SLOVENSKI STANDARD
oSIST prEN 1630:2019

01-julij-2019

Vrata, okna, obešene fasade, mreže in polkna - Protivlomna odpornost - Preskusna metoda za ugotavljanje odpornosti proti poskusu ročnega vloma

Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance to manual burglary attempts

Türen, Fenster, Vorhangfassaden, Gitterelemente und Abschlüsse - Einbruchhemmung - Prüfverfahren für die Ermittlung der Widerstandsfähigkeit gegen manuelle Einbruchversuche

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Blocs-portes pour piétons, fenêtres, façades rideaux, grilles et fermetures - Résistance à l'effraction - Méthode d'essai pour la détermination de la résistance aux tentatives manuelles d'effraction

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Ta slovenski standard je istoveten z: **prEN 1630**

ICS:

13.310	Varstvo pred kriminalom	Protection against crime
91.060.50	Vrata in okna	Doors and windows

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 1630

May 2019

ICS 13.310; 91.060.50

Will supersede EN 1630:2011+A1:2015

English Version

Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance to manual burglary attempts

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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.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 1630:2019) 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 supersedes EN 1630:2011+A1:2015.

Significant changes in this revision are:

a) updated editions of Normative references;

b) Annex E added.

This document is one of a series of standards for burglar resistant pedestrian doorsets, windows, curtain walling, grilles and shutters. The other standards in the series are:

— prEN 1627:2019, *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Requirements and classification*;

— prEN 1628:2019, *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Test method for the determination of resistance under static loading*;

— prEN 1629:2019, *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Test method for the determination of resistance under dynamic loading*.

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The manual test described in this standard covers the areas of vulnerability not suitably assessed by the static loading and dynamic loading tests described in prEN 1628:2019 and prEN 1629:2019. Certain basic security requirements for the locks, furniture and cylinders are covered by the requirements detailed in Table 10 of prEN 1627:2019. These security characteristics are not re-assessed in this test standard and the attack methods and test times have been limited to reflect this.

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The use of the tools detailed in the various tools sets is described in this standard. This has the advantage of improving the reproducibility of the test.

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1 Scope

This document specifies a test method for the determination of resistance to manual burglary attempts in order to assess the burglar resistant characteristics of pedestrian doorsets, windows, curtain walling, grilles and shutters. It is applicable to the following means of opening: turning, tilting, folding, turn-tilting, top or bottom hung, sliding (horizontally and vertically), pivoted (horizontally and vertically) and rolling as well as fixed constructions.

This document does not directly cover the resistance of locks and cylinders to attack with picking tools. It also does not cover the attack of electric, electronic and electromagnetic operated burglar resistant construction products using attack methods that might defeat these characteristics.

The manufacturer's installation instructions will give guidance on the fixing of the product.

An example for the contents of the manufacturer's installation instructions is given in Annex A of prEN 1627:2019.

This document does not apply to doors, 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, as covered by EN 13241.

It is acknowledged that there are two aspects to the burglar resistance performance of construction products, their normal resistance to forced operation and their ability to remain fixed to the building. This test method does not evaluate the performance of the fixing to the building.

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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 356:1999, *Glass in building - Security glazing - Testing and classification of resistance against manual attack*

EN 1303:2015, *Building hardware - Cylinders for locks - Requirements and test methods*

prEN 1627:2019, *Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Requirements and classification*

prEN 1628:2019, *Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance under static loading*

prEN 1629:2019, *Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance under dynamic loading*

EN ISO 10666, *Drilling screws with tapping screw thread - Mechanical and functional properties (ISO 10666)*

EN ISO 15480, *Hexagon washer head drilling screws with tapping screw thread (ISO 15480)*

EN ISO 15481, *Cross recessed pan head drilling screws with tapping screw thread (ISO 15481)*

EN ISO 15482, *Cross recessed countersunk head drilling screws with tapping screw thread (ISO 15482)*

EN ISO 15483, *Cross recessed raised countersunk head drilling screws with tapping screw thread (ISO 15483)*

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in prEN 1627:2019 and the following apply.

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
test specimen
complete, fully functioning construction product as detailed in the scope of this standard

3.2
sub-frame
surrounding frame into which the test specimen is mounted in accordance with the manufacturer's instructions

3.3
test rig
surrounding substantial steel frame with movable steel supports into which the sub-frames containing test specimens of various dimensions can be mounted

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3.4
tool set
set of tools allocated for use for a particular resistance class

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Note 1 to entry: For details of the tool set, see Clause 7 and Annex A.

3.5
rest time
time taken when the test person carrying out the manual burglary test interrupts his work for a rest

3.6
tool change time
time for the exchange or replacement of a tool or a part thereof, e.g. a defective drill, a blunt saw blade, etc

3.7
observation time
time required for the test team to observe the test and to decide on its further execution

3.8
total test time
combination of the resistance times, the rest times, the times for tool changes and the observation times during the main test

Note 1 to entry: The maximum total test time is the sum of the resistance time, rest time, tool change time and observation time. Resistance time is the working time of the test person carrying out the manual burglary test. The resistance time includes times of less than 5 s each for tool changes, e.g. exchanging a screwdriver for a crowbar.

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3.9
accessible opening
opening permitting a test block of cross section of any of the dimensions defined in 6.7 to be passed through it

4 Apparatus and test team

4.1 Test rig

The test rig shall consist of a rigid frame into which test specimens can be mounted with its subframe. Annex C, Figure C.1 shows an example of a test rig. The stiffness of the rig shall be such that a 15 kN force applied to any of the defined points shall not cause a deflection of more than 5 mm. The test rig shall support the subframe. The test rig shall not impede the execution of the test.

4.2 Test team

4.2.1 Personnel

The requirements for the test team personnel should be in accordance with EN ISO/IEC 17025:2017, 6.2.

4.2.2 Composition of the test team

The test team shall comprise a minimum of two people.

At least two members of the test team shall be capable of performing the manual test.

At least one member of the test team shall be competent to record the data and observations in such a way that a test report can be established.

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For each test in an area of attack only one test team member shall be permitted.

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4.2.3 Essential capabilities of the test team members

In order to perform the manual test, test team members shall be able to demonstrate that they are:

— mentally alert and well-motivated to maintain a sustained burglary attack;

— physically able to perform the test, and are able to withstand the physical strain likely to be imposed for the duration of the test;

— free from mobility impairments and have normal vision, corrected where necessary;

— capable of reflecting current modus operandi during burglary attacks using reasonable but not excessive force reflecting the anticipated attack relevant to the resistance class.

In addition, the test team shall be able to demonstrate detailed knowledge and understanding of:

— the design and manufacture of burglar resistant construction products including the locks, hardware and materials used;

— current modus operandi during burglary attacks;

— operation and control of test equipment;

— operation, control and maintenance of the attack tool sets;

— operation, control and maintenance of the measuring equipment;

— the handling of the tools used when performing the test for burglar resistance.

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4.2.4 Training

The test team shall have the opportunity for continuous development of skills and expertise appropriate to the performance of the tests, including:

— checking and assessing of video recording of the tests by the test team;

NOTE Video records can also form the basis for demonstrating the competence of test team members.

— the exchange of knowledge and experience between testing bodies and police agencies;

— further training, e.g. measuring techniques, material information, new construction products, new opening and closing techniques.

4.3 Measurement and recording devices

4.3.1 Measuring equipment

The following equipment shall be provided:

a) chronometer for measuring the resistance time;

b) chronometer for measuring the total test time;

c) equipment for determining temperature and relative humidity.

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4.3.2 Video recording

The pre-test and the main test conducted on each test specimen shall be fully recorded with a video recorder. The video and any copies of it shall not be published nor shown publicly without the permission of both the applicant and the test lab.

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The video may be used as a reference when subsequent changes are made to the product.

A time reference or code should be shown in the video.

When a test laboratory is asked to conduct the test and a video is recorded, the test laboratory should include restrictions on the use of the video in their terms and conditions of contract with the submitter.

4.4 Tolerances

Unless stated otherwise in this European Standard the following tolerances shall apply to the test equipment:

— Time ±1 %

— Temperature ±1°

— Relative humidity ±5 %

4.5 Sub-frame

The sub-frame shall simulate the support given to the product when installed into a building and shall be taken into consideration in the manufacturer's installation instructions. It shall typically consist of the following:

a) for group 1 to group 4 products, a rectangular metal tube 120 mm x 120 mm x 5 mm or a rectangular timber frame 100 mm x 50 mm;

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b) additionally for group 3 products and group 4 products, a steel tube 40 mm x 40 mm x 3 mm and a base plate of 8 mm steel, consisting of several segments which shall be removable for the purposes of loading, if necessary.

4.6 Cylinder plug extraction

The cylinder plug extraction shall be as given in Annex E.

5 Test specimen

5.1 General

5.1.1 General

The test specimen shall be a functioning product complete with its frames, hardware, guide rails, curtain, tube, roller box and accessories, as appropriate.

The test specimen shall be fixed square and plumb and without twist or bend into a sub-frame. Installation shall be carried out in accordance with the manufacturer's instructions as detailed in Clause 10 of prEN 1627:2019, including the method of fixing, packing supports, sealing requirements etc., as shown in Annex D, Figures D.1 to D.18. The test specimen shall be located in the test rig at a height relative to ground, nominally the same as intended in use. i.e. doors and French windows shall be mounted at ground level and windows shall be mounted at a height of 800 mm from ground level. The test specimen shall be installed in the sub-frame and test rig as close to the tester as possible to give maximum access to the test specimen.

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For products intended to be installed in orientations other than vertical (e.g. rooflights) the test specimen shall be tested in the orientation of its intended use. When a range of intended orientations is considered, the test shall be performed in the most vulnerable orientation for the test specimen.

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The number of test specimens needed is described in prEN 1627:2019, Clause 11.

NOTE 1 Under particular circumstances, additional specimens might be required.

NOTE 2 The specimen used in the static test carried out in accordance with prEN 1628:2019, and in the dynamic test carried out in accordance with prEN 1629:2019, can also be used in the pre-test, provided that any damage caused by those tests will not affect the result of the pre-test.

5.1.2 Product with glazed infilling

For the purposes of testing according to this standard, the test specimen shall be glazed according to the relevant glazing resistance class of EN 356:1999, as shown in Table 1.

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Table 1 — Test sample glazing requirements for test specimen

Resistance class	Minimum resistance class of glazing according to EN 356:1999 fitted on the test specimen for testing purpose
RC 1 N	P4 A
RC 2 N	P4 A
RC 2	P4 A[a]
RC 3	P5 A[a]
RC 4	P6 B[a]
RC 5	P7 B [a]
RC 6	P8 B[a]
[a] The glazed infilling type fitted on the test specimen shall be the type (or one of the types) used for classification purpose.	

NOTE If a higher grade of glass is used in the test specimen, it may not be possible to assess the use of lower grade glass within those products without conducting further tests. This is because higher grades of glass can increase the rigidity of the product.

5.2 Preparation and examination of the specimen

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The temperature of the test specimen shall be maintained between 15 °C and 30 °C for a period of not less than 8 h prior to test.

The test specimen and sub-frame mounted in the test rig shall be visually examined for damage, defects or other particular conditions of finish, etc. These shall be recorded.

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The test specimen shall be in the closed condition specified by the manufacturer.

Each test specimen shall be examined and the direction to disengage each locking point shall be noted.

All locking hardware that can be disengaged from the attack side without the use of a key or tool shall be disengaged during all tests.

NOTE This includes, for example, non-arresting latch bolts which are not engaged in the locking position.

The applicant shall supply the specimens pre-fitted in sub-frames (timber, aluminium or steel box section) in accordance with their installation instructions, with the maximum permitted gap between the specimen frame and sub-frame. This should be representative of a typical installation and shall be recorded in the test report. During test the test rig shall not support the joint line between specimen frame and sub-frame.

6 Procedure

6.1 General

The test sequence shall be as given in Annex B, Figure B.1.

6.2 Test room climate

The test room temperature shall be between 15 °C and 30 °C.

The relative humidity shall be between 30 % and 70 %.

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6.3 Areas of attack

6.3.1 General

For construction products in resistance classes 2 to 4 of prEN 1627:2019, the glass itself shall not be directly attacked in order to create an accessible opening through which to pass template E1 to E4. The glazing and infilling retention system shall be attacked. For construction products in resistance classes 5 and 6 of prEN 1627:2019, the glass itself as well as the glazing and infilling retention system shall be attacked.

If the glass should break during any tests, the test shall proceed and the test laboratory may apply adhesive film to the exposed area of the glass to improve the protection of the tester for RC 2-RC 4.

For construction products without key unlockable hardware on the non-attack side entry might be gained by penetrating the product (including infillings of glass) and operating the hardware. This vulnerability shall be explored in all resistance classes.

6.3.2 Construction products with moving elements

The areas of attack for movable construction products such as windows, doors, shutters and movable grilles, shall be as follows:

— locking parts;

— moving parts;

— body of the element;

— hardware;

— glazing and infilling retention system;

— any other relevant areas.

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6.3.3 Fixed construction products

The areas of attack for fixed construction products, such as curtain walling and grilles, shall be as follows:

— fixing parts (excluding the fixing of the construction product into the sub-frame);

— body of the element;

— glazing and infilling retention system;

— any other relevant areas.

6.4 Attack side and attack height

The applicant shall define the attack side. The attack side shall be described and recorded in the test report. During the test the operator shall be permitted to stand on a platform in order to work in a convenient position. The platform shall be a rigid, stable structure with a maximum height of 1,5 m above ground level.

6.5 Pre-test

Before the main test, a pre-test shall be carried out to establish the test specimen's weak and vulnerable areas.

During the pre-test, each attack area indicated in 6.3.2 or 6.3.3 (as applicable) shall be tested. The effectiveness of each of the tools specified in the relevant tool set shall be evaluated at each attack area.

During the pre-test the test lab shall consider all aspects of the design to find one or more weak spots.