



SLOVENSKI STANDARD

SIST EN 12605:2001

01-september-2001

Vrata v industrijske in javne prostore ter garažna vrata - Mehanske lastnosti - Preskusne metode

Industrial, commercial and garage doors and gates - Mechanical aspects - Test methods

Tore - Mechanische Aspekte - Prüfverfahren

Portes industrielles, commerciales et de garage - Aspects mécaniques - Méthodes d'essai

STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **EN 12605:2000**

SIST EN 12605:2001
<https://standards.iteh.ai/catalog/standards/sist/ca577ceb-683b-4d83-af61-94d6b1562456/sist-en-12605-2001>

ICS:

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

SIST EN 12605:2001

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 12605:2001](#)

<https://standards.iteh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-94d6b1562456/sist-en-12605-2001>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12605

April 2000

ICS 91.060.50

English version

Industrial, commercial and garage doors and gates - Mechanical aspects - Test Methods

Portes industrielles, commerciales et de garage - Aspects
mécaniques - Méthodes d'essai

Tore - Mechanische Aspekte - Prüfverfahren

This European Standard was approved by CEN on 1 January 2000.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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.

[SIST EN 12605:2001](https://standards.iteh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-94d6b1562456/sist-en-12605-2001)

<https://standards.iteh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-94d6b1562456/sist-en-12605-2001>



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

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

Contents

	Page
Foreword	3
1 Scope	4
2 Normative references	6
3 Definitions	6
4 Test specimen	6
4.1 Test specimen - Functionality and durability test	7
4.2 Test specimen - Special tests for anti-drop devices	8
4.3 Test specimen - Inspection	8
5 Test procedures	9
5.1 Test procedure - Functionality test	9
5.2 Test procedure - Durability test	13
5.3 Test procedure - Special tests	14
5.4 Test procedure - Inspections	16
6 Contents of the test report	20
Annex ZA (informative) Clauses of this European Standard addressing the provisions of EU Construction Product Directive	21
Annex ZB (informative) - Relationship of this European Standard with other EU Directives	22

[SIST EN 12605:2001](https://standards.iteh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-94d6b1562456/sist-en-12605-2001)

<https://standards.iteh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-94d6b1562456/sist-en-12605-2001>

Foreword

This European Standard has been prepared by CEN/TC 33 "Windows, doors, 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 October 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

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

Parts of this European Standard have been prepared under a mandate given to CEN by the European Commission in the Free Trade Association, and support essential requirements of EU Directives. For relationship with EU Directives, see informative Annexes ZA and ZB, which are integral part of this standard.

This standard is part of a series of European Standards for industrial, commercial and garage doors and gates, which are identified in prEN 13241.

No existing European Standard is superseded.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 12605:2001

<https://standards.iteh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-94d6b1562456/sist-en-12605-2001>

1 Scope

1.1 This European Standard specifies the test methods to verify the mechanical requirements for doors, gates and barriers intended for installation in areas in the reach of people and for which the main intended uses are giving safe access for goods and vehicles accompanied by persons in industrial, commercial and residential premises.

1.2 It does not apply to

- lock gates and dock gates;
- doors on lifts;
- doors on vehicles;
- armoured doors in banks;
- doors for animals in zoos;
- theatre curtains;
- revolving doors of any size;
- horizontally moving doors less than 2,5 m wide and 6,25 m² area, designed solely for pedestrian use;
- doors outside the reach of people (such as crane gantry fences);
- railway barriers;
- barriers used solely for vehicles.

1.3 This standard applies only to doors which are not part of the load carrying structure of the building.

1.4 Test method shall include several procedures, e.g. functionality, durability or special tests and inspection. The relationship between the requirements and relevant test methods is listed in table 1. Calculation can also be used as means in a test method, if it is based on the state of the art.

The relationship between requirements for mechanical aspects and relevant test methods given in this standard is shown in Table 1. A structural overview over test procedures and specimen is given in Table 2.

Table 1 – Table of reference

Requirements EN 12604		Test method EN 12605 or defined otherwise	
Object/Clause	Headword	Type	Clause
Door 4.2.2 4.2.3	Strength Operability	Inspection (Calculation or test) Functionality test	5.4.1 5.1.1
5	Durability	Durability test	5.2
Differential pressure 4.2.4	Deformation	Calculation or test	prEN 12444
Transparent surfaces 4.2.5	Performance	Special test	5.3.1
Guides and stoppers 4.3.1	Disengagement or derailment - during use and operation - by obstacles	Inspection	5.4.2
		Functionality test	5.1.2
		Functionality test	5.1.2
Arresting devices 4.3.2	Movement by wind	Functionality test	5.1.3
Vertically operating doors 4.3.3	Uncontrolled movements	Functionality test	5.1.4

4.3.4	Safeguarding against dropping - by anti-drop device	Special test	5.3.2
	- by other design features	Inspection	5.4.3
Manual operation 4.4.1	Required force	Functionality test	5.1.5
4.4.2	Devices	Inspection	5.4.4
Crushing, cutting, shearing, entanglement, drawing-in and trapping 4.5.1, 4.5.2	Hazard of crushing, cutting, shearing	Inspection	5.4.5
Doors to traffic areas 4.6	Observation window	Inspection	5.4.6
Springs 4.7.1	Ejection	Inspection	5.4.7
Counterweights 4.7.2	Guidance, protection	Inspection	5.4.8
Steel wire rope 4.7.3, 4.7.3.1	Design of steel wire rope, pulleys or drums	Inspection	5.4.9
Straps 4.7.3, 4.7.3.2	Design of straps	Inspection	5.4.10
Chains 4.7.3, 4.7.3.3	Design of chains	Inspection	5.4.11
Pass doors 4.8	Interlocking, threshold	Inspection	5.4.12
Rolling doors 4.9	Door leaf attachment	Inspection Durability	5.4.13 5.2
Self closing doors 4.10	Operating speed and force	Functionality test	5.1.6
Remaining hazards 4.1.1, 4.5.1	Warning signs	Inspection	5.4.14

(standards.iteh.ai)

SIST EN 12605:2001
Table 2 – Test methods – Structural overview

OBJECT	PROCEDURE	SPECIMEN
FUNCTIONALITY TEST	5.1	
• Verification of the operability of the door	5.1.1	4.1
• Verification of the provisions against disengagement and derailment	5.1.2	4.1
• Verification of the provisions against unintentional movements due to wind	5.1.3	4.1
• Verification of the provisions against uncontrolled movements of vertically operating door leaves	5.1.4	4.1
• Verification of forces required for manual operation	5.1.5	4.1
• Verification of speed and forces for self-closing doors	5.1.6	4.1
DURABILITY TEST	5.2	4.1
SPECIAL TESTS	5.3	
• Transparent surfaces	5.3.1	See prEN 12600
• Verification of safeguarding against dropping of vertically operating door leaves by anti-drop devices	5.3.2	4.2
INSPECTION	5.4	
• Strength	5.4.1	4.3
• Disengagement or derailment during use and operation	5.4.2	4.3
• Verification of safeguarding against dropping	5.4.3	4.3
• Devices for manual operation	5.4.4	4.3
• Mechanical protection and safety clearances against crushing, cutting, shearing, entanglement and drawing-in	5.4.5	4.3
• Observation window	5.4.6	4.3
• Springs	5.4.7	4.3

• Counterweights	5.4.8	4.3
• Steel wire rope, pulleys or drums	5.4.9	4.3
• Straps	5.4.10	4.3
• Chains and chain wheels	5.4.11	4.3
• Passdoors	5.4.12	4.3
• Rolling door leaf attachment	5.4.13	4.3
• Warning signs	5.4.14	4.3

2 Normative references

This European Standard 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 Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 349	Safety of machinery - Minimum gaps to avoid crushing of parts of the human body
EN 12 433-1	Industrial, commercial and garage doors and gates - Terminology - Part 1: Types of doors
EN 12 433-2	Industrial, commercial and garage doors and gates - Terminology - Part 2: Parts of doors
prEN 12 444	Industrial, commercial and garage doors and gates - Resistance to wind load – Testing and calculation
prEN 12 600	Glass in buildings - Pendulum test – Impact test method for flat glass and performance requirements
EN 12 604	Industrial, commercial and garage doors and gates - Mechanical aspects - Requirements
prEN 13 241	Industrial, commercial and garage doors and gates - Product standard

3 Definitions

For the purpose of this standard the definitions in EN 12 433-1 and EN 12 433-2 apply.

Whenever the term “door” is used in this standard, it shall also be deemed the full scope of types and variances of doors, gates and barriers defined in EN 12 433-1.

4 Test specimen

For practical reasons more than one test specimen may be used. Each test specimen shall consist of parts which conform to the level of quality of the production run to be tested. When ever 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 production run.

4.1 Test specimen - Functionality and durability test

4.1.1 Test specimen

Test specimen for the functionality tests may be either doors installed in the factory or on site or a test door installed in a dummy wall or a test frame, both representative of the door to be tested.

Simulation of doors with other dimensions are permitted if the tests on the test specimen are representative.

4.1.2 Dimension and weight

The test specimen shall represent the maximum size in dimensions and weight respectively for the door-type specified.

Exceptions see 4.1.3 (simulation of a bigger door).

4.1.3 Simulation of a bigger door

The door shall represent the maximum size in dimensions and weight for the specified door type. For practical reasons it is permitted to simulate bigger dimensions. This can be done by adding mass, distributed in a way equal to the distribution of weight of the door leaf to be simulated.

4.1.4 Documentation to be supplied

Together with the test specimen the following documents shall be supplied:

- Design specifications (mechanical as well as electrical);
- Installation manual; [SIST EN 12605:2001](#)
- Operation manual; [itoh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-4d6b1562456/sist-en-12605-2001](#)
- Maintenance manual; [itoh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-4d6b1562456/sist-en-12605-2001](#)

4.1.5 Conditioning

The tests shall be performed under normal, ambient conditions. Specific values of temperature or humidity shall be considered if they are specified between manufacturer and customer.

When the function of certain elements depends on temperature and/or humidity, the elements have to be tested at all limits of temperature and humidity.

These elements can be tested individually without full door construction.

4.1.6 Installation of the test specimen

When the test specimen is not tested on site, it shall be installed in a dummy wall or test frame of sufficient stability according to the instructions specified by the door manufacturer.

The test frame shall be capable of withstanding the static and dynamic forces which occur during the test procedure, without any effect on the test results from the elasticity of the frame.

The test specimen shall be installed in such a way that it can be opened and closed to its terminal positions without difficulty.

Any adjustment or calibration operations which are prescribed to be carried out as a part of the installation procedure shall be recorded.

4.1.7 Operating mechanism

For power-operated doors the type of operating mechanism designed for the door shall be used.

For manually operated doors a suitable mechanism shall be applied to open and close the specimen. The mechanism shall simulate the normal manual operation by acting upon the handles or devices used for manual opening and closing. If not otherwise specified the opening and closing speed shall be 0,3 m/s measured at the main closing edge of the leaf.

4.2 Test specimen - Special tests for anti-drop devices

4.2.1 Test specimen

One or more operational samples of anti-drop devices shall be provided for the tests depending on what is necessary to carry out the test (see 5.3.2).

4.2.2 Documentation to be supplied

Together with the test specimen the following documents relating to the anti-drop devices shall be delivered:

- design specification;
- description of its design and function;
- operating instructions which contain data relating to the determined application, installation, conditioning, starting-up, procedures after activation of the anti-drop device, repeated testing and maintenance.

SIST EN 12605:2001

4.2.3 Installation of the test specimen

<https://standards.iteh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-94d001562456/sist-en-12605-2001>

The test specimen may be installed on a rigid test frame of a testing institution, on a test frame at the manufacturers premises or on site or at a testing door.

The anti-drop device shall be installed and loaded as prescribed by the manufacturer of the door and/or the device.

4.3 Test specimen - Inspection

4.3.1 Test specimen

Test specimen for the inspection procedures may be either doors installed in the factory or on site or a test door installed in a dummy wall or in a test frame, both representative of the door to be examined.

Inspection results from other representative test specimen can also be taken into account.

4.3.2 Documentation to be supplied

Together with the specimen the following documents shall be supplied:

- Design basis (mechanical as well as electrical);
- Installation manual;
- Operation manual;
- Maintenance manual.

4.3.3 Conditioning

The inspection shall be performed under normal, ambient conditions. Other values of temperature or humidity shall be considered if they are specified between manufacturer and customer.

When the function of certain elements depends on temperature and/or humidity, the element has to be examined at all limits of temperature and humidity. These elements can be examined individually.

4.3.4 Installation of the specimen

When the door is not tested on site, it shall be installed according to the instructions specified by the door manufacturer in a dummy wall or test frame of sufficient stability.

The test frame shall be capable of withstanding the static and dynamic forces which occur during the inspection procedure, without any effect on the results from the elasticity of the frame.

The door shall be installed in such a way that it can be opened and closed to its terminal positions without difficulty.

Any adjustment or calibration operations prescribed to be carried out as a part of the installation procedure shall be recorded.

5 Test procedures

STANDARD PREVIEW
(standards.iteh.ai)

In the following clauses procedures are listed which verify the requirements. The procedures are subdivided in functionality tests, durability tests and special tests as well as inspections. For practical reasons more than one test procedure may be carried out on one test specimen.

<https://standards.iteh.ai/catalog/standards/sist/ca377ce6-683b-4d83-af61-94d6b1562456/sist-en-12605-2001>

5.1 Test procedure - Functionality test

The functionality tests shall verify that the door fulfills the relevant functional requirements and criteria specified in document EN 12604.

The subjects of the tests are:

- Operability of the door (see 4.2.3) ;
- provisions against disengagement or derailment (see 4.3.1);
- provisions against unintended movements due to wind (see 4.3.2);
- provisions against uncontrolled movements of vertically operating doors (see 4.3.3);
- level of manual operating forces (see 4.4.1);
- operating speed and forces (see 4.10).

5.1.1 Verification of the operability of the door

5.1.1.1 Objective

The test shall show whether the door withstands the opening and closing movements without permanent deformations affecting its operation.