Stock</b> .....	26
<b>C.2 TSI WAG Freight Wagons</b> .....	30
<b>C.3 TSI INF Infrastructure</b> .....	31
<b>Bibliography</b> .....	33

## European foreword

This document (EN 15663:2017+A1:2018) 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 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1 approved by CEN on 25 September 2018.

This document supersedes  $\langle A1 \rangle$  EN 15663:2017  $\langle A1 \rangle$ .

The start and finish of text introduced or altered by amendment is indicated in the text by tags  $\langle A1 \rangle$   $\langle A1 \rangle$ .

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

The main changes with respect to the previous edition are listed below:

- a) general editorial reordering of clauses and text;
- b) new Subclause 3.2 for abbreviations;
- c) new numbering for vehicle categories in 4.2;
- d) new Subclause 4.6 for defining additional or alternative mass definitions and payload states in application standards;
- e) new requirements for standing areas in gangways between vehicles in Clause 6;
- f) new treatment of wheelchair loadings in Clauses 6 and 7;
- g) permitted variations in standing passenger loadings redefined;
- h) new recommendations for the determination of the centre of gravity in 7.1;
- i) new Annex B for application of EN 15663 reference masses in other European Standards;
- j) new Annex C for application of EN 15663:2009 reference masses in TSI.

This European Standard aims to support the TSIs and European Standards for the calculation of vehicle masses.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## **Introduction**

To define the design, testing and operation of vehicles in general and their main constituent parts, it is necessary to clearly specify the associated states of loading. This European Standard provides such a set of vehicle reference masses and describes how each is derived.

This document is a preview generated by EVS

## 1 Scope

This European Standard defines a set of reference masses for specifying the requirements for the design, testing, acceptance, marking, delivery and operation of rail vehicles.

The reference masses defined in this document are as follows:

- dead mass;
- design mass in working order;
- design mass under normal payload;
- design mass under exceptional payload;
- operational mass in working order;
- operational mass under normal payload.

These reference masses are defined with respect to the whole vehicle, but they can also apply to a specific system or component.

The specification of values for tolerances applicable to reference masses is not in the scope of this standard. Tolerances can be required by an application standard.

Additional loadings due to environmental factors, for example snow and retained or absorbed rainwater, are not in the scope of this European Standard.

## 2 Normative references

There are no normative references in this document.

## 3 Terms, definitions and abbreviations

### 3.1 Terms and definitions

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

<sup>A1</sup> 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> <sup>A1</sup>

#### 3.1.1

##### **mass increment**

quantity added to or subtracted from the vehicle mass

Note 1 to entry: Examples are payload, staff, consumables and wear allowances.

#### 3.1.2

##### **payload**

mass increment for the load carried by the vehicle (passengers, luggage or cargo)

Note 1 to entry: Typically a load from which revenue is derived.