



SLOVENSKI STANDARD

SIST EN 1026:2016

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Nadomešča:
SIST EN 1026:2001

Okna in vrata - Prepustnost zraka - Preskusna metoda

Windows and doors - Air permeability - Test method

Fenster und Türen - Luftdurchlässigkeit - Prüfverfahren

Fenêtres et portes - Perméabilité à l'air - Méthode d'essai

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ICS:

91.060.50 Vrata in okna Doors and windows

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EUROPEAN STANDARD

EN 1026

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 91.060.50

Supersedes EN 1026:2000

English Version

Windows and doors - Air permeability - Test method

Fenêtres et portes - Perméabilité à l'air - Méthode
d'essaiFenster und Türen - Luftdurchlässigkeit -
Prüfverfahren

This European Standard was approved by CEN on 9 January 2016.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of 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 United Kingdom.

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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 1026:2016) 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 September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

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 supersedes EN 1026:2000.

The revision of this European Standard clarifies the test method and does not affect existing test evidence of EN 1026:2000.

In comparison with EN 1026:2000, the following significant changes were made:

- a) Clause 2: Deletion of "Normative references";
- b) Clause 3: Supplement of definition "closing condition";
- c) Sub-clause 3.2: Simplification of definition "test pressure";
- d) Sub-clause 3.4 and 3.5: Revision of definition "opening joint";
- e) Sub-clause 5.4: Revision of definition "accuracy";
- f) Sub-clause 7.3: Addition of „closing condition“;
- g) Sub-clause 7.3: Separate test methods for measurement of air permeability for windows and external pedestrian doorsets in 7.3.2 and for internal pedestrian doorsets in 7.3.3;
- h) Clause 9: Supplement of necessary description of test specimen;
- i) Clause 9: Revision of Figures 1 and 2;
- j) Clause 9: Supplement of figures:
 - Figure 3 - Sliding door test specimen;
 - Figure 4 - Single leaf test specimen with fixed glazing;
 - Figure 5 - Single leaf test specimen with fixed glazing, extension profiles and shutter boxes;
 - Figure 6 - External / internal pedestrian doorset;
- k) Revision of Annex A: Separation of figures into Figures A.1 and A.2.

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,

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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.

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1 Scope

This European Standard defines the test method to be used to determine the air permeability of completely assembled windows and doorsets of any material, when submitted to positive or negative test pressures. This test method is designed to take account of conditions in use, when the window or doorset is installed in accordance with the manufacturer's specification and the requirements of relevant European Standards and codes of practice.

This European Standard does not apply to the joints between the window or door frame and the building construction.

2 Normative references

Not applicable.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

closing condition

3.1.1

closed

movable part rest in or at the fixed part in a way in which they may be fastened (latched and/or locked)

3.1.2

fastened

where the movable part is restrained at one or more points and shall be described by at least one of the two as listed below:

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3.1.2.1

latched

movable part is returned to its closed position and restrained by either

a) a self - engaging fastener or

b) a roller catch or

c) a latch

3.1.2.2

locked

movable part is further restrained in the closed position by additional operations (of e.g. handle, key, automatic devices or electronic devices) to engage integrated locking devices (e.g. nutbolts or deadbolts) which will affect the product's characteristics

3.1.3

secured

any action(s) which prevent unauthorised release of the fastening device(s) to allow exit or entry (e.g. child safety, burglary)

3.2

test pressure

difference between the static air pressures inside and outside of the test chamber

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Note 1 to entry: The test pressure is positive if the static air pressure inside the chamber of the test apparatus is higher than that outside the test chamber.

Note 2 to entry: The test pressure is negative if the static air pressure inside the chamber of the test apparatus is lower than that outside the test chamber.

3.3 air permeability

amount of air passing through all joints between casement or leaf and frame profiles of a test specimen caused by the test pressure

Note 1 to entry: Air permeability should be expressed in cubic metres per hour (m³/h).

3.4 opening joint

line of discontinuity between either a frame and its matched component or two components which can be opened by means of their building hardware (see Figures 1 to 6)

Note 1 to entry: Conventionally, this discontinuity is as seen from the opening face of the test specimen.

3.5 length of opening joint

length of the line of discontinuity as defined in 3.4 (see Figures 1 to 6)

Note 1 to entry: The length of joint should be expressed in metres (m).

Note 2 to entry: Actual length of gaskets or seals fitted into the underlying profiles of the components or joints of components built into opening parts are not relevant.

3.6 overall area

area of the test specimen measured parallel to the glazing or the leaf (see Figures 1 to 6)

Note 1 to entry: The overall area should be expressed in square metres (m²).

4 Principle of test

Application of a defined series of test pressures (positive and negative) and at each test pressure measurement of the air permeability with a suitable test device.

5 Test apparatus

5.1 A chamber with an open side to which the test specimen can be fitted. It shall be constructed so as to be able to withstand the test pressures without deflecting to an extent likely to influence the test results.

5.2 Means for applying controlled test pressure to the test specimen.

5.3 Means of producing rapid changes in test pressure, controlled within defined limits.

5.4 Instrument suitable for measuring the quantity of air flow into or out of the chamber with an accuracy of $\pm 5\%$ of the measured value for air flows greater than 1 m³/h and an accuracy of $\pm 0,05$ m³/h for air flows equal to or smaller than 1 m³/h.

NOTE 1 Accuracy = \pm (the sum of the amount of the error plus the amount of the expanded measurement uncertainty). For values of both error and expanded measurement uncertainty see last calibration certificate of the instrument.

NOTE 2 For vocabulary of metrology see ISO/IEC Guide 99:2007.

5.5 Means of measuring the test pressure applied across the test specimen, within an accuracy of $\pm 5\%$.

5.6 Means of sealing all joints of the test specimen, when required.

6 Preparation of test specimen

The test specimen shall be fixed as intended for use without any twists or bends which may influence the test results. The test specimen shall be fully operable. The test specimen shall be cleaned and surfaces dry. Ventilation devices, if any, shall be taped over, except when it is required to determine the amount of air flow through such devices.

7 Test procedure

7.1 Preliminaries

The ambient temperature and humidity close to the test specimen shall be within the range of 10 °C to 30 °C and 25 % to 75 % RH and the test specimen shall be conditioned thus for at least 4 h immediately before testing.

Temperature shall be measured to within ± 3 °C and relative humidity to within $\pm 5\%$. Atmospheric pressure shall be measured to within ± 1 kPa.

The test pressure shall be applied in steps of 50 Pa up to 300 Pa and from 300 Pa in steps of 150 Pa.

The air permeability result shall be given to an accuracy of $\pm 10\%$. For air permeability under 3,0 m³/h the accuracy shall be $\pm 0,30$ m³/h.

7.2 Air permeability of test chamber

7.2.1 General

Determine the procedure to follow in accordance with what is known about the air permeability of the test chamber.

7.2.2 Test chamber with known air permeability

Assume the air permeability of the test chamber is zero if it is less than 5 % of the maximum air permeability permitted throughout the range of the classification that is attributed to the test specimen.

When this is not so, measure the air permeability of the test chamber as described in 7.2.3 unless it is known and shown to be approximately constant within the limit of accuracy of the measurement recorded by the test laboratory.

In no case shall the air permeability of the test chamber exceed 30 % of the overall air permeability of the test specimen and the test chamber.

7.2.3 Test chamber with unknown air permeability

Seal all joints in the test specimen with adhesive tape or an airtight sheet covering the whole test specimen.