



SLOVENSKI STANDARD

SIST ENV 1629:2000

01-maj-2000

Okna, vrata in polkna - Protivlomna odpornost - Preskusna metoda ugotavljanja odpornosti proti dinamičnim obremenitvam

Windows, doors, shutters - Burglar resistance - Test method for the determination of resistance under dynamic loading

Fenster, Türen, Abschlüsse - Einbruchhemmung - Prüfverfahren für die Ermittlung der Widerstandsfähigkeit unter dynamischer Belastung

Fenêtres, portes, fermetures - Résistance à l'effraction - Méthode d'essai pour la détermination de la résistance à la charge dynamique

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Ta slovenski standard je istoveten z: **ENV 1629:1999**

ICS:

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

SIST ENV 1629:2000

en

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EUROPEAN PRESTANDARD
PRÉNORME EUROPÉENNE
EUROPÄISCHE VORNORM

ENV 1629

January 1999

ICS 13.310; 91.060.50

Descriptors: doors, windows, closures, tests, mechanical tests, determination, mechanical strength, burglar resistance, dynamic loading, safety

English version

Windows, doors, shutters - Burglar resistance - Test method for the determination of resistance under dynamic loading

Fenêtres, portes, fermetures - Résistance à l'effraction -
Méthode d'essai pour la détermination de la résistance à la
charge dynamique

Fenster, Türen, Abschlüsse - Einbruchhemmung -
Prüfverfahren für die Ermittlung der Widerstandsfähigkeit
unter dynamischer Belastung

This European Prestandard (ENV) was approved by CEN on 25 December 1997 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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0 Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 33 "Doors, windows, shutters and building hardware", the secretariat of which is held by AFNOR.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The status of European Prestandard is proposed because some countries do not yet have experience in testing with manual burglary attempts. The ENV phase gives all countries the possibility of gaining experience in the application of this Prestandard, of comparing experiences and of harmonising the procedure. During this time it will be possible to determine whether parts of the manual attempt test methods can be replaced by test methods with a higher degree of reproducibility, see e. g. BSI: PAS 011: 1994

This ENV 1629 is a testing Prestandard, so its application does not depend at all on the material of the product.

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To define the burglar resistance of a product this European Prestandard shall be used in conjunction with ENV 1627 "Windows, doors shutters - Burglar resistance - Requirements and classification", ENV 1628 "Windows, doors shutters - Burglar resistance - Test method for the determination of resistance under static loading" and ENV 1630 "Windows, doors shutters - Burglar resistance - Test method for the determination of resistance to manual burglary attempts"

ISO 8270: 1985 was used as a basis for this document.

1 Scope

This European Prestandard specifies a test method for the determination of resistance to dynamic loading in order to assess the burglar resistant properties of doors, windows and shutters.

2 Normative references

This European Prestandard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- | | |
|----------------|---|
| ENV 1627: 1999 | Windows, doors, shutters
Burglar resistance
Requirements and classification |
| ENV 1628: 1999 | Windows, doors, shutters
Burglar resistance
Test method for the determination of resistance under static loading |
| ENV 1630: 1999 | Windows, doors, shutters
Burglar resistance
Test method for the determination of resistance to manual burglary attempts |

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3 Definitions

For the purposes of this European Prestandard, the following definitions apply:

3.1 attack side: The side of the test specimen defined by the applicant as the side exposed to attack.

3.2 test specimen: Complete, fully functioning window, door or shutter.

3.3 sub-frame: A surrounding frame into which the test specimen is mounted by the applicant, in accordance with the manufacturer's instructions. The sub-frame is supplied by the applicant and takes the place of the various forms of wall construction (*see figures 3 to 17*)

3.4 test rig: A surrounding substantial steel frame with movable steel supports into which the sub-frames containing test specimens of various dimensions can be mounted (*see figures 3 to 17*).

3.5 impacting unit: An impactor suspended by means of a suitable steel cable, as a pendulum of fixed length, with a release hook and height regulating device. The impacting unit shall be a movable item of equipment (*see figure 1*).

3.6 impactor: A sand filled sphero-conical leather bag. By means of varying heights of fall it is possible to test the test specimen with the impact energy required (*see figure 2*).

3.7 reference point: A point identified by means of lines marked on the impactor, for the purpose of determining the height of fall. The equator (maximum diameter) is marked with a horizontal line and degrees of longitude with vertical lines. (*see figure 2*)

3.8 impact point: The position on the surface of the test specimen where the dynamic load is applied (*see figures 18 to 24*).

4 Test installation

4.1 Test rig

The test rig shall consist of a surrounding strong steel frame with movable steel supports into which test specimens of various dimensions can be mounted. All connecting parts, especially corner connections, shall resist the test loads during the test. The test rig shall not impede the execution of the test (*see figure 1*).

4.2 Impacting unit

The pendulum impactor shall be suspended by means of a suitable steel cable giving a pendulum length of 1500 mm (see figure 1) with a release hook and height regulating device fixed to a stable mobile framework. The fall height of the impactor shall be measured in accordance with subclause 6.4 of this European Prestandard.

The impacting unit shall be attached to the test rig in such a manner that the impact points proposed for the dynamic test on the surface of the test specimen can be reached by repositioning it horizontally and/or vertically.

NOTE: In order not to impede the test procedure of other tests, the impacting unit should be removed prior to other tests (*see figures 1 and 2*).

4.3 Impactor

The impactor shall be as described in figure 2.

4.4 Test room climate

Test room temperature

from 15 °C to 30 °C

Relative humidity

from 40 % to 60 %
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4.5 Measuring equipment

The following equipment shall be provided:

- a) Suitable metal tape or similar measuring device for the measurement of the fall height
- b) Suitable measuring equipment for determining the temperature of the test specimen and moisture content of wood

See also 6.5 Tolerances

5 Test specimen

5.1 General

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

The specimen shall be fixed square and plumb and without twist or bend into a sub-frame by the applicant. Installation is to be done in accordance with the manufacturer's instruction, including method of fixing, packing, sealants, etc. (see figures 3 to 17).

The test specimen shall be a representative specimen of subsequent production. It is essential that the correlation between its size and its security-related equipment shall be taken into account accordingly.

When a wide range of sizes is available, the testing laboratory shall define which sizes are to be tested in order to obtain a representative result for the whole range.

The test specimen used in the static test in accordance with ENV 1628, may also be used for this test and for the pre-test in accordance with ENV 1630, provided that any damage caused by these tests will not affect the result of the pre-test.

5.2 Preparation and examination of the test specimen

The test specimen shall be stored in a suitable room until the temperature and the moisture content show stable values within the required limits.

Temperature from 15°C to 30°C
<https://standards.iteh.ai/catalog/standards/sist/460f34de-52c5-4550-90db-1a9c9f52c541/sist-1629-1999>
 Moisture content from 5 % to 18 % (where relevant)

The test specimen, mounted in its sub-frame in the test rig, is to be examined visually and any damage, defects or other particular conditions of finish, etc. are to be noted and recorded. In the case of load carrying parts constructed of wood, the testing laboratory shall measure and record the following values:

Temperature
 Raw density ρ_0 ¹⁾
 Moisture content

Before loading is started, the fastened or locked condition described by the applicant is to be effected and checked.

1) For the determination of this value parts have to be cut out of the specimen; this value is to be determined immediately after the execution of the test and is related to the oven-dry condition.

6 Procedure

The specified dynamic loading shall be applied at the impact points shown on figures 18 to 24 using the specified impacting unit.

6.1 Impact points

The dynamic test simulates physical attacks e.g. shoulder charge, kicking, therefore the weakest points of the test specimen shall be attacked. These are usually the infill panels as shown in figures 18 to 24.

6.2 Impact direction

As the dynamic test simulates only physical attacks - i.e. without tools - impact shall be always from the attack side.

6.3 Loading procedure

The specified dynamic loading shall be applied at the impact points shown on figures 18 to 24 using the specified impacting unit. The impactor shall be so positioned, that it hangs just lightly touching the point of contact. The release hook shall be attached to the bag which shall then be raised by means of the height adjusting device until the relative difference in the height between its centre of gravity, as judged by a suitable reference point on the bag, and the designated impact point is attained to the required accuracy.

The release hook is then disengaged and the bag allowed to swing freely against the test specimen. This shall be repeated for the number of times specified. After each impact the test specimen shall be inspected for damage and this shall be recorded.

6.4 Measurement procedure

The height of fall (difference in height between the free hanging and raised positions) shall be measured at the reference point on the impactor.

6.5 Tolerances

In this European Prestandard, the following tolerances shall apply:

Height of fall / Length of pendulum	± 10 mm
Moisture content	± 2 %
Temperature	± 1 K
Mass of the impactor	± 2 %

7 Test results

All values of impacts shall be recorded during the test. The test specimen shall be inspected immediately before the test and after each impact and any changes from the preceding inspection shall be recorded. Thus, any damage caused during the test can be determined.

Height of fall shall be expressed in millimetres and the mass of the impactor in kilogrammes.

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8 Test report

The report shall include the following details: [SIST ENV 1629:2000](https://standards.iteh.ai/standards/sist/460f34de-52c5-4550-90db-fa9c975a852c/sist-env-1629-2000)

- a) The name and address of the testing laboratory
- b) The name of the applicant (additionally the name of the manufacturer of the test specimen, if they are not the same)
- c) Details of the test specimen:
 - Type of construction
 - Profile references (codes, names, dimensions etc.)
 - Types of materials used
 - Designation of materials
 - Date of manufacture
- d) Attack side/s of the test specimen
- e) Dimensioned drawings of the specimen
 - Detailed drawings with dimensions and tolerances
 - Parts list of products including precise manufacturer's designation
 these shall be approved and stamped by the testing laboratory. These should be retained by the applicant as proof of testing.
- f) Details of the installation instructions for the window, door or shutter