SLOVENSKI STANDARD

SIST EN 15269-5:2014

01-september-2014

Razširjena uporaba rezultatov preskusov požarne odpornosti in/ali dimotesnosti za vrata, zaporne elemente in okna, ki se odpirajo, vključno z njihovim okovjem - 5. del: Požarna odpornost zastekljenih vrat v kovinskih okvirjih 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 5: Fire resistance of hinged and pivoted metal framed glazed doorsets and openable windows

Erweiterter Anwendungsbereich von Prüfergebnissen zur Feuerwiderstandsfähigkeit und/oder Rauchdichtigkeit von Türen, Toren und Fenstern einschließlich ihrer Baubeschläge - Teil 5: Feuerwiderstandsfähigkeit von verglästen Drehflügeltüren mit Metallrahmen und zu öffnenden 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 fenêtres, y compris leurs éléments de quincaillerie - Partie 5: Résistance au feu des blocs-portes vitrés battants et pivotants, à ossature métallique, et des fenêtres vitrées à ossature métallique

Ta slovenski standard je istoveten z: EN 15269-5:2014

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
91.190	Stavbna oprema	Building accessories

SIST EN 15269-5:2014 en,fr,de

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15269-5

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ICS 13.220.50; 91.060.50

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 5: Fire resistance of hinged and pivoted metal framed glazed doorsets and openable windows

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 5: Résistance au feu des blocs-portes vitrés battants et pivotants, à ossature métallique, et des fenêtres vitrées à ossature métallique

Erweiterter Anwendungsbereich von Prüfergebnissen zur Feuerwiderstandsfähigkeit und/oder Rauchdichtigkeit von Türen, Toren und Fenstern einschließlich ihrer Baubeschläge - Teil 5: Feuerwiderstandsfähigkeit von verglasten Drehflügeltüren und zu öffnenden Fenstern mit Metall(rohr)rahmen

This European Standard was approved by CEN on 17 April 2014.

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Foreword

This document (EN 15269-5:2014 has been prepared by Technical Committee CEN/TC 127 “Fire safety in buildings”, the secretariat of which is held by BSI.

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 November 2014 and conflicting national standards shall be withdrawn at the latest by November 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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Introduction

This document is one of a series of standards listed below and 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.

EN 15269 ,*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 4: Fire resistance of hinged and pivoted glass doorsets (in preparation)*;

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

— *Part 6: Fire resistance of sliding timber doorsets*;

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

— *Part 8: Fire resistance of horizontally folding timber doorsets (in preparation)*;

— *Part 9: Fire resistance of horizontally folding steel doorsets (in preparation)*;

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

— *Part 11: Fire resistance of operable fabric curtains*;

— *Part 20: Smoke control for hinged and pivoted steel, timber and metal framed glazed doorsets*.

1 Scope

This European Standard covers hinged and pivoted steel (any kind) and aluminium based framed, glazed doorsets or openable windows.

This European Standard prescribes the methodology for extending the application of test results obtained from resistance to fire test(s) conducted in accordance with EN 1634-1.

Subject to the completion of the appropriate test or tests selected from those identified in Clause 4 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) classifications;

— doorsets and openable windows;

— door / window leaf (leaves);

— glazing and non-glazed panels in doorset and openable window;

— 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 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 1634-2, *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*

EN 13501-2:2007+A1:2009, *Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services*

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*

EN ISO 13943, *Fire safety - Vocabulary (ISO 13943)*

3 Terms and definitions

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

3.1
full scale test
test of a full scale doorset in accordance with EN 1634-1

3.2
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

3.3
effective rebate depth-2
dimension of the door leaf thickness of overlapping adjacent edges of door leaf relative to the door frame, transom or side panel or flush overpanel

Note 1 to entry: At the meeting edges and for rebated leaves the dimension is the depth of the largest rebate. See Figure 1.

Note 2 to entry: The effective rebate depth-2 is different from the effective rebate depth definition given on other standards of the series EN 15269.

3.4
opening outwards
means opening the doorleaf away from the fireside

4 Determination of the field of extended application

4.1 General

4.1.1 Before there can be any consideration for extended application the doorset shall have been tested and classified in accordance with EN 1634-1 and EN 13501-2 respectively in order to establish a classification for the doorset.

4.1.2 A review of the 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, including those lower than the test duration. However, this shall never lead to an increased classification for any specific parameter beyond that achieved by one resistance to fire test unless specifically identified in the relevant Construction Parameter Variation tables.

4.1.3 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.

4.2 How to use extended application rules in Annex A

4.2.1 Identify the variations from the original resistance to fire 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 Table A.1.

4.2.3 Review the type of classification to be retained from column (3) and establish from the contents of column (4) whether any extended application is available beyond the direct application rules in EN 1634-1 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 (4) of Table A.1.

4.2.5 Where the variations required can only be achieved from additional testing, the additional resistance to fire test can be made on a similar specimen type i.e. a doorset of the same or more onerous configuration where the leaf construction is fundamentally the same as tested. Alternatively, column (5) identifies an option for alternative testing and relevant resistance to fire test parameters.

4.3 Procedure for maximum field of extended application

4.3.1 It is possible to provide an extended field of application from a single resistance to fire test. However, where a manufacturer intends to produce a range of doors incorporating single doors and also double doors, with or without side, transom or flush over panels, with or without glazing, with or without louvres or ventilation grilles, 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 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 resistance to fire tests in the series.

4.3.4 Conduct the first resistance to fire test or a series of tests and then establish which of the original desired parameter variations have not been covered by the resistance to fire tests, including direct application possibilities.

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 (5) in Table A.1.

4.3.7 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 4.3.5.

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 doorsets are to be part of the product range then 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 resistance to fire tests or in the weakest option, as defined in column 5 of Table A.1, double leaf doorset configurations.

4.3.9 Select the required outstanding parameter variations from column (1) and column (2) of Table A.1 and observe from column (5) of Table A.1 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 resistance to fire tests completed in accordance with 4.3.8 and 4.3.9 above, then an appropriate resistance to fire test or tests may be repeated with the additional product variations incorporated.

4.4 Analysis of resistance to fire test results

4.4.1 In order to maximize the extended field of application, it is important that the test reports shall record details of any premature integrity and / or insulation failure also record details of any distortion to evaluate low, medium and high distortion (see Annex A).

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

4.4.3 Where it has been possible, to 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).

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.

6 Classification report

The classification report shall be determined from the results of the extended application report and presented in accordance with Annex A of EN 13501-2:2007+A1:2009.

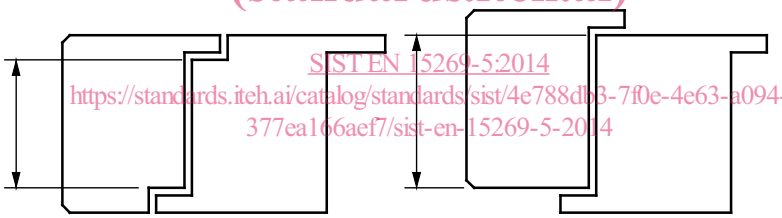

Figure 1 — Effective rebate depth-2

Annex A
(normative)

Construction parameter variations

Table A.1 is designed to be used in the field of fire resistance testing of hinged and pivoted metal framed glazed doorsets and openable windows.

The table shall only be used to evaluate a field of extended application when at least one positive fire resistance test to EN 1634-1 has resulted in a classification according to EN 13501-2.

The first two columns identify possible variations to the construction details of the specimen tested.

The Influence of variation on performance characteristic is identified from column 3 as, integrity, insulation or radiation (E, I or W respectively). For some parameters, 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.

The measurements shall be taken from the start of the test at any time during the complete required classification period (suggested measuring positions are given in EN 1634-1).

— low distortion doorsets: maximum relative movement is < 40 % of effective rebate depth-2;

— medium distortion doorsets: maximum relative movement is between 40 % and 60 % effective rebate depth-2;

— high distortion doorsets: maximum relative movement is > 60 % of effective rebate depth-2.

The effect of the change in each parameter is evaluated for each characteristic in column 3 under E for effects on integrity, I for effects on insulation (whether an I_1 or I_2 class) and W for the effects on radiation.

These evaluations lead to the judgement of the possibility of extending the field of application the results of which are given in column 4. In certain cases in column 4, it is a requirement to achieve Category B, the requirements for which are given in EN 1634-1.

Where additional tests are deemed to be necessary the type of specimen approved for incorporation of the changed parameter is defined in column 5. 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 required in column 5 the test is a full scale test with the specimen opening outwards (away from the furnace) unless it is otherwise specified.

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 depends on the classification required and the preferred direction of testing indicated in column 5.

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

All the rules in Table A.1, with exception are applicable to doorsets and openable windows. However, in the text only the word “doorset” is used. The word “doorset” can be replaced by “openable windows” in every rule.

All the rules in Table A.1 influencing glass dimensions shall respect the rules for changing them, as mentioned in Table A.1 part F.

Table A.1 — Construction parameter variations

Key symbols in column 3 (which is informative only):

> - higher performance anticipated

< - lower performance anticipated

= - no significant change in performance anticipated

_ - equal or higher performance anticipated

_ - equal or lower performance anticipated

> / = / < - the influence on performance could be worse, equal or better hence variations not possible unless specific, limited conditions are identified

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A Door leaf						
For double leaf doorsets, both leaves shall be of the same basic construction.						
A.1.1 Number of leaves — See Figure A.1	Single leaf from double leaf test	≤	≥ -	≥	Not possible without an additional test-	Additional test single leaf doorset with glazing bead in fire side
A.1.2 Number of leaves	Double leaf from single leaf test	≤	≤	≤	Not possible without an additional test	Additional test (s) double leaf doorset open outwards and inwards for doors with insulated profiles with glazing bead in fire side Open outwards for doors with un-insulated profiles with glazing bead in fire side
A.1.3 Intumescent seals between frame and	Location towards the	> / = /	> / = / <	> / = / <	Not possible without an additional test	Additional test single leaf or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
door leaf / leaves- See Figure A.2a	frame rebate	<				(open outwards)
A.1.4 Intumescent seals between frame and door leaf / leaves – See Figure A.2b	Location away from the frame rebate	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test single leaf or double leaf doorset (open outwards)
A.1.5 Intumescent seals between meeting edges of the door leaves - See Figure A.3a	Location	> / = / <	> / = / <	> / = / <	Not possible without additional test (s)	Additional test (s) double leaf doorset open outwards for E and EW doors For EI aluminium doors: test both directions For EI-steel doors: one test, with fire on opposite side of the operated direction. See Figure A.3b
A.1.6 Non intumescent seals between frame and door leaf / leaves (draught / smoke / acoustic etc.) - (Reaction to fire class A1) e.g. ceramic products(fitted in leaf or frame). See Figure A.4	Location	=	=	=	Any movement possible providing no modifications of the construction are required otherwise not possible without an additional test	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
A.1.7 Non intumescent seals between meeting edges of the door leaves (draught / smoke / acoustic etc.) - (Reaction to fire class A1)	Location	> / = / <	> / = / <	> / = / <	No movement possible without an additional test	Additional test double leaf doorset
A.1.8 Non intumescent seals between door leaves and / or frames (draught /smoke / acoustic etc.) – < Reaction to fire class A1	Location	> / = / <	> / = / <	> / = / <	No movement possible without an additional test	Additional test (s) double leaf doorset open outwards for E and W

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
(fitted in leaf or frame) - **See Figure A.4a**						doors For EI aluminium doors: test both directions For EI-steel doors: one test, with fire on opposite side of the operated direction See Figure A.4b
A.1.9 Non intumescent seals between door leaves and / or frames (draught / smoke / acoustic etc.) - (Reaction to fire class A1), e.g. ceramic products (fitted in leaf or frame) - **See Figure A.5a**	Add	=	=	=	Possible for doors without intumescent seals and providing the gap between door leaf and door frame is not increased otherwise not possible without an additional test	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
A.1.10 Non intumescent seals between door leaves and / or frames (draught / smoke / acoustic etc.) - (Reaction to fire class A1), e.g. ceramic products (fitted in leaf or frame) - **See Figure A.6**	Remove	≤	≤	≤	Not possible without an additional test	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