SLOVENSKI STANDARD
SIST EN 14600:2006

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Vrata in okna z doloļ enimi lastnostmi poģarne odpornosti in/ali dimotesnosti ï Zahteve in klasifikacija

Doorsets and openable windows with fire resisting and/or smoke control characteristics - Requirements and classification

Tore, Türen und zu öffnende Fenster mit Feuer- und/oder Rauchschutzeigenschaften - Anforderungen und Klassifizierung

Blocs-portes et fenetres ouvrantes résistant au feu et/ou pare-fumées - Exigences et classification

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This European Standard was approved by CEN on 25 May 2005.

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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.

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Foreword

This European Standard (EN 14600:2005) has been prepared by Technical Committee CEN/TC 033 “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of an identical text or by endorsement, at the latest by February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

Annex E and F of this document provide information relating this document to other relevant European Standards, some of which are in the course of development.

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

Introduction

Fire resisting doorsets and openable windows are required to provide adequate protection to openings in fire resisting walls or partitions which are formed as doorways for the passage of people, goods or vehicles. Smoke control characteristics may be added to fire resisting doorsets or may be required as a sole characteristic for smoke control doorsets to provide smoke leakage protection to doorways in walls or partitions which are not required to be fire resisting.

Fire resisting doorsets and openable windows and smoke control doorsets can only provide their designed fire resistance or smoke control capability when they are in the closed position.

This European Standard identifies the requirements and methods of conformity necessary to demonstrate that a measured fire resistance or smoke control capability can be assumed to cover their designed working life. To that end, this document identifies operational requirements and test/inspection methods which are intended to demonstrate durability of self closing and operational capabilities combined with fire resistance and/or smoke control.

In order to ensure continued performance of the characteristics, there is a need for routine inspection and maintenance. See normative Annex C.

1 Scope

This European Standard identifies the particular requirements and classifications necessary to demonstrate the characteristics of fire resistance, smoke leakage control and self closing durability for pedestrian doorsets, industrial type doorsets and openable windows.

Requirements for performance characteristics for these products can be found in the appropriate product standards.

This document does not cover any component reliability or durability testing of mechanical heat detectors (e.g. fusible link devices).

The requirements relating to the use of alternative items of building hardware are provided.

NOTE 1 Fire resistance of doorsets and fire resistance of openable windows and smoke control of doorsets which differ from the original test specimen(s) are covered by the fields of direct and extended application relative to the result of test(s) to EN 1634-1 for fire resistance and EN 1634-3 for smoke control.

NOTE 2 Smoke venting windows designed to open in the event of fire are not covered by this standard.

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 179, *Building hardware – Emergency exit devices operated by a lever handle or push pad – Requirements and test methods*

EN 572-9:2004, *Glass in building – Basic soda lime silicate glass products – Part 9: Evaluation of conformity/Product standard*

EN 1096-4:2004, *Glass in building – Coated glass – Part 4: Evaluation of conformity/Product standard*

EN 1125, *Building hardware – Panic exit devices operated by a horizontal bar – Requirements and test methods*

EN 1154, *Building hardware – Controlled door closing devices – Requirements and test methods*

EN 1155, *Building hardware – Electrically powered hold-open devices for swing doors – Requirements and test methods*

EN 1158, *Building hardware – Door coordinator devices – Requirements and test methods*

EN 1191, *Windows and doors – Resistance to repeated opening and closing – Test method*

EN 1279-5:2001, *Glass in building – Insulating glass units – Part 5: Evaluation of conformity*

EN 1303, *Building hardware – Cylinders for locks – Requirements and test methods*

EN 1364-1, *Fire resistance tests for non-loadbearing elements – Part 1: Walls*

EN 1527, *Building hardware –Hardware for sliding doors and folding doors – Requirements and test methods*

EN 1634-1, *Fire resistance tests for door and shutter assemblies – Part 1: Fire doors and shutters*

prEN 1634-2, *Fire resistance tests for door and shutter assemblies – Part 2: Fire door hardware – Building hardware for fire resisting doorsets and openable windows*

EN 1634-3, *Fire resistance tests for door and shutter assemblies – Part 3: Smoke control doors and shutters*

EN 1748-1-2:2004, *Glass in building – Special basic products – Borosilicate glasses - Part 1-2: Evaluation of conformity/Product standard*

EN 1748-2-2:2004, *Glass in building – Special basic products – Glass ceramics - Part 2-2: Evaluation of conformity/Product standard*

EN 1863-2:2004, *Glass in building – Heat strengthened soda lime silicate glass – Part 2: Evaluation of conformity/Product standard*

EN 1906, *Building hardware – Lever handles and knob furniture – Requirements and test methods*

EN 1935, *Building hardware – Single-axis hinges – Requirements and test methods*

EN 12051, *Building hardware – Door and window bolts – Requirements and test methods*

EN 12150-2:2004, *Glass in building – Thermally toughened soda lime silicate safety glass – Part 2: Evaluation of conformity/Product standard*

EN 12209, *Building hardware – Locks and latches – Mechanically operated locks, latches and locking plates – Requirements and test methods*

EN 12337-2:2004, *Glass in building – Chemically strengthened soda lime silicate glass – Part 2: Evaluation of conformity/Product standard*

EN 12433-1:1999, *Industrial, commercial and garage doors and gates – Terminology – Part 1: Types of doors*

EN 12433-2:1999, *Industrial, commercial and garage doors and gates – Terminology – Part 2: Parts of doors*

EN 12453, *Industrial, commercial and garage doors and gates – Safety in use of power operated doors – Requirements*

EN 12519:2004, *Windows and pedestrian doors – Terminology*

EN 12605, *Industrial, commercial and garage doors and gates – Mechanical aspects – Test methods*

prEN 12650-2, *Building hardware – Powered pedestrian doors – Part 2: Safety at powered pedestrian doors*

EN 13024-2:2004, *Glass in building – Thermally toughened borosilicate safety glass – Part 2: Evaluation of conformity/Product standard*

EN 13501-2, *Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services*

prEN 13633, *Building hardware – Electrically controlled panic exit systems for use on escape routes – Requirements and test methods*

prEN 13637, *Building hardware – Electrically controlled emergency exit systems for use on escape routes – Requirements and test methods*

EN 14178-2:2004, *Glass in building – Basic alkaline earth silicate glass products – Part 2: Evaluation of conformity/Product standard*

EN 14179-2:2001, *Glass in building – Heat soaked thermally toughened soda lime silicate safety glass – Part 2: Evaluation of conformity/Product standard*

prEN 14321-2:2001, *Glass in building – Thermally toughened alkaline earth silicate safety glass – Part 2: Evaluation of conformity/Product standard*

EN 14449:2002, *Glass in building – Laminated glass and laminated safety glass – Evaluation of conformity/Product standard*

prEN 14637:2003, *Building hardware – Electrically controlled hold-open systems for fire/smoke door assemblies – Requirements, test methods, application and maintenance*

prEN 14846, *Building hardware – Locks and latches – Part 3: Electromechanically operated locks and striking plates – Requirements and test methods*

CEN/TS 54-14:2004, *Fire detection and fire alarm systems – Part 14 Guidelines for planning, design, installation, commissioning, use and maintenance*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 12433-1:1999, EN 12433-2:1999, EN 12519:2004, prEN 14637:2003 and the following apply.

3.1
closing device
device to be attached to a doorset or openable window which provides a return to the closed position

3.2
designed working life
period of time for which the complete assembly is designed to operate, when installed and maintained in accordance with the manufacturer's instructions

3.3
door co-ordinating device
mechanism which ensures the correct sequence of closing of double leaf single swing doorsets

3.4
fire resisting doorset
pedestrian doorset or industrial type doorset including any frame or guide, door leaf or leaves, rolling or folding curtain, etc., which is provided to give a fire resisting capability when used for the closing of permanent openings in fire resisting separating elements. This includes any side panels, vision panels or transom panels together with the door building hardware and any seals (whether provided for the purpose of fire resistance or smoke control or for other purposes such as draught or acoustics) which form the assembly

3.5
fitness for purpose
ability of a product, process or service to serve a defined purpose under specific conditions

3.6
friable material
material that changes in physical size under mechanical impact, acceleration, deceleration, in such a way that its performance for the intended use is considered to have changed in a negative manner (for example mineral wool without binders)

3.7
hold open device
element of the hold-open system that allows a self-closing fire/smoke control doorset or openable window to remain open at either a pre-set or chosen position until released

3.8
industrial type doorset
doorset of a type generally used for the passage of vehicles, but which may in some circumstances be used for pedestrian access in public locations such as retail or sporting venues

3.9
local heat detector
device installed local to the doorset which will activate at a defined temperature to release a door closing mechanism. Two types of local heat detectors are covered by this reference;

(a) electrically operated heat detectors according to EN 54-5,

(b) mechanically operated heat detectors (e.g. fusible link devices)

NOTE Local heat detectors type (b) are not elements of electrically controlled hold open systems according to prEN 14637.

3.10
openable window
window with one or more moveable elements including any fixed or removable side or overpanel(s)

NOTE Fixed windows without any openable elements are not subject to fire resistance testing for doorsets, but to the testing for partitions to EN 1364-1.

3.11
particular product design
doorset or openable window manufactured to a common construction principle (e.g. lid and tray construction for steel doorsets or framed-up construction for timber door leaves) which permits the use of the fields of direct and extended application rules

3.12
pedestrian doorset
doorset intended primarily for the use of pedestrians

3.13
self closing
ability of an open door or window to close fully into its frame and engage any latching device that may be fitted, without human intervention, by stored energy, or by mains power backed up by stored energy in case of power failure

3.14
smoke control doorset
pedestrian doorset or industrial type door assembly including any frame or guide, doorleaf or leaves, rolling or folding curtain, etc. which is provided to give a smoke leakage control capability when used for the closing of permanent openings in separating elements. This includes any side panels, vision panels or transom panels, together with the door building hardware and any seals (whether provided for the purpose of fire resistance or smoke control or for other purposes such as draught or acoustic) which form the assembly

3.15
uncontrolled door closer
door closing device where the energy for closing the door is stored within a spring being part of the spring closer mechanism, without provision for control of the closing speed of the door leaf

4 Requirements

4.1 General

The performance of fire resisting doorsets and fire resisting openable windows and smoke control doorsets shall be in accordance with the appropriate product standard, and shall meet the following requirements for testing on a specimen product.

Fire resisting doorsets and fire resisting openable windows and smoke control doorsets shall be capable of achieving the closed position insofar as in the closed position they shall be capable of achieving the declared fire resistance/smoke control performance. Where the correct closing sequence of a self closing double leaf doorset or openable window is essential to its fire performance or smoke control capability (for example where overlapping leading edges are included) the correct sequence shall be ensured by the use of a door co-ordinator device complying with EN 1158 or to the appropriate European Technical Specification for the device used.

The requirements of 4.2 to 4.10 shall be fulfilled for at least one complete specimen of the particular product design.

NOTE 1 Guidance regarding the number of test specimens will be found in the relevant test methods.

NOTE 2 To gain the maximum benefit from a product range, a manufacturer should test the most onerous arrangement intended for production. This may be the largest size, or the least favourable arrangement, or a combination of the two. Further guidance on this may be found in the standard(s) relating to the extended application of fire test and smoke control test results when they become available.

4.2 Operability

The operability of the test specimen for fire resistance and smoke control shall be demonstrated by testing in accordance with 5.1.1.1, which in the case of self closing side hung doorsets and windows shall be followed by testing in accordance with 5.1.1.3 or 5.1.1.4 as appropriate.

4.3 Characteristics for building hardware for use on fire resisting doorsets or fire resisting openable windows and smoke control doorsets

4.3.1 General

Pedestrian doorsets and openable windows shall incorporate items of building hardware which comply with the appropriate classifications given in Annex A where such classifications apply.

4.3.2 Selection of hardware for test specimens

Wherever possible, test specimens for pedestrian doorsets and openable windows shall incorporate elements of building hardware which comply with the appropriate classifications given in Annex A.

When a door or window test specimen exceeds the limits given in the harmonised technical specifications listed in Annex A, then the assembly shall be tested to meet the requirements of 4.8 and when applicable any other European Technical Specification required to prove fitness for purpose for the particular item of building hardware.

NOTE This form of wording is used because there are European Technical Specifications currently in the course of preparation for elements where size/weight restrictions given in Annex A are applicable.

The values of the maximum door leaf mass and the maximum door width; where given in the Table of Annex A, may be exceeded if it can be verified that the results of a complete test specimen according to its classification are positive after the durability test.

The test shall be carried out with a test specimen of specified dimensions and mass according to EN 1191. The test results can only be applied to a door or window of a similar product design.

Rules for the incorporation of alternative elements of building hardware shall be as 4.10.2.

4.3.3 Uncontrolled door closers

Where uncontrolled door closers (for example spring hinges) are permitted by national legislation for use as a means of self-closing fire resisting doorsets, their operation shall fulfil the requirements of 5.1.1.3 and where appropriate 5.1.1.4 of this document.

4.4 Seals and gaskets

Applied strips (for example intumescent materials), seals and gaskets (including those performing functions other than for fire or smoke) which are part of the doorset or openable window and their attachment technique shall be tested in accordance with EN 1634-1 to demonstrate their fire resistance capability or EN 1634-3 to demonstrate their smoke control capability.

Rules for the incorporation of alternative seals and gaskets shall be as 4.10.3.