SLOVENSKI STANDARD
oSIST prEN 15269-4:2022

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Razširjena uporaba rezultatov preskusov požarne odpornosti in/ali dimotesnosti za vrata, zapore in okna, ki se odpirajo, vključno z njihovim okovjem - 4. del: Požarna odpornost steklenih vrat na tečajih z vrtljivim krilom

'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 4: Fire resistance of hinged and pivoted glass doorsets'

Erweiterter Anwendungsbereich von Prüfergebnissen zur Feuerwiderstandsfähigkeit und/oder Rauchdichtigkeit von Türen, Toren und Fenstern einschließlich ihrer Baubeschläge - Teil 4: Feuerwiderstand von Drehflügeltüren aus Glas

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 4 : Résistance au feu des blocs-portes battants et pivotants en verre

Ta slovenski standard je istoveten z: **prEN 15269-4**

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

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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 15269-4:2022) 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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

This document is one of a series entitled EN 15269 or EN 17020. A list of all parts in the EN 15269 and the EN 17020 series can be found on the CEN website.

Introduction

This document is one of the EN 15269 and EN 17020 series of standards 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 and/or durability of self-closing tests. These standards may also be used to identify the best selection of test specimens required to cover a wide range of product variations.

A review of the doorset construction parameters can indicate that one or more characteristics may be improved by a particular parameter variation. All evaluations need to be made on the basis of retaining the fire resistance and/or smoke control and/or durability of self-closing classification(s) obtained from testing to the relevant test standard. However, this will never lead to an increased classification for any specific performance parameter beyond that achieved during any one test unless specifically identified in the relevant Construction Parameter Variation Table within this standard.

For general requirements for applying this standard see EN 15269-1.

1 Scope

This document covers hinged and pivoted doors, doorsets and door assemblies with glass based leaves. Throughout this document the term “doorset” will be used to cover doors, doorsets and door assemblies. It prescribes the methodology for extending the application of test results obtained from fire resistance test(s) conducted in accordance with EN 1634-1 and/or EN 1634-3 and/or EN 1191.

Subject to the completion of the appropriate test or tests, the extended application may cover all or some of the following examples:

— integrity (E), integrity & radiation (EW) or integrity & insulation (EI_1 or EI_2) classification;

— ambient temperature smoke control (Sa) and medium temperature smoke control (S_{200}) classifications;

— ability to close and durability of self-closing (C0 – C5);

— glazed elements;

— side, transom or over panels;

— items of building hardware;

— decorative and protective finishes;

— intumescent seals and non-intumescent (e.g. smoke, draught or acoustic) seals;

— alternative supporting construction(s).

This document does not cover horizontal doorsets and windows.

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.

<std>EN 179, *Building hardware - Emergency exit devices operated by a lever handle or push pad, for use on escape routes - Requirements and test methods*</std>

<std>EN 844 (all parts), *Round and sawn timber — Terminology*</std>

<std>EN 1154, *Building hardware - Controlled door closing devices - Requirements and test methods*</std>

<std>EN 1191, *Windows and doors - Resistance to repeated opening and closing - Test method*</std>

<std>EN 1363-1, *Fire resistance tests - Part 1: General requirements*</std>

<std>EN 1364-1:2015, *Fire resistance tests for non-loadbearing elements - Part 1: Walls*</std>

<std>EN 1634-1, *Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware — Part 1: Fire resistance test for doors, shutters and openable windows*</std>

<std>EN 1634-2, *Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware - Part 2: Fire resistance characterisation test for elements of building hardware*</std>

<std>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*</std>

<std>EN 1935, *Building hardware - Single-axis hinges - Requirements and test methods*</std>

<std>EN 12150-1, *Glass in building - Thermally toughened soda lime silicate safety glass - Part 1: Definition and description*</std>

<std>EN 12519, *Windows and pedestrian doors - Terminology*</std>

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

<std>EN 15254-4:2018, *Extended application of results from fire resistance tests - Non-loadbearing walls - Part 4: Glazed constructions*</std>

<std>EN 15269-1, *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*</std>

<std>EN ISO 13943, *Fire safety - Vocabulary (ISO 13943)*</std>

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1363-1, EN 12519, EN ISO 13943, EN 1634-1, EN 1634-2, EN 1634-3, EN 1191 and EN 15269-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
most onerous configuration
configuration with the lowest relevant performance in terms of mode of failure and/or highest distortion, also be evaluated taking the intended construction parameter variation(s) into account

Note 1 to entry: For example if the construction parameter variation involves a change to glazing or side panel and over panel configurations then the previous result where these have been tested would need to be used to make the evaluation of most onerous.

3.2
effective rebate depth
dimension of the door leaf thickness of overlapping adjacent edges of door leaf relative to the door frame, transom or side panel or flush over panel

3.3
hybrid frame
frame constructed of a steel core material, cladded with insulating inorganic materials (e.g. gypsum)

3.4
doorset without frame
door leaf directly installed in the supporting construction (low or high density rigid supporting construction or a previously tested non-standard supporting construction)

3.5
representative specimen
similar design
fundamentally the same
door leaf design which has 'fundamentally the same' or 'similar' construction as another door leaf design for the purpose of evaluating parameter variations providing the relevant aspects of tested performance are considered

Note 1 to entry: see EN 15269-1 for further guidance on evaluation of similar/fundamentally the same

3.6
single action doorset
doorset which opens only in one direction, from closed position up to a maximum of 180°

3.7
double action doorset
swing door
doorset which opens in both directions, from closed position up to a maximum of ±180°

3.8
full scale test
test of a doorset in accordance with EN 1634-1

3.9
small scale test
test on elements of building hardware in accordance with EN 1634-2 and where the decision process, given in EN 1634-2, permits its use

3.10
flush over panel
panel above the door without a transom

4 Determination of the field of extended application

4.1 General

4.1.1 Before there can be any consideration for extended application, a representative doorset shall have been tested in accordance with EN 1634-1 and/or EN 1634 3 and/or EN 1191 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.

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 1634-1 and/or EN 1634 3 and/or EN 1191, including those lower than the test duration. 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 If, when following the extended application procedure, any part of the classified product cannot be covered by the extended application rules then that part shall be omitted from the subsequent extended application report and classification report.

4.2 How to use the extended application rules in Annex A

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 Annex A.

4.2.3 For the required performance characteristic(s) in column (3) establish from the contents of column (4) of Annex A whether any extended application is available beyond the direct application rules (DIAP) in EN 1634-1 and/or EN 1634 3 and/or EN 1191 without the need for further testing.

4.2.4 Where this is deemed to be possible, it can be recorded in the extended application report together with any appropriate restrictions and the stated rules from column (4) of Annex A.

4.2.5 Where the variations required can only be achieved from additional testing, the additional test should be made on a representative specimen type i.e. a doorset of the same or more onerous configuration. Alternatively, column (5) of Annex A identifies an option for alternative testing and relevant test parameters.

4.2.6 Most onerous configuration must be the one with the lowest relevant performance in terms of mode of failure and/or highest distortion but must also be evaluated taking the intended construction parameter variation(s) into account. For example if the construction parameter variation involves a change to glazing or side panel and over panel configurations then the previous result where these have been tested would need to be used to make the evaluation of most onerous.

4.3 Procedure for maximum field of extended application

4.3.1 It is possible to provide an extended field of application for a particular performance characteristic from a single test (for fire resistance and smoke control of an asymmetrical doorset only for the face tested). However, where a manufacturer envisages to manufacture a range of doorsets incorporating single leaf doorsets and also double leaf doorsets with or without side, transom or over panels, with or without glazing, louvres (ventilation/air transfer grilles), with alternative item of building hardware, etc., it is recommended that careful consideration is given to the complete range of doorset designs and options. This helps to minimise 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 Determine which are the most important specification requirements and incorporate as many as possible into the specimen(s) for the first tests in the series.

4.3.4 Conduct the first fire resistance, smoke control and/or durability of self-closing test or a series of tests and then establish which of the original desired parameter variations have not been covered by the fire resistance, smoke control and/or durability of self-closing tests, including direct application possibilities of the relevant test standard(s).

4.3.5 Identify these parameter variations in Annex A and establish if any extended application is possible without further testing.

4.3.6 Record this for the extended application report together with any restrictions and rules given in column (4) in Annex A.

4.3.7 Evaluate which, if any, of the desired parameter variations have not been covered by the field of direct application of the relevant test standard(s) or the initial field of extended application derived from 4.3.5.

4.3.8 Determine if the product range is to include only single leaf doorsets or if the range is to also include double leaf configurations. Where only single leaf doorsets are to be part of the product range, the outstanding construction parameter variations shall only be incorporated into specimens for the single leaf doorset. Where single leaf and double leaf doorsets are to be included in the product range, the outstanding construction parameter variations for the extended application of single leaf doorsets may be incorporated into either repeated single leaf doorset tests or, in the weakest option, as defined in column 4 of Table A.1 to Table A.6, double leaf doorset configurations. See also Annex B.

4.3.9 Select the required outstanding parameter variations from column (1) and column (2) of Annex A and observe from column (5) in Annex A 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 4.3.8 and 4.3.9 above, then an appropriate test or tests may be repeated with the additional product variations incorporated for the required performance characteristic(s).

4.4 Analysis of test results

4.4.1 In order to maximise the field of extended application, it is important that the test reports shall record details of any premature integrity and/or insulation failure, as well as details of any significant distortion.

4.4.2 Where a series of tests forms the basis for the extended application, the field of extended application shall be based on the lowest performance of each performance characteristic achieved from the complete series of tests unless premature failure has been attributed to one or more specific construction parameter variations.

4.4.3 Where it has been possible to clearly identify specific parameter failures, the extended application for all other construction parameter variations can be based on the performance achieved after isolating the premature failure(s), provided the requirements of clause 4.1.1 is met. Where the specific Construction Parameter variation requires EN 1634-1 Category B performance and where failures can be identified as having no relevance to this aspect of the construction, they can be disregarded and the failure time and associated Category revised accordingly.

5 Extended application report

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

When additional test data based on similar designs (within a product family) are used to extend the field of application, the rationale for using the test data should be mentioned in the EXAP report.

6 Classification report

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

Annex A
(normative)

Construction parameter variations

A.1 General

This Table is designed to be used by experts competent in the field of fire resistance, smoke control and durability of self-closing testing of hinged or pivoted doorsets with glass-based leaves.

This Table shall only be used to assess a field of extended application when at least one positive test according:

- fire resistance test to EN 1634 1 (for fire resistance characteristics) and/or;
- smoke control test to EN 1634-3 (for smoke control characteristics) and/or;
- durability of self-closing test to EN1191 (for durability of the self-closing characteristics),

has generated a classification according to EN 13501-2. Only results from tests in accordance with European standards can be used as basis for extended application.

The first two columns identify possible variations to the construction details of the specimen tested. Column (3) determines the particular performance characteristic as follows:

- **F** for fire resistance characteristics;
- **S** for smoke control characteristics;
- **D** for durability of the self-closing characteristics.

For some parameters of fire resistance characteristics, it is necessary to evaluate whether the specimen displayed a high, medium or low level of distortion during the test. Where this is the case, the following levels shall be used to establish high, medium and low distortion doorsets as measured using the maximum relative movement at any position between the edge of the door leaf and door frame or between the meeting edges of door leaves or the relative movement of the framing members for panelled systems. The measurements shall be taken from the start of the test at any time during the complete required classification period. The deflections shall be measured at the positions given in EN 1634-1:

Low: < 40 % of effective rebate depth;

Medium: ≥ 40 % and ≤ 85 % of effective rebate depth;

High: > 85 % of effective rebate depth.

The evaluation of the influence of a parameter variation on performance characteristics (E/EW/EI) lead to the judgement of the possibility of the extension of the field of application, the results of which are given in column 5. In certain cases in column 5, it is a requirement to achieve Category B; the requirements for this are given in EN 1634-1.

Where additional tests are deemed to be necessary, column (5) defines the test scenario to be used for each characteristic F, S and D. 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.

Where an additional test is defined in column 5, this test could be a single or double action doorset if not mentioned otherwise.

Where additional tests from both faces of the doorset are required, this is defined in column (5) explicitly. In case of fire resistance (F) for symmetrical doors, only one test is sufficient. In the case of smoke control characteristics (S) one specimen can be used for tests of both faces.

In order to maximize the possible field of extended application from a minimum number of tests, the parameter changes have been spread over a series of test specimens. The recommended tests for each parameter are dependent on the classification required and the preferred options.

Test evidence of test according EN 1364-1 could not be used for the door leaf.

Where more than a single parameter variation is required, the influence on other variations shall also be taken into account.

Whenever the weight of the door leaf is higher than tested according EN 1191 the requirements of Annex C have to be fulfilled if durability of self-closing is considered.

Test scenarios for tests on fire resistance according to EN 1634-1: The following test scenarios are defined and referred to in column (5) of Tables A.1- A6:

Test scenario FA:	Additional test single or double leaf doorset. Test from the most onerous side based on test results as given by basic tests.
Test scenario FB	Additional test can be single or double leaf doorset
Test scenario FC	Additional test single or double leaf doorset. If the seal is positioned between the meeting edges of the door leaves the additional test shall be a double leaf doorset
Test scenario FD	For single leaf doorsets additional test can be single or double leaf doorset. For double leaf doorsets additional test shall be double leaf doorset. Test from the most onerous side based on test results as given by basic tests.
Test scenario FE	Single leaf doorset from most onerous side for single leaf doors, double leaf doorset from most onerous side for double leaf doors
Test scenario FF	For single leaf doorsets additional test single leaf doorset, for double leaf doorsets additional test double leaf doorset. For use in flexible construction, test should be performed in a flexible supporting construction. Test from the most onerous side based on test results as given by basic tests.
Test scenario FG	For single leaf doorsets additional test single leaf or double leaf doorset, for double leaf doorsets additional test double leaf doorset

Test scenarios for smoke control tests according to EN 1634-3: The following test scenarios are defined and referred to in column (5) of Tables A.1- A6:

Test scenario SA:	Test shall be performed with a single or double leaf door
Test scenario SB:	Tests shall be performed from both sides with a single leaf door.
Test scenario SC:	Tests shall be performed from both sides with a double leaf door.
Test scenario SD:	Test shall be performed from the worst side with a double leaf doorset for single or double leaf doorsets or with a single leaf doorset for single leaf doorsets

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

Test scenarios for durability of self-closing tests according EN 1191: The following test scenarios are defined and referred to in column (5) of Tables A.1- A6:

Test scenario DA:	Test shall be performed with a single or double leaf door
Test scenario DB:	Tests shall be performed with a single leaf door.
Test scenario DC:	Tests shall be performed with a double leaf door.
Test scenario DD:	Test should be a double leaf doorset for single and double leaf doorsets, or single leaf doorset for single leaf doorsets.
Test scenario DE:	Test should be a single leaf doorset for single and double leaf doorsets, or double leaf doorset for double leaf doorsets.

A.2 Construction parameter variations for fire resistance (F), smoke control (S) and durability of self-closing (D) characteristics

A.2.1 Door leaf

In certain cases, the rules given in Section A are also appropriate to side, transom and over panels or the door frame; where this is the case it is clearly indicated in column (1). For double leaf doorsets, both leaves shall be of the same basic construction.

Table A.1 — Construction parameter variations – Section A – Door leaf

Construction Parameter (1)	Variation (2)	[1] (3)	Possibility of extension (4)	Additional Evidence Required (5)
A.1 General				
A.1.1 Number of leaves.	Single leaf doorset from double leaf doorset test.	F	Not possible without additional test.	Test should be a single leaf doorset. Single action doorset: Test should be done from opening and closing face giving a basic test. double action doorset: one test is sufficient
		S	Not possible without additional test.	Test scenario SB
		D	Possible	-
A.1.2 Number of leaves.	Double leaf doorset from single leaf doorset test.	F	Not possible without additional test.	Test should be a double leaf doorset. Single action doorset: Test should be done

[1] particular performance characteristic