



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

National foreword

This British Standard is the UK implementation of EN 15269-3:2012.

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

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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

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

Erweiterter Anwendungsbereich von Prüfergebnissen zur Feuerwiderstandsfähigkeit und/oder Rauchdichtigkeit von Türen, Toren und Fenstern einschließlich ihrer Baubeschläge - Teil 3: Feuerwiderstandsfähigkeit von Drehflügeltüren und Fenstern aus Holz

This European Standard was approved by CEN on 16 June 2012.

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Foreword

This document (EN 15269-3:2012) 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of an identical text or by endorsement, at the latest by February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

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.

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

This document is one of a series entitled “EN 15269, *Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware*” which consists of the following parts:

- *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 shutter assemblies;*
- *Part 11: Fire resistance of operable fabric curtains;*
- *Part 20: Smoke control for hinged and pivoted steel, timber and metal framed glazed doorsets.*

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard covers hinged or pivoted doorsets with timber based leaves, timber framed glazed doors and openable timber framed windows. It prescribes the methodology for extending the application of test results obtained from fire resistance test(s) conducted in accordance with EN 1634-1. This standard covers doorsets with internal structural elements which are comprised of timber.

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

- integrity (E), integrity/radiation (EW) or integrity/insulation (EI₁ or EI₂) classification;
- glazed elements including vision panels and framed glazed doorsets,
- louvres and/or vents;
- side, transom or overpanels;
- items of building hardware;
- decorative finishes;
- intumescent, smoke, draught or acoustic seals;
- alternative supporting construction(s).

The effect on the Classification 'C' for the doorsets following an extended application process is not addressed in this European Standard.

2 Normative references

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

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

EN 844 (all parts), *Round and sawn timber — Terminology*

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

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

EN 1634-1, *Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware — Part 1: Fire resistance test for 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 12519, *Windows and pedestrian doors — Terminology*

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

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

EN 15269-1:2010, *Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware — Part 1: General Requirements*

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

3 Terms and definitions

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

3.2

effective rebate depth

dimension of the door leaf thickness of overlapping adjacent edges of door leaf relative to the door frame, transom or side panel or flush overpanel

Note 1 to entry: At the meeting edges and for rebated leaves this dimension will be the rebate where the intumescent seal is fitted or, if no seal is fitted, the depth of the largest rebate (see Figure 1).

3.3

leaf symmetry

construction of a door leaf, without consideration of any leaf edge rebates, viewed either side of an imaginary plane drawn centrally in the thickness of the leaf

Note 1 to entry: A symmetrical door leaf will be identical either side of this imaginary plane, whilst an asymmetrical door leaf will differ.

3.4

exposed intumescent seal

intumescent seal which is fitted in the perimeter of the leaf or in the door frame rebate and is visible when the leaf is in the open position

3.5

concealed intumescent seal

intumescent seal which is fitted in the perimeter of the leaf or in the door frame rebate and is not visible when the leaf is in the open position, including seals behind veneers and laminates

3.6

facing (and decorative facing)

outer layer of material on the leaf or panel normally only used for decorative, not for structural, purposes

3.7

subfacing

layer (or layers) of material between the core and the facing in the leaf or panel normally used for structural purposes

4 Determination of the field of extended application

4.1 General

4.1.1 Before there can be any consideration for extended application, a representative doorset shall have been tested in accordance with EN 1634-1 to achieve a test result which could generate a classification in accordance with EN 13501-2 at least equal to the classification subsequently required from extended application considerations.

4.1.2 A review of the doorset construction parameters can indicate that one or more characteristics may be improved by a particular parameter variation. All evaluations shall be made on the basis of retaining the classifications obtainable from testing to EN 1634-1, including those lower than the test duration. However, this shall never lead to an increased classification for any specific parameter beyond that achieved during any one test, unless specifically identified in the relevant Construction Parameter Variation tables.

4.1.3 If, when following the extended application procedure, any part of the classified product cannot be covered by the extended application rules then that part shall be omitted from the subsequent extended application report and classification report.

4.2 How to use the extended application rules in Annex A

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

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

4.2.3 Review the type of classification to be retained from column (3) of Annex A and establish from the contents of column (4) of Annex A whether any extended application is available beyond the direct application rules in EN 1634-1 without the need for further testing.

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

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

4.3 Procedure for maximum field of extended application

4.3.1 It is possible to provide an extended field of application from a single test. However, where a manufacturer envisages to manufacture a range of doors incorporating single doors and also double doors with or without side, transom or over panels, with or without glazing, louvres or ventilation grilles, with alternative element of building hardware, etc., it is recommended that careful consideration is given to the complete range of doorset designs and options. This helps to minimise the testing required before testing commences.

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

4.3.3 Determine which are the most important specification requirements and incorporate as many as possible into the specimen(s) for the first tests in the series.

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

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

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

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

4.3.8 Determine if the product range is to include only single leaf doorsets or if the range is to also include double leaf configurations. Where only single doorsets are to be part of the product range, the outstanding construction parameter variations shall only be incorporated into specimens for the single leaf doorset. Where single leaf and double leaf doorsets are to be included in the product range, the outstanding construction parameter variations for the extended application of single leaf doorsets may be incorporated into either repeated single leaf doorset tests or, in the weakest option, as defined in column 5 of Table A.2, double leaf doorset configurations.

4.3.9 Select the required outstanding parameter variations from column (1) and column (2) of Annex A and observe from column (5) in Annex A which are the most appropriate, weakest specimen options for further testing.

4.3.10 If the complete selection of required parameter variations has not been covered by the tests completed in accordance with 4.3.8 and 4.3.9 above, then an appropriate test or tests may be repeated with the additional product variations incorporated.

4.4 Analysis of test results

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

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

4.4.3 Where it has been possible to identify specific parameter failures, the extended application for all other construction parameter variations can be based on the performance achieved after isolating the premature failure(s).

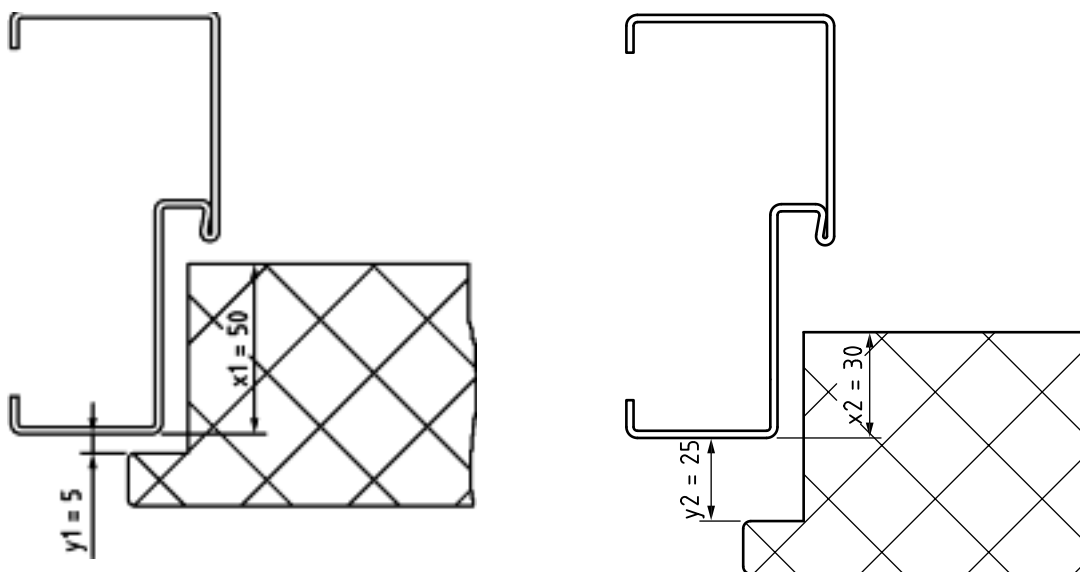
5 Extended application report

Prepare an extended application report in accordance with the requirements of Clause 6 of EN 15269-1:2010, based on the results of evaluations in accordance with the above.

6 Classification report

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

Dimensions in millimetres



Key

x1: Example of effective rebate depth in doorset to be tested

x2: Example of resulting effective rebate depth during testing after movement of 20mm

y1: Example of over rebate to frame face clearance in doorset to be tested

y2: Example of over rebate to frame face clearance in doorset after movement of 20mm

Figure 1 — Effective rebate depth

Annex A (normative)

Construction parameter variations

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

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

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

The influence of variation on performance characteristic is identified in column 3 as, integrity, insulation or radiation (E, I or W respectively). For some parameters, it is necessary to evaluate whether the specimen displayed a high, medium or low level of distortion during the test. Where this is the case, the following levels shall be used to establish high, medium and low distortion doorsets as measured using the maximum relative movement at any position between the edge of the door leaf and door frame or between the meeting edges of door leaves or the relative movement of the framing members for panelled systems. The measurements shall be taken from the start of the test at any time during the complete required classification period. The deflections shall be measured at the positions given in EN 1634-1:

- Low: < 40 % of effective rebate depth;
- Medium: ≥ 40 % and ≤ 85 % of effective rebate depth;
- High: > 85 % of effective rebate depth.

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

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

Where additional tests are deemed to be necessary, the type of specimen approved for incorporation of the changed parameter is defined in column 5. Where it is possible to use information from tests performed on one configuration for evidence on a different configuration, this allowance has been made in order to reduce the overall number of tests required for extended application evaluation e.g. single action doorsets to double action doorsets.

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

Solid timber can be replaced by other solid timber of the same group of equal or higher density or solid timber of a higher group, where Group 4 in Table A.1 is the highest group.

Table A.1 — Timber groupings

Group Nr.	Type of timber	Medium density [kg/m³]
1	Softwood and Beech* (Fagus sylvatica)	> 350 < 450
2	Hardwood excluding Beech*	> 350 < 450
3	Softwood	≥ 450
4	Hardwood excluding Beech*	≥ 450

The following definitions are taken from EN 844, *Round and sawn timber — Terminology*.

Softwood

Wood of trees of the botanical group Gymnosperms

NOTE Most commercial softwoods belong to the group “conifers” which is a part of the botanical group Gymnosperms.

Hardwood

Wood of trees which represent one group of the Angiosperms known as the Dicotyledons

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

Table A.2 — Construction parameter variations

Table A.2 – Key to symbols in Column 3 (which is informative only)

- > - higher performance anticipated
- < - lower performance anticipated
- = - no significant change in performance anticipated
- ≥ - equal or higher performance anticipated
- ≤ - equal or lower performance anticipated
- >=< - the influence on performance could be worse, equal or better: hence variations are not possible unless specific, limited conditions are identified

Construction Parameter	Variation	Influence of variation on performance characteristic	Possibility of extension	Additional Evidence Required
(1)	(2)	(3) E I W	(4)	(5)
A Door leaf. <i>In certain cases, the rules given in Section A are also appropriate to side, transom 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.</i>				
A.1 General				
A.1.1 Number of leaves. Only applicable to doorsets tested without transom and/or overpanels. See Annex B.	Single leaf from double leaf door test.	>=<	=	Annex B gives the test protocol and hierarchy for various options on leaf (and panel) configurations.

Construction Parameter	Variation	Influence of variation on performance characteristic	Possibility of extension	Additional Evidence Required
(1)	(2)	(3) E I W	(4)	(5)
A.1.2 Number of leaves Only applicable to doorsets tested without transom and/or overpanels. See Annex B.	Double leaf from single leaf door test.	< = =	Not possible without additional test.	Annex B gives the test protocol and hierarchy for various options on leaf (and panel) configurations.
A.1.3 Intumescent seals (fitted at leaf to frame interface). See Figure A.1.	Location towards the frame rebate.	≤ = =	Not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf depending upon the required configuration.
A.1.4 Intumescent seals (fitted at leaf to frame interface). See Figure A.2.	Location away from the frame rebate.	≥ = =	Possible for a proportionate movement in line with an increase in leaf thickness and frame rebate depth, otherwise not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf depending upon the required configuration.
A.1.5 Intumescent seals (fitted in meeting edges).	Location change.	>=< = =	Possible to change the tested seal arrangement from the leaf in which it was tested to the opposite leaf providing the leaves were low distortion and the seal arrangement is replicated and the minimum tested length of intumescent seal is retained (including at building hardware positions), otherwise not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf depending upon the required configuration.
A.1.6 Intumescent seals.	Location change.	≤ = =	Not possible to change from leaf to frame and vice versa.	Additional test to include seal fitted in the required position. Test can be single or double leaf.

Construction Parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional Evidence Required
(1)	(2)	(3)	E	I	W	(4)
A.1.7 Non-intumescent seals (draught/smoke/acoustic etc.) – Reaction to Fire class A1 or A2, (fitted in leaf or frame including threshold).	Location change.	>=<	=	=	=	(5) Additional test to include seal fitted in the required position. Test can be single or double leaf.
A.1.8 Non-intumescent seals (draught/smoke/acoustic etc.) – , Reaction to Fire class B-F (fitted in leaf or frame including threshold).	Location change.	>=<	=	=	=	Additional test to include seal fitted in the required position. Test can be single or double leaf.
A.1.9 Non-intumescent seals (draught/smoke/acoustic etc.) - Reaction to Fire class A1 or A2, (fitted in leaf or frame including threshold).	Add.	>=<	=	=	=	Additional test to include seal fitted in the required position. Test can be single or double leaf.
A.1.10 Non-intumescent seals (draught / smoke / acoustic etc.) - Reaction to Fire class A1 or A2, (fitted in leaf or frame including threshold).	Remove.	<	=	=	=	Further test to prove the leaf to frame detail with no seal fitted. Test can be single or double leaf.
A.1.11 Non-intumescent seals (draught/smoke/acoustic etc.) – Reaction to Fire class B-F (fitted in leaf or frame including threshold).	Add.	<	=	=	=	Additional test to include seal fitted in the required position on a similar doorset. Test can be single or double leaf. In the case of a double door test the leaf to frame seals may be different between the 2 leaves generating evidence on alternative types of seals from a single test.

Construction Parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional Evidence Required
(1)	(2)	(3)	E	I	W	(5)
A.1.12 Non-intumescent seals (draught/smoke/acoustic etc. – Reaction to Fire class B-F (fitted in leaf or frame including threshold).	Remove.	<	=	=	Not possible without additional test.	Additional test to include seal fitted in the required position. Test can be single or double leaf.
A.1.13 Louvres in door leaf or panel.	Add.	>=<	=	=	Possible to change tested louvre from the active leaf to the inactive leaf but not <i>vice versa</i> . Also possible to add louvre to single leaf doorset if it was tested in the active leaf of a double-leaf doorset. In both cases, the louvre cannot be greater than 25 % of the leaf area, otherwise not possible without additional test.	Additional test to include louvre fitted in the required position. Test can be single or active leaf of double leaf.
A.1.14 Louvres in door leaf or panel.	Remove.	≥	=	=	Possible providing tested louvre size ≤ 25 % of leaf area or ≤ 30 % of leaf area for low distortion doors or ≤ 35 % of leaf area for low distortion doors that achieve Category B, otherwise not possible without additional test	Test can be single or double leaf.
A.1.15 Louvres in door leaf or panel tested with louvre.	Fitting higher or lower in the leaf.	<	=	=	Tested positions will define the maximum and minimum fitting positions i.e. louvres may be fitted between the highest and lowest tested positions, subject to the rules given in A1.16 and A1.17, otherwise not possible without additional test.	Additional test to include louvre fitted in the required position. Test can be single or double leaf.
A.1.16 Louvres in door leaf or panel tested with louvre.	Fitting to the side of the tested position.	≥	=	=	Possible providing the minimum distance between the edge of the leaf and the aperture is not reduced, otherwise not possible without additional test.	Test can be single or double leaf.

Construction Parameter	Variation	Influence of variation on performance characteristic	Possibility of extension	Additional Evidence Required
(1)	(2)	(3) E I W	(4)	(5)
A.1.17 Louvres in door leaf or panel tested with louvre – See Figure A.3.	Smaller area.	≥ =	Possible to reduce the area of the louvre by 50 % and minimum distance between the edge of the leaf and the aperture is not reduced, otherwise a separate test is required and then sizes between the 2 extended louvre areas are acceptable.	Test to include louvre at 25 % of leaf area. Test can be single or double leaf.
A.1.18 Louvres in door leaf or panel tested with louvre.	Larger size (for area or dimensions).	< =	Possible up to a maximum 15 % increase in height and/or width or 20 % in area for louvre tested in a door which achieved Category B overrun time; and providing the minimum distance between the edge of louvre and the perimeter of the door leaf / panel is not decreased and possible in line with a leaf size increase, otherwise not possible without an additional test.	Further test required with maximum louvre required. Test can be single or double leaf.

Construction Parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional Evidence Required
(1)	(2)	(3)	E	I	W	(5)
A.1.19 Leaf edge rebate (not at the meeting edges. See section A2 for meeting edge parameters) - See Figure A.4.	Create a rebate (added material shown shaded in figures).	$\geq$	$=$	$\leq$	Possible for the constructions shown in drawings A4a, A4b & A4c, for timber based materials with a maximum of 30mm overlap. The additional material shown in drawings A4a and A4c may be applied to the full face of the leaf in which case and the maximum thickness is limited to 25 % of the thickness of the door leaf. Also possible for rebates made from materials with a melting point $< 450^{\circ}\text{C}$ for the construction shown in drawing 4b only, if the leaf thickness is increased by the addition of a 'profile' or 'astragal' to create the rebate and the hinges, locking devices, intumescent seals, pivots and any protective (sub)facings remain as tested, e.g. not cut. In all above conditions, the symmetry of the leaf construction shall be maintained. For double leaf doorsets, both leaves will include the same rebate detail, otherwise the required rebate and leaf detail shall be tested.	Additional test to include the required rebate and leaf detail. Test can be single or double leaf.
A.1.20 Leaf edge rebate (not at the meeting edges. See A.2 for meeting edge parameters).	Remove a rebate.	$\leq$	$=$	$=$	Not possible.	The required detail shall be tested. Test can be single or double leaf.
A.1.21 Change in mode of operation (double acting from single acting and <i>vice versa</i>).	Alternative.	$\leq$	$\leq$	$\leq$	Not possible.	Test to be on the required mode of operation.

Construction Parameter	Variation	Influence of variation on performance characteristic	Possibility of extension	Additional Evidence Required
(1)	(2)	(3) E I W	(4)	(5)
A.1.22 Latched condition for single leaf doorsets.	Change in latching condition. (See also Section C of this table for hardware variation).	>=<= = =	Possible to change the latching condition from unlatched to latched but not vice versa.	Additional test to include the required latching condition.

A.1.23 Latched condition for double leaf doorsets – see Figure A.5 .	Change in latching condition (See also Section C of this table for hardware variation).	>=<	=	=	Possible in line with the following relationship and providing a latch and bolt have been included in the tested doorset ,otherwise additional test required.				Additional test to include the required latching condition.
					Tested unlatched and unbolted	Tested unlatched but bolted	Tested latched and bolted		
					Extension to unlatched and unbolted	not possible	not possible		
					Extension to unlatched but bolted		not possible		
					Extension to latched and bolted	possible for low distortion door leaves only	possible		

A.2 Meeting edge detail						
A.2.1 Rebated, or plain meeting edge detail – see Figure A 6.	Change in edge detail.	>=<	>=<	=	Possible for timber based materials with a maximum of 30mm overlap which may be applied to the full face of the leaf in which case and the maximum thickness is limited to 25 % of the thickness of the door leaf. Also possible for the detail shown in Figure A6f for rebates made from timber or materials with a melting point <450°C for the construction shown in drawing 4b only, if the leaf thickness is increased by the addition of a 'profile' or 'astragal' to create the rebate and the hinges, locking devices, intumescent seals, pivots and any protective (sub)facings remain as tested, e.g. not cut. In all above conditions, the symmetry of the leaf construction shall be maintained. For full face 'panels' both leaves will include the same rebate detail, otherwise the required rebate and leaf detail shall be tested.	Test shall be double leaf.
A.2.2 Plain meeting edge detail – see Figure A.6.	Change between plain edge details.	>=<	=	=	Possible to change from plain to slanted (by a maximum of 5°) for Category B doors and vice versa for Category A and B doors and from rounded/radiused to plain or slanted, otherwise not possible without additional test.	Test shall be double leaf.
A.2.3 astragal detail.	Add.	<	=	=	Possible to change from plain edge detail to astragal detail if the rebate is created by the addition of a timber based or low melt material of < 450 °C melting point and the seal arrangement remains as tested, otherwise not possible without additional test.	
A.2.4 astragal detail.	Remove.	>=<	>=<	>=<	Not possible without additional test.	Test shall be double leaf.

A.3. Size variations						
A.3.1 Size of leaf or panel (area, width, height).	Decrease.	>=<	>=<	=	Possible in line with Direct Application	Additional test to include the required leaf size.
A.3.2 Height of leaf or panel.	Increase.	≤	≤	≤	Possible in line with Direct Application or in line with the following classification period/overrun period relationship (distortion measured throughout the required classification period only). For double leaf doorsets, both leaves shall be of the same construction, otherwise not possible without additional test.	For sizes above that allowed by the adjacent column, the specific size shall be tested.
	Low distortion leaf or panel.	≤	≤	≤	Possible to increase the leaf height by the same percentage as achieved overrun when factored by 0,50 for doorsets intended to be classified 15, 20, 30, 45 or 60 and when factored by 0,75 for 90 minute classifications and when factored by 1,00 for 120 minute classification.	
	Medium distortion leaf or panel.	≤	≤	≤	Possible to increase the leaf height by the same percentage as achieved overrun when factored by 0,33 for doorsets intended to be classified 15, 20, 30, 45 or 60 and when factored by 0,50 for 90 min classifications and when factored by 0,66 for 120 min classification.	
	High distortion leaf or panel.	≤	≤	≤	Possible to increase the leaf height by the same percentage as achieved overrun when factored by 0,25 for doorsets intended to be classified 15, 20, 30, 45 or 60 and when factored by 0,375 for 90 min classifications and when factored by 0,50 for 120 min classification.	
A.3.3 Width of leaf or panel.	Increase.	>=<	>=<	>=<	Possible in line with Direct Application or in line with the principles given above (in A.3.2 for height increase).	For sizes above that allowed by the adjacent column, the specific size shall be tested.

A.3.4 Area of leaf or panel.	Increase.	>=<	>=<	>=<	Possible in line with the principles given above (in A.3.2 for height increase) except for double leaf doorsets which shall be subject to the principles for width proportions given in direct application, otherwise not possible without additional test.	For sizes above that allowed by the adjacent column, the specific size shall be tested.
A.3.5 Thickness of the door leaf or panel.	Increase.	>=<	>=<	>=<	Possible in line with direct application and the position of any intumescent material should remain in the same position in relation to the effective rebate depth and core material, otherwise not possible without an additional test. For double leaf doorsets, both leaves shall be of the same thickness.	
A.3.6 Thickness of the door leaf or panel.	Decrease.	<	<	<	Not possible without additional test.	Additional test to include the required thickness of leaf or panel.
A.4. Materials and constructions						
A.4.1 Density of core material of leaf or panel.	Increase.	>=<	>=<	>=<	Possible providing the type of material remains as that tested and the leaf symmetry is not affected and the density of the core material does not increase by greater than 50 % and providing the overall weight of the leaf does not increase by more than 25 %, otherwise not possible without additional test.	Test to include the maximum density required.
A.4.2 Density of core material of leaf or panel.	Decrease.	VI	VI	VI	Not possible without additional test.	Additional test to include the required density of core material.
A.4.3 Thickness of core material or individual layers of core material in leaf or panel.	Increase.	>=<	>=<	>=<	Possible in line with direct application, otherwise not possible without additional test.	

A.4.4 Thickness of core material or individual layers of core material in leaf or panel.	Decrease.	≤	≤	≤	Not possible without additional test.	
A.4.5 Pieces of core material of leaf or panel – See Figure A.7.	Increase number of pieces.	>=<	=	=	Possible up to 50 % providing the test included at least one joint. For double leaf doorsets, the rule shall be applied to each leaf separately, otherwise not possible without additional test.	Test shall be on a leaf with the maximum number of required pieces.
A.4.6 Pieces of core material of leaf or panel.	Decrease number of pieces.	>=<	=	=	Possible by up to 50 % providing one joint in the core material remains. For double leaf doorsets, the rule shall be applied to each leaf separately, otherwise not possible without additional test.	Test shall be on a leaf with the minimum number of required pieces.
A.4.7 Number of layers of identical core material of leaf or panel.	Decrease number of layers of identical core material.	>=<	=	=	Possible up to 50 % for Category B doors. For double leaf doorsets, the rule shall be applied to each leaf separately. In all cases, the core thickness shall remain as tested, otherwise not possible without additional test.	Test shall be on a leaf with the minimum number of required pieces.
A.4.8 Number of layers of identical core material of leaf or panel.	Increase number of layers.	>=<	=	=	Not possible unless the increase results in a thicker door leaf i.e. by adding an extra layer, otherwise not possible without additional test	Test shall be on a leaf with the maximum number of required layers.
A.4.9 Number of layers of core material of different materials in leaf or panel.	Decrease.	≤	≤	≤	Not possible without additional test.	Test shall be on a leaf with the minimum number of required layers.
A.4.10 Number of layers of core material of different materials in leaf or panel.	Increase.	>=<	>=<	>=<	Possible providing the increase results in a thicker door leaf i.e. by adding an extra layer and only of the tested materials, otherwise not possible without additional test	Test shall be on a leaf with the required layers.