SLOVENSKI STANDARD
oSIST prEN 15269-20:2017

01-oktober-2017

Razširjena uporaba rezultatov preskusov požarne odpornosti in/ali dimotesnosti za vrata, zapore in okna, ki se odpirajo, vključno z njihovim okovjem - 20. del: Požarna odpornost vrat, zapor in oken, ki se odpirajo

Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware - Part 20: Smoke control for doors, shutters and openable windows

Erweiterter Anwendungsbereich von Prüfergebnissen zur Feuerwiderstandsfähigkeit und/oder Rauchdichtigkeit von Türen, Toren und Fenstern einschließlich ihrer Baubeschläge - Teil 20: Rauchdichtigkeit von Türen, Toren, Abschlüssen und Fenstern

Application étendue des résultats d'essais en matière de résistance au feu et/ou d'étanchéité à la fumée des blocs-portes, blocs-fermetures et ouvrants de fenêtre, y compris leurs éléments de quincaillerie intégrés - Partie 20 : Étanchéité à la fumée des blocs-portes battants et pivotants en acier, en bois et vitrés à ossature métallique

Ta slovenski standard je istoveten z: **prEN 15269-20**

ICS:

13.220.50	Požarna odpornost gradbenih materialov in elementov	Fire-resistance of building materials and elements
91.060.50	Vrata in okna	Doors and windows

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 13.220.50; 91.060.50

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English Version

Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware - Part 20: Smoke control for doors, shutters and openable windows

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 127.

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.

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

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European foreword

This document (prEN 15269-20:2017) has been prepared by Technical Committee CEN/TC 127 “Fire safety in buildings”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15269-20:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

The EN 15269 series of standards *Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware* currently consists of:

— *Part 1: General requirements*;

— *Part 2: Fire resistance of hinged and pivoted steel doorsets*;

— *Part 3: Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows*;

— *Part 5: Fire resistance of hinged and pivoted metal framed glazed doorsets and openable windows*;

— *Part 6: Fire resistance of sliding timber doorsets* [currently at Enquiry stage];

— *Part 7: Fire resistance for steel sliding doorsets*;

— *Part 10: Fire resistance of steel rolling shutter assemblies*;

— *Part 11: Fire resistance for operable fabric curtains* [currently at Enquiry stage];

— *Part 20: Smoke control for doors, shutters and openable windows* [the present document; currently at Enquiry stage].

Introduction

This document is one of a series of standards listed above and is intended to be used for the purpose of producing an extended application report based on the evaluation of one or more fire resistance and/or smoke control tests. These standards may also be used to identify the best selection of test specimens required to cover a wide range of product variations.

Before there can be any consideration for extended application the doorset needs to be tested in accordance with EN 1634-3 to achieve a test result which could generate a classification in accordance with EN 13501-2 at least equal to the classification subsequently required from extended application considerations.

A review of the doorset construction parameters can indicate that one or more characteristics may be improved by a particular parameter variation. All evaluations needs to be made on the basis of retaining the smoke control classifications obtainable from testing to EN 1634-3. However, this will never lead to an increased classification for any specific smoke performance parameter beyond that achieved during any one test unless specifically identified in the relevant Construction Parameter Variation tables within this series of standards.

1 Scope

This draft European Standard, which should be read in conjunction with EN 15269-1, covers doors, shutters, openable windows and fabric curtains of any material and of the following types:

- hinged and pivoted (e.g. metal, timber, framed glazed doors) of single or double leaf, excluding frameless glass doors (Table A.1);
- horizontally and vertically moving sliding doors of single or double leaf with and without pass doors, including telescopic doorsets (Table A.2);
- metal rolling shutters and operable fabric curtains (excluding overlapping systems) (Table A.3).

NOTE 1 For the following constructions the tables/rules will be subject to future work:

- frameless glass doors;
- sectional doors (including stacking doors);
- vertically and horizontally folding doors.

In this standard whenever doors are mentioned, the whole range of doors, shutters, openable windows and operable fabric curtains is included or otherwise mentioned.

This document prescribes the methodology for extending the application of test results obtained from test(s) conducted in accordance with EN 1634-3.

NOTE 2 This standard covers doorsets made of a combination of materials as well.

Subject to the completion of the appropriate test or tests, the extended application may cover Ambient Temperature Smoke Control (S_a) and Medium Temperature Smoke Control *(*S_{200}*)* classifications and all or some of the following non-exhaustive list:

— leaf/leaves;

— wall/ceiling fixed elements

— glazed elements, louvres and/or vents;

— side, transom or overpanels;

— items of building hardware;

— decorative finishes;

— intumescent, smoke, draught or acoustic seals;

— alternative supporting construction(s).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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, for use on escape routes — Requirements and test methods*

EN 1125, *Building hardware — Panic exit devices operated by a horizontal bar, for use on escape routes —Requirements and test methods*

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

EN 1363-1, *Fire resistance tests — Part 1: General Requirements*

EN 1634-1, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Part 1: Fire resistance test for door and shutter assemblies and openable windows*

EN 1634-3, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Part 3: Smoke control test for door and shutter assemblies*

EN 1993-1-2, *Eurocode 3: Design of steel structures — Part 1-2: General rules — Structural fire design*

EN 12101-1:2005, *Smoke and heat control systems — Part 1: Specification for smoke barriers*

EN 13501-2:2016, *Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests, excluding ventilation services*

EN 15269-1:2010, *Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware — Part 1: General requirements*

prEN 15269-11:2016, *Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware — Part 11: Fire resistance for operable fabric curtains*

EN ISO 75-1, *Plastics - Determination of temperature of deflection under load — Part 1: General test method (ISO 75-1)*

EN ISO 75-2, *Plastics - Determination of temperature of deflection under load — Part 2: Plastics and ebonite (ISO 75-2)*

EN ISO 75-3, *Plastics - Determination of temperature of deflection under load — Part 3: High-strength thermosetting laminates (ISO 75-3)*

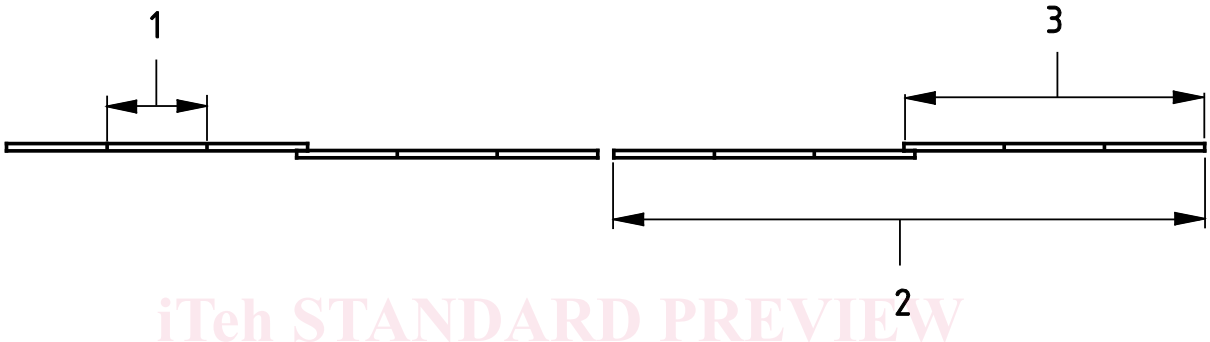
EN ISO 13943:2010, *Fire safety — Vocabulary (ISO 13943:2008)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1363-1, EN ISO 13943:2010, EN 1634-1, EN 1634-3 and EN 15269-1 and the following apply.

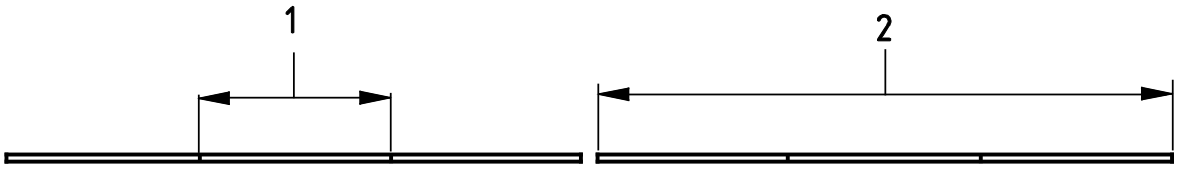
3.1
core
material fitted centrally within the thickness of a door leaf which may consist of a single sheet of material or a combination either of sheets of the same material or layers of different materials

3.2
leaf/element/panel
different parts of a sliding doorset as indicated in Figures 1 and 2 below



Key
1 panel
2 leaf
3 element

Figure 1 — Double leaf telescopic door



Key
1 panel
2 leaf

Figure 2 — Double leaf sliding door

3.3
glazed aperture
cut-out in a solid flush door filled with glass

3.4
glazed panel
glass infill in a framed door or a joinery door

4 Determination of the field of extended application

4.1 General

In Clause 4 “doorset” stands for doors, shutters, operable fabric curtains and openable windows as well (which means for any kind of products mentioned in the scope).

4.1.1 Before there can be any consideration for extended application the doorset shall have been tested in accordance with EN 1634-3 to achieve a test result which could generate a classification in accordance with EN 13501-2 at least equal to the classification subsequently required from extended application consideration.

4.1.2 A review of the doorset construction parameters can indicate that one or more characteristics may be improved by a particular parameter variation. All evaluations shall be made on the basis of retaining the classifications obtainable from testing to EN 1634-3. However, this shall never lead to an increased classification for any specific parameter beyond that achieved during any one test unless specifically identified in the relevant Construction Parameter Variation tables.

4.1.3 All evaluations shall be made on the basis of retaining the classification obtained from testing to EN 1634-3.

4.1.4 If, by following the ensuing procedure, any part of the classification cannot be achieved by extended application rules that part of classification shall be omitted from the subsequent extended application report and classification report, if not tested. The test shall be performed from both sides Test scenario F

4.2 Procedure for evaluation

4.2.1 Identify the variations from the original test specimen(s) which are required to be covered by an extended application report.

4.2.2 Locate the variations in the appropriate parameter variation by reference to columns (1) and (2) of Tables A.1, A.2 or A.3.

4.2.3 Establish from the contents of column (3) of Tables A.1, A.2 or A.3, whether any extended application is available without the need for further testing.

4.2.4 Where this is deemed to be possible this can be recorded in the extended application report together with any appropriate restrictions and the stated rules from column (3) in Tables A.1, A.2 or A.3.

4.2.5 Where the variations required can only be achieved from additional testing according to column (4), the additional test can be made on a similar specimen type to the original test against which the extended application is sought. Alternatively, column (3) in Tables A.1, A.2 or A.3 identifies an option for alternative testing and relevant test parameters.

4.3 Procedure for maximum field of extended application

4.3.1 It is possible to provide a limited field of extended application from the results of a single test. However, where a manufacturer intends to produce a range of doors incorporating single doors and also double doors with or without glazing, with alternative elements of building hardware, etc., it is recommended that careful consideration is given to the complete range of doorset designs and options in order to minimize the testing required before testing commences.

4.3.2 Establish all the parameter variations which are required to be part of the product range.

4.3.3 Select specimens for the first tests in the series to ensure that the most important parameter variations for the manufactured products are covered.

4.3.4 Complete the first test or a series of tests and prepare a field of direct application and possibly a classification report from the results of the test(s).

4.3.5 Establish which of the original desired parameter variations have not been covered by the direct application and classification report.

4.3.6 Identify these parameter variations in Annex A and establish where an extended application is possible without further testing.

4.3.7 Record this for the extended application report together with any restrictions and rules given in column (4) in Tables A.1, A.2 or A.3.

4.3.8 Evaluate which, if any, of the desired parameter variations have not been covered by the field of direct application or the initial field of extended application derived from 4.3.7 above.

4.3.9 Select the required outstanding parameter variations from column (1) and column (2) of Tables A.1, A.2 or A.3and observe from column (3) in Tables A.1, A.2 or A.3 which are the most appropriate weakest specimen options for further testing.

4.3.10 If the complete selection of required parameter variations has not been covered by the tests completed in accordance with 4.3.9 above, an appropriate test or tests may be carried out with the additional product variations incorporated.

4.4 Interpretation of test results

4.4.1 In order to maximize the field of extended application, it is important that the test reports shall record details of any failure throughout the duration of the test.

4.4.2 Where a series of tests have been conducted, the field of extended application shall be based on the lowest performance achieved from the complete series of tests unless excessive leakage has been attributed to one or more specific construction parameter variation.

4.4.3 Where it has been possible, to identify leakage due to a specific parameter, the extended application for all other construction parameter variations can be based on the performance achieved after isolating the parameter with excessive leakage.

5 Extended application report

Prepare an extended application report in accordance with the requirements of EN 15269-1:2010, Clause 6 based on the results of evaluations in accordance with the above.

6 Classification report

The classification report shall be determined from the results of the extended application report and shall be presented in accordance with EN 13501-2:2016, Annex A.

Annex A
(normative)

Construction parameter variations

The Tables are designed to provide rules for the creation of extended application reports by experts in the field of smoke control testing of:

— Table A.1: hinged and pivoted doorsets.

— Table A.2: horizontally sliding doorsets (single leaf and double leaf), telescopic doorsets, (single leaf and double leaf) and single leaf vertically sliding doorsets.

— Table A.3: metal rolling shutters and operable fabric curtains (excluding overlapping systems).

The Tables A.1, A.2 or A.3 shall only be used to evaluate a field of extended application when at least one positive smoke control test to EN 1634-3 has resulted in a classification according to EN 13501-2.

The first two columns of Tables A.1, A.2 or A.3 identify possible variations to the construction details of the specimen tested.

Column (3) of Tables A.1, A.2 or A.3 gives the possibility of extending the field of application.

Where additional tests are deemed to be necessary the type of specimen approved for incorporation of the changed parameter is defined in column (4) of Tables A.1, A.2 or A.3. Where it is possible to use information from tests performed on one configuration for evidence on a different configuration, this allowance has been made in order to reduce the overall number of tests required for extended application evaluation (e.g. single action doorsets to double action doorsets).

The following test scenarios are defined and referred to in column (4) of Tables A.1, A.2 or A.3:

Test scenario A: Test shall be performed with a single or double leaf door

Test scenario B: Tests shall be performed from both sides with a single leaf door.

Test scenario C: Tests shall be performed from both sides with a double leaf door.

Test scenario D: Test shall be performed from the worst side with a double leaf door for single or double leaf doors or with a single leaf door for single leaf doors

Test scenario E: Test shall be performed from the worst side with a single leaf door for single leaf doors or a double leaf door for double leaf doors respectively

Test scenario F: Tests shall be performed from both sides with a single leaf door for single leaf doors or a double leaf door for double leaf doors respectively. If the double leaf door test leads to a leakage of ≤ 20 m^3/h, this test is sufficient for single leaf doors as well.

Test scenario G: Tests shall be performed from both sides with a single or double leaf sliding door.

Test scenario H: If the hardware does interfere with the smoke seal more than tested: Tests shall be performed from both sides with a single leaf door for single leaf doors or a double leaf door for double leaf doors respectively. If the double leaf door test leads to a leakage of ≤ 20 m^3/h, this test is sufficient for single leaf doors as well.

Otherwise: Test shall be performed on the opening face with a double leaf door for single or double leaf doors or with a single leaf door for single leaf doors

Test scenario I: Test shall be performed from one side with the part(s) changed faced to the furnace.

Where an additional test is required in column 4, the test shall be a full scale test according to EN 1634-3 at least with the size of the initial test described in 4.1.1., unless it is otherwise specified by the notified product certification body, or the details changed are limited to the tested size. The test shall be performed with the specimen tested from the side with the higher leakage achieved in the tests mentioned in 4.1.1 (worst side) unless it is otherwise specified.

Where additional tests from both sides are required, it is defined in Annex A explicitly (test scenarios B, C, F, G and H). In this case one specimen can be used for both tests. If the specimen shall be tested without a specific hardware, the hardware can be installed in the specimen, but set disengaged.

The rules for increase of the maximum size of Annex C are to be considered to all variations of Tables A.1, A.2 or A.3, if they shall be applied to a larger size. For rolling shutters and operable fabric curtains stability and limitation of deformations are crucial for the leakage. Calculation principles for stresses and strains are given in Annex D and examples for calculations for relevant parts in Annex E.

Interpolations between minimum and maximum size tested of any measure is possible if not otherwise specified in Tables A.1, A.2 or A.3. The influence of parameter variations on the statics of a doorset or curtain assembly always shall be considered by the manufacturer.

Solid timber can be replaced by other solid timber of the same or higher density. Glued timber with solid pieces of min. 10 mm thickness may be used as solid timber. Composite wood products (e.g. Medium Density Fibreboard) may not be replaced with other materials or composites. Timber doors with metal inlays shall follow the rules for metal doors. Test results achieved with a timber door with metal inlays may not be used to evaluate the extended field of application of a timber doors without metal inlays and vice versa.

If after consideration of a specific variation, additional changes are required to be made to the specimen, these may be made providing the implications on other variations are also taken into account. If two or more variations should be tested within the same specimen, those variations should not interfere (negative or positive) with each other, unless the variations are always used together.

Table A.1 — Construction parameter variations for hinged and pivoted doors (metal, timber, framed glazed doors) of single or double leaf, excluding frameless glass doors

Construction parameter (1)		Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A	**Door leaf** In certain cases, the rules given in Section A are also appropriate to side and overpanels or the door frame; where this is the case it is clearly indicated in column (1). For double leaf doorsets, both leafs shall be of the same basic construction.			
A.1	**General**			
A.1.1	Number of leafs	Single leaf from double leaf doorset	Possible for S_a if the sealing system on the lock side is already tested on the double leaf door and the leakage is not more than $20 m^3/h$. Otherwise not possible without an additional test. Not possible for S_{200} without an additional test	Test scenario B
A.1.2	Number of leafs	Double leaf from single leaf doorset	Not possible without additional test	Test scenario C
A.1.3	Smoke seals (fitted at leaf to frame interface) – **see Figure A.1**	Location towards the frame rebate	Not possible without additional test	Test scenario F
A.1.4	Smoke seals (fitted at leaf to frame interface) – **see Figure A.2**	Location away from the frame rebate	Not possible without additional test	Test scenario F
A.1.5	Smoke seals (fitted in meeting edges)	Location change	Not possible without additional test	Test scenario F
A.1.6	Smoke seals (fitted in leaf or frame)	Add/Remove	Not possible without additional test	Test scenario F
A.1.7	Intumescent seals (fitted in leaf or frame) which are separate from the smoke seal	Add / Remove / Location change / Alternative	Possible providing the smoke sealing system is not interfered Otherwise not possible without additional test	Test scenario F
A.1.8	Louvres in door leaf or panel	Add	Not possible without additional test	Test scenario F

Construction parameter (1)		Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.1.9	Louvres in door leaf or panel	Remove	Possible	
A.1.10	Louvres in door leaf or panel tested with louvre	Fitting higher or lower in the leaf	Possible	
A.1.11	Louvres in door leaf or panel tested with louvre	Fitting to the side of the tested position	Possible	
A.1.12	Louvres in door leaf or panel tested with louvre – **see Figure A.3**	Smaller size (total area)	Possible	
A.1.13	Louvres in door leaf or panel tested with louvre	Larger size (for area or dimensions)	Not possible without additional test	Test scenario F
A.1.14	Louvre tested in double leaf doorset	Change position of louvre from one leaf to the opposite leaf	Possible if the area of the louvre is not more than 15 % of door leaf area or providing that both door leafs are active or the louvre is tested in active leaf. Otherwise not possible without an additional test.	Test scenario B
A.1.15	Leaf edge rebate (to door leaf or panel – not at the meeting edges; see section A.2 for meeting edge parameters) – **see Figure A.4**	Add (added rebate shown shaded in drawings)	Possible providing the rebate does not lead to reduced compression on the seals. Otherwise not possible without an additional test.	Test scenario F
A.1.16	Leaf edge rebate (to door leaf or panel – not at the meeting edges; see section A.2 for meeting edge parameters)	Remove	Not possible without additional test	Test scenario F
A.1.17	Change in mode of operation (single/double action)	Alternative	Possible for S_a to provide a double action doorset from a single action doorset providing the sealing system, including the area around the hinges/pivots, is unchanged, otherwise not possible	Test scenario F