

## SLOVENSKI STANDARD oSIST prEN 15269-3:2009

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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 3: Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows

## iTeh STANDARD PREVIEW

Erweiterter Anwendungsbereich von Prüfergebnissen zur Feuerwiderstandsfähigkeit und/oder Rauchdichtigkeit von Türen, Toren, Abschlüssen und Fenstern einschließlich ihrer Baubeschläge - Teil 3: Feuerwiderstandsfähigkeit von Drehflügeltüren und Fenstern aus Holz https://standards.iteh.ai/catalog/standards/sist/5d66e372-2c2e-423b-affa-34d1a6c3fcee/osist-pren-15269-3-2009

Application élargie des résultats d'essais en matière de résistance au feu et/ou d'étanchéité à la fumée des blocs-portes, fermetures et fenêtre, y compris leurs éléments de quincaillerie - Partie 3: Résistance au feu des blocs-portes battants et pivotants et des fenêtres à ossature bois

Ta slovenski standard je istoveten z: prEN 15269-3

## ICS:

13.220.50Požarna odpornostFire<br/>gradbenih materialov in<br/>elementov91.060.50Vrata in oknaDoc

Fire-resistance of building materials and elements

Doors and windows

oSIST prEN 15269-3:2009

en,fr,de

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# EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

# DRAFT prEN 15269-3

October 2008

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 3: Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows

Application élargie des résultats d'essais en matière de résistance au feu et/ou d'étanchéité à la fumée des blocsportes, fermetures et fenêtre, y compris leurs éléments de quincaillerie - Partie 3: Résistance au feu des blocs-portes battants et pivotants et des fenêtres à ossature bois

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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.

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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## Foreword

This document (prEN 15269-3:2008) 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 EC Directive(s).

This document is one of a series entitled "prEN 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" which consists of the following:

- 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 REVIEW
- Part 5: Fire resistance of hinged and pivoted, metal framed, glazed doorsets and openable windows
- Part 6: Fire resistance of sliding timber doorsets 69-3:2009
- Part 7: Fire resistance of sliding steel doorsets
- osist-pren-15269-3-2009
- Part 8: Fire resistance of horizontally folding timber doorsets
- Part 9: Fire resistance of horizontally folding steel doorsets
- Part 10: Fire resistance of steel rolling shutters
- Part 11: Fire resistance of fabric curtains
- Part 20: Smoke control for hinged and pivoted timber and steel doorsets

#### 1 Scope

This document covers hinged or pivoted doorsets with timber based leaves, timber framed glazed doors and openable timber framed windows. It prescribes the methodology for extending the application of test results obtained from test(s) conducted in accordance with EN 1634-1.

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

- uninsulated (E), radiation (EW) or insulated (El<sub>1</sub> or El<sub>2</sub>) classifications;
- glazed elements, louvres and/or vents;
- side, transom or overpanels;
- items of building hardware;
- decorative finishes;

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- intumescent, smoke, draught or acoustic seals;
- alternative supporting construction(s).

## iTeh STANDARD PREVIEW Normative references (standards.iteh.ai)

# This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references, are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 844, Round and sawn timber — Terminology

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

EN 1125, Building hardware — Panic exit devices operated by a horizontal bar — 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, shutter and openable window assemblies and elements of building hardware — Part 1: Fire resistance test for door, shutter and openable window assemblies

prEN 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 12519, Windows and pedestrian doors — Terminology

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

EN ISO 13943, Fire safety — Vocabulary

EN 15254-4 Extended application of results from fire resistance tests — Non-loadbearing walls — Part 5: Glazed constructions

prEN 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

#### 3 Definitions

For the purposes of this part, the definitions given in EN 1363-1, EN 12519, ISO 13943, EN 1634-1, prEN 1634-2 and prEN 15269-1 together with the following apply:

#### 3.1

#### core

material fitted centrally within the thickness of a door leaf. It 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

#### 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 overpanel. At the meeting edges and for rebated leaves the dimension shall be the depth of the largest rebate or the rebate where the intumescent seal is fitted

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construction of a door leaf, without consideration of any leaf edge rebates, viewed either side of an imaginary plane drawn centrally in the thickness of the leaf. A symmetrical door leaf will be identical either side of this imaginary plane, whilst an asymmetrical door leaf will differ

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#### 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 in accordance with EN 1634-1 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, 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.

**4.1.4** The effect on the durability of self closing of the doorsets following an extended application process is not addressed in this series of documents.

#### 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** Review the type of classification to be retained from column (3) of Annex A and establish from the contents of column (4) of Annex A 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 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 can be made on a similar specimen type (e.g. single-leaf doorset) to the original test against which the extended application is sought. Alternatively, column (5) of Annex A 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 an extended field of application from a single test. However, where a manufacturer envisages to manufacture a range of doors incorporating single doors and also double doors with or without side, transom or over panels, with or without glazing, louvres or ventilation grilles, with alternative element 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. https://standards.iteh.ai/catalog/standards/sist/5d66e372-2c2e-423b-affa-

**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 test or a series of tests and then establish which of the original desired parameter variations have not been covered by the 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 (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 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 tests or in the weakest option double leaf doorset configurations.

**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.

#### 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 also record 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 achieved from the complete series of 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.

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#### 6 Classification report

(standards.iteh.ai) The classification report shall be determined from the results of the extended application report and presented in accordance with EN  $1350_{0.2}^{+2}$  st prEN 15269-32009

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## Annex A

(normative)

## **Construction parameter variations**

This table is designed to be used by experts competent in the field of fire resistance of hinged or pivoted doorsets with timber based leaves.

The table shall only be used to assess a field of extended application when at least one positive fire resistance test to EN 1634-1 has generated 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 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 (suggested measuring positions are given in EN 1634-1):

- low < 40 % of effective rebate depth; ndards.iteh.ai)</p>
- medium ≥ 40 % and ≤ 85 % of effective rebate depth; oSIST prEN 15269-3:2009

— high > 85 % of effective rebate depth and sist/5d66e372-2c2e-423b-affa-34d1a6c3fcee/osist-pren-15269-3-2009

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  $I_1$  or  $I_2$ ) and W for the effects on radiation.

These evaluations lead to the judgement of the possibility of the extension of 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 this 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

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.

In all cases following the evaluation, the relationship between the leaf and the frame shall remain the same. The relationship between intumescent material and the faces and/or edges of the leaf i.e. the distance between the edges of the intumescent material and the leaf face shall not change. Also the distance between the intumescent material and the leaf edge shall not change.

Solid timber can be replaced by other solid timber of the same group of equal or higher density or solid timber of a higher group, where Group 4 in Table 1 is the highest group. Glued timber with solid pieces of min. 10 mm thickness may be used as solid timber. Composite wood products (MDF etc.) may not be replaced with other materials or composites unless the proposed alternative material has been previously tested in a similar position, with the same dimensions, within a similar doorset and for the classification period required.

Group Nr.	Type of timber	Medium density [kg/m <sup>3</sup> ]
1	Softwood and Beech <sup>*</sup> (Fagus sylvatica)	> 350 < 450
2	Hardwood	> 350 < 450
	excluding Beech <sup>*</sup>	
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4	(Hardwoodards.)	12450.ai)
	excluding Beech 5269	-3:2009
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Table A.1 — Timber	groupings
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Definitions taken from EN 844: Round and sawn timber. Terminology

#### Softwood

Wood of trees of the botanical group gymnosperms

NOTE Most commercial softwoods belong to the botanical group conifers.

#### Hardwood

Wood of trees of the botanical group dicotyledons

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

Table A2 - Construction parameter variations

T able A2 – Key to symbols in Column 3

- higher performance anticipated ->

Ingrier performance anticipated
lower performance anticipated
no significant change in performance anticipated
equal or higher performance anticipated
equal or lower 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	er Variation		of varia nance stic	ation	Possibility of extension	Additional Evidence Required
(1)	(2) https:/	(3) E I		W	(4)	(5)
A Door leaf. In certain cases, the rules given in Section	A are also appropriate to side, tra				I e door frame; where this is the case it is clearly indicated in c	Dolumn (1). For double leaf
doorsets, both leaves shall be of the same	basic construction.	2				
A.1 General	<b>Sta</b> <u>o</u> sh.ai/c d1a60					
A.1.1 Number of leaves. Only applicable to doorsets tested without transom and/or overpanels. See Annex B.	Single leaf door tests for the standards start pren-15269-3-2009 start for the start of the star	>=< =	-	=	Possible for doorsets with exposed intumescent seals only and when the distortion of the leaf is low. In doorsets where there is an inactive and an active leaf, only the construction and parameters of the active leaf may be used for the single leaf doorset otherwise not possible without additional test. Intumescent seals and their positioning shall be retained in the (primary) active leaf or positioned in the door frame if they were in the inactive leaf.	Annex B gives the test protocol and hierarchy for various options on leaf (and panel) configurations.
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Construction Parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional Evidence Required
(1)	(2)	(3) E	1	W	(4)	(5)
A.1.2 Number of leaves Only applicable to doorsets tested without transom and/or overpanels. See Annex B.	Double leaf from single leaf door test.	<	=	=	Not possible without additional test.	Annex B gives the test protocol and hierarchy for various options on leaf (and panel) configurations.
A.1.3 Intumescent seals (fitted at leaf to frame interface) – See Figure A1.	Location towards the frame rebate.	S		=	Possibly if the position of any intumescent material remains in the same position in relation to the frame rebate or for a proportionate movement in line with an increase in leaf thickness otherwise not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf depending upon the required configuration.
A.1.4 Intumescent seals (fitted at leaf to frame interface) – See Figure A2.	Location away from the frame rebate.	S	=	=	Possibly if the position of any intumescent material remains in the same position in relation to the frame rebate or for a proportionate movement in line with an increase in leaf thickness otherwise not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf depending upon the required configuration.
A.1.5 Intumescent seals (fitted in meeting edges).	Location Cost Standards	S	=	=	Possible to change the tested seal arrangement from the leaf in which it was tested to the opposite leaf providing the leaves were low distortion and the seal arrangement is replicated and the minimum tested length of intumescent seal is retained (including at building hardware positions) otherwise not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf depending upon the required configuration.
A.1.6 Intumescent seals .	<b>b</b> <b>b</b> <b>b</b> <b>b</b> <b>c</b> <b>b</b> <b>c</b> <b>c</b> <b>c</b> <b>c</b> <b>c</b> <b>c</b> <b>c</b> <b>c</b> <b>c</b> <b>c</b>	≤	=	=	Not possible to change from leaf to frame and vice versa.	Additional test to include seal fitted in the required position. Test can be single or double leaf.
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onstruction Parameter Variation		on perf charact	ce of var ormance eristic		Possibility of extension	Additional Evidence Required
(1)	(2)	(3) E	1	W	(4)	(5)
A.1.7 Non intumescent seals (draught / smoke / acoustic etc.) – Euroclass A1, (fitted in leaf or frame).	Location change.	≤	=	=	Possible to change from leaf to frame and <i>vice versa</i> and from one leaf to the opposing leaf at the meeting edges providing the seal arrangement is replicated, otherwise not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf.
A.1.8 Non intumescent seals (draught /smoke / acoustic etc.) – , < Euroclass A1 (fitted in leaf or frame).	Location change.	≤	=	=	Possible to change from leaf to frame and <i>vice versa</i> and from one leaf to the opposing leaf at the meeting edges providing the seal arrangement is replicated, otherwise not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf.
A.1.9 Non intumescent seals (draught / smoke / acoustic etc.) - Euroclass A1, (fitted in leaf or frame).	Add.	>=<	=	=	Possible providing the gap is not increased and the expansion of the intumescent seal is not affected otherwise not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf.
A.1.10 non intumescent seals (draught / smoke / acoustic etc.) - Euroclass A1, (fitted in leaf or frame).	Remove. (Stan dards.iteh.ai/cat 34d1 a6c3	<	=	=	Not possible without additional test.	Further test to prove the leaf to frame detail with no seal fitted. Test can be single or double leaf.
A.1.11 non intumescent seals (draught / smoke / acoustic etc.) – < Euroclass A1 (fitted in leaf or frame).	dards.iteh.ai) ST prEN 15269-3:2009 ibg/standards/sist/5d66e372-2c ceee/osist-pren-15269-3-2009			=	Not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf. In the case of a double door test the leaf to frame seals may be different between the 2 leaves generating evidence on alternative types of seals from a single test.
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Construction Parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional Evidence Required
(1)	(2)	(3) E	1	W	(4)	(5)
A.1.12 non intumescent seals (draught / smoke / acoustic etc. – < Euroclass A1 (fitted in leaf or frame).	Remove.	<	=	=	Not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf.
A.1.13 Louvres in door leaf or panel.	Add.	<	=	=	Not possible without additional test .	Additional test to include louvre fitted in the required position. Test can be single or double leaf.
A.1.14 Louvres in door leaf or panel.	Remove.	=>	=	=	Possible providing tested louvre size is 25 % or less of the tested leaf area (per leaf), or for up to 30 % of leaf area for low distortion doors, otherwise not possible without additional test.	Test can be single or double leaf.
A.1.15 Louvres in door leaf or panel tested with louvre.	Fitting higher or lower in the leaf. 34d1 a6c3	<	=	=	Tested positions will define the maximum and minimum fitting positions, subject to the rules given in A1.16 and A1.17, otherwise not possible without additional test.	Additional test to include louvre fitted in the required position. Test can be single or double leaf.
A.1.16 Louvres in door leaf or panel tested with louvre.	Fitting to the side of the tested position.osist-previous 15	2	=	=	Possible providing the minimum distance between the edge of the leaf and the aperture is not reduced, otherwise not possible without additional test.	Test can be single or double leaf.
A.1.17 Louvres in door leaf or panel tested with louvre – See Figure A3.	Smaller 5269-3-2009	≥	=	=	Possible to reduce the size of the louvre by 50 % and possible to remove the louvre if the size is 25 % or less than the leaf area and minimum distance between the edge of the leaf and the aperture is not reduced, otherwise a separate test is required and then sizes between the 2 tested louvre sizes are acceptable.	Test to include louvre at 25% of leaf area. Test can be single or double leaf.
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