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Järnvägar – Utformning för personer med funktionsnedsättning – Allmänna krav – Del 2: Information

Railway applications – Design for PRM use – General requirements – Part 2: Information

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16584-2

January 2017

ICS 11.180.01; 45.020

English Version

Railway applications - Design for PRM use - General requirements - Part 2: Information

Applications ferroviaires - Conception destinée à l'usage par les PMR: Exigences générales - Partie 2: Informations

Bahnanwendungen - Gestaltung für die Nutzung durch PRM - Allgemeine Anforderungen - Teil 2: Informationen

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

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European foreword

This document (EN 16584-2:2017) 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of an identical text or by endorsement, at the latest by July 2017, and conflicting national standards shall be withdrawn at the latest by July 2017.

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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.

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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 both infrastructure and 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 lighting, contrast, tactile feedback, transmission of visual and acoustic information. The definitions and requirements of this standard cover the infrastructure and the rolling stock applications.

— This standard only refers to aspects of accessibility for PRM passengers it does not define non PRM related requirements and definitions.

— This standard assumes that the infrastructure or rolling stock is in its defined operating condition.

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

The 'General requirements' standard is written in three parts:

— Part 1 contains

  — contrast;

— This document is Part 2 and contains

  — spoken information;

  — written information;

  — tactile information;

  — pictograms;

— Part 3 contains

  — lighting;

  — low reflective properties;

  — transparent obstacles;

  — slip resistance.

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 81-70:2003, *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 16584-1:2017, *Railway applications — Design for PRM use — General requirements — Part 1: Contrast*

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

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

EN 16585-2:2017, *Railway applications — Design for PRM use — Equipment and components on board rolling stock — Part 2: Elements for sitting, standing and moving*

prEN 16587:2013, *Railway applications — Design for PRM use — Requirements for obstacle free routes for infrastructure*

EN 60268-16, *Sound system equipment — Part 16: Objective rating of speech intelligibility by speech transmission index (IEC 60286-16)*

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 7000, *Graphical symbols for use on equipment — Registered symbols*

ISO 7001, *Graphical symbols — Public information symbols*

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

ETSI EN 301 462 (2000-03), *Human Factors (HF); Symbols to identify telecommunications facilities for deaf and hard of hearing people*

3 Terms and definitions

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

3.1
ascender
part of any of the characters b, d, f, h, i, j, k, l or t which protrudes above the x-height of the character

Note 1 to entry: For examples see Annex F

3.2
bezel
raised area that surrounds a pressel as part of a pushbutton

3.3
character height
vertical size of uppercase letters or numbers

Note 1 to entry: For examples see Annex F.

3.4
compressed 'ascender'
ascender that has been compressed or squashed or misaligned and does not use a consistent x-height and/or ascender height

Note 1 to entry: For examples see Annex F.

3.5
compressed 'descender'
descender that has been compressed or squashed or misaligned and does not use a consistent x-height and/or descender height

Note 1 to entry: For examples see Annex F.

3.6
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) or luminance values

Note 1 to entry: See BS 8300:2009+A1 2010 for further information.

3.7
customer information
all visual and spoken information other than information intended only for staff

3.8
descender
part of any of the characters g, j, p, q or y which protrudes below the level of the baseline

Note 1 to entry: For examples see Annex F.

3.9
essential information
subset of customer information delivered within the confines of the infrastructure comprising information concerning the departure of train services and safety instructions

Note 1 to entry: Platform number, train routeing information, departure times and any updates/changes to previously available information and actions required in reaction to a threat to personal safety (e.g. evacuate station FIRE!, stand back from platform edge train approaching) .

3.10
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

3.11
halo
illuminated ring surrounding a pressel, not necessarily continuous

3.12
innovative solution
technological progression that results in a solution that does not comply with the specification set out in Clause 5 of this standard or for which there are no assessment methods

Note 1 to entry: An innovative solution (Article 6 Commission Regulation (EU) No 1300/2014) may only be used following a positive opinion from the European Commission

3.13
last step
final step for an ascending passenger to use to overcome a height change, forming the edge of the walking floor

3.14
low reflective properties
characteristics that reduce reflection of light from a surface

3.15
mixed case
text using a combination of upper and lower case characters

Note 1 to entry: For examples see Annex F

3.16
pictogram
graphical symbol, diagram or figure with a particular meaning which directly represents or conveys its meaning independently of language through a pictorial representation of a physical object, action or character

Note 1 to entry: Refer to ISO 7001:2007, ISO/TR 7239 and ISO 9186 for rules regarding graphical symbols and frames.

3.17
pressel
surface of the pushbutton which is pressed in order to activate the pushbutton

3.18
routeing information
information, used by passengers to guide them on their journey, a guide as to which route to take to get to a required destination or facility and changes along that journey

Note 1 to entry: This can be temporary information to an event e.g. exhibition or sporting event but NOT any form of commercial advertising

3.19
sans serif font
character set from a sans serif typeface

Note 1 to entry: For examples see Annex F.

3.20
sans serif
without serifs

Note 1 to entry: For examples see Annex F.

3.21
serif
additional stroke or line attached to the main strokes of a character or number

Note 1 to entry: For examples see Annex F.

3.22
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

3.23
spoken information
information audibly communicated in words

Note 1 to entry: This can be direct, pre-recorded or synthesized information.

3.24
station
any form of infrastructure where a train operates and passengers can board or alight in normal operation

3.25
station building
any building or structure within the confines of the station in areas for use by passengers which can be open at different times to the overall station

Note 1 to entry: This does not include other commercial structures that are not essential for travel

3.26
tactile
information that is understood through the physical sense of touch

Note 1 to entry: Tactile signs, controls, symbols, pictograms, guide path and braille or raised characters are a physical means by which tactile information is provided

3.27
transparent obstacle
obstacle that allows objects or images to be seen as if there were no intervening material, seen through with a level of clarity

Note 1 to entry: Transparency in this standard is when an obstacle allows at least 50 % direct light transmission.

3.28
typeface
character set (letters and numbers) of a particular design that is categorised as either 'serif' or 'sans serif' where this is a collective definition of all the characters in that typeface and not the individual characters

Note 1 to entry: Examples of the characters in a 'serif and 'sans serif' typeface are shown in Annex F and example typefaces in Annex N

3.29
universal toilet
toilet designed to be used by all passengers including passengers in wheelchairs

3.30
visual acuity
clearness or acuteness of vision

3.31
visual information
written information, pictograms and markings

3.32
written information
information visually communicated in words, letters and numerals, excluding pictograms and markings

4 Symbols and abbreviations

Table 1 —Abbreviations

Abbreviation	Designation
EN	European Standard
ISO	the International Organization for Standardization
NCS	Natural Colour System
PRM	Persons with disabilities and persons with reduced mobility
RAL	German colour matching system issued by RAL gGmbH.
STI-PA	Speech Transmission Index Passenger Address
TSI	Technical Specification for Interoperability

Table 2 —Symbols

Symbol	Designation	Unit
%ile	percentile	
dB	unit of noise level	decibel
dB LAeq	average noise levels	decibel
Hz	unit of frequency	Hertz
L	unit of luminance in candela per square metre	cd/m^2
m	unit of length	metre
mm	unit of length	millimetre
s	unit of time	second

5 Requirements and assessment

5.1 General

Assessment of the requirements identified in Clause 5 shall be according to Annex H and Annex I. 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 Infrastructure

5.2.1 Parking facilities for persons with disabilities and persons with reduced mobility

Where a station specific parking area exists, there shall be sufficient and adapted parking spaces reserved for persons with disabilities and persons with reduced mobility eligible to utilize them at the nearest practicable position, within the parking area, to an accessible entrance.

International or National rules shall apply to parking spaces (this includes, but is not limited to: the number of spaces, access, location, dimensions, materials, colours, signing and lighting).

5.2.2 Obstacle free routes

5.2.2.1 Vertical circulation

Staircases on the obstacle free routes shall as a minimum have tactile warning surface indicators according to prEN 16587:2013 installed before the first descending step.

International or National rules shall apply to tactile warning surface indicators.

5.2.2.2 Route identification

1) Obstacle free routes shall be clearly identified by visual information as detailed in 5.2.5.

2) Information on the obstacle free route shall be provided to visually impaired people by tactile and contrasting walking surface indicators as a minimum:

   — international or National rules shall apply to tactile walking surface indicators;

   — if a tactile path is installed it shall comply with National rules and shall be provided along the full length of the obstacle free route(s);

   — contrast shall be assessed according to EN 16584-1;

   — this requirement does not apply to obstacle free routes to and from car parks.

   Technical solutions using remotely controlled audible devices or telephone applications are permitted to be used in addition or as an alternative.

   — When used as an addition to the tactile walking surface indicators, international or National rules, if available shall apply.

   — When they are intended to be used as an alternative, they shall be treated as innovative solutions.

   If there are handrails or walls within reach along the obstacle free route to the platform, they shall have brief information (for example platform-number or direction-information) in braille or in prismatic letters or numbers on the handrail, or on the wall at a height between 1 450 mm and 1 650 mm.

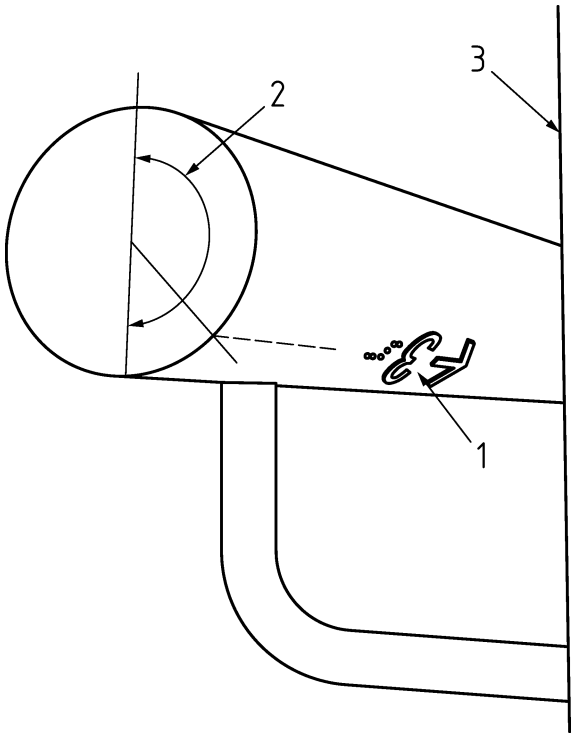
   — Arrows are permissible, in addition to braille or prismatic letters and numbers.

   — For the purpose of this standard prismatic means raised or tactile character and shall be assessed according to Annex B.

   — Braille shall be assessed according to Annex E.

   — When placed on the handrail, this information shall be positioned on the rear of the handrail. The centreline of the tactile information shall be within the 180° arc as shown in Figure 1.

   — When placed on the wall, this information shall be positioned as shown in Figure 2.



Key

1 tactile information in braille and prismatic characters on handrails at height 850 mm to 1 000 mm

2 0° to 180° angle from top of handrail to centreline of tactile information at rear of handrail

3 wall, surface or structure on which handrail is mounted (rear side of the handrail)

NOTE The example in Figure 1 shows the tactile information at approximately 140° from the top.

Figure 1 — Positioning of tactile information on the handrail