



# SLOVENSKI STANDARD SIST EN 16587:2017

01-september-2017

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## Železniške naprave - Načrtovanje za osebe z omejenimi gibalnimi sposobnostmi - Zahteve za infrastrukturo brez ovir na poti

Railway Applications - Design for PRM Use - Requirements on Obstacle Free Routes for  
Infrastructure

Bahnanwendungen - Gestaltung für mobilitätseingeschränkte Menschen -  
Anforderungen an die Infrastruktur für hindernisfreie Wege

Applications ferroviaires - Conception à l'usage des personnes à mobilité réduite -  
Exigences relatives à l'absence d'obstacles sur les trajets pour l'infrastructure

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Ta slovenski standard je istoveten z: **EN 16587:2017**

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### ICS:

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EUROPEAN STANDARD

EN 16587

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 11.180.01; 45.020

English Version

## Railway applications - Design for PRM Use - Requirements on obstacle free routes for infrastructure

Applications ferroviaires - Conception destinée à  
l'usage par les PMR - Exigences relatives aux  
cheminements libres d'obstacles pour l'infrastructure

Bahnanwendungen - Gestaltung für die Nutzung durch  
PRM - Anforderungen an die Infrastruktur für  
hindernisfreie Wege

This European Standard was approved by CEN on 23 January 2017.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## European foreword

This document (EN 16587:2017) 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of an identical text or by endorsement, at the latest by December 2017, and conflicting national standards shall be withdrawn at the latest by December 2017.

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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

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**EN 16587:2017 (E)****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 for obstacle-free routes applying to infrastructure and the assessment of those requirements. The following applies to this European 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 European Standard defines elements which are universally valid for obstacle-free routes. The definitions and requirements of this European Standard should be used for infrastructure applications;
- This European Standard only refers to aspects of accessibility for PRM passengers, it does not define general requirements and general definitions;
- This European Standard assumes that the infrastructure is in the defined operating condition;
- Where minimum or maximum dimensions are quoted these are absolute NOT nominal requirements.

This European Standard contains requirements relating to 'Obstacle-free routes'.

## 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 81-70, *Safety rules for the construction and installations of lifts - Particular applications for passenger and good passengers lifts - Part 70: Accessibility to lifts for persons including persons with disability*

EN 115-1, *Safety of escalators and moving walks — Part 1: Construction and installation*

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 16584-3, *Railway applications - Design for PRM use - General requirements - Part 3: Optical and friction characteristics*

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 ISO 2813, *Paints and varnishes - Determination of gloss value at 20°, 60° and 85° (ISO 2813)*

ISO 21542, *Building construction — Accessibility and usability of the built environment*

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ISO 23599, *Assistive products for blind and vision-impaired persons — Tactile walking surface indicators*

**3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN 16584-1 and the following apply.

**3.1****obstacle-free route**

link between two or more public areas dedicated to the transport of passengers that can be navigated independently by all persons with disabilities and reduced mobility

Note 1 to entry: In order to achieve this, the route can be divided to better meet the needs of all persons with disabilities and reduced mobility. The combination of all the parts of the obstacle-free route constitutes the route accessible for all persons with disabilities and reduced mobility.

**3.2****step free route**

division of an obstacle-free route that meets the needs of mobility impaired persons by avoiding changes in level or, when they cannot be avoided, are bridged via ramps or lifts

**3.3****weather protection**

protection against the effects of weather

Note 1 to entry: The level of weather protection is regulated by national rules.

**4 Symbols and abbreviations**

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**Table 1 — Abbreviations**

Abbreviation	Designation
EN	European Standard (Euronorm)
PRM	Persons with disabilities and persons with reduced mobility
TSI	Technical Specification for Interoperability
UIC	Union Internationale des Chemins de Fer

**Table 2 — Symbols**

Symbol	Designation	Unit
km	Length	kilometre
mm	Length	millimetre
N	Force	Newton



## 5 Requirements

### 5.1 General

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

All measurements in figures unless otherwise stated shall be in full millimetres.

### 5.2 Obstacle-free routes

#### 5.2.1 General requirements of an obstacle-free route

- 1) Obstacle-free routes shall be provided
  - i. that accommodate all categories of PRM on the same route
    - Where there are height changes the route may diverge to accommodate ramps, steps or lifts, for example.
    - The route shall converge after the height changes and continue as a single route, unless the destination has already been reached.
    - For assessment: an example scenario would be moving through the station area to the platform area, the route diverges to utilize stairs and a separate lift or ramp to overcome the height change to the elevated walkway; the route converges on the elevated walkway above the tracks, then diverges to stairs and a separate lift or ramp, to overcome the height change back to platform level but there is no necessity to converge the routes again to a single point as the platform was the destination.
  - ii. at all times, for when trains are timetabled to operate at that station.
  - iii. that interconnect the following public areas of the infrastructure, if provided and during the normal operation of those facilities:
    - a) Stopping points for other connecting modes of transport within the station confines (for example, taxi, bus, tram, metro, ferry);
    - b) Car parks
    - c) Accessible entrances and exits
    - d) Information desks
    - e) Visual and audible information systems
    - f) Ticketing facilities
    - g) Customer assistance
    - h) Waiting areas
    - i) Toilet facilities

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- j) Platforms
- k) Customs
- l) Border control

NOTE See Figure C.1 for an example of an obstacle-free route connecting to a variety of services with tactile path.

- 2) The length of the obstacle-free routes shall be the shortest practical distance.
  - There may be reasons that require the route to diverge to accommodate different categories of PRM, provided each division is the shortest practical distance for that category of PRM.
  - When the station building is open during the operating time for passenger traffic the main route shall pass through the station building if it is the shortest practical route.
  - When the station building is closed during the operating time for passenger traffic, all passengers shall be directed to an alternative route within the station confines.
  - This should be based on good practice as described in Annex C. An example of a specification for a main route is described in Annex C.
- 3) Obstacle-free route floor surfaces and ground surfaces shall have low reflecting properties.
  - Assessment shall be in accordance with EN ISO 2813 for paints and varnishes, an achieved gloss value of 50 or lower shall be assumed to be compliant. For any other ground material and/or surface materials an assessment is not necessary.

**5.2.2 Horizontal circulation**

- 1) All obstacle-free routes, footbridges and subways shall have a free width of a minimum of 1 600 mm, except in doors, platforms and level crossings
  - Assessment: minimum width shall be maintained from floor height to the minimum headroom requirement
  - Assessment: handrails may not encroach into the free width (shown in Figure 1)
  - Assessment: exceptions for platforms are specified in 5.13

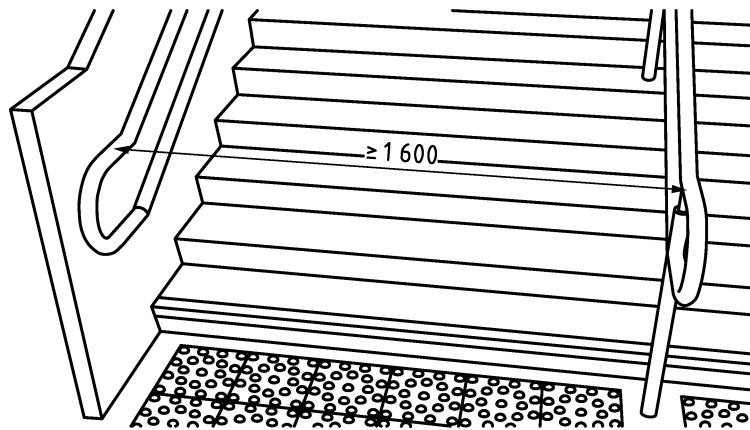
NOTE 1 This requirement is further explained in UIC 140.

- Assessment: the minimum width requirement does not take into account any additional width that may be required for passenger flows, these additional widths shall be in accordance with National Rules.

NOTE 2 This requirement is not applicable to escalators, travelators and lifts.

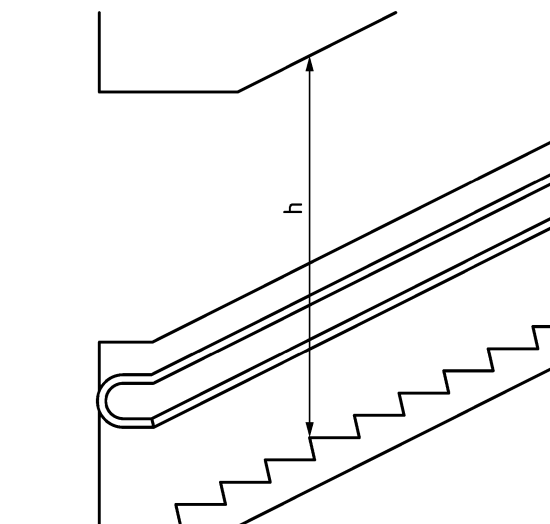
Where travelators are provided this should not be the only option available to a wheelchair user.

Dimensions in millimetres.



**Figure 1 — Obstacle-free width at stairs example showing a minimum width of 1 600 mm between handrails**

- 2) Where thresholds are installed on a horizontal route, they shall contrast with the surrounding floor and shall not be higher than 25 mm.
  - Assessment: Contrast shall be according to EN 16584-1
- 3) All obstacle-free routes, stairs, footbridges and subways shall have a minimum headroom of 2 100 mm (h) according to ISO 21542 over the entire width of 1 600 mm.
  - Assessment: the height shall be assessed from floor to ceiling over the full width of the obstacle-free route, footbridges and subways
  - Assessment: for stairs, the headroom shall be assessed vertically from the plane touching the nosing of each step as shown in Figure 2



**Key**

h minimum clear headroom of 2 100 mm on staircases

**Figure 2 — Stair headroom**