SLOVENSKI STANDARD
SIST EN 13241:2003+A2:2016

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Nadomešča:
SIST EN 13241-1:2003+A1:2011

Vrata v industrijske in javne prostore ter garažna vrata - Standard za proizvod, zahtevane lastnosti

Industrial, commercial, garage doors and gates - Product standard, performance characteristics

Tore - Produktnorm, Leistungseigenschaften

Portes et portails industriels, commerciaux et de garage - Norme de produit, caractéristiques de performance

Ta slovenski standard je istoveten z: **EN 13241:2003+A2:2016**

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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EUROPÄISCHE NORM

EN 13241:2003+A2

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English Version

Industrial, commercial, garage doors and gates - Product standard, performance characteristics

Portes et portails industriels, commerciaux et de garage - Norme de produit, caractéristiques de performance

Tore - Produktnorm, Leistungseigenschaften

This European Standard was approved by CEN on 12 June 2003 and includes Amendment 1 approved by CEN on 22 February 2011 and Amendment 2 approved by CEN on 11 July 2016.

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

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European foreword

This document ([A2] EN 13241:2003+A2:2016 [A2]) 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of an identical text or by endorsement, at the latest by March 2017, and conflicting national standards shall be withdrawn at the latest by June 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1, approved by CEN on 2011-02-22 and Amendment 2, approved by CEN on 2016-07-11.

This document supersedes [A2] EN 13241-1:2003+A1:2011 [A2].

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1] and [A2] [A2].

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(s).

For relationship with EU Directive(s), see informative Annexes ZA, ZB and ZC, which are integral parts of this document.

[A1] Annex ZB is revised taking into account the "new" Machinery Directive. [A1]

Annexes A and C are informative. Annex B is normative.

This document includes a Bibliography.

[A2] *deleted text* [A2]

[A2] The main changes introduced by the 2nd Amendment to this new edition of the present text concern the title and the scope according to the EC's request and the CEN/TC 33 decisions D1010 (April 2014), D1074 and D1089 (April 2015). [A2]

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

With the aim of clarifying the intentions of this European Standard and avoiding doubts when reading it, the following assumptions were made when producing it:

a) components without specific requirements are:

- designed in accordance with the usual engineering practice and calculation codes, including all failure modes;
- of sound mechanical and electrical construction;
- made of materials with adequate strength and of suitable quality;
- general electrical hazards are dealt with according to electrical safety standards such as EN 60204–1.

b) components are kept in good repair and working order, so that the required characteristics remain during the economical working life despite wear;

c) with the exception of the items listed below, a mechanical device is built according to good practice and the requirements of this European Standard:

- negotiations occur between the manufacturer and the purchaser concerning particular conditions for the use and places of use for the door related to health and safety;
- the place of use/installation to be adequately lit;
- the place of use/installation to allow safe use of the door.

These assumptions do not restrict the need for adequate information for use in this European Standard.

1 Scope

1.1 General

This European Standard specifies the safety and performance requirements, except resistance to fire and smoke control characteristics, for industrial, commercial, garage doors and gates and barriers, intended for installation in areas in the reach of persons, and for which the main intended uses are giving safe access for goods and vehicles accompanied or driven by persons in industrial, commercial or residential premises.

Fire resisting and/or smoke control characteristics for industrial, commercial, garage doors and gates are covered by EN 16034.

This European Standard also covers commercial doors such as rolling shutters and rolling grilles used in retail premises which are mainly provided for the access of persons rather than vehicles or goods.

These doors can include pass doors incorporated in the door leaf which are also covered by this European Standard.

These devices can be manually or power operated.

This European Standard does not cover operation in environments where the electromagnetic disturbances are outside the range of those specified in EN 61000-6-3.

1.2 Exclusions

This European Standard does not apply to the following which are intended for a different use:

- lock gates and dock gates;
- doors on lifts;

- doors on vehicles;
- armoured doors;
- doors mainly for the retention of animals;
- theatre textile curtains;
- horizontally moving power operated doors mainly intended for pedestrian use in accordance with EN 16361;
- revolving doors of any size;
- railway barriers;
- barriers used solely for vehicles.

This European Standard does not cover the radio part of doors. If a radio operating device is used, the relevant ETSI standards should be applied in addition.

This European Standard does not contain any specific requirement for doors which are moving because of energy stored by dedicated means from human power such as manually tensioned springs.

This European Standard does not contain any specific requirements for doors on escape routes. The ability to open the door leaf safely and easily cannot normally be achieved by industrial, commercial and garage doors due to size, weight and/or mode of operation.

The noise emission of powered doors and gates is not considered to be a relevant hazard. Therefore this European Standard does not contain any specific requirements on noise in relation to the Machinery Directive.

1.3 Specific applications

This European Standard should also apply to power operated doors which have been created by the addition of power operation to an installed manual door in respect of the relevant requirements. Annex ZA does not apply to this kind of door.

It also identifies requirements and classes of performance for additional characteristics considered to be of importance to the trade.

When a door is part of the load carrying structure of the building the requirements of this European Standard can apply on a voluntary basis in addition to the requirements for the load carrying structure, which are not dealt with in this European Standard. Annex ZA does not apply for this kind of doors.

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 418, *Safety of machinery — Emergency stop equipment, functional aspects — Principles for design*

EN 1037, *Safety of machinery — Prevention of unexpected start-up*

ENV 1991-2-4, *Eurocode 1: Basis of design and actions on structures — Part 2-4 : Actions on structures — Wind actions*

EN 12424:2000, *Industrial, commercial and garage doors and gates — Resistance to wind load — Classification*

EN 12425, *Industrial, commercial and garage doors and gates — Resistance to water penetration — Classification*

EN 12426, *Industrial, commercial and garage doors and gates — Air permeability — Classification*

EN 12427, *Industrial, commercial and garage doors and gates — Air permeability — Test method*

EN 12428, *Industrial, commercial and garage doors and gates — Thermal transmittance — Requirements for the calculation*

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 12444, *Industrial, commercial and garage doors and gates — Resistance to wind load — Testing and calculation*

EN 12445:2000, *Industrial, commercial and garage doors and gates — Safety in use of power operated doors — Test methods*

EN 12453:2000, *Industrial, commercial and garage doors and gates — Safety in use of power operated doors — Requirements*

EN 12489, *Industrial, commercial and garage doors and gates — Resistance to water penetration — Test method*

EN 12604:2000, *Industrial, commercial and garage doors and gates — Mechanical aspects — Requirements*

EN 12605:2000, *Industrial, commercial and garage doors and gates — Mechanical aspects — Test methods*

EN 12635:2002, *Industrial, commercial and garage doors and gates — Installation and use*

EN 12978:2003, *Industrial, commercial and garage doors and gates — Safety devices for power operated doors and gates — Requirements and test methods*

EN 60204-1:1997, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:1997)*

EN 61000-6-2, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments (IEC 61000-6-2:2005)*

EN 61000-6-3, *Electromagnetic compatibility (EMC) — Part 6-3: Generic standards — Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3:2006)*

EN ISO 140-3, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 3 : Laboratory measurements of airborne sound insulation of building elements (ISO 140-3:1995)*

EN ISO 717-1, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 1 : Airborne sound insulation (ISO 717-1:1996)*

EN ISO 12567-1, *Thermal performance of windows and doors — Determination of thermal transmittance by hot box method — Part 1 : Complete windows and doors (ISO 12567-1:2000)*

3 Terms and definitions

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

3.1
operating force of the door
force exerted by the power operated door leaf when coming into contact with a person and/or an obstacle

3.2
vertically moving door
any door where the main closing edge remains parallel to the ground or floor during its movement

3.3
horizontally moving door
any door where the main closing edge remains perpendicular to the ground or floor during its movement

4 Requirements

4.1 General

The choice of the door type and its specification needs to be made after taking into account where the door is to be installed and the operating requirements expected from it. Safety in use, ease of use and the amount

and frequency of maintenance, its mode of operation, frequency of operation, degree of automation, provision of pass doors and position of the door within the building, etc. are all linked to the choice of the door type. Such specifications may include requirements for performance features which shall be demonstrated by the standards given in the following clauses.

Unless the manufacturer is supplying to fulfil the particular classes or values of performance characteristics for resistance to water penetration, resistance to wind load, thermal resistance air permeability, resistance to fire or resistance to smoke as notified by the purchaser, the manufacturer shall declare the relevant performance levels of his product.

Doors shall be planned, designed and constructed in accordance with the following requirements to ensure their satisfactory and safe operation in their intended situation and under their expected conditions of use and their safe maintenance, repair and dismantling.

4.2 Mechanical aspects

4.2.1 General

All doors, manual and power operated, shall be planned, designed and constructed in accordance with EN 12604. In particular, all doors shall meet the following requirements.

4.2.2 Force for manual operation

Maximum values for the force for manual operation are specified in EN 12604:2000, 4.4.1.

Maximum values of the force for emergency manual operation due to power or drive failure are specified in EN 12453:2000, 5.3.5.

Verification of the force for manual operation shall be carried out in accordance with the test method specified in EN 12605:2000, 5.1.5.

4.2.3 Mechanical resistance

Doors shall be designed and constructed in accordance with EN 12604:2000, 4.2.2 and 4.2.3 so that in normal operation the imposed forces, impacts and stresses neither damage the door nor impair its mechanical performance.

The mechanical strength shall be verified in accordance with the test methods specified in EN 12605:2000, 5.1.1 and 5.4.1.

4.2.4 Mechanical durability

The mechanical performance of a door shall be ensured, subject to prescribed maintenance, for a number of operational cycles, to be declared by the manufacturer in accordance with EN 12604:2000, Clause 5.

Mechanical durability shall be verified in accordance with the test methods specified in EN 12605:2000, 5.2.

NOTE The influences of degradation, by chemical and/or biological attack on the components, which may be incorporated in the test specimen for mechanical durability testing, when they are necessary to achieve characteristics such as air permeability, resistance to water penetration, safety in use etc. are not taken into account. The components are e.g. seals, gaskets, guards.

4.2.5 Geometry of glazing/glass components

Where transparent materials are used in doors they shall not become dangerous, if any breakage should occur.

Door leaves which are primarily made of transparent material shall be easily visible.

Specific requirements are specified in EN 12604:2000, 4.2.5, which shall be verified by the related test methods specified in EN 12605:2000, 5.3.1.

4.2.6 Protection against cutting

Accessible parts of doors shall not create any cutting hazard. Sharp edges shall be eliminated in accordance with EN 12604:2000, 4.5.1, and EN 12453:2000, 5.1.1.3.

4.2.7 Protection against tripping

Parts of doors shall not cause any tripping hazard. Height differences up to 5 mm which occur in the traffic area are not considered dangerous.

When height differences greater than 5 mm are needed due to technical reasons, e.g. thresholds of pass doors, the raised parts shall be clearly visible themselves or shall be made so by warning signs, e.g. yellow-black strips.

Pressure sensitive mats and floors which may create a tripping hazard shall comply with EN 12978:2003, 4.2.4.2.

4.2.8 Safe openings

Vertically moving doors shall be safeguarded in the event of failure of a single component in their suspension (including gear drives) or balancing system against dropping or uncontrolled out-of-balance movement.

Requirements are specified in EN 12604:2000, 4.3.4. These requirements shall be verified in accordance with EN 12605:2000, 5.3.2 and 5.4.3.

Horizontally moving doors shall be safeguarded against derailment.

Requirements are specified in EN 12604:2000, 4.3.1. These requirements shall be verified in accordance with EN 12605:2000, 5.1.2 and 5.4.2.

4.2.9 Release of dangerous substances

Products shall not release any dangerous substances in excess of the maximum permitted levels specified in the relevant European Standard or other specifications.

NOTE For products sold in the EEA, see Annex ZA.

4.3 Power operation

4.3.1 General

All power operated doors shall fulfil (in addition to meeting the requirements of 4.2) the requirements of EN 12453. In particular, power operated doors shall fulfil the following requirements:

4.3.2 Protection against crushing, shearing and drawing-in

Crushing, shearing and drawing-in points generated by the door leaf during normal use shall be eliminated or safeguarded.

Requirements for safety measures are specified in EN 12453:2000, 5.1.1.

The effectiveness of these measures shall be assessed in accordance with EN 12445:2000, 4.1.1.

Safety devices, e.g. pressure-sensitive or electro-sensitive protective devices, which are involved in compliance with the requirements listed above shall be designed and tested in accordance with EN 12453:2000, 5.1.1.6 and EN 12978.