SLOVENSKI STANDARD
oSIST prEN 12978:2017

01-december-2017

Vrata v industrijske in javne prostore ter garažna vrata - Varnostne naprave za vrata s samodejnim delovanjem - Zahteve in preskusne metode

Industrial, commercial and garage doors and gates - Safety 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 résidentiels - Dispositifs de sécurité pour portes motorisées - Exigences et méthodes d'essai

Ta slovenski standard je istoveten z: **prEN 12978**

ICS:

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

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EUROPEAN STANDARD

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DRAFT
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ICS 91.060.50

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English Version

Industrial, commercial and garage doors and gates - Safety devices for power operated doors and gates - Requirements and test methods

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

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

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 33.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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European foreword

This document (prEN 12978:2017) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 12978:2003+A1:2009.

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.

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

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) deletion of requirements which are covered by EN 12453 for the safe function of the combination of safety device and industrial, commercial and garage doors, so that only basic requirements of safety devices are covered by this document;

c) modification of the definition of test pieces and test procedures for light curtains and barriers.

Introduction

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

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

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

This document has been prepared to meet the needs of manufacturers, users and safety enforcement authorities, with the primary purpose of providing design and performance for safety in use of power operated industrial, commercial and garage doors and gates used by vehicular and pedestrian traffic.

With the aim of clarifying the intention of this document and avoiding doubts when reading it, it was assumed when producing it that clarification occurred between all involved parties (manufacturer, professional installer, user etc.) concerning:

— components to be kept in good repair or working order;

— intended use, the users and place of use of the door;

— all parts of door installations, whether fixed or moving, including the fixing and assembling means, to be in all respects of good construction, suitable material, adequate strength and free from obvious defects for their intended working life;

— the design to be in accordance with European technical rules taking into account the most unfavourable forces occurring during the operation and all failure modes.

1 Scope

This European Standard specifies requirements and test methods for sensitive protective equipment to be used with power operated industrial/commercial/garage doors, gates and barriers covered by EN 12453 and power operated pedestrian doors covered by EN 16005.

NOTE „safety protective equipment" means a device:

— which serves to fulfil a safety function,

— which is independently placed on the market,

— the failure and/or malfunction of which endangers the safety of persons, and

— which is not necessary in order for the machinery to function, or for which normal components may be substituted in order for the machinery to function.

Whenever the term „door" is used in this document, it need to be deemed to cover the full scope of types and variances of doors, gates and barriers defined by the scope of EN 12453 and EN 16005.

This standard does not deal with sensitive protective equipment using ultrasonic, radar, capacitive, inductive or active infrared technologies.

This standard does not apply to inherent sensitive protective equipment.

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

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

EN 12453, *Industrial, commercial and garage doors and gates — Safety in use of power operated doors — Requirements*

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

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

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

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

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

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

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

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

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

EN 61000-6-3, *Electromagnetic compatibility (EMC) — Part 6-3: Generic standards — Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3)*

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

EN 61000-6-7, *Electromagnetic compatibility (EMC) — Part 6-7: Generic standards — Immunity requirements for equipment intended to perform functions in a safety-related system (functional safety) in industrial locations (IEC 61000-6-7)*

EN 61496-2:2013, *Safety of machinery — Electro-sensitive protective equipment — Part 2: Particular requirements for equipment using active opto-electronic protective devices (AOPDs) (IEC 61496-2:2013)*

EN 61784 (all parts), *Industrial communication networks — Profiles (IEC 61784, all parts)*

EN 62471, *Photobiological safety of lamps and lamp systems (IEC 62471)*

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

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

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

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

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)*

EN 60664-1:2007, *Insulation coordination for equipment within low-voltage systems — Part 1: Principles, requirements and tests (IEC 60664-1:2007)*

CLC/TS 61496-3:2008, *Safety of machinery — Electro-sensitive protective equipment — Part 3: Particular requirements for Active Opto-electronic Protective Devices responsive to Diffuse Reflection (AOPDDR) (IEC 61496-3:2008)*

IEC TS 61496-4-2:2014, *Safety of machinery — Electro-sensitive protective equipment — Part 4-2: Particular requirements for equipment using vision based protective devices (VBPD) — Additional requirements when using reference pattern techniques (VBPDPP)*

IEC TS 61496-4-3:2015, *Safety of machinery — Electro-sensitive protective equipment — Part 4-3: Particular requirements for equipment using vision based protective devices (VBPD) — Additional requirements when using stereo vision techniques (VBPDST)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12433-1, EN 12433-2 and EN 12453 and the following apply.

3.1
sensitive protective equipment
SPE
sensitive protective equipment is a stand-alone device including, as a minimum:

— a sensing function;

— a logic function;

— a monitoring function;

— one or more output signal switching device(s)

3.2
electro-sensitive protective equipment
ESPE
assembly of devices and/or components working together for presence sensing purposes and comprising as a minimum

— a sensing device;

— controlling/monitoring devices;

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

[SOURCE: EN 61496-1:2013 modified]

3.3
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 (or for a light beam device, on the axis of the light beam) and comprising as a minimum

— a sensing device;

— controlling/monitoring devices;

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

[SOURCE: EN 61496-2:2013 modified]

3.4
light barrier
AOPD comprising an integrated assembly of one or two emitting element(s) and one or two receiving element(s) forming a detection zone with a specified detection capability

3.5
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

[SOURCE: EN 61496-2:2013 modified]

3.6
pressure-sensitive protective device
PSPE
sensitive protective equipment 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;

— controlling/monitoring devices;

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

[SOURCE: EN ISO 13856-3:2013 modified]

4 List of hazards

4.1 General

Relevant hazards are listed in 4.2 to 4.13.

4.2 Hazards caused by fixing

Inadequate fixing of the protective equipment or parts of it can impair the protective function or cause hazards because of falling objects.

4.3 Hazards caused by the shape

Shape of the protective equipment or parts of it can cause cutting hazards.

4.4 Hazards caused by source of energy

Source of energy for the powered operation of the protective equipment can lead to hazards. This includes electrical, hydraulic and pneumatic source of energy.

4.5 Hazards generated by optical radiation

Photobiological hazards can arise from the radiation intensity of coherent light waves (e. g. laser beams).

4.6 Hazards caused by out of range wavelength

Hazardous operation can arise from use of a wavelength outside the specified range