



SLOVENSKI STANDARD

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

Einbruchhemmende Bauprodukte (nicht für Betonfertigteile) - Prüfverfahren für die
Ermittlung der Widerstandsfähigkeit gegen manuelle Einbruchversuche

Produits de construction résistants à l'effraction (sauf éléments en béton préfabriqué) -
Méthode d'essai pour la détermination de la résistance aux tentatives manuelles
d'effraction

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EUROPEAN STANDARD
NORME EUROPÉENNE
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FINAL DRAFT
prEN 1630

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Will supersede ENV 1630:1999

English Version

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

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

Einbruchhemmende Bauprodukte (nicht für Betonfertigteile) - Prüfverfahren für die Ermittlung der Widerstandsfähigkeit gegen manuelle Einbruchversuche

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

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Foreword

This document (prEN 1630:2009) 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 Formal vote.

This document will supersede ENV 1630:1999.

This European Standard is one of a series of standards for burglar resistant windows, doorsets and shutters. The other standards in the series are:

- prEN 1627, *Pedestrian doorsets, windows, curtain walling, grilles and shutters – Burglar resistance – Requirements and classification*;
- prEN 1628, *Pedestrian doorsets, windows, curtain walling, grilles and shutters – Burglar resistance – Test method for the determination of resistance under static loading*;
- prEN 1629, *Pedestrian doorsets, windows, curtain walling, grilles and shutters – Burglar resistance – Test method for the determination of resistance under dynamic loading*.

This standard is a revision of, and supersedes ENV 1630:1999. The three other standards in this series are revisions of, and supersede ENV 1627, ENV 1628 and ENV 1629 respectively.

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 and prEN 1629. Certain basic security requirements for the locks, furniture and cylinders are covered by the requirements detailed in Table 2 of prEN 1627:2009. 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 standard. This has the advantage of improving the reproducibility of the test.

1 Scope

This European Standard 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) and rolling as well as fixed constructions.

This European Standard 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.

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. Due to the limitation of reproducing the fixing methods and building construction in a laboratory environment this aspect is not fully covered by the standard. This is particularly true with products built into a building. The performance of the fixed part of the product is evaluated using a standard sub frame. It is the manufacturer's responsibility to ensure that guidance on the fixing of the product is contained in the mounting instructions and that this guidance is suitable for the burglar resistance class claimed for the product. As with the other referenced standards this specification uses a standard sub frame and the product is mounted according to the manufacturers' instructions. An example for the contents of the manufacturer's installation instructions is given in Annex A of prEN 1627:2009. This test method does not evaluate the performance of the fixing to the building.

This European Standard 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 13241-1.

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2 Normative references

The following referenced documents are indispensable for the application 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, *Building hardware – Cylinders for locks – Requirements and test methods*

prEN 1627:2009, *Pedestrian doorsets, windows, curtain walling, grilles and shutters – Burglar resistance – Requirements and classification*

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

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

EN 1906, *Building hardware – Lever handles and knob furniture – Requirements and test methods*

EN 12209, *Building hardware – Locks and latches – Mechanically operated locks, latches and locking plates – Requirements and test methods*

prEN 1630:2009 (E)

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in prEN 1627:2009 and the following apply:

3.1

attack side

side of the test specimen defined by the applicant as the side exposed to attack

3.2

test specimen

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

3.3

sub-frame

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

3.4

test rig

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

3.5

tool set

set of tools allocated for use for a particular resistance class

NOTE For details of the tool set, see Clause 7 and Annex A.

3.6

resistance time

working time of the test person carrying out the manual burglary test (see prEN 1627:2009, Table 6)

NOTE The resistance time includes times of less than 5 s each for tool changes, e.g. exchanging a screwdriver for a crow bar.

3.7

rest time

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

3.8

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

3.9

observation time

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

3.10

total test time

combination of the resistance times, the rest times, the times for tool changes and the observation times during the main test.

3.11**accessible opening**

opening permitting a test block of cross section of any of the dimensions shown below to be passed through it

NOTE	Template E1:	- a rectangle of	400 mm \pm 2 mm x 250 mm \pm 2 mm; or
	Template E2:	- an ellipse of	400 mm \pm 2 mm x 300 mm \pm 2 mm; or
	Template E3:	- a circle of diameter	350 mm \pm 2 mm

All templates shall be 20 mm \pm 5 mm thick.

4 Apparatus and test team**4.1 Test rig**

The test rig shall consist of a rigid steel frame with movable steel supports into which test specimens of various dimensions can be mounted, as shown in Annex C, Figure C.1. The stiffness of the rig shall be such that a 15 kN force applied to any of the defined points and normal to the plane of the frame shall not cause a deflection of more than 5 mm. The test rig shall not impede the execution of the test.

4.2 Test team

The test team shall comprise of a minimum of two people. One member of the team shall be assigned overall control and responsibility for the test. The individual time elements and all observations shall be recorded.

All members of the test team shall be capable of carrying out the test. For every test in an area of attack only one operator is allowed.

4.3 Measurement and recording devices**4.3.1 Measuring equipment**

The following equipment shall be provided:

- chronometer for measuring the resistance time;
- chronometer for measuring the total test time;
- 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 recorded with a video recorder. The videotape and any copies of it shall not be published nor shown publicly.

NOTE 1 The video may be used as a reference when subsequent changes are made to the product.

NOTE 2 A time reference or code should be shown in the video.

NOTE 3 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.

prEN 1630:2009 (E)**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;
- 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.

5 Test specimen

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5.1 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 1627:2009, 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, nominal 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.

At least two specimens shall be provided for testing, one for the pre-test and one for the main test.

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 and in the dynamic test carried out in accordance with prEN 1629 may also be used in the pre-test, provided that any damage caused by those tests will not affect the result of the pre-test.

For the purposes of this standard, the test specimen shall be glazed according to the relevant glazing resistance class of EN 356:1999, corresponding to the resistance class of the construction product according to prEN 1627:2009, as shown in Table 1. Security glazing, when used in an insulating glass unit, is normally positioned on the inside of the building. For the purpose of this test the glass pane offering the highest security level shall be positioned on the attack side of the sample.

Table 1 — Test sample glazing requirements

Resistance class	Resistance class of glazing in accordance with EN 356:1999
1	P4 A
2	P5 A
3	P6 B
4	P7 B
5	P8 B
6	P8 B

5.2 Preparation and examination of the specimen

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

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

The test specimen shall be closed and locked at the declared closing condition in accordance with the manufacturer's instructions.

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.

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 %.

6.3 Areas of attack

6.3.1 General

For construction products in resistance classes 2 to 4 of prEN 1627:2009, the glass itself shall not be directly attacked. The glazing and infilling retention system shall be attacked. For construction products in resistance classes 5 and 6 of prEN 1627:2009, the glass itself and the glazing and infilling retention system shall be attacked. For construction products without key unlockable hardware on the non-attack side entry might be gained by penetrating the product and operating the hardware. This vulnerability shall be explored.

prEN 1630:2009 (E)**6.3.2 Construction products without 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.

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.

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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 of height of 1.5m 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. Each attack area shall be subjected to a pre-test of at least 25% of the resistance time for the expected class.

The effectiveness of each of the tools specified in the relevant tool set shall be evaluated at each attack area.

The pre-test shall be recorded on the video.

6.6 Main test

In the main test, attempts shall be made to force open the test specimen or to create an accessible opening, by targeting the weak and vulnerable areas of the test specimen identified during the pre-test using the most effective tool or set of tools appropriate to the resistance class of the test