SLOVENSKI STANDARD
SIST EN 12978:2025

01-februar-2025

Vrata za industrijske in javne prostore, garažna vrata in vratni sestavi (garniture) za pešce - Zaščitne naprave za vrata in vratca na električni pogon - Zahteve in preskusne metode

Industrial, commercial and garage doors and gates and pedestrian doorsets - Protective devices for power operated doors and gates - Requirements and test methods

Türen und Tore - Schutzeinrichtungen für kraftbetätigte Türen und Tore - Anforderungen und Prüfverfahren

Portes et portails industriels, commerciaux et de garage et blocs-portes pour piétons - Dispositifs de protection pour portes et portails motorisés - Exigences et méthodes d'essai

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Ta slovenski standard je istoveten z: **EN 12978:2024**

ICS:

91.060.50	Vrata in okna	Doors and windows
91.090	Konstrukcije zunaj stavb	External structures

SIST EN 12978:2025 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12978

December 2024

ICS 91.060.50

Supersedes EN 12978:2003+A1:2009

English Version

Industrial, commercial and garage doors and gates and pedestrian doorsets - Protective devices for power operated doors and gates - Requirements and test methods

Portes et portails équipant les locaux industriels et commerciaux et les garages et bloc 's-portes pour piétons - Dispositifs de sécurité pour portes motorisées - Prescriptions et méthodes d'essai

Türen und Tore - Schutzeinrichtungen für kraftbetätigte Türen und Tore - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 11 November 2024.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 12978:2024) has been prepared by Technical Committee CEN/TC 33 “Doors, windows, shutters, building hardware and curtain walling”, the secretariat of which is held by AFNOR.

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 2025, and conflicting national standards shall be withdrawn at the latest by June 2025.

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 EN 12978:2003+A1:2009.

Compared with EN 12978:2003+A1:2009, the following changes have been made:

a) revision according to the requirements of EN ISO 12100:2010 (safety of machines);

b) change of scope ensuring that only basic requirements of protective devices put separately on the market are covered by this document; requirements for the safe function of the combination of protective device and industrial, commercial and garage doors are given in EN 12453;

c) modification of the definition of test pieces and test procedures.

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This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

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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.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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Introduction

This document is a type-C standard as stated in EN ISO 12100.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

— machine manufacturers (small, medium and large enterprises);

— health and safety bodies (regulators, accident prevention organizations, market surveillance etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

— machine users/employers (small, medium and large enterprises);

— machine users/employees (e.g. trade unions, organizations for people with special needs);

— service providers, e.g. for maintenance (small, medium and large enterprises);

— consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

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1 Scope

This document specifies requirements and test methods for sensitive protective equipment put separately on the market as safety components to be used with entrance equipment such as power operated industrial, commercial and garage doors, gates and barriers, power operated pedestrian doors and power operated pedestrian entrance control equipment.

NOTE Requirements for the safe function of the combination of protective device and industrial, commercial and garage doors and barriers are given in EN 12453.

This document deals with all significant hazards, hazardous situations and events relevant to the power operation of doors, gates and barriers when they are used as intended and under conditions of misuse which are reasonably foreseeable as identified in Clause 4.

All lifetime phases of the sensitive protective equipment including transportation, assembly, dismantling, disabling and scrapping are considered by this document.

Whenever the term „door" is used in this document, it is deemed to cover the full scope of types and variances of doors, gates, barriers and entrance control equipment listed in the scope of EN 12453:2017+A1:2021, EN 16005:2023+A1:2024 and EN 17352:2022.

This document is not intended to be used for sensitive protective equipment using ultrasonic, radar, capacitive, inductive, passive infrared and vision based technologies. For these types of equipment this document can be used as a guide to demonstrate that such a device is allowed.

This document is not applicable to sensitive protective equipment manufactured before the date of its publication.

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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.

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EN 12433-1:1999, *Industrial, commercial and garage doors and gates — Terminology — Part 1: Types of doors*

EN 12433-2:1999, *Industrial, commercial and garage doors and gates — Terminology — Part 2: Parts of doors*

EN 12453:2017+A1:2021, *Industrial, commercial and garage doors and gates — Safety in use of power operated doors — Requirements and test methods*

EN 60068-2-6:2008, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal) (IEC 60068-2-6:2007)*

EN 60068-2-14:2009, *Environmental testing — Part 2-14: Tests — Test N: Change of temperature (IEC 60068-2-14:2009)*

EN 60068-2-27:2009, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock (IEC 60068-2-27:2008)*

EN 60068-2-78:2013, *Environmental testing — Part 2-78: Tests — Test Cab: Damp heat, steady state (IEC 60068-2-78:2012)*

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EN 60335-1:2012,[1] *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2010, modified)*

EN 60529:1991,[2] *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

EN 60825-1:2014,[3] *Safety of laser products — Part 1: Equipment classification and requirements (IEC 60825-1:2014)*

EN 62368-1:2014,[4] *Audio/video, information and communication technology equipment — Part 1: Safety requirements (IEC 62368-1:2014, modified)*

EN 62471:2008, *Photobiological safety of lamps and lamp systems (IEC 62471:2006, modified)*

EN IEC 60664-1:2020,[5] *Insulation coordination for equipment within low-voltage supply systems — Part 1: Principles, requirements and tests (IEC 60664-1:2020)*

EN IEC 61000-6-1:2019, *Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity standard for residential, commercial and light-industrial environments (IEC 61000-6-1:2016)*

EN IEC 61000-6-2:2019, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity standard for industrial environments (IEC 61000-6-2:2016)*

EN IEC 61496-1:2020, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2020)*

EN IEC 61496-2:2020, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:2020)*

EN IEC 61496-3:2019, *Safety of machinery — Electro-sensitive protective equipment — Part 3: Particular requirements for active opto-electronic protective devices responsive to diffuse reflection (AOPDDR) (IEC 61496-3:2018)*

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EN ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 4414:2010, *Pneumatic fluid power — General rules and safety requirements for systems and their components (ISO 4414:2010)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13849-1:2023, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design (ISO 13849-1:2023)*

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[1] As impacted by EN 60335-1:2012/AC:2014, EN 60335-1:2012/A1:2019, EN 60335-1:2012/A2:2019, EN 60335-1:2012/A11:2014, EN 60335-1:2012/A13:2017, EN 60335-1:2012/A14:2019 and EN 60335-1:2012/A15:2021.

[2] As impacted by EN 60529:1991/A1:2000, EN 60529:1991/A2:2013, EN 60529:1991/A2:2013/AC:2019-02 and EN 60529:1991/AC:2016-12.

[3] As impacted by EN 60825-1:2014/AC:2017-06, EN 60825-1:2014/A11:2021 and EN 60825-1:2014/A11:2021/AC:2022-03.

[4] As impacted by EN 62368-1:2014/AC:2015-02, EN 62368 1:2014/AC:2015-05, EN 62368-1:2014/AC:2015-11, EN 62368-1:2014/AC:2017-03 and EN 62368-1:2014/A11:2017.

[5] As impacted by EN 60664-1:2020/AC:2020-12.

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EN ISO 13849-2:2012, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation (ISO 13849-2:2012)*

EN ISO 13856-1:2013, *Safety of machinery — Pressure-sensitive protective devices — Part 1: General principles for design and testing of pressure-sensitive mats and pressure-sensitive floors (ISO 13856-1:2013)*

EN ISO 13856-2:2013, *Safety of machinery — Pressure-sensitive protective devices — Part 2: General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars (ISO 13856-2:2013)*

EN ISO 13856-3:2013, *Safety of machinery — Pressure-sensitive protective devices — Part 3: General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices (ISO 13856-3:2013)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12433-1:1999, EN 12433-2:1999, EN 12453:2017+A1:2021, EN ISO 12100:2010 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp/ui

— IEC Electropedia: available at https://www.electropedia.org/

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3.1
active opto-electronic protective device
AOPD
device whose sensing function is performed by opto-electronic emitting and receiving elements detecting the interruption of optical radiations generated within the device, by an opaque object present in the specified detection zone

[SOURCE: EN ISO 12100:2010, 3.28.6, modified: NOTE deleted]

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3.2
active opto-electronic protective device responsive to diffuse reflection
AOPDDR
device, whose sensing function is performed by opto-electronic emitting and receiving elements, that detects the diffuse reflection of optical radiations generated within the device by an object present in a detection zone specified in two or three dimensions

[SOURCE: EN IEC 61496-3:2019, 3.301, modified: Note 1 to entry and Note 2 to entry deleted]

3.3
light barrier
AOPD comprising one emitting element and one corresponding receiving element forming a single detection line

Note 1 to entry: Systems with multiple pairs of emitting and receiving elements, are considered as multiple independent light barriers, if:

— they are not part of an integrated assembly, or

— they have less than three emitting and less than three receiving elements, which can be part of an integrated assembly.

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3.4
light curtain
AOPD comprising an integrated assembly of three or more emitting element(s) and three or more receiving element(s) forming a detection zone with a specified detection capability specified by the supplier

3.5
sensitive protective equipment
SPE
equipment for detecting persons or parts of persons which generates an appropriate signal to the control system to reduce risk to the persons detected

[SOURCE: EN ISO 12100:2010, 3.28.5, modified: NOTE deleted]

3.6
electro-sensitive protective equipment
ESPE
sensitive protective equipment (SPE) consisting of a non-mechanically actuated assembly of devices and/or components working together for presence sensing purposes and comprising as a minimum:

— a non-mechanical sensing device and

— controlling/monitoring devices and

— output signal switching devices (OSSD) and/or a safety-related data interface

[SOURCE: EN IEC 61496-1:2020, 3.5, modified: NOTE deleted]

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3.7
pressure-sensitive protective equipment
PSPE
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sensitive protective equipment (SPE) of the „mechanically activated trip" type intended to detect the touch of a person or body part of a person and comprising as a minimum:

— a sensing device and

— controlling/monitoring devices and

— output signal switching devices (OSSD) and/or a safety-related data interface

Note 1 to entry: PSPE can be mats and floors (see EN ISO 13856-1:2013) or pressure sensitive edges or pressure sensitive bars (see EN ISO 13856-2:2013) or pressure-sensitive bumpers, plates, wires and similar devices (see EN ISO 13856-3:2013).

3.8
output signal switching device
OSSD
component of the SPE connected to the machine control system which, when the sensing device is actuated during normal operation, responds by going to the OFF-state

[SOURCE: EN IEC 61496-1:2020, 3.19]