SLOVENSKI STANDARD
oSIST prEN 12605:2005

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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 et portails industriels, commerciaux et de garage - Aspects mécaniques - Méthodes d'essai

Ta slovenski standard je istoveten z: **prEN 12605**

ICS:

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

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ICS

Will supersede EN 12605:2000

English version

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

Portes industrielles, commercial et de garage - Aspects mécaniques - Méthodes d'essais

Tore - Mechanische Aspekte - Prüfverfahren

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Foreword

This document (prEN 12605:2005) 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 12605:2000.

This document is part of a series of European Documents for industrial, commercial and garage doors and gates, which are identified in EN 13241-1.

This document is intended for use in conjunction with prEN 12604:2005. It contains the test methods needed to evaluate conformity of doors and gates to the requirements of prEN 12604:2005.

Introduction

This document is a type C document as stated in EN 1070.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in clause 1.

When provisions of this type C document are different from those which are stated in type A or B documents, the provisions of this type C document take precedence over the provisions of the other standards, for machines that have been designed and built in accordance with the provisions of this type C document.

This product related document has been prepared to meet the needs of manufacturers, users and safety enforcement authorities, with the primary purpose of providing design and performance for safety mechanical aspects of industrial, commercial and garage doors and gates used by vehicles accompanied or driven by persons.

With the aim of clarifying the intention of this document and avoiding doubts when reading it, it was assumed when producing it that negotiation occurred between the manufacturer and the professional installer concerning:

— components to be kept in good repair or working order;

— negotiation occurred between the manufacturer and the user concerning the specificity of the use and place of use of the safety device;

— all parts of door installations, whether fixed or moving, including the fixing and assembling means, to be in all respects of good construction, suitable material, adequate strength and free from obvious defects for their intended working life;

— the design to be in accordance with usual European technical rules taking into account the most unfavourable static and dynamic forces occurring during the operation and all failure modes.

1 Scope

1.1 General

This document specifies the methods to verify the safety requirements stated in prEN 12604:2005 for doors, gates and barriers or their components 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 or driven by persons in industrial, commercial and residential premises.

1.2 Exclusions

It does not apply to

— lock gates and dock gates;

— doors on lifts;

— doors on vehicles;

— armoured doors;

— doors mainly for the retention of animals;

— theatre textile curtains;

— horizontally moving doors less than 2,5 m wide and 6,25 m^2 area, designed principally for pedestrian use;

— doors outside the reach of people (such as crane gantry fences);

— revolving doors of any size;

— railway barriers;

— barriers used solely for vehicles.

This document is not applicable to doors, gates and barriers which are manufactured before the date of publication of this document by CEN.

1.3 Specific applications

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

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 349, *Safety of machinery — Minimum gaps to avoid crushing of parts of the human body.*

EN 1070, *Safety of machinery — Terminology.*

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.*

EN 12600, *Glass in buildings — Pendulum test — Impact test method for flat glass and performance requirements.*

prEN 12604:2005, *Industrial, commercial and garage doors and gates — Mechanical aspects — Requirements.*

EN 13241-1, *Industrial, commercial and garage doors and gates — Product standard — Part 1: Products without fire and/or smoke characteristics.*

3 Terms and definitions

For the purposes of this document the terms and definitions given in EN 1070, EN 12433-1 and EN 12433-2 apply.

NOTE Whenever the term “door” is used in this document, it shall also be deemed the full scope of types and variances of doors, gates and barriers defined in EN 12433-1.

4 Test specimen

4.1 General

For practical reasons more than one test specimen may be used. Each test specimen shall consist of parts which conform to the design specification of the intended product. Each test specimen shall be newly made. Doors and parts in stock are to be regarded as newly made if they fully comply with the design specification of the product.

4.2 Test specimen — Functionality and durability test

4.2.1 Test specimen

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

4.2.2 Dimension and mass

The test specimen shall represent the size in dimensions and/or mass for the door type, which ever gives the most unfavourable conditions for the test.

Simulation, e.g. by adding mass, distributed in a way equal to the distribution of weight of the door leaf shall not be disregarded.

4.2.3 Documentation

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

— Design specifications (mechanical as well as electrical);

— Installation manual;

— Operation manual;

— Maintenance manual.

4.2.4 Conditioning

The tests shall be performed under normal ambient conditions, which are a temperature of (20 ± 10) °C, humidity between 20 % and 90 %. Other values of temperature or humidity shall be considered if they are intended by the manufacturer.

When the function of certain elements depends on temperature and/or humidity, the elements have to be tested at all intended limits of temperature and humidity. These elements can be tested individually without full door construction.

4.2.5 Installation of the test specimen

When the test specimen is installed in a dummy wall or test frame, their stability and rigidity shall represent the installation conditions, specified by the door manufacturer.

The test specimen shall be installed in such a way that it can be opened and closed to its terminal positions as intended.

4.2.6 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.

4.3 Test specimen — Special tests for anti-drop devices

4.3.1 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 5.4.2).

4.3.2 Documentation

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

— 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.

4.3.3 Installation of the test specimen

The test specimen shall 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.

4.4 Test specimen — Inspection

4.4.1 Test specimen

Test specimen for the inspection procedures shall 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.

4.4.2 Documentation

Together with the specimen the following documents shall be supplied:

— Design specification (mechanical as well as electrical);

— Installation manual;

— Operation manual;

— Maintenance manual.

4.4.3 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.

4.4.4 Installation of the specimen

When the door is not inspected on site, it shall be installed in accordance with 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 as intended.

5 Test procedures

5.1 General

In the following clauses procedures are listed to verify compliance with the requirements of prEN 12604:2005 (see Table A.1).

5.2 Test procedure — Functionality test

5.2.1 Verification of the operability of the door

5.2.1.1 Objective

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

5.2.1.2 Procedure

The door shall be fully opened and closed 10 times with an operating mechanism in accordance with 4.2.6.

5.2.1.3 Test results

The door movements shall be observed, whether any abnormalities linked to elastic or permanent deformation occur.

After the test cycles are finished, any alterations in the dimensions or in the shape (form), deformations or wear shall be checked by measuring or observation.

5.2.1.4 Test report

The test report shall contain:

a) all necessary details to identify the door, the door leaf or component;

b) all relevant details concerning the type, specified dimensions, materials, form and construction of the door, the door leaf or component;

c) test results;

d) details of temperature and humidity if not in the range, specified in 4.2.4.

5.2.2 Verification of guides and end-stops

5.2.2.1 Objective

The objective of the following tests is to verify that disengagement or derailment of the door leaf (leaves) or any other moving parts due to contact with a stationary obstacle or failure of a suspension element is prevented. It is also to verify that the door leaf is stopped in its terminal positions without any permanent critical deformation.

5.2.2.2 Apparatus

The obstacle shall consist of a solid cube with an edge length of 400 mm, resting on the floor in the running direction of the main closing edge.

For vertically operating doors the obstacle shall be positioned in the middle and offset at both sides (3 steps total):

a) in the middle of the opening;

b) at the left hand side of the opening;

c) at the right hand side of the opening.

5.2.2.3 Procedure

a) The door leaf shall travel once with the defined speed against the obstacles (see 4.2.6);

b) Door leaves with mechanical end stops which are manually operated shall travel twice to their terminal positions (see 4.2.6)

c) Simulation of a failure of a non rigid suspension element, such as rope, chain or strap.