



SLOVENSKI STANDARD

oSIST prEN 12427:2021

01-januar-2021

Vrata v industrijske in javne prostore ter garažna vrata - Prepustnost zraka - Preskusna metoda

Industrial, commercial and garage doors and gates - Air permeability - Test method

Tore - Luftdurchlässigkeit - Prüfverfahren

Portes et portails industriels, commerciaux et de garage - Perméabilité à l'air - Méthode
d'essai

ITeH STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **prEN 12427**

oSIST prEN 12427:2021
<https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021>

ICS:

91.060.50	Vrata in okna	Doors and windows
91.090	Konstrukcije zunaj stavb	External structures

oSIST prEN 12427:2021

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN 12427:2021](#)

<https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 12427

November 2020

ICS 91.060.50

Will supersede EN 12427:2000

English Version

Industrial, commercial and garage doors and gates - Air permeability - Test method

Portes et portails industriels, commerciaux et de garage - Perméabilité à l'air - Méthode d'essai

Tore - Luftdurchlässigkeit - Prüfverfahren

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.

This draft European Standard was established by CEN 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, 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 United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pr-en-12427-2021>

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents		Page
European foreword.....		3
1	Scope.....	4
2	Normative references.....	4
3	Terms and definitions.....	4
4	Principle of test.....	4
5	Apparatus.....	4
6	Preparation of test specimen.....	5
7	Test procedure.....	5
7.1	Preliminaries.....	5
7.2	Procedure.....	5
8	Test report.....	6
Annex A (normative) Air pressure sequence for test rig.....		8
Bibliography.....		9

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN 12427:2021](https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021)
<https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021>

European foreword

This document (prEN 12427:2020) 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 will supersede EN 12427:2000.

Compared with EN 12427:2000, the following changes have been made:

- normative references were updated;
- references to the classification standard EN 12426:2000 were deleted as the classification of the characteristic air permeability has been transferred to prEN 13241:2020, and references to prEN 13241:2020 have been added accordingly.

This document is one of a series of test standards identified within the product standard prEN 13241:2020.

European Standards as well as relevant national regulations and standards will enable the actual exposure levels to be determined for the individual locations of the products.

This document has been drafted on basis of EN 12114, *Thermal performance of building — Air permeability of building components and building elements — Laboratory test method*.

As during the revision of this document the test procedures haven't been changed, existing test results remain valid (historical data).

prEN 12427:2020 (E)**1 Scope**

This document specifies a test method for determining the air permeability for industrial, commercial and garage doors and gates according prEN 13241:2020 in a closed position.

For the purposes of this document the term 'door' is used as a general term for 'industrial, commercial and garage doors and gates' unless clearly stated.

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 12433-1, *Industrial, commercial and garage doors and gates — Terminology — Part 1: Types of doors*

EN 12433-2, *Industrial, commercial and garage doors and gates — Terminology — Part 2: Parts of doors*

prEN 13241:2020, *Industrial, commercial, garage doors and gates — Product standard, performance characteristics*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12433-1 and EN 12433-2 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 <https://www.iso.org/obp>

3.1
air permeability
ability of a test specimen in relation to the overall area, when in closed position, to allow air flow, expressed in $\text{m}^3/\text{m}^2 \text{ h}$

3.2
overall area
area of the structural opening of the specimen, expressed in square meters (m^2)

4 Principle of test

Application of air pressure (positive or negative) on the external or internal surface of the test specimen whilst a measurement of the airflow is made with a device according to Clause 5 c).

5 Apparatus

The basic test apparatus shall include:

- a) an opening to which the test specimen can be fitted, to simulate the structural opening of the product on site;
- b) device(s) to provide controlled air pressure, above atmospheric air pressure, to the exposed surface of the specimen;

- c) device(s) to measure the amount of airflow with an accuracy of +5 %. It shall be calibrated so as to give airflow in normal conditions (20 °C, 101 kPa);
- d) device(s) for measuring air pressure with an accuracy of +5 %;
- e) a means of sealing all joints of the specimen when required.

NOTE The test rig is designed to not increase the performance of the specimen.

The test rig shall be prepared so that it is able to withstand the pressures applied during the test, without deflecting to an extent likely to impair jointing or to impose bending stresses.

6 Preparation of test specimen

- a) The test specimen shall be installed in accordance with the manufacturer's standard or published installation instructions.
- b) The test specimen shall consist of parts, which in detail conform to the production level of quality. Whenever possible the test specimen should be newly made. Doors and parts in stock are to be regarded as newly made if they fully comply with the specification of the running production.
- c) The test specimen shall be clean and the surfaces dry.
- d) Any ventilation, drainage or "weep holes" shall be taped up or left open according to the purpose of test and this purpose and state shall be noted and recorded. In most cases, air can pass through both fixed and opening joints.
- e) Minimum dimensions of specimen see Table 1.

<https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-001726471000/pr-en-12427-2020>

Table 1 — Minimum dimensions of specimen

Commercial and garage doors	Width:	2 000 mm
	Height:	2 000 mm
Industrial doors	Width:	3 500 mm
	Height:	3 000 mm

7 Test procedure

7.1 Preliminaries

The test specimen shall be conditioned for at least 4 h within the range 10 °C to 30 °C and 25 % to 75 % relative humidities immediately before testing.

Temperature shall be measured within +3 °C.

Atmospheric pressure shall be measured within +1 kPa.

The pressure shall be applied up to 50 Pa.

7.2 Procedure

The residual air permeability shall be measured prior to the specimen test.

prEN 12427:2020 (E)

The diagrams of pressure sequences given in Annex A, Figure A.1 may be helpful for a clear understanding.

7.2.1 Air permeability with positive pressure shall be carried out first.

Negative pressure shall be carried out only if required.

7.2.2 Air permeability of specimen fitted to the test rig shall be measured.

7.2.3 The test specimen shall be opened and closed at least once before finally secured in the closed position.

7.2.4 Apply three air pressure pulses, to position the seals, the rate of application being over a period of not less than one second. Maintain each pulse for at least three seconds.

These pulses shall produce a pressure 10 % greater than the maximum pressure Pmax required for the test.

7.2.5 The air pressure in the test rig is then raised up to 50 Pa.

The duration should be such that air pressure in the test rig is adequately stabilized before reading the value linked to air permeability.

7.2.6 Calculate the air permeability according to the formula:

$$\frac{\text{Air leakage (m}^3 \text{ / h)} - \text{Residual air leakage (m}^3 \text{ / h)}}{\text{Structural opening (m}^2\text{)}} \quad \text{(standards.iteh.ai)}$$

8 Test report

[oSIST prEN 12427:2021
https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021](https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021)

The test report shall state the devices used for the test and also record the location of any air leakage observed, on a drawing or a photograph of the test specimen.

The report shall contain as a minimum the following information:

- a) date of the test report;
- b) reference to this standard;
- c) name of the approved laboratory, if applicable;
- d) all necessary references to identify the specimen;
- e) all relevant details concerning the dimensions of the specimen, its materials, design, construction and manufacture and its finished surface and fittings and also its method of delivery;
- f) drawings of details of the specimen shall be of a suitable scale;
- g) identification of the test equipment;
- h) test method;
- i) test procedures, including storage and conditioning prior to test and mounting the specimen ready for test;

- j) test climates used;
- k) location of air leakage, if detectable;
- l) take the overall area (m^2) into account when to calculate the specific airflow in m^3/m^2h (see 3.2);
- m) air permeability result;
- n) summary with observations;
- o) determine the classification according to prEN 13241:2020, 4.5;
- p) signature of the responsible person.

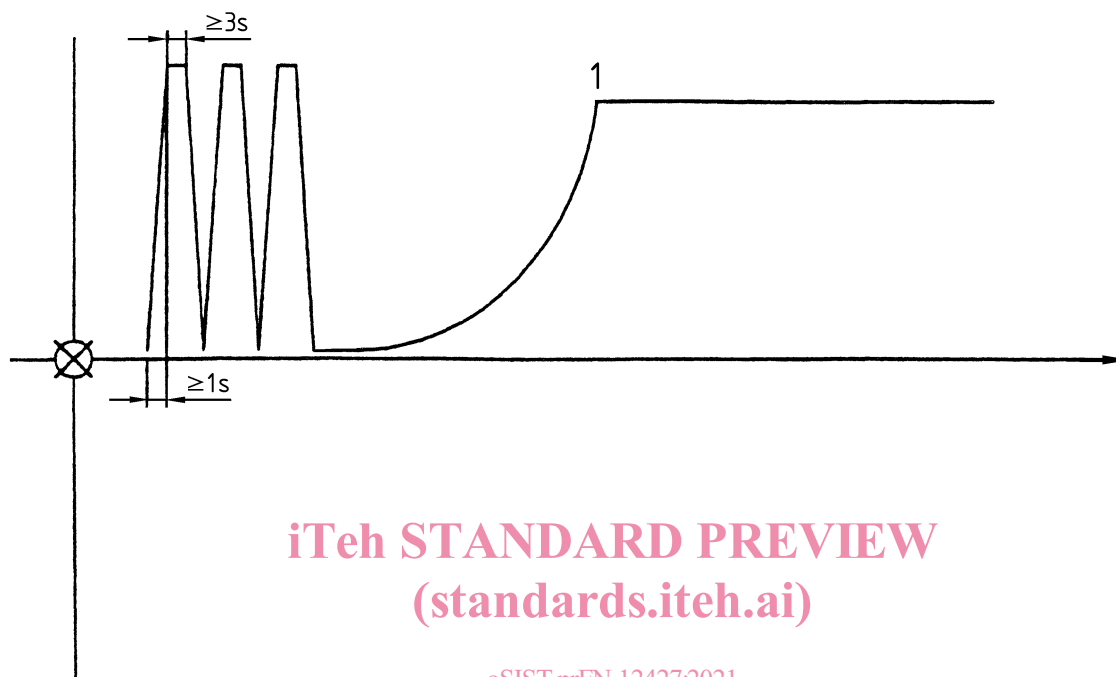
iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN 12427:2021](https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021)

<https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021>

Annex A
(normative)

Air pressure sequence for test rig



iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN 12427:2021](https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021)

[https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-](https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021)

[00b72647281b/osist-pren-12427-2021](https://standards.iteh.ai/catalog/standards/sist/bb4acb26-bcc0-4da4-8555-00b72647281b/osist-pren-12427-2021)

Key



opening and closing operation

1

stabilized pressure

Figure A.1 — Air pressure sequence for test rig