SLOVENSKI STANDARD
SIST EN 16361:2013+A1:2016

01-september-2016

Nadomešča:
SIST EN 16361:2013

Avtomatska vrata za prehod ljudi - Standard za proizvod, zahtevane lastnosti - Sestavi vrat za prehod ljudi, razen nihajnih vrat, najprej zasnovani za montažo s pogonom

Power operated pedestrian doors - Product standard, performance characteristics - Pedestrian doorsets, other than swing type, initially designed for installation with power operation

Kraftbetätigte Türen - Produktnorm, Leistungseigenschaften - Türsysteme, mit Ausnahme von Drehflügeltüren, vorgesehen für den kraftbetätigten Betrieb

Portes motorisées pour piétons - Norme de produit, caractéristiques de performance - Blocs-portes pour piétons, autres que de type battant, initialement conçus pour une installation avec un système de motorisation

Ta slovenski standard je istoveten z: **EN 16361:2013+A1:2016**

ICS:

91.060.50	Vrata in okna	Doors and windows

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 16361:2013+A1

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ICS 91.060.50

Supersedes EN 16361:2013

English Version

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This European Standard was approved by CEN on 26 July 2013 and includes Amendment 1 approved by CEN on 4 April 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 (EN 16361:2013+A1:2016) 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of an identical text or by endorsement, at the latest by January 2017, and conflicting national standards shall be withdrawn at the latest by April 2018.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 4 April 2016.

This document supersedes EN 16361:2013.

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

A1 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 2014/30/EU and Regulation (EU) 305/2011.

For relationship with EU Directive 2014/30/EU and Regulation (EU) 305/2011, see informative Annexes ZA and ZB, which are an integral part of this document. A1

According to the CEN/CENELEC Internal Regulations, the national standards organizations 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.

1 Scope

This European Standard specifies requirements and test/assessment/calculation methods for external and internal power operated pedestrian doorsets, other than swing type, initially designed for installation with power operation [A1] *deleted text* [A1].

Such doorset constructions may be operated electro-mechanically, electro-hydraulically or pneumatically.

These doorsets include power operated pedestrian sliding doorsets, revolving doorsets, balanced (sliding/swing) doorsets and folding doorsets with one or more horizontally moving leaves.

This European Standard applies to power operated pedestrian doorsets with flush or panelled leaves, complete with:

— integral fanlights, if any;

NOTE 1 A fanlight is a panel over a door which is part of the doorset.

— side panels that are contained within a single frame for inclusion in a single aperture, if any.

The intended uses of the products covered by this European Standard are:

— doorsets for external use in escape routes and other declared specific uses and/or uses subject to other specific requirements, in particular noise, energy, tightness and safety-in-use in construction works;

— doorsets for internal use in escape routes, communication and other declared specific uses and/or uses subject to other specific requirements, in particular noise and safety-in-use in construction works;

— doorsets for internal use in escape routes, communication and other declared specific uses and/or uses subject to other specific requirements, in particular noise, energy and safety-in-use in construction works.

The products covered by this European Standard are not assessed for structural applications of the building.

This European Standard does not cover operation in environments where the electromagnetic disturbances are outside the range of those specified in EN 61000-6-2.

This European Standard does not apply to:

— external pedestrian doorsets according to EN 14351-1;

— internal pedestrian doorsets according to prEN 14351-2;

[A1]

— fire resistance and/or smoke control characteristics according to EN 16034; [A1]

[A1] *deleted text* [A1]

— lifts doorsets;

— vehicles doorsets;

— doorsets used in industrial processes;

— doorsets in partition walls;

— doorsets outside the reach of people (such as crane gantry fences);

— turnstiles;

— platform doorsets.

This European Standard does not cover special functions of doorsets (e.g. security, fire aspects in banks, airports, etc.).

This European Standard does not deal with any specific requirements on noise emitted from power operated doorsets, other than swing type, initially designed for installation with power operation [A1] *deleted text* [A1] as their noise emission is not considered to be a relevant hazard.

NOTE 2 Noise emission of power operated doorsets, other than swing type, initially designed for installation with power operation [A1] *deleted text* [A1] is not a significant hazard for the users of these products. It is a comfort aspect.

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 1026:2000, *Windows and doors — Air permeability — Test method*

EN 1027:2000, *Windows and doors — Watertightness — Test method*

[A1] EN 1279-5, *Glass in building — Insulating glass units — Part 5: Evaluation of conformity* [A1]

EN 1627, *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Requirements and classification*

EN 1863-2, *Glass in building — Heat strengthened soda lime silicate glass — Part 2: Evaluation of conformity/Product standard*

EN 12150-2, *Glass in building — Thermally toughened soda lime silicate safety glass — Part 2: Evaluation of conformity/Product standard*

EN 12207:1999, *Windows and doors — Air permeability — Classification*

EN 12208:1999, *Windows and doors — Watertightness — Classification*

EN 12210:1999, *Windows and doors — Resistance to wind load — Classification*

EN 12211:2000, *Windows and doors — Resistance to wind load — Test method*

EN 12519:2004, *Windows and pedestrian doors — Terminology*

EN 13049, *Windows - Soft and heavy body impact — Test method, safety requirements and classification*

EN 14179-2, *Glass in building — Heat soaked thermally toughened soda lime silicate safety glass — Part 2: Evaluation of conformity/Product standard*

EN 14321-2, *Glass in building — Thermally toughened alkaline earth silicate safety glass — Part 2: Evaluation of conformity/Product standard*

EN 14351-1:2006+A1:2010, *Windows and doors —Product standard, performance characteristics — Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics*

EN 16005:2012, *Power operated pedestrian doorsets — Safety in use — Requirements and test methods*

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

EN ISO 10077-1:2006, *Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — Part 1: General (ISO 10077-1:2006)*

EN ISO 10077-2, *Thermal performance of windows, doors and shutters — Calculation of thermal transmittance — Part 2: Numerical method for frames (ISO 10077-2)*

EN ISO 10140-2, *Acoustics — Laboratory measurement of sound insulation of building elements — Part 2: Measurements of airborne sound insulation (ISO 10140-2)*

EN ISO 12543-2, *Glass in building — Laminated glass and laminated safety glass — Part 2: Laminated safety glass (ISO 12543-2)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16005:2012, EN 12519:2004, EN 14351-1:2006+A1:2010 and the following apply.

3.1
night shield
additional element to close the entrance of a revolving doorset

4 Requirements

4.1 General

The performance characteristics for power operated pedestrian doorsets, other than swing type, initially designed for installation with power operation ⟨A1⟩ *deleted text* ⟨A1⟩ shall be determined and expressed in accordance with 4.2 to ⟨A1⟩ 4.12 ⟨A1⟩.

NOTE 1 The order in which the performance characteristics are identified does not imply an order of priority or a test sequence.

The performance characteristics of 4.2, 4.3, 4.5, 4.7 to 4.10 and the burglar resistance of ⟨A1⟩ 4.14.4 ⟨A1⟩ shall be determined with closed and locked doorsets for revolving doorsets with closed night shield or in the night position.

NOTE 2 Without night shield most of the following requirements are not applicable to revolving doors due to requirements of safety in use (e.g. safety distances).

For revolving doorsets the external side is the part of the doorset which is exposed to the weather.

4.2 Rate of release of dangerous substances (only for indoor impact)

This test is applicable to all the intended uses of the products covered by this European Standard.

National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this standard are placed on those markets.

In the absence of European harmonised test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.

NOTE An informative database covering European and national provisions on dangerous substances is available at the Construction web site on EUROPA accessed through: http://ec.europa.eu/enterprise/construction/cpd-ds/.

4.3 Impact resistance (only for glazed doors with injury risks)

Impact resistance is the ability of a doorset to keep in place a glazed insert without creating hazards in case of impact with a body.

This test is applicable to all the intended uses of the products covered by this European Standard.

Doorsets fitted with glass or other fragmental material and doorsets with unframed glass leaves shall be tested and the results shall be expressed in accordance with EN 13049. Where relevant, the test shall be carried out from both sides.

4.4 Height

Height is the clear opening of a doorset a pedestrian can use to pass through it.

This test is applicable to all the intended uses of the products covered by this European Standard.

The clear opening height (see EN 12519:2004, 3.1) shall be expressed in millimetres.

Where the threshold and the head/transom are not parallel, the maximum and minimum height shall be stated.

NOTE The height can be diminished due to projecting hardware and angle of opening.

4.5 Direct airborne sound insulation index (only for uses where acoustic performance is declared)

The direct airborne sound insulation index is the ability of a doorset to protect an ambient from the noise coming from another one.

This test is applicable to all the intended uses of the products covered by this European Standard when the acoustic performance is declared.

The direct airborne sound insulation index, when declared, shall be determined in accordance with EN ISO 10140-2 (reference method).

The test results shall be evaluated and expressed in accordance with EN ISO 717-1.

4.6 Impact forces (safety in use)

Impact forces are the forces a user could be subject to when getting in contact with a moving door leaf.

This test is applicable to all the intended uses of the products covered by this European Standard.

Impact forces exerted by the door leaf of power operated doorsets, other than swing type, initially designed for installation with power operation 〚A1〛 *deleted text* 〚A1〛, where crushing or impact hazards are safeguarded by limitation of forces, shall be in accordance with EN 16005:2012, 4.6.7.

4.7 Water tightness (only for external doors)

Water tightness is the ability of a closed doorset to reduce penetration of water in the environment where the doorset is installed.

This test is only applicable to doorsets for external use.

The test shall be carried out in accordance with EN 1027:2000 with the following additions and modifications:

— Clause 1: Addition: revolving doorsets need not be fully assembled but shall include the relevant parts of the doorset for the test, e.g. night shield;

— Subclause 6.1: Addition: the test sample need not be fully functional but shall include the relevant parts of the doorset for the test, e.g. night shield for revolving doorset;

— Subclause 7.1: Modification: the minimum test pressure of 500 Pa is not required.

The results shall be expressed in accordance with EN 12208:1999 with the following additions and modifications:

— Clause 4: Addition: water penetration through the gap between floor level and the door leaf shall not be considered for classification of the doorset;

— Clause 4, Table 1: Modification: classes are limited to 0 to 5A, 0 to 5B and Exxx for P_{max} > 200 Pa.

The test for water tightness of side panels shall be carried out on the side panel or on its individual parts. In the latter case, the designation of the side panel shall be determined by the part(s) with the most unfavourable performance.

NOTE Installation of a weather shield or similar can reduce the need for water tightness of the doorset.

4.8 Resistance to wind load (only for external doors)

Resistance to wind load is the ability of a closed doorset to withstand the load of the wind in the environment where the doorset is installed.

This test is only applicable to doorsets for external use.

Tests shall be carried out in accordance with EN 12211:2000 with the following modifications:

— Subclause 6.1: the test sample need not be fully functional but shall include the relevant parts of the doorset for the test, e.g. night shield for revolving doorset;

— Subclause 7.1: the air permeability test according to EN 1026 (P1 and P2) shall not be performed;

— Subclause 7.3: the number of cycles shall be 20 and the air permeability test according to EN 1026 shall not be repeated.

The deflection of frame elements (e.g. transoms and mullions) shall be determined by calculation or by test (reference method).

The results shall be expressed in accordance with EN 12210:1999 with the following modifications:

— Clause 4: Table 1 is modified as follows:

Table 1 — Classification of wind load for external doorsets (EN 12210:1999, Table 1)

A1

Class	P1 (Pa)	P2 [a] (Pa)	P3 (Pa)
PPD0,value	value [b]	0,5 value	1,5 value
PPD1	200	100	300
PPD2	300	150	450
PPD(xxx)	xxx [c]	0,5 xxx	1,5 xxx

[a] This pressure is repeated 20 times.

[b] "value" is the actual test pressure P1 lower than 200 Pa (e.g. 150, etc.).

[c] xxx is the actual test pressure P1 higher than 300 Pa (e.g. 350, etc.).

A1

— Subclause 6.1: the air permeability requirement (after the P1 and P2 tests) is not applicable.

When appropriate European Standards are in place, the determination of the load-bearing capacity should be carried out as prescribed in those European Standards.

4.9 Thermal transmittance (only for external doors and for internal doors where the thermal insulation is declared)

Thermal transmittance is the ability of a doorset to avoid the temperature of an ambient is influenced by the temperature of another ambient next to it.

The test is only applicable to doorsets for external use and to doorsets for internal use where thermal insulation is declared and shall be determined:

a) by calculation using:

   1) EN ISO 10077-1; or

   2) EN ISO 10077-1 and EN ISO 10077-2.

   Calculation previously performed in accordance with EN ISO 10077-1 and tabulated values in accordance with EN ISO 10077-1:2006, Table F.1, may be taken into account with an addition of 0,1 W/m^2K.

or

b) by hot box method using EN ISO 12567-1.

The collective symbols for thermal transmittance is U_D, i.e. the symbol U_{st} used in EN ISO 12567-1 is equivalent to U_D.

4.10 Air permeability (only for external doors and for internal doors where thermal insulation is declared)

Air permeability is the ability of a doorset to reduce unwanted air exchange between two ambients at different temperature.

The test is only applicable to doorsets for external use and to doorsets for internal use where thermal insulation is declared.

This test shall only be performed when thermal performance of the doorset is declared. Two air permeability tests shall be carried out in accordance with EN 1026 (reference method), one with positive test pressures and one with negative test pressures.

EN 1026:2000 is applicable with the following modification:

— Subclause 7.3.1: the minimum test pressure of 500 Pa is not required.

The tests for air permeability of side panels shall be carried out on the side panel or on its individual parts including joints between the individual parts. In the latter case the air permeability of the side panel shall be calculated as the sum of the air permeability of the individual parts and the joints.

〈A1〉 The test result, defined as the numerical average of the two air permeability values (m^3/h) at each pressure step, shall be expressed in accordance with EN 12207:1999, 4.4 and 4.5 which are applicable with the following modifications:

Table 2 — Reference air permeabilities at 100 Pa and maximum test pressures, related to overall area, for classes 1 to 4 (EN 12207:1999, Table 1)

Class	Reference air permeability 100 Pa $\frac{m^3}{h \times m^2}$	Maximum test pressure Pa
PPD0,value	–	< 150
PPD1	50	150
PPD2	27	300
PPD(xxx)	–	> 300

Table 3 — Reference air permeabilities at 100 Pa and maximum test pressures, related to joints length, for classes 1 to 4 (EN 12207:1999, Table 2)

Class	Reference air permeability 100 Pa $\frac{m^3}{h \times m}$	Maximum test pressure Pa
PPD0,value	–	< 150
PPD 1	12,5	150
PPD 2	6,75	300
PPD(xxx)	–	> 300

The value PPD0,value shall be calculated by measuring the air permeability up to 150 Pa.

The worst performance of the unit in the measurement range relating to the overall area and the length of joints (EN 12207:1999, Figure 1, Y1 and Y2) shall be referred to 100 Pa reference pressure, using the following formula:

$$Q_{Y1,Y2} = Q_{100}\left(\frac{p}{100}\right)^{2/3}$$

or