
Železniške naprave - Vrata in zapiralni sistemi na železniških potniških vozilih

Railway applications - Bodyside entrance systems for rolling stock

Bahnanwendungen - Seiteneinstiegssysteme für Schienenfahrzeuge

Applications ferroviaires - Systèmes d'accès latéraux pour matériel roulant

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Railway applications - Bodyside entrance systems for rolling stock

Applications ferroviaires - Systèmes d'accès latéraux pour matériel roulant

Bahnanwendungen - Seiteneinstiegssysteme für Schienenfahrzeuge

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European foreword

This document (EN 14752:2019+A1:2021) 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of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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 supersedes A1 EN 14752:2019 A1.

This document includes Amendment 1 approved by CEN on 29 November 2021.

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

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Introduction

This document specifies the minimum requirements for construction and operation of railway passenger access systems to ensure:

- safe access and egress from passenger trains through body side doors and steps;
- usability for persons with reduced mobility;
- a minimum risk of injury to persons as a result of door and step operation;
- that the doors and moveable steps, ramps, bridging plates remain closed when the vehicle is in motion; and
- safe maintenance of the entrance systems.

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EN 14752:2019+A1:2021 (E)**1 Scope**

This document applies to passenger body side entrance systems of all newly designed railway vehicles such as tram, metro, suburban, mainline and high-speed trains that carry passengers. The requirements of this document also apply to existing vehicles undergoing refurbishment of the door equipment, as far as it is reasonably practicable.

This document also specifies the requirements for testing of entrance systems.

This document makes reference to manual and power operated entrance systems. For manual doors, clauses referring to power operation are not applicable.

This document does not apply to the following:

- entrance systems for equipment access, inspection or maintenance purposes and for crew only use;
- doors on freight wagons; and
- doors or hatches specifically provided for escape under emergency conditions.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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+A1:2014, *Railway applications — Structural requirements of railway vehicle bodies — Part 1: Locomotives and passenger rolling stock (and alternative method for freight wagons)*

EN 13032-1:2004+A1:2012, *Light and lighting — Measurement and presentation of photometric data of lamps and luminaires — Part 1: Measurement and file format*

EN 13272:2012, *Railway applications — Electrical lighting for rolling stock in public transport systems*

EN 14067 (all parts), *Railway applications — Aerodynamics*

EN 16116-1:2013, *Railway applications — Design requirements for steps, handrails and associated access for staff — Part 1: Passenger vehicles, luggage vans and locomotives*

EN 45545-2:2013+A1:2015, *Railway applications — Fire protection on railway vehicles — Part 2: Requirements for fire behaviour of materials and components*

EN 50121-3-2:2016, *Railway applications — Electromagnetic compatibility — Part 3-2: Rolling stock — Apparatus*

EN 50125-1:2014, *Railway applications — Environmental conditions for equipment — Part 1: Rolling stock and on-board equipment*

EN 50126 (all parts), *Railway applications — The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS)*

EN 50153:2014, *Railway applications — Rolling stock — Protective provisions relating to electrical hazards*

EN 50155:2017, *Railway applications — Rolling stock — Electronic equipment*

EN 50215:2009, *Railway applications — Rolling stock — Testing of rolling stock on completion of construction and before entry into service*

EN 50657:2017, *Railways Applications — Rolling stock applications — Software on Board Rolling Stock*

EN 60077-1:2002, *Railway applications — Electric equipment for rolling stock — Part 1: General service conditions and general rules (IEC 60077-1:1999, modified)*

EN 61373:2010, *Railway applications — Rolling stock equipment — Shock and vibration tests (IEC 61373:2010)*

EN ISO 4762:2004, *Hexagon socket head cap screws (ISO 4762:2004)*

EN ISO 10140-2:2010, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 2: Measurement of airborne sound insulation (ISO 10140-2:2010)*

EN ISO 12567-1:2010, *Thermal performance of windows and doors — Determination of thermal transmittance by the hot-box method — Part 1: Complete windows and doors (ISO 12567-1:2010)*

DIN 5032-7:2017, *Photometry — Part 7: Classification of illuminance meters and luminance meters*

DIN 7340:2011, *Tubular rivets cut from the tube*

UIC 566:1990, *Loadings of coach bodies and their components*

UIC 660:2002, *Measures to ensure the technical compatibility of high-speed trains*

3 Terms and definitions

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

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>

3.1

access device

operating element used to unlock a locked door in order to allow for door opening from outside when the door is not available for normal operation

EN 14752:2019+A1:2021 (E)**3.2****bridging plate**

retractable device integrated into the vehicle as close as possible to the door threshold level that enables access for wheelchair users, fully automatic and activated/controlled in conjunction with the door opening/closing sequences or semi-automatic on demand from passenger or staff

Note 1 to entry: It retains its strength without support on the station platform when extended.

[SOURCE: EN 16586-1:2017, 3.2]

3.3**central closing**

powered closing of the door by remote command without intervention by the passenger

3.4**contrast**

perception of a difference visually between one surface or element of a building/rail vehicle and another by reference to their light reflectance values (LRV)

[SOURCE: EN 16584-1:2017, 3.5]

3.5**door**

body side panel available for passenger access and egress, including its components

3.6**door button**

device to initiate door opening or closing command

3.7**door/step out-of-service**

door or step which is locked and not available for use

3.8**door/step isolated**

door and/or step to which the pneumatic and/or electric power supply is isolated

3.9**door operation**

all door operating sequences

3.10**emergency egress device**

operating element used to unlock a locked door in order to allow for manual opening of the door from inside in case of an emergency

3.11**entrance system**

system to facilitate passenger entrance to vehicles including door, step/ramp/bridging plates and the related drive and control devices

3.12**first step**

step that is the first step for a passenger to use, to overcome a height change

Note 1 to entry: For the external access/egress steps this will normally be the step that is closest to the platform edge (it may be a fixed or a movable step), therefore this is the first step when boarding and the last step when alighting.

Note 2 to entry: In the context of steps for internal height changes (other than the external access/egress steps) this means the first usable step when ascending and the edge of the walking floor when descending.

[SOURCE: EN 16586-1:2017, 3.6]

3.13**leading edge**

edge of the door, leading during closing movement

3.14**local closing**

powered closing by intervention of a person or by a local automatic device

3.15**locked door**

closed door held closed by a mechanical device

3.16**manual door**

door that is closed or opened exclusively by hand power

3.17**manual ramp**

device designed for the passage from one level to another, which is compatible with the vehicle and which is supported on the station platform when extended

Note 1 to entry: Deployment by train crew or platform staff is manual.

Note 2 to entry: The purpose of the manual ramp is to facilitate wheelchair access.

Note 3 to entry: See EN 16586-2 for further details.

3.18**moveable step**

retractable device integrated into the vehicle forming a step with the threshold, fully automatic and activated/controlled in conjunction with the door opening/closing sequences to reduce the gap in width and height between vehicle and platform

Note 1 to entry: The moveable step retains its strength without support on the station platform.

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EN 14752:2019+A1:2021 (E)**3.19****palm operated**

operable by the palm or any part of the hand, not requiring fingers to be unclenched

Note 1 to entry: The design need is that passengers with painful conditions, which affect their joints such as arthritis, may be unable to (and are likely to experience discomfort or pain if they do) exert any force with the tip of a single finger. Many may not be able to unclench their fingers to do this or perform any pulling action.

[SOURCE: EN 16585-1:2017, 3.7, modified — The original term was “palm operable”.]

3.20**power operated door system**

door system which operates doors in opening and closing direction by machine power

3.21**released door**

door in a state in which it may be opened by a member of the public or train crew by operating the door buttons

3.22**RIC-KEY**

key according to the agreement on mutual use of vehicles for persons and goods in international transport (RIC = International coach regulations)

Note 1 to entry: See Annex H.

3.23**routine test**

test to which each entrance system equipment is subjected during or after manufacturing or assembly to the vehicle

3.24**semi-automatic ramp**

device designed for the passage from one level to another, which is integrated into the vehicle and which is supported on the station platform when extended

Note 1 to entry: Deployment is locally activated and supervised.

Note 2 to entry: The purpose of the semi-automatic ramp is to facilitate wheelchair access.

Note 3 to entry: See EN 16586-2 for further details.

3.25**slip resistant**

surface finish that is sufficiently rough or otherwise specially formulated so that friction between the surface and a person's footwear or mobility aid is maintained at an acceptable level in both wet and dry conditions

Note 1 to entry: Snow and ice are outside this definition and this standard, therefore other special measures (e.g. operational) should be taken for steps and platforms, etc. that are exposed to these weather conditions.

[SOURCE: EN 16584-3:2017, 3.5]

3.26**tactile**

appertaining to touch

Note 1 to entry: Tactile signs or controls may include raised pictograms, raised characters or Braille lettering.

Note 2 to entry: See also EN 16584-1.

[SOURCE: EN ISO 9241-910:2011, 2.5, modified — Both Notes 1 and 2 to entry were added.]

3.27**Technical Specification**

document describing specific parameter and/or product requirements as an addition to the requirements of this standard

3.28**train crew**

persons authorized to carry out the duties for door operation

3.29**type test**

test of one entrance system and its components to prove that the design meets the standard and the relevant specifications

3.30**unlocked door**

door with mechanical door locking released

4 Constructional requirements**4.1 Door design**

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4.1.1 Door throughway design

2022

4.1.1.1 Minimum width

Doors shall have an unrestricted clear usable width (1) of 800 mm minimum to allow unimpeded access and egress of passengers (Figure 1 shows two examples of doors). On trains where there is no step between the threshold of a dedicated wheelchair access door and the adjacent vestibule, usable without manual or semi-automatic ramps as defined in 4.11, that door shall have a minimum clear useable width of 1 000 mm when open.