



BSI Standards Publication

Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware

Part 20: Smoke control for doors, shutters, operable fabric curtains and openable windows

National foreword

This British Standard is the UK implementation of EN 15269-20:2020, incorporating corrigendum September 2022. It supersedes BS EN 15269-20:2009, which is withdrawn.

The start and finish of text introduced or altered by corrigendum is indicated in the text by tags. Text altered by CEN corrigendum September 2022 is indicated in the text by AC1 AC1.

The UK participation in its preparation was entrusted to Technical Committee FSH/22/-/5, Fire resistance tests for doors.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Published by BSI Standards Limited 2022

ISBN 978 0 539 23312 4

ICS 13.220.50; 91.060.50

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 October 2020.

Amendments/corrigenda issued since publication

Date	Text affected
30 November 2022	Implementation of CEN corrigendum September 2022

English Version

**Extended application of test results for fire resistance
and/or smoke control for door, shutter and openable
window assemblies, including their elements of building
hardware - Part 20: Smoke control for doors, shutters,
operable fabric curtains 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 20 : Étanchéité à la fumée des portes,
fermetures, rideaux en toile manœuvrables et ouvrants
de fenêtre

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

This European Standard was approved by CEN on 27 April 2020.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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European foreword

This document (EN 15269-20:2020) 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 2021, and conflicting national standards shall be withdrawn at the latest by March 2021.

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

This document supersedes EN 15269-20:2009.

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

In comparison with EN 15269-20:2009, the following changes have been made:

- Clause 1, "Scope":
 - revised,
 - hinged and pivoted (e.g. metal, timber, framed glazed) doors and openable windows of single or double leaf, added,
 - metal rolling shutters and operable fabric curtains (excluding overlapping systems), added;
- Clause 2, "Normative references" updated;
- Clause 3, "Terms and definitions" revised;
- Clause 4, "Determination of the field of extended application" revised;
- Annex A (normative) "Construction parameter variations":
 - introduction revised,
 - Table A.1 and figure to Table A.1 revised,
 - new Table A.2 and figure to Table A.2 added,
 - new Table A.3 and figure to Table A.3 added;
- new Annex B (normative) "Arrangements for hinged and pivoted doorsets incorporating side and/or overpanels" added;
- new Annex C (normative), "Calculation methods" added;
- new Annex D (normative) "Stress calculation method for metal rolling shutter and fabric curtain assemblies" added;

- new Annex E (informative) "Examples for stress calculations for load-bearing components of metal rolling shutter and fabric curtain assemblies" added;
- complete editorial and contented revision.

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

- *Part 1: General requirements;*
- *Part 2: Fire resistance of hinged and pivoted steel doorsets;*
- *Part 3: Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows;*
- *Part 5: Fire resistance of hinged and pivoted metal framed glazed doorsets and openable windows;*
- *Part 6: Fire resistance of sliding timber doorsets [in preparation];*
- *Part 7: Fire resistance for steel sliding doorsets;*
- *Part 10: Fire resistance of steel rolling shutter assemblies;*
- *Part 11: Fire resistance for operable fabric curtains;*
- *Part 20: Smoke control for doors, shutters and openable windows [the present document].*

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

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 smoke control classifications obtainable from testing to EN 1634-3. However, this will never lead to an increased classification for any specific smoke performance parameter beyond that achieved during any one test unless specifically identified in the relevant Construction Parameter Variation tables within this series of standards.

Issued extended application reports after prior versions of the series EN 15269 (e.g. EN 15269-20:2009) stay valid as long as there is no change in the construction(s) described in the report.

1 Scope

This document, which is intended to be read in conjunction with EN 15269-1, covers doors, shutters, openable windows and fabric curtains of any material and of the following types:

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

The following construction products are not covered by this standard:

- unframed glass doors and openable windows;
- sectional doors (including stacking doors);
- vertically and horizontally folding doors;
- horizontally and vertically moving timber sliding doors;
- horizontally and vertically moving framed sliding doors (metal or timber).

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

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

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

- Ambient Temperature Smoke Control (S_a) and Medium Temperature Smoke Control (S_{200}) classifications;
- leaf/leaves;
- wall/ceiling fixed elements;
- glazed elements, louvres and/or vents;
- side, transom or overpanels;
- items of building hardware;
- decorative finishes;
- intumescent, smoke, draught or acoustic seals;
- alternative supporting construction(s).

2 Normative references

The following documents 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.

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

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

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

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

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

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

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

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

EN 13501-2, *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 15269-11:2018+AC:2019, *Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware - Part 11: Fire resistance for operable fabric curtains*

EN 15684, *Building hardware - Mechatronic cylinders - Requirements and test methods*

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

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

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

EN ISO 13943, *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 1634-3 and EN 15269-1 and the following apply.

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

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

3.1

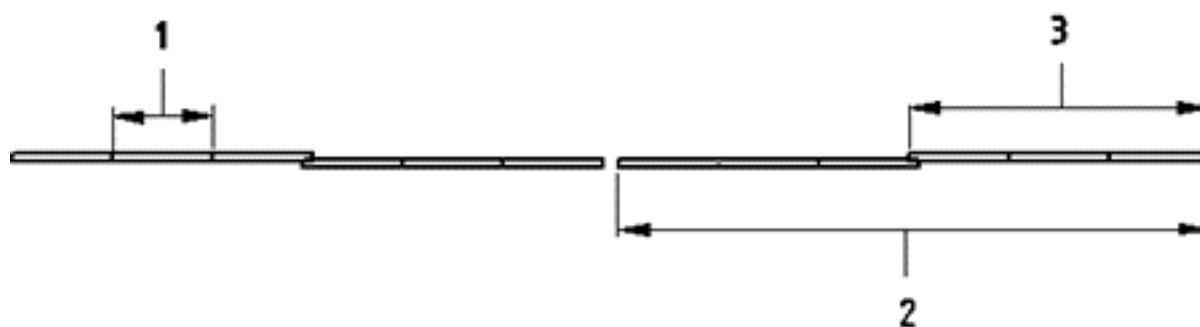
core

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

3.2

leaf/element/panel

different parts of a sliding doorset as indicated in Figures 1 and 2 below



Key

- 1 panel
- 2 leaf
- 3 element

Figure 1 — Double leaf telescopic door



Key

- 1 panel
- 2 leaf

Figure 2 — Double leaf sliding door

3.3

glazed aperture

cut-out in a solid flush door filled with glass

3.4**glazed panel**

glass infill in a framed door or a joinery door

3.5**properly sealed**

continuous and tight sealing of any joints or gaps with a gasket or permanently elastic sealing material or a tight constructional joint

3.6**element of building hardware**

synonym to “item of building hardware”, means one piece of building hardware, e.g. a lock or a lever-handle

3.7**flexible supporting construction**

constructions with studs made of metal or timber with a full-faced lining at least on one side including constructions with structural steel work or timber structure in the core

4 Determination of the field of extended application**4.1 General**

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

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

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

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

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

4.1.5 Arrangements for hinged and pivoted doorsets incorporating side and/or overpanels are given in Annex B.

4.2 Procedure for evaluation

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

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

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

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

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

4.3 Procedure for maximum field of extended application

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

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

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

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

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

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

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

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

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

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

4.4 Interpretation of test results

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

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

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

5 Extended application report

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

6 Classification report

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

Annex A (normative)

Construction parameter variations

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

- Table A.1: hinged and pivoted doorsets.
- Table A.2: horizontally sliding doorsets (single leaf and double leaf), telescopic doorsets, (single leaf and double leaf) and single leaf vertically sliding doorsets.
- Table A.3: metal rolling shutters and operable fabric curtains (excluding overlapping systems).

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

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

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

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

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

- Test scenario A: Test shall be performed with a single or double leaf door
- Test scenario B: Tests shall be performed from both sides with a single leaf door.
- Test scenario C: Tests shall be performed from both sides with a double leaf door.
- Test scenario D: Test shall be performed from the worst side with a double leaf door for single or double leaf doors or with a single leaf door for single leaf doors
- Test scenario E: Test shall be performed from the worst side with a single leaf door for single leaf doors or a double leaf door for double leaf doors respectively
- Test scenario F: Tests shall be performed from both sides with a single leaf door for single leaf doors or a double leaf door for double leaf doors respectively. If the double leaf door test leads to a leakage of $\leq 20 \text{ m}^3/\text{h}$, this test is sufficient for single leaf doors as well.
- Test scenario G: Tests shall be performed from both sides with a single or double leaf sliding door.
- Test scenario H: If the hardware does interfere with the smoke seal more than tested: Tests shall be performed from both sides with a single leaf door for single leaf doors or a double leaf door for double leaf doors respectively. If the double leaf door test leads to a leakage of $\leq 20 \text{ m}^3/\text{h}$, this test is sufficient for single leaf doors as well.
Otherwise: Test shall be performed on the opening face with a double leaf door for single or double leaf doors or with a single leaf door for single leaf doors
- Test scenario I: Test shall be performed from one side with the part(s) changed faced to the furnace.

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

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

The rules for increase of the maximum size of Annex C are to be considered to all variations of Tables A.1, A.2 or A.3, if they shall be applied to a larger size. A variation must not lead to an overload or an improper deformation of any component (which might e.g. prevent to close fully). For rolling shutters and operable fabric curtains stability and limitation of deformations are crucial for the leakage. Calculation principles for stresses and strains are given in Annex D and examples for calculations for relevant parts in Annex E.

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

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

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

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

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

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.1.9 Louvres in door leaf or panel	Remove	Possible	
A.1.10 Louvres in door leaf or panel tested with louvre	Fitting higher or lower in the leaf	Possible	
A.1.11 Louvres in door leaf or panel tested with louvre	Fitting to the side of the tested position	Possible	
A.1.12 Louvres in door leaf or panel tested with louvre – see Figure A.3	Smaller size (total area)	Possible	
A.1.13 Louvres in door leaf or panel tested with louvre	Larger size (for area or dimensions)	Not possible without additional test	Test scenario F
A.1.14 Louvre tested in double leaf doorset	Change position of louvre from one leaf to the opposite leaf	Possible if the area of the louvre is not more than 15 % of door leaf area or providing that both door leafs are active or the louvre is tested in active leaf Otherwise not possible without an additional test	Test scenario B
A.1.15 Leaf edge rebate (to door leaf or panel – not at the meeting edges; see section A.2 for meeting edge parameters) – see Figure A.4	Add (added rebate shown shaded in drawings)	Possible providing the rebate does not lead to reduced compression on the seals and any stiffening components in the door leaf are not reduced Otherwise not possible without an additional test	Test scenario F
A.1.16 Leaf edge rebate (to door leaf or panel – not at the meeting edges; see section A.2 for meeting edge parameters)	Remove	Not possible without additional test	Test scenario F
A.1.17 Change in mode of operation (single/double action)	Alternative	Possible for S_{a3} to provide a double action doorset from a single action doorset providing the sealing system, including the area around the hinges/pivots, is unchanged Otherwise not possible	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)				Additional evidence required (4)
A.1.18 Latched condition for single leaf or double leaf doorsets – see Figure A.5	Change in latching condition	Possible for S _a in line with the following relationship Otherwise not possible without an additional test:				Test scenario E
			Tested without a latch/lock/bolt	Tested with a latch/lock/bolt but unlatched	Tested with a latch/lock/ bolt, latched	
		Extension to: without a lock/latch/ bolt	As tested	Possible	Not possible	
		Extension to: with a lock/latch/ bolt	Possible	Possible	As tested	
		Possible for S ₂₀₀ in line with the following relationship Otherwise not possible without an additional test:				
			Tested without a latch/lock/bolt	Tested with a latch/lock/bolt but unlatched	Tested with a latch/lock/ bolt, latched	
		Extension to: without a lock/latch/ bolt	As tested	Possible	Not possible	
		Extension to: with a lock/latch/ bolt	Not possible	Not possible	As tested	

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.1.19 Additional seals (additional to the smoke sealing system) fitted in leaf or frame (e.g. noise reduction)	Add	Possible providing the sealing system is not interfered Otherwise not possible without an additional test	Test scenario F
A.2 Meeting edge detail			
A.2.1 Meeting edge detail – see Figure A.6	Change in edge detail	Possible for S _a for rebated details shown in Figure A.6, interchange between a) and b) only Change from a) or b) to g) possible but not vice versa providing the smoke sealing system is not interfered Otherwise not possible without an additional test	Test scenario C
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 scenario C
A.3 Size variations			
A.3.1 Size of leaf or panel (area, width, height)	Decrease	Possible	

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.3.2 Height/width/area of door leaf	Increase	The size may be increased based on the calculation in Annex C and the following limitations: a) The sealing system is unchanged. b) For hinged or pivoted latched doors: Size increase is permitted up to 25 % height, 25 % width and 25 % in area without additional movement restrictors as locks, bolts, hinges etc. For larger size increases up to 25 % height, 25 % width and 50% in area the number of movement restrictors shall be increased according to the size change, maintaining positions between movement restrictors and distances from leaf corners as tested. c) For hinged or pivoted unlatched doors: Not possible without an additional test. Otherwise not possible without an additional test	Test scenario F
A.3.3 Thickness of the door leaf or panel	Increase	Possible for S_a Possible for S_{200} steel and metal framed doors excluding timber doors with metal inlay For S_{200} timber doors: possible for door leaves without metal inlay Otherwise not possible without an additional test Possible to interpolate between the smallest and largest tested thickness	Test scenario F
A.3.4 Thickness of the door leaf or panel	Decrease	Not possible without an additional test Possible to interpolate between the smallest and largest tested thickness	Test scenario F
A.4 Materials and constructions			

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.4.1 Density of core material of leaf or panel	Increase/decrease	Possible for S_a doorsets Possible for S_{200} providing the increase/decrease is not greater than 25 % Otherwise not possible without an additional test	Test scenario A
A.4.2 Pattern of core material of leaf or panel – see Figure A.7	Increase number of pieces	Possible for S_a Possible for S_{200} by 50 % providing the test included more than one joint Possible also proportionately with a leaf/panel size increase For double leaf doorsets, the rule shall be applied to each leaf separately Otherwise not possible without additional test	Test scenario A
A.4.3 Pattern of core material of leaf or panel	Decrease number of pieces	Possible for S_a Possible for S_{200} steel based doorsets providing the fixing technique is unchanged Possible for S_{200} timber based doorsets by up to 50 % providing one joint in the core material remains Possible also proportionately with a leaf/panel size decrease For double leaf doorsets, the rule shall be applied to each leaf separately Otherwise not possible without additional test	Test scenario A

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.4.4 Number of layers of identical core material of leaf or panel	Increase number of layers	Possible for S₂₀₀ steel based doorsets providing the fixing technique to the topplayer/coverplate (e.g. steel sheet of the steel door) is unchanged Possible for S₂₀₀ timber based doorsets providing the test included more than two joints and the fixing technique to the topplayer/coverplate is unchanged Otherwise not possible without additional test	Test scenario A
A.4.5 Number of layers of identical core material of leaf or panel	Decrease number of layers	Possible for S_a Possible for S₂₀₀ providing the fixing technique to the topplayer/coverplate (e.g. steel sheet of the steel door) is unchanged Otherwise not possible without additional test	Test scenario A
A.4.6 Number of layers of different materials – see Figure A.25	Change	Rules A.4.4 and A.4.5 can be used for change of any non-metal based layer of composite core materials	
A.4.7 Type of core material in leaf or panel (single thickness or in combination of different layers)	Change of manufacturer (same product type)	Possible	
A.4.8 Type of core material in leaf or panel (single thickness or in combination of different layers)	Alternative composition of same basic product type	Possible for S_a Possible for S₂₀₀ providing the density is not changed by more than 25 % Otherwise not possible without an additional test	Test scenario D
A.4.9 Type of core material in leaf or panel (single thickness or in combination of different layers)	Alternative	Not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.4.10 Facings (for timber doorsets)	Alternative type without metal	Possible for S _a based on direct application Possible for S ₂₀₀ to interchange wood based facings without any metal-sheets/foils based on the direct application for S ₂₀₀ doorsets and providing the alternative is of the same or higher density and the same or greater thickness (subject to A.4.9) and that the assembly technique is not changed Otherwise not possible without additional test	Test scenario F
A.4.11 Facings (for timber doorsets)	Alternative type with metal	Possible for S _a based on direct application Possible for S ₂₀₀ to interchange wood based facings with metal-sheets/foils based on the direct application for S ₂₀₀ doorsets and providing the alternative is of the same or higher density, same or lower expansion coefficient and thickness of the metal layer and the same or greater over-all thickness (subject to A.4.9) and that the assembly technique is not changed Otherwise not possible without additional test	Test scenario D
A.4.12 Facings (for timber doorsets)	Increase in thickness	Possible providing the sealing system will not be affected Otherwise not possible without an additional test	Test scenario D
A.4.13 Facings (for timber doorsets)	Decrease in thickness	Not possible without an additional test	Test scenario D
A.4.14 Type of adhesives used in leaf or panel	Change of supplier/manufacturer for identical composition	Possible	
A.4.15 Type of adhesives used in leaf or panel	Alternative composition	Possible for S _a Not possible for S ₂₀₀ without an additional test	Test scenario D
A.4.16 Amount of adhesive / m ²	Increase	Possible	
A.4.17 Amount of adhesive / m ²	Decrease	Not possible without an additional test	Test scenario D
A.4.18 Glued area (partially or fully glued)	Increase	Possible	

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.4.19 Glued area (partially or fully glued)	Decrease	Not possible without an additional test	Test scenario D
A.4.20 Metal protective sheet (internally mounted) used in leaf or panel	Add	Possible for S_a Possible for S_{200} providing the sheet is not fixed to the leaf's material (so that the sheet can expand without affecting the leaf) and thickness is $\leq 2\text{mm}$ Otherwise not possible without an additional test	Test scenario E
A.4.21 Metal protective sheet (internally mounted) used in leaf or panel	Remove	Possible for S_a Possible for S_{200} providing the sheet was not fixed to the leaf's material (so that the sheet can expand without affecting the leaf) and thickness was $\leq 1\text{mm}$ for timber based doors or $\leq 2\text{mm}$ for steel based doors respectively Otherwise not possible without an additional test	Test scenario E
A.4.22 Cross-section dimension of stiffening elements in leaf or panel	Increase	Possible for S_a Possible for S_{200} for timber doors Possible for S_{200} for steel doors in line with A.3.3 only to adapt to the changed thickness Otherwise not possible without an additional test	Test scenario D
A.4.23 Cross-section dimension of stiffening elements in leaf or panel	Decrease	Not possible without additional test	Test scenario D
A.4.24 Framing elements of leaf or panel for timber doors with/without metal inlay	Change of species	Possible providing the density is the same or higher Otherwise not possible without an additional test	Test scenario D
A.4.25 Jointing technique (leaf edges, stiffening elements, etc.) - not for metal framed doors (see chapter A.7)	Alternative (e.g. welding / riveting / screwing / glueing)	Possible for S_a Possible for S_{200} providing the stiffness of the leaf is not reduced Otherwise not possible without an additional test	Test scenario D

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.4.26 Decorative leaf or panel edge detail – see Figure A.9	Shape	Possible providing the alternative shape doesn't interfere with the sealing system Otherwise not possible without an additional test	Test scenario D
A.4.27 Dimension of smoke seals (fitted in leaf or frame) – see Figure A.2	Increase	Possible providing the part of the increase doesn't affect the functional part of the sealing system.(e.g. the increase is located in the seal base) Possible to interpolate between the smallest and biggest tested size of the smoke seal (same shape type) Otherwise not possible without additional test	Test scenario F
A.4.28 Dimension of smoke seals (fitted in leaf or frame) – see Figure A.2	Decrease	Possible providing the part of the decrease doesn't affect the functional part of the sealing system (e.g. the decrease is located in the seal base) Possible to interpolate between the smallest and biggest tested size of the smoke seal (same shape type) Otherwise not possible without additional test	Test scenario F
A.4.29 Type of smoke seals (fitted in leaf or frame)	Change of supplier/manufacturer	Possible if the composition, material, size and shape are identical (identical means within the limits of the specified production features e.g. shore-hardness) Otherwise not possible without an additional test	Test scenario F
A.4.30 Type of smoke seals (fitted in leaf or frame)	Alternative material	Not possible without additional tests	Test scenario F
A.4.31 Dimensions of gaps between frame and leaf and between the meeting edges for double leaf doors	Increase / Decrease	Possible in line with direct application Possible separately for each gap on each edge (top, bottom, hinge side, lock side) according to the following rule: $X = (A+B)/2$ (X = the maximum permitted gap size, A = the maximum measured gap size, B = the mean measured gap size, X can be rounded up to the next 0,5 step (e.g.: 1,7 is rounded up to 2,0 mm)) Otherwise not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.4.32 Type of steel sheet and steel stiffening elements (not applicable for metal framed doors, see chapter A.7)	Mild steel to stainless steel	Possible for S _a Not possible for S ₂₀₀ without an additional test	Test scenario E
A.4.33 Type of steel sheet and steel stiffening elements (not applicable for metal framed doors, see chapter A.7)	Stainless steel to mild steel	Possible	
A.4.34 Thickness of rebate (door leaf to frame/meeting edges of a double leaf door) – see Figure A.21	Increase	Not possible for meeting edges of a double leaf door without an additional test Possible for door leaf to frame, providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.4.35 Thickness of rebate (door leaf to frame/meeting edges of a double leaf door) – see Figure A.21	Decrease	Not possible for meeting edges of a double leaf door without an additional test Possible for door leaf to frame, providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.4.36 Thickness of steel cover sheet	Increase	Possible for S _a Possible for S ₂₀₀ to a maximum of 10 % Otherwise not possible without an additional test	Test scenario D
A.4.37 Thickness of steel cover sheet	Decrease	Not possible without an additional test	Test scenario D
A.5 Decorative and / or protective			
A.5.1 Decorative laminates/timber veneers on the face and/or edges (on leaf, panel or frame)	Add	Possible up to a thickness of 3 mm and providing the sealing system is not affected and for timber doors the decorative finish is without metal inlay Otherwise not possible without an additional test	Test scenario D

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.5.2 Decorative laminates/timber veneers on the face and/or edges (on leaf, panel or frame)	Remove	Possible providing the tested thickness of decorative laminates/timber veneers is not more than 1.5 mm and the sealing system is not affected Otherwise not possible without an additional test	Test scenario D
A.5.3 Decorative plastics edging (on leaf or panel)	Add	Possible providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.5.4 Decorative plastics edging on the edges (on leaf or panel)	Remove	Possible providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.5.5 <i>unused (see A.5.3)</i>			
A.5.6 <i>unused (see A.5.4)</i>			
A.5.7 Species of timber lippings on leaf or panel	Change of species	Possible	
A.5.8 Lippings on leaf or panel	Change size	Possible providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.5.9 Lippings on leaf or panel	Add	Possible providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.5.10 Lippings on leaf or panel	Remove	Possible providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.5.11 Protective plates – face fixed (kick plates / push plates / protective plates) on leaf or panel – only for timber doors with/without metal inlay	Recessed to unrecessed	Possible providing the sealing system is unaffected Otherwise not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.5.12 Protective metal plates – face fixed (kick plates / push plates / protective plates) on leaf or panel – only for timber doors with/without metal inlay	Unrecessed to recessed	Possible for plates up to 1.5 mm thick providing the sealing system is unaffected Otherwise not possible without an additional test	Test scenario F
A.5.13 Protective elements for steel doors – face fixed (kick plates/push plates/armour plates) – see Figure A.10. Not applicable to metal framed doors and timber doors with metal inlays	Add	Possible for S _a providing the sealing system is not affected Possible for S ₂₀₀ for one piece no thicker than 1,5 mm up to 800 mm from the base of the leaf or limited to maximum two pieces no thicker than 3 mm per face with a width or height of up to 250 mm (second dimension is limited to the door leaf width/height) providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario D
A.5.14 Protective elements for timber doors with/without metal inlays – face fixed (kick plates/push plates/armour plates) – see Figure A.10. Not applicable to timber framed doors	Add	Possible for S _a providing the sealing system is not affected Possible for S ₂₀₀ for one piece per face no thicker than 1,5 mm and with a width/height of up to 250 mm, mounted below the handle and providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario D
A.5.15 Protective elements – face fixed (kick plates/push plates/armour plates)	Remove	Possible for S _a providing the sealing system is not affected For S ₂₀₀ not possible without an additional test	Test scenario F
A.5.16 Protective elements for timber or metal framed doors – face fixed (kick plates/push plates/armour plates)	Add	Possible for S _a providing the sealing system is not affected Possible for S ₂₀₀ for one piece no thicker than 1,5 mm up to 300 mm from the base of the leaf providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.5.17 Attachment technique of protective elements (as described above) on leaf or panel	Alternative (adhesive / screw)	Possible providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.5.18 Mouldings (on the face of the leaf, panel or glazed aperture)	Add	Possible providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.5.19 Mouldings (on the face of the leaf, panel or glazed aperture)	Remove	Possible providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.6 Joinery Type timber framed doorsets			
This section refers to doorsets which are made using a perimeter, and where applicable internal, framing made of solid or laminated timber based materials, and which include one or more panels. The panels/apertures are normally formed using the perimeter and internal framing sections. This section covers specific rules for these types of doorsets only. For variations on glazed panels, refer to Section F.			
A.6.1 Cross-section dimension of perimeter / intermediate framing elements in leaf or panel	Increase	Possible	
A.6.2 Intermediate framing in leaf or panel	Remove	Possible	
A.6.3 Intermediate framing in leaf or panel	Add	Not possible without an additional test	Test scenario D
A.6.4 Panel size	Increase	Possible only for an proportional increase in line with A.3.2 Otherwise not possible without an additional test	Test scenario D
A.6.5 Panel size	Decrease	Possible	
A.6.6 Panel construction	Alternative	Possible in line with rule F.1.10 Otherwise not possible without an additional test	Test scenario D

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.7 Metal framed doorsets This section refers to doorsets which are made using a perimeter, and where applicable internal, framing made of metal with or without thermal break, and which include one or more panels. The panels/apertures are normally formed using the perimeter and internal framing sections. This section covers specific rules for these types of doorsets only. For variations on glazed panels, refer to Section F. The following rules can also be applied to profiles in side and over panels.			
A.7.1 Profile material	Change metal	Possible for S _a to interchange between mild and stainless steel Possible for S ₂₀₀ to change from stainless to mild steel Otherwise not possible without an additional test	Test scenario F
A.7.2 Profile geometry – see Figures A.29 and A.30	Modification	Possible to interpolate between the smallest and biggest tested base body cross section Possible to modify the profile outside of the base body (e.g. small lips or noses) providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.7.3 Thermal break – see Figure A.30	Add/Remove	Possible for S _a providing the new profile has an equal or higher stiffness (I _t , I _x and I _y) and the sealing system is not affected For S ₂₀₀ removing is possible providing the new profile has an equal or higher stiffness (I _t , I _x and I _y) Otherwise not possible without an additional test	Test scenario F
A.7.4 Thermal break	Change manufacturer	Possible for S _a providing the sealing system is not affected Possible for S ₂₀₀ for the same type of material and same geometry Otherwise not possible without an additional test	Test scenario F
A.7.5 Thermal break	Change size (distance between metal profiles)	Possible for S _a Possible for S ₂₀₀ to interpolate between the smallest and biggest tested thermal break Otherwise not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.7.6 Thermal break	Modify geometry of thermal break without change of distance between metal profiles	Possible to modify the thermal break providing the new thermal break has an equal or higher stiffness (I _t , I _x and I _y) and providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.7.7 Thermal break	Change material	Possible for S _a Otherwise not possible without an additional test	Test scenario F
A.7.8 Profile infill – see Figure A.30	Add	Possible for S ₂₀₀ for non metal infills providing they are not force-fitted connected to the profile and are non stiffening Otherwise not possible without an additional test	Test scenario F
A.7.8.1 Profile infill – see Figure A.30	Increase thickness	Possible for S _a Possible for S ₂₀₀ for non metal infills providing they are not force-fitted connected to the profile and are non stiffening Otherwise not possible without an additional test	Test scenario F
A.7.9 Profile infill – see Figure A.30	Remove	Possible for S _a Otherwise not possible without an additional test	Test scenario F
A.7.9.1 Profile infill – see Figure A.30	Decrease thickness	Possible for S _a Otherwise not possible without an additional test	Test scenario F
A.7.10 Profile infill	Alternative composition of same basic product type	Possible for S _a Possible for S ₂₀₀ providing the density is not changed by more than 25 % Otherwise not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.7.11 Profile infill	Change of supplier/manufacturer for identical composition or the same type according to a product standard	Possible for S_a Possible for S_{200} providing the density is not changed by more than 25 % Otherwise not possible without an additional test	Test scenario F
A.7.12 Profile connections - corner jointing and horizontal/vertical glazing bars jointing	Connection method: gluing, grouting, welding, screwing	Any interchange possible beside change to screwing without sealing the joint Otherwise not possible without an additional test	Test scenario F
A.7.13 Profile connections – corner jointing	Connection: butt joint, mitre joint	Possible to change from butt joint to mitre joint but not vice versa and providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.7.14 Profile connections – coupling – see Figure A.30	Add	Possible for S_a providing the joint is sealed properly and the sealing system is not affected Possible for S_{200} to interpolate between the smallest and highest number of couplings Otherwise not possible without an additional test	Test scenario F
A.7.15 Profile connections – coupling – see Figure A.30	Remove	Possible to interpolate between the smallest and highest number of couplings Otherwise not possible without an additional test	Test scenario F
A.7.16 Surface mounted metal sheets (e.g. protective elements) on profiles	Add	Possible for S_a providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
A.7.17 Surface mounted metal sheets (e.g. protective elements) on profiles	Remove	Not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
A.7.18 Vertical glazing bars) – see Figure A.31	Add	Possible if at least one stile was tested in the door leaf providing the same glass-retention and sealing system is used The distance of the additional stile to the closing edge shall be larger than tested Otherwise not possible without an additional test	Test scenario F
A.7.19 Horizontal rails (glazing bars) – see Figure A.32	Add	Possible if at least one rail was tested in the door leaf providing the same glass-retention and sealing system is use The distance of the additional rail to the top edge shall be larger than tested Otherwise not possible without an additional test	Test scenario F
A.7.20 Vertical stiles and horizontal rails (glazing bars) – see Figure A.33	Change angle	Possible if tested in accordance to Figure A.33 Otherwise not possible without an additional test	Test scenario F
A.7.21 Vertical stiles and horizontal rails (glazing bars)	Remove (completely)	Possible providing the size of the glass is not bigger then the biggest tested glass-size Otherwise not possible without an additional test	Test scenario F
A.7.22 Vertical stiles and horizontal rails (glazing bars)	Decrease number	Possible providing the size of the glass is not bigger then the biggest tested glass-size Otherwise not possible without an additional test	Test scenario F
B Door Frame			
B.1 General			
B.1.1 Position of a door above floor level	Alternative	Possible	
B.1.2 Position of door frame within the thickness of the supporting construction – see Figure A.26	Alternative	Possible providing the door frame does not project beyond the face of the supporting construction more than tested Otherwise not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
B.1.3 Change of Position of door frame from “within the supporting construction” to “on the face” of the supporting construction – see Figure A.27	“Within” to “on the face”	Possible	
B.1.4 Change of Position of door frame from “within the supporting construction” to “on the face” of the supporting construction – see Figure A.27	“On the face” to “Within”	Not possible without an additional test	Test scenario D
B.1.5 Threshold/bottom frame member at the bottom of the doorset (three-sided to four-sided frame) – see Figure A.8	Add (including replacement of threshold sealing)	Possible for S _a Possible for S ₂₀₀ providing the tested bottom sealing system is maintained or replaced by the sealing system tested at the upper edges of the door leaf and the height of the door leaf is not more than 50% of the maximum tested height Otherwise not possible without an additional test	Test scenario E
B.1.6 Threshold at the bottom of the doorset	Remove	Possible for S _a Not possible for S ₂₀₀ without an additional test	Test scenario D
B.1.7 Change of Position of door frame “on the face” of the supporting construction – see Figure A.27	Alternative	Possible	
B.1.8 Frame profile	Change from corner to wrap around or block	Possible providing the rebate depth is maintained Otherwise not possible without an additional test	Test scenario F
B.2 Materials and Constructions			

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
B.2.1 External Dimensions	Increase	Possible providing the rebate depth is maintained For blockframe projected/face width increase is limited up to 300 mm, for face-mounted frames without limit Otherwise not possible without an additional test	Test scenario D
B.2.2 External Dimensions	Decrease	AC1 Possible providing the rebate depth is maintained and the connection to the wall is properly sealed Otherwise not possible without an additional test AC1	Test scenario F
B.2.3 Profile connections – coupling – see Figure A.30	Add	Possible for S _a providing the joint is sealed properly and the sealing system is not affected. For blockframe projected/face overall width is limited up to 300 mm, for face-mounted frames without limit Otherwise not possible without an additional test	Test scenario F
B.2.4 Profile connections – coupling – see Figure A.30	Remove	Possible	
B.2.5 Thermal break – see Figure A.30	Add/Remove	Possible for S _a providing the sealing system is not affected For S ₂₀₀ removing is possible Otherwise not possible without an additional test	Test scenario F
B.2.6 Type of frame material (timber)	Change timber type	Possible for timber and laminated timber	
B.2.7 Type of frame material (timber)	Timber to derived timber product	Possible for S _a to change from derived timber to timber and vice versa Otherwise not possible without an additional test	Test scenario D
B.2.8 Type of frame material (derived timber product)	Change type	Possible providing the density is the same or higher and the finished surface is covered all-over by a dense material (e.g. foil, laminate, veneer) Otherwise not possible without an additional test	Test scenario D

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
B.2.9 Type of frame material (metal)	Change metal type (e.g. mild steel, stainless steel, aluminium)	Possible for S _a Possible for S ₂₀₀ if they are fixed directly to the supporting construction (directly in the sense of a close contact, the distance between frame and supporting construction shall not exceed 30mm) Otherwise not possible without an additional test	Test scenario D
B.2.10 Type of frame material	Interchange material (timber and steel)	Possible for steel to timber (but not vice versa) providing the sealing system is not interfered Otherwise not possible without an additional test	Test scenario F
B.2.11 Thickness of steel	Increase	Possible	
B.2.12 Thickness of steel	Decrease	Possible up to a maximum of 25% decrease Otherwise not possible without an additional test	Test scenario D
B.2.13 Type of infill material (in any frame)	Alternative material or without infill material	Possible for S _a where seal to supporting construction is unchanged Possible for S ₂₀₀ where seal to supporting construction is unchanged and providing the density of the infill material is not decreased. If tested without infill material, any other material is allowed Otherwise not possible without an additional test	Test scenario D
B.2.14 Assembling technique for timber based frame members	Alternative	Possible to change from nails to screw fixings, or from butt joint to mortice and tenon joint Also possible to change from staples to nails or screws Otherwise not possible without an additional test	Test scenario D
B.2.15 Assembling technique for metal frame members	alternative (welding / riveting / screwing)	Possible providing the meeting edge is properly sealed Otherwise not possible without an additional test	Test scenario A
B.3 Protection			

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
B.3.1 Protection of frame members – see Figure A.11	Add/Remove	Possible providing the protection does not interfere with the smoke seal Otherwise not possible without an additional test	Test scenario F
C Building hardware			
C.1 General			
It is a requirement of this document, that all items of building hardware are in accordance with the relevant technical specification and that the building hardware is appropriate to the class of use of the door. Where hardware can be removed, no openings or holes should remain or they should be sealed/closed properly.			
C.1.1 Latches / locks, bolts (flush, morticed, internal or surface mounted) and strike plates	Alternative	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F
C.1.2 Strike plates	Add / remove	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F
C.1.3 Number of latches / locks, bolts (flush, morticed, internal or surface mounted) and strike plates for metal doors (steel doors and metal framed doors) and timber doors with metal inlay	Increase	If the hardware does not interfere with the smoke seal: Possible for S_a Possible for S_{200} providing that the distance between the original and the additional lock/latch at latch position is not more than 500 mm Or possible for S_{200} providing the additional locks/latches are at least one above and at least one below of the main lock/latch. For double leaf doors the locking system shall fix both leaves in the same way Otherwise not possible without additional test	Test scenario H
C.1.4 Number of latches / locks and strike plates for timber doors without metal inlay	Increase	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
C.1.5 Number of latches / locks, bolts (flush, morticed, internal or surface mounted) and strike plates	Decrease	Not possible without an additional full size test unless originally tested with the latch bolt(s) withdrawn	Test scenario D
C.1.6 Position of lock assembly – single element – see Figure A.12	Alternative	Possible by 200 mm in each direction providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario D
C.1.7 Position of latches / locks and strike plates – multi-point locks (including locks/latches to the top frame member and/or to the bottom) – see Figure A.28	Alternative	The alternative position of the latch/lock may vary within the minimum and the maximum of the originally tested distance between lock/latch and any unlocked/unlatched door/leaf edge Otherwise not possible without additional test	Test scenario D
C.1.8 Strike plates	Alternative	Possible providing the hardware does not interfere with the smoke seal more than tested and providing, that the penetration depth of the latch is not less than tested Otherwise not possible without additional test	Test scenario H
C.1.9 Latches / locks – see Figure A.13	Exchange internal for external and vice versa	Possible only for internal to external providing the hardware does not interfere with the smoke seal more than tested and providing that the penetration depth of the latch is not less than tested Otherwise not possible without additional test	Test scenario H
C.1.10 Size of leaf cut-out for through items	Increase/decrease	Possible to decrease Possible to increase providing the through items are sealed and sealed in the same way as tested Otherwise not possible without additional test	Test scenario A
C.1.11 Function of latches / locks (e.g. From normal use to panic use or vice versa)	Alternatives	Possible	

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
C.1.12 Door handles, push pads and emergency exit devices to EN 179 or panic devices to EN 1125	Add / Alternative	Possible to add or exchange face mounted elements providing any break through being limited to screw fixings and their covering Otherwise not possible without additional test	Test scenario A
C.1.13 Door handles, push pads and emergency exit devices to EN 179 or panic devices to EN 1125	Remove	Possible but the lock assembly shall remain as tested and providing the removal does not expose any areas of potential weakness beneath the element Otherwise not possible without additional test	Test scenario A
C.1.14 Dimension of hinges	Increase	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F
C.1.15 Dimension of hinges	Decrease	Possible	
C.1.16 Hinge fixing type	Alternative	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F
C.1.17 Hinges	Alternative	Possible providing the hardware does not interfere with the smoke seal more than tested Possible for S ₂₀₀ only for metal components with the same or higher strength Otherwise not possible without additional test	Test scenario F
C.1.18 Dimension of dog bolts	Increase	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F
C.1.19 Dimension of dog bolts	Decrease	Possible for S _a Not possible for S ₂₀₀ without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
C.1.20 Number of hinges/dog bolts	Increase	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F
C.1.21 Number of hinges/dog bolts	Decrease	Not possible without an additional test	Test scenario F
C.1.22 Hinges / dog bolts of the same type	Change of manufacturer	Possible	
C.1.23 Hinges or dog bolts of the same type	Alternative material	Possible for S_a Possible for S_{200} for metal components with the same or higher strength Otherwise not possible without an additional test	Test scenario F
C.1.24 Type of hinges except single axis spring hinges	Alternative type	Follow rule C.1.17	
C.1.25 Single axis spring hinges	Change from single axis spring hinge to single axis hinge	Follow rule C.1.17	
C.1.26 Single axis spring hinges	Change of type from a Single axis hinge to a single axis spring hinge	Follow rule C.1.17	
C.1.27 Distance from top of upper hinge to top of door leaf or from bottom of lower hinge to bottom of door	Increase	Possible to a maximum variation of 100 mm Otherwise not possible without additional test	Test scenario A
C.1.28 Distance from top hinge to top of door leaf or from bottom of lower hinge to bottom of door	Decrease	Possible to a maximum variation of 100 mm Otherwise not possible without additional test	Test scenario A

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
C.1.29 Distance (x and y) between intermediate movement restrictors (i.e. hinges or dog bolts) – see Figure A.14	Increase	Possible for S _a Possible for S ₂₀₀ in line with the height increase following A.3.2 up to a maximum of 30 % Otherwise not possible without additional movement restrictors or without additional test	Test scenario A
C.1.29.1 Distance (x and y) between intermediate movement restrictors (i.e. hinges or dog bolts) – see Figure A.14	Decrease	Possible	
C.1.30 Position of intermediate movement restrictors (i.e. hinges or dog bolts) – see Figure A.14	Variation	Possible for S _a doors limited to a maximum variation of 300 mm Possible for S ₂₀₀ doors limited to a maximum variation of 100 mm Otherwise not possible without additional test	Test scenario A
C.1.31 Door closer positioning on face of doorset	Alternative side	Possible	
C.1.32 Concealed door closer positioning in the head/frame of doorset	Change position, manufacturer or product	Possible providing the hardware does not interfere with the smoke seal more than tested and remaining holes are sealed properly Otherwise not possible without additional test	Test scenario F
C.1.33 Door closer (leaf or frame mounted)	Exchange concealed for face fixed	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F
C.1.34 Door closer (leaf or frame mounted)	Exchange face fixed for concealed	Possible for steel doors only, providing the hardware does not interfere with the smoke seal more than tested and remaining holes are sealed properly Otherwise not possible without additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
C.1.35 Door closer face fixed	Change position, manufacturer or product	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F
C.1.36 Floor/transom mounted closing devices/pivots with single action accessories (shoe and top centre)	Exchange from hinged to pivoted	Possible for S _a providing the sealing system is not affected and originally tested with 2 hinges with not more than 300 mm distance to the edges of the doorleaf (measured from hinge centre) Otherwise not possible without an additional test	Test scenario F
C.1.37 Floor/transom mounted closing devices/pivots with single action accessories (shoe and top centre)	Exchange from pivoted to hinged	Possible for S _a providing the sealing system is not affected Otherwise not possible without an additional test	Test scenario F
C.1.38 Power cable and protective conduits (door or frame) – see Figure A.15	Add	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F
C.1.39 Power cable and protective conduits (fitted door or frame) – see Figure A.15	Remove	Possible	
C.1.40 Door viewer	Add	Possible providing the door viewer is not bigger than 15 mm in diameter and is sealed properly Otherwise not possible without additional test	Test scenario A
C.1.41 Door viewer	Remove	Possible	
C.1.42 Key tubes	Add	Not possible without additional test	Test scenario F
C.1.43 Alarm contacts and proximity switches	Additional/alternative	Possible providing the hardware does not interfere with the smoke seal more than tested Otherwise not possible without additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
C.1.44 Face mounted elements (e.g. door signs, coordinating devices, hold-open devices, sensors, power operated devices, finger protectors, etc.) on the door leaf or frame	Add	Possible glued, welded or providing that any break through is limited to screw fixings/rivetings and their covering and that the fixings do not break both sides Otherwise not possible without additional test	Test scenario A
C.1.45 Face mounted elements (e.g. door signs, coordinating devices, hold-open devices, sensors, power operated devices, finger protectors, etc.) on the door leaf or frame	Remove	Possible	
C.1.46 Threshold seal including drop seals	Add	Possible if the smoke sealing system is not interfered Otherwise not possible without additional test	Test scenario F
C.1.47 Threshold seal excluding drop seals	Remove	Possible for S _a doors Otherwise not possible without additional test	Test scenario F
C.1.48 Threshold seal including drop seals	Alternative System (e.g. automatic seals to static seals)	Possible for S _a doors Otherwise not possible without additional test	Test scenario F
C.1.49 Threshold seal	Alternative type of the same system	Possible for S _a doors Otherwise not possible without additional test	Test scenario F
C.1.50 Drop seals	Remove	Possible for S _a doors Otherwise not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
C.1.51 Drop seals	Alternative	Possible for S _a doors Possible for S ₂₀₀ doors if the alternative type has been tested successfully in a door of the same type (steel / timber / framed...) and thickness (± 10 %) and according to the number of door leaves (single for single, double for double and single) Otherwise not possible without an additional test	Test scenario F
C.1.52 Letter plates	Alternative type	Not possible without additional test	Test scenario F
C.1.53 Letter plates	Alternative size	Possible to decrease the size for the same types Otherwise not possible without additional test	Test scenario F
C.1.54 Letter plates	Add	Not possible without additional test	Test scenario F
C.1.55 Letter plates	Remove	Possible	
C.1.56 Letter plates	Alternative position in the door leaf	Possible providing that no stiffening elements of the door leaf are interfered Otherwise not possible without additional test	Test scenario F
C.1.57 Cylinders	Add / remove / alternative	Add/alternative: Possible providing the door was previously tested with a standard cylinder according to EN 1303 or EN 15684 Remove: In any case any remaining holes shall be covered properly Otherwise not possible without additional test	Test scenario A
D Support / attachment - door leaf to framing			
D.1 General			
D.1.1 Gap dimensions (door leaf to frame)	Increase / decrease	see Table A.1 - A.4.31	

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
E Side / transom panels and flush over panels			
E.1 Panel arrangements			
Before there can be any consideration for the variation in side and over panel arrangements, 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. If the original doorset test was conducted only on a single leaf doorset without side/over panels then only the single leaf door arrangements from the following variations will be permissible. If the original doorset test was conducted only on a double leaf doorset without side/over panels then only the double leaf door arrangements from the following variations will be permissible. If a variation is not covered, an additional test will be necessary.			
E.1.1 Side / transom / flush over panel arrangement	Variation of tested arrangement	A successful test on an arrangement indicated on the left hand column of Table B.1 would allow the variations in arrangement indicated by a "x" in the same row assuming the fixing/retention method of the panelling system is retained Otherwise not possible without additional test It is not possible to mix up timber framed timber doors with metal framed timber doors	Test scenario F
E.1.2 Hinged / removable over panel system	from hinged to removable or vice versa	Possible providing the smoke sealing system is not changed Otherwise not possible without additional test	Test scenario A
E.1.3 Height/width/area of side / transom / flush over panel	decrease	Possible	

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
E.1.4 Height/width/area of side / transom / flush over panel	Increase	Increase in dimension is possible providing the sealing system is unchanged and subject to the following rules: For S₂₀₀ doorsets with a maximum tested leakage rate of 80 % of the leakage rate referred in EN 13501-2, the size may be increased up to 100 % in width and/or height but not more than increase of 1 m in any dimension For S_a doorsets with a maximum tested leakage rate of 80 % of the leakage rate referred in EN 13501-2, the size may be increased up to 100 % in width and/or height Possible to combine the maximum tested size of each side, transom and/or flush over panel (no interchange between side, transom and flush-over panel) Otherwise not possible without additional test	Test scenario A
E.1.5 Vertical stiles (glazing bars) in side / transom / flush over panel	Add	Possible if at least one stile was tested in the door leaf or side- or overpanel, providing the same glass-retention and sealing system is used Otherwise not possible without an additional test	Test scenario F
E.1.6 Horizontal rails (glazing bars) in side / transom / flush over panel	Add	Possible if at least one rail was tested in the door leaf or side- or overpanel, providing the same glass-retention and sealing system is used Otherwise not possible without an additional test	Test scenario F
F Panel infills (glazing or non-transparent materials) for door leaf or side / over panels Before there can be any consideration for glazing in door leaf, side and/or over panel arrangements, the doorset shall have been tested without glazing 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 - this is not applicable for framed glazed doors. Wherever “glass” or “glazed” is mentioned, it is also applicable to non-transparent panels/infills, unless it is excluded explicitly.			
F.1 General			
F.1.1 Glazed apertures	Add	Not possible without additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
F.1.2 Glazed aperture	Remove	Possible	
F.1.3 Panel/infill	Interchange Glass pane to non-glass infill and vice versa	Possible for S_a providing the smoke sealing system is not influenced and the surface is solid and plain For S_{200} only possible to change from non-glass infill to glass pane providing the glass is fire rated or will not fracture at temperatures up to 200°C (e.g. TGU, laminated Glass) Otherwise not possible without additional test	Test scenario A
F.1.4 Number of glazed panels for framed doors only	Increase	Possible in line with the rules given in A.7.18 and A.7.19 Possible for side- and/or transom panels Otherwise not possible without additional test	Test scenario A
F.1.5 Thickness of glass	Increase	Possible providing the smoke sealing system of the glazing is not influenced except adapting the system to the new thickness of the glass Otherwise not possible without additional test	Test scenario A
F.1.6 Thickness of glass	Decrease	Possible for S_a up to 10% decrease providing the smoke sealing system of the glazing is not influenced except adapting the system to the new thickness of the glass Otherwise not possible without additional test	Test scenario F
F.1.7 Dimensions of each pane – see Figure A.16	Increase	Possible providing the glass is sealed as tested and the distance between the edge of the glazing and the edge of the door or the distance between two glazings is not decreased Otherwise not possible without additional test	Test scenario F
F.1.8 Dimensions of each pane – see Figure A.17	Decrease	Possible for S_a Possible for S_{200} to decrease the size in line to the decrease of the door leaf. Possible to decrease down to the dimensions of a smaller tested glazing. Possible if tested the door without glazing Otherwise not possible without additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
F.1.9 Type of glass – see Figure A.24 (including IGU with additional integrated functional parts, e.g. blinds, shutters, slats) - only for glass, not for non-transparent panels	Change of manufacturer and/or glass type	Possible for S _a Not possible for S ₂₀₀ for single float-glass-panes and combinations, where the float-glass-pane stands alone on the surface (e.g. IGU) Possible if the glass is fire rated or will not fracture at temperatures up to 200°C (e.g. TGU, laminated Glass) Otherwise not possible without an additional test	Test scenario F
F.1.10 Type of non-transparent panel	Change of manufacturer and/or type	Possible to change the manufacturer for the same composition Possible for S _a providing the smoke sealing system is not influenced and the surface is solid and plain Possible for S ₂₀₀ providing the smoke sealing system is not influenced and the installation allows proper elongation, one or more of the following changes can be done: - Change coversheet from stainless steel to mild steel to aluminium with same or less thickness - Change coversheet from mild steel or aluminium to stainless steel with a thickness of at least – 30 % less - Change from metal coversheet to glass coversheet - Change of mineral board - Change density of mineral wool - Change of derived timber products except such with metal inlays Otherwise not possible without an additional test	
F.1.11 Materials of glazing beads without changing the seals	Alternative	Possible providing that any openings or holes should be sealed or closed properly Otherwise not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
F.1.12 Geometry of glazing beads without changing the seals	Alternative	Possible providing that any openings or holes should be sealed or closed properly Otherwise not possible without an additional test	Test scenario F
F.1.13 Glazing beads	“On both sides” to “on one side”	Possible providing the pane is properly sealed Otherwise not possible without an additional test	Test scenario F
F.1.14 Glazing beads	Change to “without glazing beads” for flush panels	Not possible without an additional test	Test scenario F
F.1.15 Change of glass sealing system	Alternative	Possible to change from dry glazing to wet glazing, but not vice versa Otherwise not possible without an additional test	Test scenario F
F.1.16 Glazing bead fixing technique	Alternative (welding / riveting / screwing / nailing / clipped)	Possible for S_a Possible for S_{200} to change from clipped to the others Possible to interchange between welding, riveting, screwing and nailing Otherwise not possible without an additional test	Test scenario F
F.1.17 Position of glazing bead fixings	Alternative	Possible to decrease the distance between fixings Otherwise not possible without an additional test	Test scenario F
F.1.18 Shape of glazing – see Figure A.18	Alternative	Possible providing the new shape is within the area of the tested glass and the rules for size decreasing are fulfilled Otherwise not possible without an additional test	Test scenario F
F.1.19 Number of glazed apertures – see Figure A.19 (not applicable to framed doors)	Increase	Possible for S_a providing the air leakage rate is calculated proportionately Otherwise not possible without an additional test	Test scenario F

Construction parameter (1)	Variation (2)	Possibility of extension (3)	Additional evidence required (4)
F.1.20 Number of glazed apertures	Decrease	Possible for S_a Possible for S_{200} to decrease the number down to the smallest number tested, possible if tested the door without glazing Otherwise not possible without additional test	Test scenario F
F.1.21 Smallest tested distance between the edge of glazing and the perimeter of the door leaf / panel	Increase	Possible	
F.1.22 Smallest tested distance between the edge of glazing and the perimeter of the door leaf / panel	Decrease	Not possible without additional test	Test scenario F
F.1.23 Distance between glazed apertures	Increase	Possible	
F.1.24 Smallest tested distance between glazed apertures – see Figure A.20	Decrease	Not possible without additional test	Test scenario F
F.1.25 Additional glass pane on the surface of framed doors (glued or mechanical fixed) – only for glass, not for non-transparent panels – see Figure A.22	Add	Possible	
F.1.26 Additional glass pane on the surface of framed doors (glued or mechanical fixed) – see Figure A.23	Remove	Not possible without additional test	Test scenario F