SLOVENSKI STANDARD
SIST EN 16585-3:2017

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Železniške naprave - Načrtovanje za osebe z omejenimi gibalnimi sposobnostmi - Oprema in sestavni deli na železniških vozilih - 3. del: Prehodi in notranja vrata

Railway applications - Design for PRM use - Equipment and components onboarding Rolling Stock - Part 3: Passageways and internal doors

Bahnanwendungen - Gestaltung für mobilitätseingeschränkte Menschen - Ausrüstungen und Bauteile in Schienenfahrzeugen - Teil 3: Durchgänge und Innentüren

Applications ferroviaires - Conception à l'usage des personnes à mobilité réduite - Équipements et éléments à bord du matériel roulant - Partie 3: Intercirculation et portes intérieures

Ta slovenski standard je istoveten z: **EN 16585-3:2017**

ICS:

11.180.01	Pripomočki za onesposobljene in hendikepirane osebe na splošno	Aids for disabled and handicapped persons in general
45.060.20	Železniški vagoni	Trailing stock

SIST EN 16585-3:2017 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

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English Version

Railway applications - Design for PRM use - Equipment and components on board rolling stock - Part 3: Clearways and internal doors

Applications ferroviaires - Conception destinée à l'usage par les PMR - Equipements et éléments à bord du matériel roulant - Partie 3 : Passages et portes intérieures

Bahnanwendungen - Gestaltung für die Nutzung durch PRM - Ausstattung und Bauteile in Schienenfahrzeugen - Teil 3: Lichte Räume und Innentüren

This European Standard was approved by CEN on 26 September 2016.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 16585-3:2017) 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of an identical text or by endorsement, at the latest by July 2017, and conflicting national standards shall be withdrawn at the latest by July 2017.

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For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

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Introduction

This document is part of a suite of four 'Design for PRM use' standards that have in total nine parts:

— EN 16584 is a standard that covers both infrastructure and rolling stock — Railway applications — Design for PRM use - General requirements:

  — Part 1: Contrast (EN 16584-1);

  — Part 2: Information (EN 16584-2);

  — Part 3: Optical and friction characteristics (EN 16584-3).

— EN 16585 is a standard that covers rolling stock - Railway applications - Design for PRM use - Equipment and components on board rolling stock:

  — Part 1: Toilets (EN 16585-1);

  — Part 2: Elements for sitting, standing and moving (EN 16585-2);

  — Part 3: Clearways and internal doors (EN 16585-3).

— EN 16586 is a standard that covers Rolling stock — Railway applications — Design for PRM use - Accessibility of persons with reduced mobility to rolling stock:

  — Part 1: Steps for access and egress (EN 16586-1);

  — Part 2: Boarding aids (EN 16586-2).

— EN 16587 is a standard that covers Infrastructure - Railway applications — Design for PRM use - requirements for obstacle free routes for infrastructure.

These standards aim to clarify the requirements (with clear and consistent terms and definitions) and to define the associated criteria and, where appropriate, methodologies to allow a clear pass/fail assessment.

1 Scope

This European Standard describes the specific 'Design for PRM use' requirements applying to rolling stock and the assessment of those requirements. The following applies to this standard:

— the definitions and requirements describe specific aspects of 'Design for PRM use' required by persons with disabilities and persons with reduced mobility as defined in the PRM TSI;

— this standard defines elements which are universally valid for obstacle free travelling including toilets, elements for sitting, standing and moving and clearways and internal doors. The definitions and requirements of this standard are to be used for rolling stock applications;

— this standard only refers to aspects of accessibility for PRM passengers. It does not define general requirements and general definitions;

— this standard assumes that the rolling stock is in its defined operating condition;

— where minimum or maximum dimensions are quoted these are absolute NOT nominal requirements.

The 'Equipment and components' standard is written in three parts:

— Part 1 contains:

  — toilets;

— Part 2 contains:

  — handholds;

  — seats;

  — wheelchair spaces;

— this document is Part 3 and contains:

  — clearways;

  — internal doors.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1756-2, *Tail lifts - Platform lifts for mounting on wheeled vehicles - Safety requirements - Part 2: Tail lifts for passengers*

EN 16584-1, *Railway applications — Design for PRM use - General requirements — Part 1: Contrast*

EN 16584-2, *Railway applications — Design for PRM use - General requirements — Part 2: Information*

EN 16585-1:2017, *Railway applications — Design for PRM use - Equipment and components on board rolling stock — Part 1: Toilets*

EN 16586-2, *Railway applications — Design for PRM use - Accessibility of persons with reduced mobility to rolling stock — Part 2: Boarding aids*

EN 14752:2015, *Railway applications - Body side entrance systems for rolling stock*

3 Terms and definitions

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

3.1
automatic door
powered door which opens and closes without the need for the passenger to operate a control device

3.2
clear width
clear usable width
unobstructed width of an open door or clearway to allow a PRM to pass through

3.3
clearway
unobstructed space with defined widths and heights to allow movement within a vehicle

3.4
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 moveable 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.

3.5
gangway
means for passengers to pass from one vehicle of a train to the adjacent vehicle and includes the inter-vehicle connection device and any aisle (e.g. between body end cupboards, cabinets or toilets) immediately adjacent to the device

Note 1 to entry: This definition is intentionally different to EN 16286–1.

3.6
inter-vehicle gangway
articulating device allowing transit between vehicles (provided for passenger use)

3.7
handrail
continuous element with round cross section for passengers to use to aid personal stability by gripping around

3.8
last step
final step for an ascending passenger to use to overcome a height change, forming the edge of the walking floor

3.9
manual door
unpowered door which the passenger has to physically open and/or close

3.10
palm operable
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.

3.11
proximity sensor
sensor that can be used to control facilities without the control device being physically touched

3.12
semi-automatic door
powered door which opens and/or closes following operation of a control device by a passenger

3.13
universal toilet
toilet designed to be used by all passengers including passengers in wheelchairs

3.14
usable width
unobstructed width of an open door or passageway allowing for passengers to pass through

3.15
wheelchair
wheeled personal mobility device

Note 1 to entry: Wheelchair characteristics are defined in EN 16585–1:2017, Annex A.

3.16
wheelchair space
designated space in the passenger compartment for the wheelchair users and their wheelchairs

Note 1 to entry: Space can be designed for two wheelchairs, one beside the other (dual).

4 Symbols and abbreviations

For purposes of this document, the symbols and abbreviations in Table 1 and Table 2 apply.

Table 1 — Abbreviations

Abbreviation	Designation
EN	European Standard (Euronorm)
ISO	International Organization for Standardization
PRM	Persons with disabilities and persons with reduced mobility
TSI	Technical Specification for Interoperability

Table 2 — Symbols

Symbols	Designation	Unit
°	Angle	degree
mm	Length	millimetre
N	Force	Newton

5 Requirements and assessment

5.1 General

Assessment of the requirements identified in Clause 5 shall be according to Annex A and Annex B. Where additional assessment criteria apply, these will be identified against the relevant clause.

All dimensions in the figures are in millimetres (mm) unless otherwise stated.

5.2 Doors

5.2.1 General

1) These requirements apply only to doors providing access to another public part of the train, with the exclusion of toilet doors.

   — When assessing these requirements they are only applicable to doors that provide access to parts of the train that are intended for use by the travelling public. (This excludes, for example, train crew only areas and equipment cupboards).

2) To latch or unlatch a manually operated door for use by the public, the control device shall:

   i. be palm operable of the hand.

      — Assessment shall be as described in Clause 6.

   ii. be operable by exerting a force not exceeding 20 N.

      — Assessment of force required to operate a control device shall be by pulling or pushing the device depending on its normal mode of operation with the representative clenched fist as described in Clause 6 with a ‘force gauge’ or 'force meter' until the door is latched or unlatched. See Annex C for an example force meter.

3) Door controls, whether manual, pushbuttons or other devices shall:

   i. contrast with the surface on which they are mounted;

      — Contrast shall be assessed according to EN 16584-1.

   ii. have visual indication, on or around it when enabled;

      — Visual indication shall be assessed according to EN 16584-2.

      — This requirement shall only be assessed for electrical devices requiring a physical force to be applied in order to operate.

iii. be palm operable of the hand exerting a force not greater than 15 N;

— Assessment of force required to operate a control device shall be by pulling or pushing the device depending on its normal mode of operation with the representative clenched fist as described in Clause 6 with a ‘force gauge’ or 'force meter' until the door is latched or unlatched. See Annex C for an example force meter.

iv. be identifiable by touch; this identification shall indicate the functionality.

— 'Identifiable by touch' in this context shall be assessed as tactile (for example tactile markings) according to EN 16584-2.

v. If both open and closed door control devices are fitted one above the other: the top button shall always be the open control. (To be subject to this requirement the buttons do not need to be directly one above the other).

For systems that are operated by proximity sensors the requirements in 5.2.1 (3) do not apply. Proximity sensors should detect objects (for example a guide dog) at a minimum of 500 mm and upwards from the walking floor.

5.2.2 Interior doors

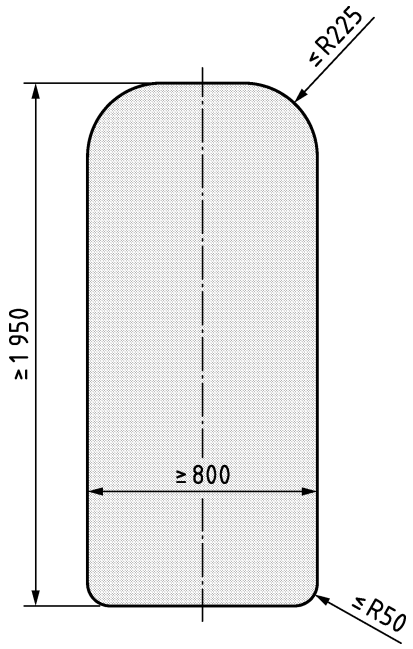
1) Internal automatic and semi-automatic doors shall incorporate devices that prevent passengers becoming trapped during operation of the doors.

— Assessment shall be according to method described in EN 14752:2015, 5.2.1.4.2.2 for Exterior doors using the following peak force: $Fp \leq 300$ N.

2) Interior doors that are made available for wheelchair users shall have a minimum clear usable width of 800 mm (see Figure 1).

— When assessing this requirement there shall be no protrusions into the minimum clear usable width of 800 mm, such as handles or other features, from the floor up to a minimum height of 1 450 mm.

Dimensions in millimetres



Minimum height of 1 950 mm is recommended.

Figure 1 — Clear usable width through an internal door

3) The force required to open or close a manual door shall not exceed 60 N.

   — Assessment of force required shall be by pulling or pushing the door relative to its normal mode of operation with a 'force gauge' or 'force meter' until the door is fully opened or fully closed. See Annex C for an example force meter.

   It is recommended that manual doors are not used for wheelchair accessible areas.

4) The centre of interior door controls shall be between 800 mm and 1 100 mm above the floor

   — measured vertically from the walking floor.

   If the door is to be operable by a wheelchair user: it should be shown to be within the defined reach range see EN 16585-1:2017, Figure B.2 for wheelchair occupant reach range.

5) Automatic or semi-automatic inter-vehicle connecting doors shall operate either synchronously as a pair, or the second door shall automatically detect the person moving towards it and open.

   — When assessing this requirement a difference of up to 0,2 s is allowed for synchronous operation.

6) If more than 75 % of a door's surface is made of a transparent material, it shall be clearly marked with visual indicators.

   — Assessment shall be according to EN 16584-1.

5.3 Clearways

1) From the vehicle entrance, the section of the clearway through the vehicle shall be as follows: