



# SLOVENSKI STANDARD SIST EN 15269-20:2009

01-december-2009

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 hinged and pivoted steel, timber and metal framed glazed doorsets

Erweiterter Anwendungsbereich von Prüfergebnissen zur Feuerwiderstandsfähigkeit und Rauchdichte von Türen, Toren und Verblendverschlüssen - Teil 20: Rauchdichte von Drehtüren aus Holz und Stahl sowie Verblendverschlüssen

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Application élargie des résultats d'essai en matière d'étanchéité à la fumée des blocs-portes et des blocs-fermetures - Partie 20: Blocs-portes pivotants ou battants en bois et en acier

**Ta slovenski standard je istoveten z: EN 15269-20:2009**

## 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

**EN 15269-20**

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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 hinged and pivoted steel, timber and metal  
framed glazed doorsets

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

Erweiterter Anwendungsbereich von Prüfergebnissen zur  
Feuerwiderstandsfähigkeit und/oder Rauchdichtigkeit von  
Türen, Toren und Fenstern einschließlich ihrer  
Baubeschläge - Teil 20: Rauchdichtigkeit von  
Drehflügeltüren und -toren aus Holz und Stahl sowie Metall-  
und Holzrahmentüren mit Verglasungen

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Management Centre: Avenue Marnix 17, B-1000 Brussels

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## Foreword

This document (EN 15269-20:2009) 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 March 2010, and conflicting national standards shall be withdrawn at the latest by March 2010.

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.

The (pr/Fpr)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 4: Fire resistance of hinged and pivoted glass doorsets*
- *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*
- *Part 9: Fire resistance of horizontally folding steel doorsets*
- *Part 10: Fire resistance of steel rolling shutters*
- *Part 11: Fire resistance of operable fabric curtains*
- *Part 20: Smoke control for hinged and pivoted steel, timber and metal framed glazed doorsets*

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

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

## 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 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 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 shall be made on the basis of retaining the fire resistance classifications obtainable from testing to EN 1634-3. However, this shall never lead to an increased classification for any specific fire or 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.

The classification of smoke control of doorsets foresees the addition of the symbol "C" indicating that the product also satisfies the "self closing" criterion. The "C" classification is complemented by the digits 0 to 5 according to the use category on the basis of details included in the relevant product standards. The effect on the "C" classification following an extended application process is not addressed in this standard.

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## 1 Scope

This Part of (pr/Fpr)EN 15269, which should be read in conjunction with prEN 15269-1, covers hinged and pivoted steel doorsets, hinged and pivoted timber doorsets (including timber framed glazed doorsets) and hinged and pivoted metal framed glazed doorsets of single or double-leaf construction.

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

NOTE It is anticipated that the above scope will be extended to cover other product types when the relevant test information and expertise become available.

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 ( $S_m$ ) classifications and all or some of the following variations:

- 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).

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## 2 Normative references

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The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1363-1:1999, *Fire resistance tests – Part 1: General requirements*

EN 1634-1:2008, *Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware – Part 1: Fire resistance tests for doors, shutters 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 1634-3:2004, *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 13501-2:2007, *Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services*

prEN 15269-1:2009, *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 13943:2000, *Fire safety – Vocabulary (ISO 13943:2000)*

**EN 15269-20:2009 (E)****3 Definitions**

For the purposes of this Part of EN 15269, the terms and definitions given in EN 1363-1:1999, EN ISO 13943:2000, EN 1634-1:2008, EN 1634-3:2004 and prEN 15269-1:2009 together with 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

**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 1634-3 and EN 13501-2 respectively in order to establish a classification for the doorset.

**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, 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** 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.

**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 Table A.1.

**4.2.3** Review the type of classification to be retained from column (3) of Table A.1 and establish from the contents of column (4) of Table A.1 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 (4) in Table A.1.

**4.2.5** Where the variations required can only be achieved from additional testing according to column (5), the additional test can be made on a similar specimen type to the original test against which the extended application is sought. Alternatively, column (5) in Table A.1 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 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** 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 (5) in Table A.1.

**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 Table A.1 and observe from column (5) in 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 have not been covered by the tests completed in accordance with 4.3.9 above, then an appropriate test or tests may be carried out with the additional product variations incorporated.

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#### **4.4 Interpretation 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 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 Clause 6 of prEN 15269-1:2009, 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 Annex A of EN 13501-2:2007.

## Annex A (normative)

### Construction parameter variations

Table A.1 is designed to provide rules for the creation of extended application reports by experts in the field of smoke control testing of hinged and pivoted doorsets.

Table A.1 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 Table A.1 identify possible variations to the construction details of the specimen tested.

The type of classification, referred to as performance characteristic in Column (3) of Table A.1, achieved from the test can be identified from the 'Performance characteristic' section of Table A.1 column (3) as Ambient Smoke Control ( $S_a$ ) and Medium Temperature Smoke Control ( $S_m$ ) as derived from EN 13501-2.

The effect of the change in each parameter is evaluated for each characteristic in Table A.1 column (3) under  $S_a$  for Ambient temperature and  $S_m$  for Medium temperature.

Where symbols are used these relate to the following definitions:

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- a) < - forecast is a worse performance;
- b) > - forecast is a better performance;
- c) = - forecast is no significant difference;
- d) ≤ - forecast is a worse or equal performance;
- e) ≥ - forecast is a better or equal performance;
- f) >=< - forecast unknown.

These evaluations lead to the judgement of the possibility of extending the field of application, the results of which are given in column (4) of Table A.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) of Table A.1. 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 all cases following the evaluation, the relationship between the leaf and the frame (e.g. gaps) shall remain the same as shall the relationship between smoke seals and the faces and/or edges of the leaf (i.e. the contact between the edges of the smoke seal and the leaf face) shall not decrease, nor shall the contact between the smoke seal and the leaf edge.

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.

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.

Table A.1 — Construction parameter variations

Construction Parameter (1)	Variation (2)	Influence of variation on performance characteristic (3)		Possibility of extension (4)	Additional Evidence Required (5)	
		$S_a$	$S_m$			
<b>A Door leaf</b>						
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 leaves shall be of the same basic construction.						
<b>A.1 General</b>						
A.1.1	number of leaves	Single leaf from double leaf doorset	$\geq$	$\leq$	Possible for $S_a$ if the seals are unchanged Not possible for $S_m$ without additional test	Test shall be a single leaf doorset from the most onerous exposure direction.
A.1.2	number of leaves	Double leaf from single leaf doorset	$\leq$	$\leq$	Not possible without additional test	Test shall be a double leaf doorset.
A.1.3	smoke seals (fitted at leaf to frame interface) – see Figure A.1	Location towards the frame rebate	$\leq$	$\leq$	Not possible without additional test	Test shall be of the required configuration.
A.1.4	smoke seals (fitted at leaf to frame interface) – see Figure A.2	Location away from the frame rebate	$\leq$	$\leq$	Not possible without additional test	Test shall be of the required configuration.
A.1.5	smoke seals (fitted in meeting edges)	Location change	$\leq$	$\leq$	Not possible without additional test	Test shall be of the required configuration.
A.1.6	smoke seals (fitted in leaf or frame)	Remove	$<$	$<$	Not possible without additional test	Test shall be of the required configuration.
A.1.7	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 leaf or double leaf.
A.1.8	Louvres in door leaf or panel	Remove	$\geq$	$\geq$	Possible	

Construction Parameter  (1)	Variation  (2)	Influence of variation on performance characteristic  (3)		Possibility of extension  (4)	Additional Evidence Required  (5)
		S <sub>a</sub>	S <sub>m</sub>		
A.1.9 Louvres in door leaf or panel tested with louvre	Fitting higher or lower in the leaf	=	=	Possible	
A.1.10 Louvres in door leaf or panel tested with louvre	Fitting to the side of the tested position	=	=	Possible	
A.1.11 Louvres in door leaf or panel tested with louvre – see Figure A.3	smaller size (total area)	≥	≥	Possible	
A.1.12 Louvres in door leaf or panel tested with louvre	larger size (for area or dimensions)	<	<	Not possible without additional test	Further test required with maximum louvre required. Test can be single or double leaf.
A.1.13 Louvre tested in double leaf doorset	Change position of louvre from one leaf to the opposite leaf	>=<	>=<	Possible providing that both door leaves are active or the louvre is tested in active leaves only	
A.1.14 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	
A.1.15 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	The required detail shall be tested. Test can be single or double leaf.
A.1.16 Change in mode of operation (single/double action)	Alternative	>=<	≤	Possible for S <sub>a</sub> 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 to be on the required mode of operation
A.1.17 Latched condition for single leaf or double leaf doorsets - see	Change in latching condition	>=<	<	Possible in line with the following relationship otherwise not possible without an additional test:	Additional test to include the required

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Construction Parameter (1)	Variation (2)	Influence of variation on performance characteristic (3)		Possibility of extension (4)				Additional Evidence Required (5)
		S <sub>a</sub>	S <sub>m</sub>					
Figure A.5					tested without a latch/lock/bolt	tested with a latch/lock/bolt but unlatched	tested with a latch/lock/bolt, latched	latching condition
				extension to: without a lock/latch/bolt		possible	not possible	
				extension to: with lock/latch/bolt but unlatched	not possible		not possible	
				extension to: with a lock/latch/bolt, latched	not possible	possible		
				Additional latch/lock may be fitted providing there is specific evidence on the latch/lock identifying it will not affect the leakage.				
<b>A.2 Meeting edge detail</b>								
A.2.1 Meeting edge detail – see Figure A.6	Change in edge detail	≤	≤	Possible for S <sub>a</sub> for rebated details shown in Figures A.6(a and A.6(b only otherwise not possible without additional test				Test shall be double leaf.
A.2.2 Astragal – see Figure A.6f)	Add	≥	≥	Possible				
A.2.3 Astragal – see Figure A.6f)	Remove	≤	≤	Not possible without additional test				Test shall be double leaf.
<b>A.3 Size variations</b>								
A.3.1 Size of leaf or panel (area, width, height)	Decrease	≥	≥	Possible				

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