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Railway applications - Platform barrier systems

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

Railway applications - Platform barrier systems

Applications ferroviaires - Systèmes façades de quai

Bahnanwendungen - Bahnsteig-Barriere-Systeme

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European foreword

This document (EN 17168:2021) 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of an identical text or by endorsement, at the latest by January 2022, and conflicting national standards shall be withdrawn at the latest by January 2022.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.

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Introduction

Platform barrier systems provide a movable barrier between trains and other guided transit vehicles, and passengers waiting at stations and boarding points.

Platform barrier systems are used increasingly on metro and other rail networks to ensure the safety of passengers on the station platform who are waiting to board vehicles. Such systems are also used on "people-mover" guided systems for short-distance transits, for example at airports. Their use is recommended by EN 62267 for any fully automated transit system.

In particular platform barrier systems can be used to control the risk of:

— incursion by passengers or other persons on the railway track (deliberate or accidental); and

— contact between passengers and moving vehicles.

These risks can be especially significant where there is the possibility of overcrowding on station platforms at busy locations. Barriers may increase the safely useable space in the station for passengers waiting and circulating on the platforms.

Platform barrier systems integrate the operation of the platform barrier doors and gates with opening and closing of train doors and also assist in the management of station operations, to safely permit higher speeds for trains entering and exiting the stations.

Barrier installations can also be part of a continuous partition between the running tracks and the station areas for the purposes of:

— fire safety (including smoke management);

— tunnel and station ventilation (including reduction of the piston effect);

— trackside noise reduction; and

— passenger comfort at climate-controlled stations.

Additionally, the terminology used in connection with platform barrier systems, in particular to improve the specification and understanding of safety requirements, should be standardized.

1 Scope

This document specifies requirements for the design, construction and operation of platform barrier systems positioned at the edge of a station platform immediately adjacent to the rail or other guided vehicles in stations and boarding points for passenger services. This document includes:

— requirements for the fixed structure and fixed parts along the platform;

— physical requirements for the movable doors and gates normally used by passengers;

— requirements for emergency doors;

— requirements for driver access doors;

— requirements for platform extremity doors; and

— requirements for the management of safety risks that are particular to barrier systems.

This document also gives requirements for the integration of barriers within the overall rail system, including:

— synchronization of vehicle and platform barrier doors/gates;

— audible and visible alerts;

— integrity of control systems;

— testing of the barrier installation;

— operational performance; and

— requirements relating to other interfacing sub-systems, notably signalling and vehicles.

For barrier systems set back from the platform edge, which are used to control access to trains or for crowd management, relevant sections of the document can be used as guidance.

This document applies to all persons involved in the implementation and system integration of a platform barrier system, including infrastructure owners, designers, installers and operators.

This document does not cover barrier systems using bars, ropes, etc. or which operate in a vertical direction.

This document applies to rail services, e.g. metro, tram systems and heavy rail services as requested by a project specification. It applies to small systems, working in conjunction with a single vehicle, or with larger systems working with a complete train.

This document applies to platform barrier systems used at sub-surface stations, enclosed surface stations (e.g. those enclosed for the purposes of providing an air-conditioned environment for waiting passengers), and those fully in the open-air.

This document does not cover normative requirements relating to fire performance or fire requirements arising from use of platform barrier systems as fire barriers.

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 1090-2, *Execution of steel structures and aluminium structures — Part 2: Technical requirements for steel structures*

EN 1090-3, *Execution of steel structures and aluminium structures — Part 3: Technical requirements for aluminium structures*

EN 1125, *Building hardware — Panic exit devices operated by a horizontal bar, for use on escape routes — Requirements and test methods*

EN 1990:2002, *Eurocode — Basis of structural design*

EN 1991-1-1:2002, *Eurocode 1: Actions on structures — Part 1-1: General actions — Densities, self-weight, imposed loads for buildings*

EN 1991-1-4, *Eurocode 1: Actions on structures — Part 1-4: General actions — Wind actions*

EN 1993-1-1, *Eurocode 3: Design of steel structures — Part 1-1: General rules and rules for buildings*

EN 1993-1-9, *Eurocode 3: Design of steel structures — Part 1-9: Fatigue*

EN 1998-1, *Eurocode 8: Design of structures for earthquake resistance — Part 1: General rules, seismic actions and rules for buildings*

EN 1999-1-1, *Eurocode 9: Design of aluminium structures — Part 1-1: General structural rules*

EN 1999-1-3, *Eurocode 9: Design of aluminium structures — Part 1-3: Structures susceptible to fatigue*

EN ISO 12543-1, *Glass in building — Laminated glass and laminated safety glass — Part 1: Definitions and description of component parts (ISO 12543-1)*

EN 12600, *Glass in building — Pendulum test — Impact test method and classification for flat glass*

EN 13272-1, *Railway applications — Electrical lighting for rolling stock in public transport systems — Part 1: Heavy rail*

EN 13272-2, *Railway applications — Electrical lighting for rolling stock in public transport systems — Part 2: Urban rail*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13501-2, *Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests, excluding ventilation services*

EN 13501-6, *Fire classification of construction products and building elements — Part 6: Classification using data from reaction to fire tests on power, control and communication cables*

EN 14752:2019, *Railway applications — Body side entrance systems for rolling stock*

EN 16584-1, *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 50121-4, *Railway applications — Electromagnetic compatibility — Part 4: Emission and immunity of the signalling and telecommunications apparatus*

EN 50122-1:2011, *Railway applications — Fixed installations — Electrical safety, earthing and the return circuit — Part 1: Protective provisions against electric shock*

EN 50122-2, *Railway applications — Fixed installations — Electrical safety, earthing and the return circuit - Part 2: Provisions against the effects of stray currents caused by d.c. traction systems*

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

EN 50128, *Railway applications — Communication, signalling and processing systems — Software for railway control and protection systems*

EN 50129, *Railway applications — Communication, signalling and processing systems — Safety related electronic systems for signalling*

EN 50162, *Protection against corrosion by stray current from direct current systems*

HD 60364-4-41, *Low-voltage electrical installations — Part 4-41: Protection for safety — Protection against electric shock*

HD 60364-5-54, *Low-voltage electrical installations — Part 5-54: Selection and erection of electrical equipment — Earthing arrangements and protective conductors*

HD 60364-6, *Low-voltage electrical installations — Part 6: Verification*

EN 60529, *Degrees of protection provided by enclosures (IP Code)*

EN 61000-6-2, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments*

EN 61000-6-4, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments*

EN 61140, *Protection against electric shock — Common aspects for installation and equipment*

EN 62061, *Safety of machinery — Functional safety of safety-related electrical, electronic and programmable electronic control systems*

EN 62290-2:2014, *Railway applications — Urban guided transport management and command/control systems — Part 2: Functional requirements specification*

EN 62305-1, *Protection against lightning — Part 1: General principles*