SLOVENSKI STANDARD
SIST EN 1630:2021

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Nadomešča:
SIST EN 1630:2012+A1:2016

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

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

Ta slovenski standard je istoveten z: EN 1630:2021

ICS:

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

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EUROPEAN STANDARD
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English Version

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This European Standard was approved by CEN on 19 March 2021.

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Contents

Page

European foreword

This document (EN 1630:2021) 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of an identical text or by endorsement, at the latest by December 2021, and conflicting national standards shall be withdrawn at the latest by December 2021.

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 1630:2011+A1:2015.

Significant changes in this revision are:

a) updated editions of Normative References;

b) Annex E and Annex F added;

c) for certain test the template E4 was added in 6.7;

d) the figures in Annex A have been updated.

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:

— EN 1627:2021 *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Requirements and classification*;

— EN 1628:2021, *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Test method for the determination of resistance under static loading*;

— EN 1629:2021, *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Test method for the determination of resistance under dynamic loading*.

The manual test described in this document covers the areas of vulnerability not suitably assessed by the static loading and dynamic loading tests described in EN 1628:2021 and EN 1629:2021. Certain basic security requirements for the locks, furniture and cylinders are covered by the requirements detailed in EN 1627:2021, Table 3. These security characteristics are not re-assessed in this test standard and the attack methods and test times have been limited to reflect this.

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

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, Turkey and the United Kingdom.

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 opening functions: turning, tilting, folding, turn-tilting, top or bottom hung, sliding (horizontally and vertically), pivoted (horizontally and vertically), projecting, and rolling as well as non-openable 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 surreptitious attack methods that might defeat these characteristics.

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.

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 EN 1627:2021, Annex A.

This document does not apply to walls and roofs, as well as for 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 13241:2003+A2:2016.

NOTE It is important that construction products that can be reached or driven through by vehicles are protected by appropriate measures such as barriers, extensible ramps, etc.

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.

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*

EN 1627:2021, *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Requirements and classification*

EN 1628:2021, *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Test method for the determination of resistance under static loading*

EN 1629:2021, *Pedestrian doorsets, windows, curtain walling, grilles and shutters — Burglar resistance — Test method for the determination of resistance under dynamic loading*

EN 12216:2018, *Shutters, external blinds, internal blinds — Terminology, glossary and definitions*

EN 12519:2018, *Windows and pedestrian doors — Terminology*

EN 13119:2016, *Curtain walling — Terminology*

EN ISO 10666:1999, *Drilling screws with tapping screw thread — Mechanical and functional properties (ISO 10666:1999)*

EN ISO 15480:2019, *Fasteners — Hexagon washer head drilling screws with tapping screw thread (ISO 15480:2019)*

EN ISO 15481:1999, *Cross recessed pan head drilling screws with tapping screw thread (ISO 15481:1999)*

EN ISO 15482:1999, *Cross recessed countersunk head drilling screws with tapping screw thread (ISO 15482:1999)*

EN ISO 15483:1999, *Cross recessed raised countersunk head drilling screws with tapping screw thread (ISO 15483:1999)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1627:2021, EN 12519:2018, EN 12216:2018, EN 13119:2016 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 document

3.2
sub-frame
standard surrounding frame into which the test specimen is mounted for testing purpose

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

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

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.

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 their subframes. 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.

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

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, building 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.

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 available:

a) chronometer for measuring the resistance time;

b) chronometer for measuring the total test time;

c) equipment for determining temperature and relative humidity.

4.3.2 Video recording

The pre-test and the main test conducted on each test specimen shall be fully video recorded. 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.

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 applicant.

The test laboratory should take precautions to be in line with the EU General Data Protection Regulation.

4.4 Tolerances

Unless stated otherwise in this document 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. It shall typically consist of the following:

a) for group 1 to group 4 products, a rectangular minimum metal tube 120 mm × 120 mm × 5 mm or a rectangular timber frame minimum 100 mm × 70 mm;

NOTE High quality wood, e.g. glue laminated timber.

b) additionally for group 3 products and group 4 products, a steel tube 40 mm × 40 mm × 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

When cylinders do not fulfil EN 1627:2021, Table 3, the cylinder plug extraction shall be conducted in accordance with Annex E.

5 Test specimen

5.1 General

5.1.1 General

The test specimen shall be a functioning product complete with its frames, building 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.

The manufacturer shall ensure that the method of fixing, packing supports, sealing requirements, etc. of the test specimen into the sub-frame are in accordance with their installation instructions (see EN 1628:2021, Figures A.15 to A.63). The sub-frame shall be supported by the test rig so that there will be no movement of the sub-frame during the test.

Installation shall be carried out in accordance with the manufacturer's instructions as detailed in EN 1627:2021, Clause 10 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.

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.

The number of test specimens needed is described in EN 1627:2021, Clause 11.

NOTE Under particular circumstances, additional specimens might be required.

The specimen used in the static test carried out in accordance with EN 1628:2021, and in the dynamic test carried out in accordance with EN 1629:2021, 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 glazing

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

Table 1 — Glazing requirements for the 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 1	P4 A [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 glazing type fitted on the test specimen shall be the type (or one of the types) used for classification purpose.	

If a glass unit with a higher security level is used within the specimen used for the tests, it may not be possible to assess the use of glass units with a lower grade 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

The specimen shall be stored for at least 8 h in a temperature range between 15 °C and 30 °C until the start of the test to ensure that it is fully tempered for the 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.

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 specimen pre-fitted in sub-frames (timber, aluminium or steel box section), with the maximum permitted gap between the specimen frame and the sub-frame, according to their installation instructions. The installation details and gap size 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.

The applicant shall provide information about possible risks caused by the electromechanical system.

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 %.

6.3 Areas of attack

6.3.1 General

For construction products in resistance classes 2 to 4 of EN 1627:2021, 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 EN 1627:2021, 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 to RC 4.

For construction products with non-key operated lockable hardware (e.g. panic exit device, knob cylinder, non-key operated lockable handle, non-lockable window handles, switches, push-buttons) or lockable window handle not complying with the requirements according EN 1627:2021, Table 3 on the non-attack side entry might be gained by penetrating the product (including glazing) and operating the operating device.

The acceptance criterion is that it shall not be possible to penetrate the product and operate the operating device so to achieve an accessible opening by this way of attack.

Regarding electrical operating device (e.g. switches or push-buttons) the test must be carried out with the product in the state to be expected in the event of an attempted attack, i.e. with the power on or in the powerless state in accordance with the operating instructions.

For RC 1/RC 1 N elements with non-key operated lockable hardware: A test shall be carried out on the building element with tools 1.2 or 1.10 to1.13 of tool set A1. The resistance time shall be 3 minutes.

For RC 2/RC 2 N up to RC 6: A test shall be carried out with the appropriate tool set and within the appropriate resistance time.

Annex F (normative) shows further details to be observed when carrying out these tests.

6.3.2 Construction products with moving elements

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

— locking parts;

— moving parts;

— body of the element;

— building hardware;

— glazing and infilling retention system;

— any other relevant areas.