



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

National foreword

This British Standard is the UK implementation of EN 15269-5:2014+A1:2016. It supersedes BS EN 15269-5:2014, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by A1 A1.

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

Application étendue des résultats d'essais en matière
de résistance au feu et/ou d'étanchéité à la fumée des
blocs-portes, blocs-fermetures et ouvrants de fenêtre, y
compris leurs éléments de quincaillerie intégrés -
Partie 5: Résistance au feu des blocs-portes vitrés
battants et pivotants, à ossature métallique, et des
fenêtres vitrées à ossature métallique

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

This European Standard was approved by CEN on 17 April 2014 and includes Amendment 1 approved by CEN on 13 March 2016.

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European foreword

This document (EN 15269-5:2014+A1:2016) 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 April 2017, and conflicting national standards shall be withdrawn at the latest by April 2017.

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 includes Amendment 1 approved by CEN on 2016-03-13.

This document supersedes EN 15269-5:2014.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** and **A1**.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports basic work requirements of Regulation (EU) 305/2011.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, 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.

Introduction

This document is one of a series of standards listed below and intended to be used for the purpose of producing an extended application report based on the evaluation of one or more fire resistance and/or smoke control tests. These standards may also be used to identify the best selection of test specimens required to cover a wide range of product variations.

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

- *Part 1: General requirements;*
- *Part 2: Fire resistance of hinged and pivoted steel doorsets;*
- *Part 3: Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows;*
- *Part 4: Fire resistance of hinged and pivoted glass doorsets (in preparation);*
- *Part 5: Fire resistance of hinged and pivoted metal framed glazed doorsets and openable windows;*
- *Part 6: Fire resistance of sliding timber doorsets;*
- *Part 7: Fire resistance of sliding steel doorsets;*
- *Part 8: Fire resistance of horizontally folding timber doorsets (in preparation);*
- *Part 9: Fire resistance of horizontally folding steel doorsets (in preparation);*
- *Part 10: Fire resistance of steel rolling shutter assemblies;*
- *Part 11: Fire resistance of operable fabric curtains;*
- *Part 20: Smoke control for hinged and pivoted steel, timber and metal framed glazed doorsets.*

1 Scope

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

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

Subject to the completion of the appropriate test or tests selected from those identified in Clause 4 the extended application may cover all or some of the following examples:

- integrity (E), integrity/radiation (EW) or integrity/insulation (EI₁ or EI₂) classifications;
- doorsets and openable windows;
- door / window leaf (leaves);
- glazing and non-glazed panels in doorset and openable window;
- items of building hardware;
- decorative finishes;
- intumescent, smoke, draught or acoustic seals;
- alternative supporting construction(s).

2 Normative references

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

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

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

EN 1634-2, *Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware — Part 2: Fire resistance characterisation test for elements of building hardware*

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

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

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

3 Terms and definitions

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

3.1

full scale test

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

3.2

small scale test

test on elements of building hardware in accordance with EN 1634-2 and where the decision process given in EN 1634-2 permits its use

3.3

effective rebate depth-2

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

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

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

3.4

opening outwards

means opening the doorleaf away from the fireside

4 Determination of the field of extended application

4.1 General

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

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

4.1.3 If, by following the ensuing procedure, any part of the classification cannot be achieved by extended application rules that part of classification shall be omitted from the subsequent extended application report and classification report.

4.2 How to use extended application rules in Annex A

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

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

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

4.2.4 Where this is deemed to be possible this can be recorded in the extended application report together with any appropriate restrictions and the stated rules from column (4) of Table A.1.

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

4.3 Procedure for maximum field of extended application

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

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

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

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

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

4.3.6 Record this for the extended application report together with any restrictions and rules given in column (5) in Table A.1.

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

4.3.8 Determine if the product range is to include only single leaf doorsets or if the range is to also include double leaf configurations. Where only single doorsets are to be part of the product range then the outstanding construction parameter variations shall only be incorporated into specimens for the single leaf doorset. Where single leaf and double leaf doorsets are to be included in the product range, the outstanding construction parameter variations for the extended application of single leaf doorsets may be incorporated into either repeated single leaf doorset resistance to fire tests or in the weakest option, as defined in column 5 of Table A.1, double leaf doorset configurations.

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

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

4.4 Analysis of resistance to fire test results

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

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

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

5 Extended application report

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

6 Classification report

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

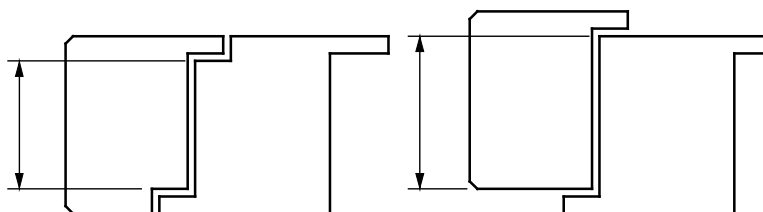


Figure 1 — Effective rebate depth-2

Annex A (normative)

Construction parameter variations

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

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

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

The Influence of variation on performance characteristic is identified from column 3 as, integrity, insulation or radiation (E, I or W respectively). For some parameters, it is necessary to evaluate whether the specimen displayed a high, medium or low level of distortion during the test. Where this is the case the following levels shall be used to establish high, medium and low distortion doorsets: as measured using the maximum relative movement at any position between the edge of the door leaf and door frame or between the meeting edges of door leaves.

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

- low distortion doorsets: maximum relative movement is < 40 % of effective rebate depth-2;
- medium distortion doorsets: maximum relative movement is between 40 % and 60 % effective rebate depth-2;
- high distortion doorsets: maximum relative movement is > 60 % of effective rebate depth-2.

The effect of the change in each parameter is evaluated for each characteristic in column 3 under E for effects on integrity, I for effects on insulation (whether an I₁ or I₂ class) and W for the effects on radiation.

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

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

Where an additional test is required in column 5 the test is a full scale test with the specimen opening outwards (away from the furnace) unless it is otherwise specified.

In order to maximize the possible field of extended application from a minimum number of tests the parameter changes have been spread over a series of test specimens. The recommended tests for each parameter depends on the classification required and the preferred direction of testing indicated in column 5.

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

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

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

Table A.1 — Construction parameter variations

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

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

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

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

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		For EI aluminium doors: test both directions For EI-steel doors: one test, with fire on opposite side of the operated direction See Figure A.4b
A.1.9 Non intumescent seals between door leaves and / or frames (draught / smoke / acoustic etc.) - (Reaction to fire class A1), e.g. ceramic products (fitted in leaf or frame) - See Figure A.5a	Add	=	=	=	Possible for doors without intumescent seals and providing the gap between door leaf and door frame is not increased otherwise not possible without an additional test	Additional test single or double leaf doorset, if the seal is positioned between the meeting edges of the door leaves the additional test shall be a double leaf doorset
A.1.10 Non intumescent seals between door leaves and / or frames (draught / smoke / acoustic etc.) - (Reaction to fire class A1), e.g. ceramic products (fitted in leaf or frame) - See Figure A.6	Remove	≤	≤	≤	Not possible without an additional test	Additional test single or double leaf doorset, if the seal is positioned between the meeting edges of the door leaves the additional test shall be a double leaf doorset
A.1.11 Non intumescent seals between door leaves and / or frames (draught / smoke / acoustic etc.) - < Reaction to fire class A1 (fitted in leaf or frame) - See Figure A.5a	Add	≤	≤	≤	Not possible without an additional test	Additional test single or double leaf doorset, if the seal is positioned between the meeting edges of the door leaves the additional test shall be a double leaf doorset. Fireside opposite the position where the seal is added. See Figure A.5b

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	E	I	W	(4)	(5)
A.1.12 Non intumescent seals between door leaves and / or frames (draught / smoke / acoustic etc. - < Reaction to fire class A1 (fitted in leaf or frame) - See Figure A.6	Remove	> / = / <	> / = / <	=	Not possible without an additional test	Additional test single or double leaf doorset, if the seal is positioned between the meeting edges of the door leaves the additional test shall be a double leaf doorset
A.1.13 Ventilation grilles (louvres) in door leaf tested without ventilation grille - See Figure A.7a	Add	≤	≤	≤	Not possible without an additional test	Additional test single or double leaf doorset
A.1.14 Ventilation grilles (louvres) in door leaf - See Figure A.7b	Remove	> / = / <	≥	≥	Possible providing the cut out is less than 50 % of the infill otherwise not possible without an additional test	Additional test single or double leaf doorset
A.1.15 Ventilation grilles (louvres) in the infill of the door leaf tested with ventilation grille	Location in vertical direction	≤	≤	≤	Possible for lower location than tested otherwise not possible without an additional test	Additional test single or double leaf doorset
A.1.16 Ventilation grilles (louvres) in door leaf tested with ventilation grille - See Figure A.8	Location in horizontal direction	=	=	=	Possible providing the distance between the edge of the louvre and the perimeter of the infill is not decreased and providing any internal stiffening elements are not affected otherwise not possible without an additional test	Additional test single or double leaf doorset
A.1.17 Ventilation grilles (louvres) in the profile of the door leaf tested with ventilation grille	Location in horizontal and/or vertical direction	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A.1.18 Ventilation grilles (louvres) in door leaf tested with ventilation grille - See Figure A.9a	Smaller size	≥	≥	≥	Possible for one or more louvres smaller than that tested specimen providing the location is inside the perimeter of the tested louvre and minimum spacing between cut outs is not less than 100 mm otherwise not possible without an additional test	Additional test single or double leaf doorset
A.1.19 Ventilation grilles (louvres) in door leaf tested with ventilation grille- See Figure A.9b	Larger size	≤	≤	≤	Possible for doorsets have achieved category B, size increase of ventilation grilles in the infill of the door leaf up to 20 % in height and width and increase up to 21 % In area otherwise not possible without an additional test	Additional test single or double leaf doorset
A.1.20 Rebate (door leaves to frames) - See Figure A.10	Add	≤	≤	≥	Insulated profiles: Not possible without an additional test unless the original test had additional thermocouples positioned on the profile maximum 100 mm and/or 25 mm from the edge of the notional rebate (i.e. 100-x) where x means the width of the added rebate and dimension y shall not be reduced, otherwise not possible without an additional test Un-insulated profiles: Not possible without an additional test	Additional test single doorset for single doors, double doorset for double doors

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
A.1.21 Rebate (meeting edges) - See Figure A.11	Add (one rebate)	E	I	W	Insulated Not possible without an additional test unless the original test had additional thermocouples positioned on the profile maximum 100 mm and/or 25 mm from the edge of the notional rebate (i.e. 100-x) where x means the width of the added rebate and dimension y shall not be reduced. Otherwise not possible without an additional test Un-insulated profiles: Not possible without an additional test	Additional test single leaf doorset for single doorsets, double leaf doorset for double leaf doorsets (added rebate away from the fire)
A.1.22 Rebate (door leaves to frames and meeting edges) - See Figure A.12	Remove	≤	≤	≤	Not possible without an additional test	Additional test single or double leaf doorset (open inwards)
A.1.23 Latched condition for single and double leaf doorsets	Change in latching condition	> / = / <	=	=	Possible in line with the following relationship: tested without a lock tested with a latch/lock but unlatched tested with a latch/lock latched	Additional test to include the required latching condition
					extension to: without a lock/latch	
					possible	not possible

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension				Additional evidence required
(1)	(2)	(3)			(4)				(5)
		E	I	W	extension to: lock with lock/latch but unlocked / unlatched	not possible for EI doors.	possible for E or EW doors if latch/lock is all metal construction	—	not possible
						extension to: with a lock/latch , latched	not possible for EI doors.	possible	

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A.1.24 Latching / locking	Remove from door leaf tested with latching locking /	≤	≥	≥	Not possible without an additional test	For single leaf doorsets additional test single leaf doorset (open inwards for EI doors, open outwards for E or W doors) for double leaf doorsets additional test double leaf doorset (open inwards for EI doors, open outwards for E or W doors)
A.2 Size variations						
A.2.1 Size (area, width, height) all distortions	Decrease	≥	≤	≥	E and EW unlimited reduction is Possible EI: possible to decrease to a minimum dimension of the glass as it is mentioned in rule F.1.4 otherwise not possible without an additional test	For single leaf doorsets additional test single leaf or double leaf doorset, for double leaf doorsets additional test double leaf doorset
A.2.2 Height – all distortions	Increase	≤	=	≤	Possible for doorsets have achieved category B up to 15 %	For single leaf doorsets additional test single leaf

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)	E	I	W	(5)
					or possible for doorsets which have achieved category B and medium and low distortion up to 20 % providing overlap of door leaf to frame header is not reduced and distance between top hinge and top of door leaf is equal to or less than tested and additional for EW a thermal emission calculation in accordance with EN 15254-4 within the 15 KW limit (Rule F.1.3 applies) otherwise not possible without an additional test	or double leaf doorset, for double leaf doorsets additional test double leaf doorset
A.2.3 Width - all distortions	Increase		≤	=	≤	For single leaf doorsets additional test single leaf or double leaf doorset, for double leaf doorsets additional test double leaf doorset (open outwards)

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A.2.4 Area - all distortions	Increase	≤	=	≤	Possible for doorsets which have achieved category B up to 20 % or possible for doorsets which have achieved category B and medium and low distortion up to 21 % providing overlap of door leaf to frame header is not reduced and distance between top hinge and top of the door leaf is equal to or less than tested) and additional (for EW) a thermal emission calculation in accordance with EN 15254-4 within the 15 KW limit Rule F.1.3 applies Otherwise not possible without an additional test	Additional test see A.2.2 and/or A.2.3
A.3. Materials and constructions						
A.3.1 Density of infill of profile or core-material in the panel (organic or Reaction to fire class A1) – all distortions	Increase	> / = / <	≥	≥	Possible by a maximum of 15 % (nominal value) of each core material of the door leaf above 15 % not possible without an additional test	Additional test single or double leaf doorset
A.3.2 Density of infill of profile of core material (organic or Reaction to fire class A1) – all distortions	Decrease	> / = / <	≤	≤	E possible to reduce with 50 % EI, EW not possible without an additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A.3.3 Type of infill of profile of core material (single thickness or in combination of different layers)	Change of supplier / manufacturer of identical material with identical composition and properties	=	=	=	Possible	
A.3.4 Type of core material (single thickness or in combination of different layers)	Alternative composition	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test single or double leaf doorset
A.3.5 Amount of adhesive / m ² – organic based (<Reaction to fire class A1)	Increase	≤	=	=	Not possible without an additional test	Additional test single or double leaf doorset
A.3.6 Amount of adhesive / m ² – organic based (<Reaction to fire class A1)	Decrease	> =	=	=	Possible	
A.3.7 Amount of adhesive / m ² – inorganic based (Reaction to fire class A1)	Increase	=	=	=	Possible	
A.3.8 amount of adhesive / m ² – inorganic based (Reaction to fire class A1)	Decrease	=	=	=	Not possible without an additional test	Additional test single or double leaf doorset
A.3.9 Type of adhesive	Change of manufacturer for identical composition	=	=	=	Possible for identical chemical composition otherwise not possible without an additional test	Additional test single or double leaf doorset
A.3.10 Type of adhesive	Alternative composition	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A.3.11 Additional overlapping edge at the bottom of the door leaf - See Figure A.13a	Add	≥	≤	> / = / <	Possible providing the tested overlapping edge at the top of the leaf is added at the bottom of the leaf and providing a fourth frame member is added otherwise not possible without an additional test	Additional test single or double leaf doorset
A.3.12 Overlapping edge at the bottom of the door leaf - See Figure A.13b	Remove	≤	≥	> / = / <	Possible providing the gap between the bottom of the door leaf and the floor remains the same as the original test specimen and in line with direct application otherwise not possible without an additional test	Additional test single or double leaf doorset
A.3.14 Dimension of intumescent seals (leaf or frame fitted) - See Figure A.14a	Increase	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test single or double leaf doorset
A.3.15 Dimension of intumescent seals (leaf or frame fitted) - See Figure A.14b	Decrease	≤	≤	≤	Not possible without an additional test	Additional test single or double leaf doorset
A.3.16 Type of intumescent seals (leaf or frame fitted)	Change of supplier / manufacturer	> / = / <	> / = / <	> / = / <	Possible but only for identical composition otherwise not possible without an additional test	Additional test single or double leaf doorset
A.3.17 Type of intumescent seals (leaf or frame fitted)	Alternative material	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test single or double leaf doorset
A.3.18 Dimension of draught / smoke seals (Reaction to fire class A1); e.g. ceramic products (leaf or frame fitted) - See Figure A.15a	Increase	≥	=	=	Possible providing the gap between door leaf and door frame is not increased otherwise not possible without an additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	E	I	W	(4)	(5)
A.3.19 Dimension of draught / smoke seals (Reaction to fire class A1); e.g. ceramic products (leaf or frame fitted) - See Figure A.15b	Decrease	≤	=	=	Not possible without an additional test	Additional test single or double leaf doorset
A.3.20 Dimension of draught / smoke seals (<Reaction to fire class A1) (leaf or frame fitted) - See Figure A.16a	Increase	≤	≤	≤	Not possible without an additional test.	Additional test single or double leaf doorset
A.3.21 Dimension of draught / smoke seals (<Reaction to fire class A1) (leaf or frame fitted) - See Figure A.16b	Decrease	≥	≥	≥	Possible in any cross sectional dimension providing the same material and the same manufacturer otherwise not possible without an additional test	
A.3.22 Type of draught / smoke seals (leaf or frame fitted)	Change of supplier / manufacturer	> / = / <	=	=	Possible for Reaction to fire class A1 material or for identical chemical composition otherwise not possible without an additional test	Additional test single or double leaf doorset
A.3.23 Type of draught / smoke seals (leaf or frame fitted)	Alternative material (changing to higher Reaction to fire class)	=	=	=	Possible	
A.3.24 Type of draught / smoke seals (leaf or frame fitted)	Alternative material (changing to a equal or a lower Reaction to fire class)	≤	≤	≤	Not possible without an additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A4. Decorative and / or protective finishes						
A.4.1 Paints without contribution to fire resistance (on leaf or frame)	Addition	=	=	=	Possible in line with direct application beyond the field of direct application rules not possible without an additional test	Additional test single or double leaf doorset
A.4.2 Paints without contribution to fire resistance (on leaf or frame)	Interchange	=	=	=	Possible	
A.4.3 Thickness of paints with positive contribution to fire resistance (on leaf or frame)	Increase	≥	≥	≥	Possible up to a maximum of 25 % in mass per m ² otherwise not possible without an additional test	Additional test single or double leaf doorset
A.4.4 Thickness of paints with positive contribution to fire resistance (on leaf or frame)	Decrease	≤	≤	≤	Not possible without an additional test	Additional test single or double leaf doorset
A.4.5 type of paints with positive contribution to fire resistance (on leaf or frame)	change of supplier / manufacturer	> / = / <	> / = / <	=	Possible but only for identical composition Otherwise not possible without an additional test	Additional test single or double leaf doorset
A.4.6 Type of paints with positive contribution to fire resistance (on leaf or frame)	Alternative material	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test single or double leaf doorset
A.4.7 Decorative laminates and timber veneers on the face (on leaf or frame) - See Figure A.17	Add	> / = / <	≥	≥	Possible in line with direct application Otherwise not possible without additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A.4.8 Decorative laminates and timber veneers on the face (on leaf or frame) - See Figure A.18	Remove	≥	≤	≤	E Possible EI, EW Possible for category B door providing that the thickness of a the laminate is less or equal to 1,5 mm Otherwise not possible without an additional test	Additional test single or double leaf doorset
A.4.9 Decorative laminates and timber veneers on the edges (on leaf or frame) - See Figure A.19	Add	≤	≤	≤	Not possible without an additional test	Additional test single or double leaf doorset
A.4.10 Decorative laminates and timber veneers on meeting edges	Add	≤	≤	≤	Not possible without an additional test	Additional test double leaf doorset
A.4.11 Decorative laminates and timber veneers on the edges (on leaf or frame) - See Figure A.20	Remove	≥	=	=	Possible providing the gap dimension is retained between door leaf and frame otherwise not possible without additional test	Additional test single or double leaf doorset
A.4.12 Types and thickness of decorative laminates and timber veneers on the face (on leaf or frame)	Change material content, increase, decrease	> / = / <	> / = / <	> / = / <	Possible in line with direct application beyond the field of direct application rules not possible without an additional test	Additional test single or double leaf doorset
A.4.13 Types and thickness of decorative laminates and timber veneers on the edges (leaf to frame)	Change material content, increase, decrease	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A.4.14 Types and thickness of decorative laminates and timber veneers on the meeting edges	Change material content, increase, decrease	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test double leaf doorset
A.4.15 Types of decorative laminates and timber veneers on the face/edges (on leaf or frame)	Colour, pattern	=	=	=	Possible in line with direct application otherwise not possible without additional test	Additional test single or double leaf doorset
A.4.16 Protective elements – face fixed (kick plates/push plates/armour plates) - See Figure A.21	Add	> / = / <	> / = / <	> / = / <	Not possible if the protective elements cover any part of the glass otherwise possible only for metal elements for one piece up to 800 mm from the base of the leaf providing no thicker than 1,5 mm or limited to maximum two pieces per face at 250 mm in width or height (for E and EW doors the elements shall be Reaction to fire class A1). For acceptable fixing methods see rule 4.18. "Attachment technique for elements added to doors" otherwise not possible without an additional test	Additional test single or double leaf doorset
A.4.17 Protective elements – face fixed (kick plates/push plates/armour plates)	Remove	> / = / <	> / = / <	> / = / <	Not possible without an additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A.4.18 Attachment technique for elements added to doors	Selection (adhesive/rivet/screw)	=	=	=	E, EI, EW only selection of Reaction to fire class A1 material for fixings possible and for EI doors providing no through connection EI all selections possible within the area where thermocouples shall be placed and providing no through connection and providing no through connection otherwise not possible without an additional test	Additional test single or double leaf doorset
A.4.19 Mouldings/profiles - See Figure A.22	Add	≤	=	≤	E, EI, EW Possible only for mouldings/profiles which will not change the structural rigidity of the leaf and providing no break through to the opposite face E, EW possible only for inorganic material otherwise not possible without an additional test	Additional test single or double leaf doorset
A.4.20 Mouldings/profiles - See Figure A.22	Remove	≥	≤	≤	E Possible providing the removal will not change the structural rigidity of the leaf EI, EW Not possible without an additional test	Additional test single or double leaf doorset
A.5 Profiles in doorleaf (see Figure A.23 for explanation of width and depth of the profile)						
A.5.1. Cross section of profile of the door leaf (including transoms and mullions) based on high distortion	Increase depth	> / = / <	>	≥	not possible without an additional test	additional test can be single or double leaf doorset; with glazing bead in fire side

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
A.5.2. Cross section of profile of the door leaf (including transoms and mullions) based on medium and low distortion	Increase depth	E	I	W	Possible to increase the depth to a maximum of 25 % by increasing the shells and/or the insulation-connectors providing: o The overlap rebate depth (See Figure A.24) of the frame-profile is increased with the same percentage o If the thickness of one of the outer shell is increased, then the other shell is increased with the same percentage - See Figure A.25 o The insulation-connectors can be increased in thickness with the same percentage according to the following rule: profile can be cut according to cut C, and all cutted materials shall be filled in with more of the same material. See Figure A.25 otherwise not possible without an additional test	additional test can be single or double leaf doorset with glazing bead in fire side
		> / = / <	≥	≥		

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	E	I	W	(4)	(5)
A.5.3. Cross section of profile of the door leaf	Decrease depth	> / = / <	≤	≤	Not possible without an additional test	additional test can be single leaf doorsets or double leaf for double leaf doorsets; with glazing bead in fire side
A.5.3. a Type of Infill material	Change of supplier/ manufacture of material with identical composition and properties				Possible	
A.5.3. b Type of Infill material	Alternative material				Not possible without an additional test	additional test can be single or double leaf doorset with glazing bead in fire side
A.5.3. c Thickness of Infill material - See Figure A.26	Increase				Possible	
A.5.3. d Thickness of Infill material - See Figure A.26	Decrease				Not Possible	
A.5.4. Cross section of profile of the door leaf based on high distortion	Increase width	<	<	<	Not possible without additional test	additional test can be single or double leaf doorset with glazing bead in fire side

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
A.5.5 Cross section of profile of the door leaf (including transoms and mullions) Based on Medium and Low distortion	Increase width	E	I	W	The dimensions of the profile can only be increased according to the following rule: - o profile can be cut according cut B, Figure A.27 - o all cutted materials must be filled in with more of the same material; see Figure A.27 E, EW and EI1: Possible to increase the width of the vertical side profiles, and the horizontal top profile (together or separately) up to 100 % to a maximum of profile-width of 120 mm	additional test can be single or double leaf doorset with glazing bead in fire side

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	E	I	W	(4)	(5)
					Possible to increase the width of profile in the bottom of the doorleaf, and transoms and mullions up to 300 % until a maximum of 300 mm El2: Possible to increase the width of the vertical side profiles, and the horizontal top profile (together or separately) up to 100 % to a maximum profile width of 120 mm It is obliged to measure the temperature on the profile; the increase with 100 % is only allowed when the maximum temperature rise is not higher than 180 °C (measured according to EN 1363-1 Possible to increase the width of profile in the bottom of the doorleaf, and transoms and mullions up to 300 % to a maximum of 300 mm Otherwise not possible without an additional test	Additional test can be single or double leaf doorset with glazing bead in fire side

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
A.5.6 Cross section of profile of the door leaf	Decrease width	E	I	W	EI2: Reduction from a width smaller than 115 mm is allowed with a maximum of 40 % to a minimum of 30 mm E and EW doors: a decrease of 40 % down to a minimum of 30 mm is allowed EI with overrun B a decrease of 40 % down to a minimum of 30 mm is allowed Rule F.1.3 applies for E, EW, EI1 and EI2 Otherwise not possible without an additional test	Additional test can be single or double leaf doorset with glazing bead in fire side. 
A.5.7 Thickness of the metal wall of the profile (including transoms and mullions)	Increase	>	>	<	An increase of 0,5 mm to a maximum thickness of 2 mm is allowed, Otherwise not possible without an additional test	Additional test can be single or double leaf doorset with glazing bead in fire side
A.5.8 Thickness of the metal wall of the profile	decrease	<	<	>	Not possible without an additional test	Additional test can be single or double leaf doorset with glazing bead in fire side
A.5.9 Horizontal rails in doorleaf	add	=	=	<	Possible if rail is tested in a leaf in the same construction providing the same glass-retention system is used Otherwise not possible without additional test	Additional test can be single or double leaf doorset with glazing bead in fire side

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
A.5.10 Horizontal rails	remove	=	=	=	Possible provided the height of the glass is not bigger than the biggest tested glass-height (glass tested in the highest position in the same construction, rules for extension of glass height is allowed) Otherwise not possible without additional test	Additional test can be single or double leaf doorset with glazing bead in fire side
A.5.11a Vertical stiles	add	=	=	<	Possible if the stile is tested in a leaf in the same construction providing the same glass-retention system is used Otherwise not possible without additional test	Additional test can be single or double leaf doorset with glazing bead in fire side
A.5.11b Vertical stile	Remove	> =	=	=	Possible provided the width of the glass is not bigger than the biggest tested glass-width (glass tested in the same construction, rules for extension of glass is allowed) Otherwise not possible without additional test	Additional test can be single or double leaf doorset with glazing bead in fire side
A.5.12 Position of horizontal rail	Moving upwards				Possible providing the height of the glass is not bigger than the biggest tested in the same construction rules for extension of glass height is allowed)	

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	E	(3) I	W	(4)	(5)
A.5.13. Position of horizontal rail	Moving downwards				Possible providing the height of the glass is not bigger than the biggest tested in the same construction in the highest position. rules for extension of glass is allowed)	Additional test can be single or double leaf doorset with glazing bead in fire side
A.5.14. Position of vertical stile	Moving away from the hinges	<	=	=	Not possible without an additional test	
A.5.15. Position of vertical stile	Moving to the hinge side	>	=	=	Possible providing the width of the glass is not bigger than tested in the same construction	
A.5.16. Horizontal rails	Changing the angle				Changing the angle of rails in any direction is allowed for E, EW and EI doorsets if worst case as shown in Figure A.28 is tested If worst-case (Figure A.28) is not tested, then turning of the rail is only allowed for EI doorsets within the following conditions: 1. Connection with vertical side profile of the door-leaf cannot be within 200 mm of the inner corner of the doorleaf A > 200 mm. See Figure A.29 2. Resulting height of the glass cannot be higher than tested in the same construction	Additional test can be single or double leaf doorset with glazing bead in fire side

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	E	(3) I	W	(4)	(5)
A.5.17. Vertical stiles	Changing the angle				Otherwise not possible without additional test Rule F.1.15 and F.1.16 apply Changing the angle of stiles in any direction is allowed for E, EW and EI doorsets if worst case as shown in Figure A.28 is tested If worst-case (Figure A.28) is not tested, then turning of the stile is allowed for EI doorsets within the following conditions: 1. Connection with horizontal top- or bottom-profile of the doorleaf can only be closer to the hinge-side and cannot be within 200 mm of the inner corner; A > 200 mm. See Figure A.30 2. Resulting width of the glass cannot be wider than tested in the same construction Otherwise not possible without additional test Rule F.1.15 and F.1.16 apply	Additional test can be single or double leaf doorset with glazing bead in fire side
A.5.18. Other changes of rails and stiles	Bended, shaped, etc.	> = <	> = <	> = <	Not possible without additional test	Additional test can be single or double leaf doorset with glazing bead in fire side

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
A.5.19 Shapes of door-leaf	Other than rectangular	E	I	W	Not possible without additional test	Additional test: single door for single doors; double door for double doors glazing bead in fire side
A.5.20 Type of steel	Mild to stainless	$> / = / <$	$> / = / <$	$> / = / <$	Not possible without an additional test	Additional test: double leaf door for double leaf doors single leaf door for single and double leaf doors
A.5.21 Type of steel	Stainless to mild	$> / = / <$	$> / = / <$	$> / = / <$	Possible for door sets which have achieved category B Otherwise not possible without an additional test	Additional test: double leaf door for double leaf doors single leaf door for single and double leaf doors
B. Door Frame						
B.1. General						
For intumescent / draught / smoke seals refer to sections A.1.						
B.1.1 Threshold / Sill / Frame member to bottom of door frame	Add	$\geq$	$\geq$	$\geq$	Possible for threshold / sill made of metal or A1 materials or frame member of identical construction like the upper member of the doorframe providing the doorleaf is adapted in the same way Otherwise not possible without an additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
B.1.2 Threshold / Sill / Frame member to bottom of door frame	Remove	E	I	W	Possible providing the gap between the bottom of the door leaf and the floor level remains the same as the original test specimen and in line with direct application otherwise not possible without an additional test	Additional test single or double leaf doorset
B.1.3 Distance between frame of hatch, or door, or openable window and floor level - See Figure A.31	Variation	$\leq$	$\leq$	$\leq$	Possible to position in all locations providing tested to simulate a finished floor level 1,5 m below the doorset i.e. with 8,5 Pa at the base of the doorset For test furnaces in which the pressure can be adjusted: The test specimen can be placed in any position as long as a pressure of 8,5 Pa is applied to the base of the doorset during the test. For test furnaces in which the pressure cannot be adjusted: The test specimen can be positioned at any height as long as the finished floor level in the test is between 1,5 m and 2,5 m below the door and a pressure of at least 8,5 Pa is applied to the base of the doorset during the test. otherwise not possible without an additional test	Tested to simulate a finished floor level 1,5 m below the doorset i.e. with 8,5 Pa at the base of the doorset single for single or double leaf doorset for single and double leaf doorset. (open outwards)

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required
(1)	(2)	(3)			(4)	(5)
		E	I	W		
B.1.4 Height of door set above floor	Variation	> / = / <	> / = / <	> / = / <	Possible to a higher position of 0,3 m above the notional floor maximum. Variation of more than 0,3 m possible providing the top edge of the door set was tested with a pressure of +20 Pa and providing a fourth frame member of identical construction like the upper member is added at the bottom, otherwise not possible without an additional test	Additional test with suspension system on the fire side with a pressure of +20 Pa at the top edge or tested in the maximum height of door set above floor
B.2. Materials and constructions rules related to open profiles in perimeter frame						
B.2.1 Overall dimensions and shape - See Figure A.32	Increase	≥	≥	≥	Possible providing that the cross section detail at the overlap/rebate position (shown in bold in Figure A.32) is retained or the overlap dimension is increased otherwise not possible without an additional test	Additional test single or double leaf doorset
B.2.2 Overall dimensions and shape - See Figure A.33	Decrease	≤	≤	≤	Not possible without an additional test	Additional test single or double leaf doorset
B 2.2.a cross - section dimensions and shape - See Figure A.34	Open profile to closed profile	=	=	> / = / <	E, EW: possible E1 and E12: not possible without an additional test	Additional test single or double leaf doorset

Construction parameter	Variation	Influence of variation on performance characteristic			Possibility of extension	Additional evidence required	
(1)	(2)	(3)			(4)	(5)	
		E	I	W			
B.2.3 Type of infill material	Change of supplier / manufacturer of material with identical composition and properties	> / = / <	> / = / <	> / = / <	Possible		
B.2.4 Type of infill material							
Allows this material							
Test with	No infill	Mineral wool	Gypsum board	Gypsum plaster	Mortar	Concrete	PU Foam
No infill	Yes	No for EI doors Yes for E and EW doors	No for EI doors Yes for E and EW doors	No for EI doors Yes for E and EW doors	No for EI doors Yes for E and EW doors	No for EI doors Yes for E and EW doors	No
Mineral wool	No	Yes *	Yes	Yes	Yes	Yes	No
Gypsum board	No	No	Yes *	Yes	Yes	Yes	No
Gypsum plaster	No	No	No	Yes *	Yes	Yes	No
Mortar	No	No	No	Yes	Yes *	Yes	No
Concrete	No	No	No	No	No	Yes *	No
PU Foam	No	No	Yes	Yes	Yes	Yes	Yes
Note to Table: mineral wool = glass, ceramic or stone wool of same or better reaction to fire classification *) density can be increased but not decreased							