



BSI Standards Publication

# **Extended application of test results on durability of self-closing for fire resistance and/or smoke control doorsets and openable windows**

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Part 1: Durability of self-closing of hinged and pivoted steel doorsets

## National foreword

This British Standard is the UK implementation of EN 17020-1:2022.

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

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

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| Date | Text affected |
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English Version

Extended application of test results on durability of self-closing for fire resistance and/or smoke control doorsets and openable windows - Part 1: Durability of self-closing of hinged and pivoted steel doorsets

Application étendue des résultats d'essais de durabilité de la fermeture automatique des blocs-portes et fenêtres ouvrantes résistants au feu et/ou étanches à la fumée - Partie 1 : Durabilité de la fermeture automatique des blocs-portes battants et pivotants en acier

Erweiterter Anwendungsbereich von Prüfergebnissen zur Dauerhaftigkeit des Selbstschließens für Feuerschutz- und/oder Rauchschutztüren und zu öffnende Fenster - Teil 1: Dauerhaftigkeit des Selbstschließens von Drehflügeltüren und Drehflügeltüren aus Stahl

This European Standard was approved by CEN on 5 September 2022.

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## Contents

Page

|                                                                                                     |    |
|-----------------------------------------------------------------------------------------------------|----|
| European foreword.....                                                                              | 3  |
| Introduction .....                                                                                  | 4  |
| 1 Scope.....                                                                                        | 5  |
| 2 Normative references.....                                                                         | 5  |
| 3 Terms and definitions .....                                                                       | 7  |
| 4 Determination of the field of extended application .....                                          | 8  |
| 4.1 General.....                                                                                    | 8  |
| 4.2 Procedure for evaluation .....                                                                  | 9  |
| 4.3 Procedure for maximum field of extended application .....                                       | 9  |
| 4.4 Interpretation of test results .....                                                            | 10 |
| 5 Extended application report.....                                                                  | 10 |
| 6 Classification report.....                                                                        | 10 |
| Annex A (normative) Construction parameter variations .....                                         | 11 |
| Annex B (normative) Arrangements for doorsets incorporating side and/or over panels .....           | 80 |
| Annex C (normative) Construction parameter variation simulation by applying additional weights..... | 87 |
| Bibliography.....                                                                                   | 88 |

## European foreword

This document (EN 17020-1:2022) 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 May 2023, and conflicting national standards shall be withdrawn at the latest by May 2023.

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

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

A list of all parts in the EN 17020 series and the EN 15269 series can be found on the CEN website.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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## **Introduction**

The EN 15269 series of standards covering extended application of test results for fire resistance and/or smoke control for doorsets, openable windows and shutter assemblies, including their items of building hardware, does not yet include the durability of self-closing following an extended application process. This document is one of the EN 17020 series of standards intended to be used for the purpose of producing an extended application report based on the evaluation of one or more durability of self-closing tests. These European Standards may also be used to identify the best selection of test specimens required to cover a wide range of product variations.

## 1 Scope

This document covers single and double leaf, hinged and pivoted, steel based doorsets as covered by EN 15269-2 and/or EN 15269-20.

This document prescribes the methodology for extending the application of test results obtained from durability of self-closing test(s) conducted in accordance with EN 1191 and or EN 12605:2000, as appropriate.

Subject to the completion of the appropriate durability of self-closing test(s), the extended application can cover all or some of the following non-exhaustive list:

- door leaf;
- side, transom and/or overpanels;
- ventilation grilles and/or louvres;
- wall or ceiling fixed parts or items of the doorset, e.g. frame or suspensions systems;
- glazing for door leaf, side, transom and flush over panels;
- items of building hardware;
- decorative finishes;
- intumescent strips, smoke, draught or acoustic seals;
- alternative supporting construction(s).

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

EN 1154, *Building hardware - Controlled door closing devices - Requirements and test methods*

EN 1155, *Building hardware - Electrically powered hold-open devices for swing doors - Requirements and test methods*

EN 1158, *Building hardware - Door coordinator devices - Requirements and test methods*

EN 1191, *Windows and doors - Resistance to repeated opening and closing - Test method*

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

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

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

EN 1935:2002<sup>1</sup>, *Building hardware - Single-axis hinges - Requirements and test methods*

EN 12209, *Building hardware - Mechanically operated locks and locking plates - Requirements and test methods*

EN 12519, *Windows and pedestrian doors - Terminology*

EN 12605:2000, *Industrial, commercial and garage doors and gates - Mechanical aspects - Test Methods*

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

EN 13637, *Building hardware - Electrically controlled exit systems for use on escape routes - Requirements and test methods*

EN 14846, *Building hardware - Locks and latches - Electromechanically operated locks and striking plates - Requirements and test methods*

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

EN 15269-2, *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 2: Fire resistance of hinged and pivoted steel doorsets*

EN 15685<sup>2</sup>, *Building hardware – Multipoint locks, latches and locking plates - Requirements and test methods*

EN 16034, *Pedestrian doorsets, industrial, commercial, garage doors and openable windows - Product standard, performance characteristics - Fire resisting and/or smoke control characteristics*

EN 16035, *Hardware performance sheet (HPS) - Identification and summary of test evidence to facilitate the inter-changeability of building hardware for application to fire resisting and/or smoke control doorsets and/or openable windows*

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

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<sup>1</sup> As impacted by EN 1935:2002/AC:2003.

<sup>2</sup> Under preparation. Stage at the time of publication: prEN 15685:2022.

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1191, EN 1363-1, EN 1363-2, EN 1634-1, EN 1634-3, EN 12519, EN 15269-1, EN 15269-2 and EN ISO 13943 and the following apply.

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

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

#### 3.1

##### **full scale test**

test of a full size doorset in accordance with EN 1191

#### 3.2

##### **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

#### 3.3

##### **panel**

component of a door leaf separated from other elements by joints which break through the total door leaf thickness

Note 1 to entry: A door leaf can consist of one or more panels.

#### 3.4

##### **add**

to put an additional component to the doorset which has not been tested as a part of the original doorset

#### 3.5

##### **remove**

to take a component away which has been tested as a part of the original doorset

#### 3.6

##### **alternative**

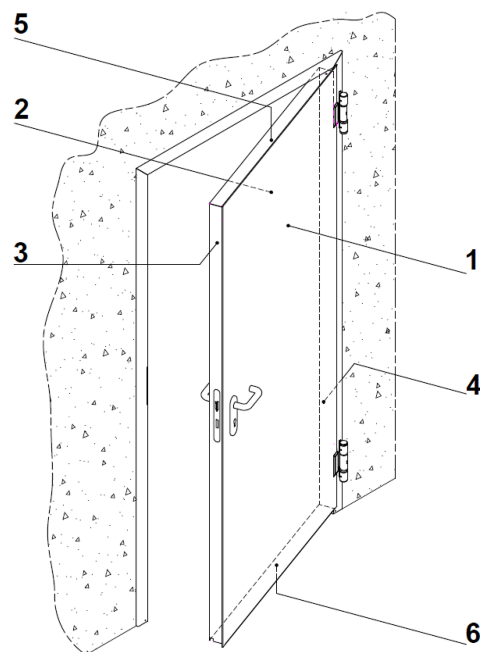
variation intended by the application of EXAP rules where the original construction parameter tested shall be substituted by another one either by change, interchange or exchange

Note to entry: Finally, the alternatives are those variations that are permitted by the EXAP report.

#### 3.7

##### **faces and sides of a door leaf**

faces and sides of a door leaf are shown in Figure 1

**Key**

- 1 opening face
- 2 closing face
- 3 lock side
- 4 hinge side
- 5 top side
- 6 bottom side

**Figure 1 — Faces and sides of a door leaf**

## 4 Determination of the field of extended application

### 4.1 General

**4.1.1** Before there can be any consideration for extended application, the doorset shall have been tested in accordance with EN 1191 and/or EN 12605:2000 to achieve a test result, which could generate a classification for the durability of self-closing in accordance with EN 13501-2 and/or correspond to a use category according to EN 16034.

**4.1.2** A review of the doorset construction parameters can indicate that one or more characteristics can be improved by a particular parameter variation. All evaluations shall be made on the basis of retaining the classifications for the durability of self-closing obtainable from testing to EN 1191 and/or EN 12605, including those with a lower number of opening and closing cycles. However, this shall never lead to an increased classification for the durability of self-closing 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, that part shall be omitted from the subsequent extended application report and classification report.

## 4.2 Procedure for evaluation

**4.2.1** Identify the variations from the original test specimen(s) which are required to be covered by an extended application report. Ensure that the variation(s) do/does not prevent the doorset from self-closing.

**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** Establish from the contents of column (3) of Table A.1 whether any extended application is available beyond the direct application rules in EN 1191 and/or EN 12605:2000 without the need for further testing.

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

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

## 4.3 Procedure for maximum field of extended application

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

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

**4.3.3** 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 durability of self-closing test or a series of tests and then establish which of the original desired parameter variations have not been covered by this test(s), including direct application possibilities.

**4.3.5** Identify these parameter variations in Table A.1 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 (3) in Table A.1.

**4.3.7** Evaluate which, if any, of the desired parameter variations have not been covered by the initial field of extended application derived from 4.3.6 above.

**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 leaf doorsets are to be part of the product range, the outstanding construction parameter variations shall only be incorporated into specimens for the single leaf doorsets. 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 (4) of the table in 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 (4) in Table A.1 which are the most appropriate weakest specimen options for further testing.

**4.3.10** If the complete selection of required parameter variations 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 carried out with the additional product variations incorporated.

#### **4.4 Interpretation of 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 failures occurred throughout the test duration.

**4.4.2** Where a series of tests have been conducted, the field of extended application shall be based on the lowest performance achieved from the complete series of tests unless 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). This means that the failed parameters have to be excluded from the classification / EXAP report.

### **5 Extended application report**

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

### **6 Classification report**

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

## **Annex A**

### **(normative)**

### **Construction parameter variations**

Table A.1 below is designed to be used by experts competent in the field of fire resistance, smoke control and durability of self-closing testing of hinged and pivoted steel doorsets.

The table shall only be used to assess a field of extended application when at least one positive durability of self-closing test to EN 1191 and/or EN 12605:2000, as appropriate has generated a classification according to EN 13501-2 and/or correspond to a use category according to EN 16034.

The first two columns identify possible variations to the construction details of the specimen tested. It is presupposed that the variations do not restrain the doorset from closing.

Column (3) leads to the judgement of the possibility of extending the field of application.

Where additional tests are deemed to be necessary, the type of specimen approved for incorporation of the changed parameter is defined in column (4). 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 (4), the test is a full scale test unless otherwise specified.

In order to maximize the possible field of application from a minimum number of tests, the parameter changes have been spread over a series of test specimens. Where more than a single parameter variation is required, the influence on other variations shall also be taken into account.

Table A.1 — Construction parameter variations

| Construction Parameter                                                                                                                                                                                                                                                                                                     | Variation                                         | Possibility of extension                                                                                                                                                                                                                                                   | Additional Evidence Required                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| (1)                                                                                                                                                                                                                                                                                                                        | (2)                                               | (3)                                                                                                                                                                                                                                                                        | (4)                                                                                                   |
| <b>A Door leaf</b><br>In certain cases, the rules given in Section A are also appropriate to side, transom and flush over panels or the door frame; where this is the case it is clearly indicated at the beginning of the relevant section. For double leaf doorsets, both door leaves shall be of the same construction. |                                                   |                                                                                                                                                                                                                                                                            |                                                                                                       |
| <b>A.1 General</b>                                                                                                                                                                                                                                                                                                         |                                                   |                                                                                                                                                                                                                                                                            |                                                                                                       |
| A.1.1<br>Number of door leaves — See Figure A.1<br>only applicable to doorsets tested without transom and/or flush over panels.                                                                                                                                                                                            | Single leaf doorset from double leaf doorset test | Possible                                                                                                                                                                                                                                                                   | -                                                                                                     |
| A.1.2<br>Number of door leaves — See Figure A.1<br>only applicable to doorsets tested without transom and/or flush over panels.                                                                                                                                                                                            | Double leaf doorset from single leaf doorset test | Not possible without additional test                                                                                                                                                                                                                                       | Additional test double leaf doorset                                                                   |
| A.1.3<br>Number of panels per door leaf (primary or secondary door leaf)                                                                                                                                                                                                                                                   | Add one panel per door leaf — on any door leaf    | Possible if tested at least one door leaf (single, primary or secondary door leaf) with the minimum of two panels, panel size not increased and the intended jointing technique centrally located in the door leaf<br>otherwise<br>not possible without an additional test | Additional test double for single and double leaf doorsets or single for single leaf doorsets         |
| A.1.4<br>Number of panels per door leaf (primary or secondary door leaf) — See Figure A.2                                                                                                                                                                                                                                  | Reduce one panel per door leaf                    | Possible providing the tested width of the panel is not increased<br>otherwise<br>not possible without an additional test                                                                                                                                                  | Additional test double for single and double leaf doorsets or single for single leaf doorsets doorset |

| Construction Parameter<br>(1)                                                                                                                                                                                                                                                           | Variation<br>(2)                     | Possibility of extension<br>(3)                                                                                                                            | Additional Evidence Required<br>(4)                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| A.1.5 Intumescent strips between door frame and door leaf/leaves — See Figure A.3.                                                                                                                                                                                                      | Move towards the door frame rebate   | Possible                                                                                                                                                   | –                                                                                             |
| A.1.6 Intumescent strips between door frame and door leaf/leaves — See Figure A.4.                                                                                                                                                                                                      | Move away from the door frame rebate | Possible                                                                                                                                                   | –                                                                                             |
| A.1.7 Location of intumescent strips between meeting edges of the door leaves                                                                                                                                                                                                           | Alternative                          | Possible                                                                                                                                                   | –                                                                                             |
| A.1.8 Location of non-intumescent seals between door frame and door leaf/leaves (draught/smoke/acoustic etc.) — Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1), e.g. ceramic products (fitted in door leaf or door frame) — See Figure A.5                                 | Alternative                          | Possible                                                                                                                                                   | –                                                                                             |
| A.1.9 Location of non-intumescent seals between meeting edges of the door leaves (draught/smoke/acoustic etc.) — Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1), e.g. ceramic products                                                                                     | Alternative                          | Possible                                                                                                                                                   | –                                                                                             |
| A.1.10 Location of non-intumescent seals/combination of non-intumescent and intumescent seals between door leaves and/or door frames (draught /smoke/acoustic etc.) — Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1) (fitted in door leaf or door frame). — See Figure A.6 | Alternative                          | Possible providing the deformation of the seal will not increase during movement of the door leaf/leaves otherwise not possible without an additional test | Additional test double for single and double leaf doorsets or single for single leaf doorsets |

| Construction Parameter<br>(1)                                                                                                                                                                                                                      | Variation<br>(2) | Possibility of extension<br>(3)                                                                                      | Additional Evidence Required<br>(4)                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| A.1.11 Non-intumescent seals between door leaves and/or door frames (draught/smoke/acoustic seals etc.) — Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1), e.g. ceramic products (fitted in door leaf or door frame). — See Figure A.7 | Add              | Not possible without an additional test                                                                              | Additional test double for single and double leaf doorsets or single for single leaf doorsets |
| A.1.12 Non-intumescent seals between door leaves and/or door frame (draught/smoke/acoustic seals etc.) — Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1), e.g. ceramic products (fitted in door leaf or door frame) — See Figure A.8   | Remove           | Possible                                                                                                             | —                                                                                             |
| A.1.13 Non-intumescent seals between door leaves and/or door frames (draught/smoke/acoustic seals etc.) — < Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1) (fitted in door leaf or door frame) — See Figure A.9                       | Add              | Not possible without an additional test                                                                              | Additional test double for single and double leaf doorsets or single for single leaf doorsets |
| A.1.14 Non-intumescent seals between door leaves and/or door frames (draught/smoke/acoustic seals etc. — < Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1) (fitted in door leaf or door frame) — See Figure A.10                       | Remove           | Possible                                                                                                             | —                                                                                             |
| A.1.15 Air transfer grilles (e.g. ventilation grilles/louvres) in door leaf tested without ventilation grille — See Figure A.11a                                                                                                                   | Add              | possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test | Additional test single or double leaf doorset                                                 |

| Construction Parameter<br>(1)                                                                                                            | Variation<br>(2)               | Possibility of extension<br>(3)                                                                                      | Additional Evidence Required<br>(4)           |
|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| A.1.16 Air transfer grilles (e.g. ventilation grilles/louvres) in door leaf — See Figure A.11b                                           | Remove                         | Possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test | Additional test single or double leaf doorset |
| A.1.17 Location of Air transfer grilles (e.g. ventilation grilles/louvres) in door leaf tested with ventilation grille                   | Change in vertical direction   | Possible                                                                                                             | —                                             |
| A.1.18 Location of Air transfer grilles (e.g. ventilation grilles/louvres) in door leaf tested with ventilation grille — See Figure A.12 | Change in horizontal direction | Possible                                                                                                             | —                                             |
| A.1.19.1 Air transfer grilles (e.g. ventilation grilles/louvres) in door leaf tested with ventilation grille — See Figure A.13a          | Smaller size                   | Possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test | Additional test single or double leaf doorset |
| A.1.19.2 Air transfer grilles (e.g. ventilation grilles/louvres) in door leaf tested with ventilation grille — See Figure A.13b          | Larger size                    | Possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test | Additional test single or double leaf doorset |
| A.1.20 Rebate (door leaves to door frames) — See Figure A.15                                                                             | Add                            | Possible                                                                                                             | —                                             |
| A.1.21 Rebate (meeting edges) — See Figure A.14                                                                                          | Add<br>(one rebate)            | Possible                                                                                                             | —                                             |
| A.1.22 Rebate (door leaves to door frames) — See Figure A.15                                                                             | Remove                         | Possible                                                                                                             | —                                             |
| A.1.23 Rebate (meeting edges) — See Figure A.14                                                                                          | Remove                         | Possible                                                                                                             | —                                             |

| Construction Parameter<br>(1)                                    | Variation<br>(2)            | Possibility of extension<br>(3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Additional Evidence Required<br>(4)                                                           |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
|------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------|----------------------------------------|----------------------------------|--|---|----------|----------|---------------------------------|---|----------|----------|----------------------------------------------------------------|----------|---|----------|---------------------------------------|--------------|--------------|---|-----------------------------------------------------------------------------------------------|
| A.1.24 Latching condition for single and double leaf doorsets    | Change                      | <div>Possible in line with the following relationship:</div> <table> <tr> <th></th><th>tested without a latch/lock</th><th>tested with a latch/lock but unlatched</th><th>tested with a latch/lock latched</th></tr> <tr> <td></td><td>—</td><td>Possible</td><td>possible</td></tr> <tr> <td>change to: without a lock/latch</td><td>—</td><td>Possible</td><td>possible</td></tr> <tr> <td>change to: with lock/latch but unlocked/unlatched (disengaged)</td><td>Possible</td><td>—</td><td>possible</td></tr> <tr> <td>change to: with a lock/latch, latched</td><td>Not possible</td><td>Not possible</td><td>—</td></tr> </table> |                                                                                               | tested without a latch/lock | tested with a latch/lock but unlatched | tested with a latch/lock latched |  | — | Possible | possible | change to: without a lock/latch | — | Possible | possible | change to: with lock/latch but unlocked/unlatched (disengaged) | Possible | — | possible | change to: with a lock/latch, latched | Not possible | Not possible | — | Additional test double for single and double leaf doorsets or single for single leaf doorsets |
|                                                                  | tested without a latch/lock | tested with a latch/lock but unlatched                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | tested with a latch/lock latched                                                              |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
|                                                                  | —                           | Possible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | possible                                                                                      |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
| change to: without a lock/latch                                  | —                           | Possible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | possible                                                                                      |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
| change to: with lock/latch but unlocked/unlatched (disengaged)   | Possible                    | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | possible                                                                                      |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
| change to: with a lock/latch, latched                            | Not possible                | Not possible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | —                                                                                             |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
| <b>A.2 Size variations/single or multiple panel construction</b> |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                               |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
| A.2.1 Size of door leaf (area, width, height)                    | Decrease                    | Possible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | —                                                                                             |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
| A.2.2 Height of door leaf                                        | Increase                    | Possible by a maximum of 80 % providing the requirements of Annex C are fulfilled otherwise not possible without an additional test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Additional test double for single and double leaf doorsets or single for single leaf doorsets |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
| A.2.3 Width of door leaf                                         | Increase                    | Possible by a maximum of 25 % providing that the requirements of Annex C are fulfilled otherwise not possible without an additional test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Additional test double for single and double leaf doorsets or single for single leaf doorsets |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |
| A.2.4 Area of door leaf                                          | Increase                    | Possible in line with A.2.2 and A.2.3 otherwise not possible without an additional test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Additional test double for single and double leaf doorsets or single for single leaf doorsets |                             |                                        |                                  |  |   |          |          |                                 |   |          |          |                                                                |          |   |          |                                       |              |              |   |                                                                                               |

| Construction Parameter<br>(1)                                       | Variation<br>(2) | Possibility of extension<br>(3)                                                                                                                                     | Additional Evidence Required<br>(4)                                                           |
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| A.2.5 Thickness of the door leaf                                    | Increase         | Possible by a maximum of 2.5 % providing the requirements of Annex C are fulfilled otherwise not possible without an additional test                                | Additional test double for single and double leaf doorsets or single for single leaf doorsets |
| A.2.6 Thickness of the door leaf                                    | Decrease         | Possible by a maximum of 10 % otherwise not possible without an additional test                                                                                     | Additional test double for single and double leaf doorsets or single for single leaf doorsets |
| <b>A.3 Materials and constructions</b>                              |                  |                                                                                                                                                                     |                                                                                               |
| A.3.1 Density of core material                                      | Increase         | Possible providing the requirements of Annex C are fulfilled otherwise not possible without an additional test                                                      | Additional test single or double leaf doorset                                                 |
| A.3.2 Density of core material                                      | Decrease         | Possible                                                                                                                                                            | –                                                                                             |
| A.3.3 Thickness of core material — See Figure A.16                  | Increase         | possible providing the requirements of Annex C are fulfilled otherwise not possible without an additional test                                                      | Additional test single or double leaf doorset                                                 |
| A.3.4 Thickness of core material — See Figure A.17                  | Decrease         | Possible providing the decrease of the core material is to adjust to the decrease of the door leaf thickness only otherwise not possible without an additional test | Additional test single or double leaf doorset                                                 |
| A.3.5 Pattern of core material = number of pieces — See Figure A.18 | Increase         | Possible                                                                                                                                                            | –                                                                                             |
| A.3.6 Pattern of core material = number of pieces — See Figure A.19 | Decrease         | Possible                                                                                                                                                            | –                                                                                             |

| Construction Parameter<br>(1)                                                                         | Variation<br>(2) | Possibility of extension<br>(3)                                                                                                | Additional Evidence Required<br>(4)           |
|-------------------------------------------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| A.3.7 Number of layers of identical and/or different materials — See Figure A.20                      | Increase         | Possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test           | Additional test single or double leaf doorset |
| A.3.8 Number of layers of identical and/or different materials — See Figure A.21                      | Decrease         | Possible                                                                                                                       | –                                             |
| A.3.9 Supplier/Manufacturer of core material (single thickness or in combination of different layers) | Change           | Possible for identical material with identical composition and properties<br>Otherwise<br>not possible without additional test | –                                             |
| A.3.10 Composition of core material (single thickness or in combination of different layers)          | Alternative      | Possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test           | Additional test single or double leaf doorset |
| A.3.11 Amount of adhesive/m <sup>2</sup> – organic based                                              | Increase         | Possible                                                                                                                       | –                                             |
| A.3.12 Amount of adhesive/m <sup>2</sup> — organic based                                              | Decrease         | Possible by a maximum of 50 % for bonding the core material only<br>otherwise<br>not possible without an additional test       | Additional test single or double leaf doorset |
| A.3.13 Amount of adhesive/m <sup>2</sup> — inorganic based                                            | Increase         | Possible                                                                                                                       | –                                             |
| A.3.14 Amount of adhesive/m <sup>2</sup> — inorganic based                                            | Decrease         | Possible by a maximum of 50 % for bonding the core material only<br>otherwise<br>not possible without an additional test       | Additional test single or double leaf doorset |
| A.3.15 Manufacturer /Supplier of adhesive                                                             | Change           | Possible                                                                                                                       | –                                             |

| Construction Parameter<br>(1)                                     | Variation<br>(2) | Possibility of extension<br>(3)                                                                                                                                                     | Additional Evidence Required<br>(4)                                                           |
|-------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| A.3.16 Composition of adhesive                                    | Alternative      | Possible for adhesives to bond the core material only<br>otherwise<br>not possible without an additional test                                                                       | Additional test single or double leaf doorset                                                 |
| A.3.17 Metal armour sheet (internally mounted) — See Figure A.22a | Add              | Possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test                                                                | Additional test single or double leaf doorset                                                 |
| A.3.18 Metal armour sheet (internally mounted) — See Figure A.22b | Remove           | Possible providing the armour sheet was originally not fixed inside the door leaf by welding, riveting, screwing or bonding<br>otherwise<br>not possible without an additional test | Additional test single or double leaf doorset                                                 |
| A.3.19 Electronic security mesh — See Figure A.23a                | Add              | Possible                                                                                                                                                                            | —                                                                                             |
| A.3.20 Electronic security mesh — See Figure A.23b                | Remove           | Possible                                                                                                                                                                            | —                                                                                             |
| A.3.21 Thickness of steel sheet                                   | Increase         | Possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test                                                                | Additional test single or double leaf doorset                                                 |
| A.3.22 Thickness of steel sheet                                   | Decrease         | Possible by a maximum of 25 %<br>otherwise<br>not possible without an additional test                                                                                               | Additional test double for single and double leaf doorsets or single for single leaf doorsets |
| A.3.23 Type of steel sheet — Mild to stainless                    | Change           | Possible                                                                                                                                                                            | —                                                                                             |
| A.3.24 Type of steel sheet —Stainless to mild                     | Change           | Possible                                                                                                                                                                            | —                                                                                             |

| Construction Parameter<br>(1)                                                 | Variation<br>(2) | Possibility of extension<br>(3)                                                                                                                                                     | Additional Evidence Required<br>(4)                                                           |
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| A.3.25<br>Gross — section dimension of stiffening elements — See Figure A.24a | Increase         | possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test                                                                | additional test double for single and double leaf doorsets or single for single leaf doorsets |
| A.3.26<br>Gross — section dimension of stiffening elements — See Figure A.24b | Decrease         | Possible by a maximum of 50 % but only in line with the reduction of the size or weight of the door leaf<br>otherwise<br>not possible without an additional test                    | Additional test single or double leaf doorset                                                 |
| A.3.27<br>Number of intermediate stiffening elements — See Figure A.25a       | Increase         | possible providing the requirements of Annex C are fulfilled<br>otherwise<br>not possible without an additional test                                                                | additional test double for single and double leaf doorsets or single for single leaf doorsets |
| A.3.28<br>Number of intermediate stiffening elements — See Figure A.25b       | Decrease         | Possible proportional to the decrease of height or width of the door leaf rounded to the nearest whole number of stiffeners<br>otherwise<br>not possible without an additional test | Additional test single or double leaf doorset                                                 |
| A.3.29<br>Location of Stiffening elements — See Figure A.26                   | Change           | Possible                                                                                                                                                                            | –                                                                                             |
| A.3.30<br>Number of stiffening element fixing points — See Figure A.27 a)     | Increase         | Possible                                                                                                                                                                            | –                                                                                             |
| A.3.31<br>Number of stiffening element fixing points — See Figure A.27 b)     | Decrease         | Possible proportional to the decrease of height or width of the door leaf rounded to the nearest whole number<br>otherwise<br>not possible without an additional test               | Additional test single or double leaf doorset                                                 |

| Construction Parameter<br>(1)                                                                                                                             | Variation<br>(2) | Possibility of extension<br>(3)                                                                                                                                                                                                                                                                                                         | Additional Evidence Required<br>(4)                                                           |
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| A.3.32 Overlap dimension of door leaf edge rebate (between door leaf and door frame) — See Figure A.28a                                                   | Increase         | Possible                                                                                                                                                                                                                                                                                                                                | —                                                                                             |
| A.3.33 Overlap dimension of door leaf edge rebate (meeting edges) — See Figure A.28b                                                                      | Increase         | Possible                                                                                                                                                                                                                                                                                                                                | —                                                                                             |
| A.3.34 Overlap dimension of door leaf edge rebate (between door leaf and door frame) — See Figure A.29a                                                   | Decrease         | Possible                                                                                                                                                                                                                                                                                                                                | —                                                                                             |
| A.3.35 Overlap dimension of door leaf edge rebate (meeting edges) — See Figure A.29b                                                                      | Decrease         | Possible                                                                                                                                                                                                                                                                                                                                | —                                                                                             |
| A.3.36 overlapping edge at the bottom of the door leaf — Change from unrebated to rebated — See Figure A.30a                                              | Change           | Possible                                                                                                                                                                                                                                                                                                                                | —                                                                                             |
| A.3.37 overlapping edge at the bottom of the door leaf — change from rebated to unrebated — See Figure A.30b                                              | Change           | Possible                                                                                                                                                                                                                                                                                                                                | —                                                                                             |
| A.3.38 Shape of door leaf edge detail (between door leaf and door frame and meeting edges) — See Figure A.31                                              | Alternative      | Possible                                                                                                                                                                                                                                                                                                                                | —                                                                                             |
| A.3.39 Jointing/assembly technique (welding/riveting/screwing) of door leaf edges, stiffening elements etc. for door leaf or door frame — See Figure A.32 | Alternative      | <p>Possible to change from riveting or screwing to welding but not vice versa.</p> <p>Possible to change between riveting and screwing, providing that the centre distances are not exceeded and the cross section dimension of the alternative (rivets / screws) is not smaller, otherwise not possible without an additional test</p> | Additional test double for single and double leaf doorsets or single for single leaf doorsets |

| Construction Parameter<br>(1)                                                                                                                                                       | Variation<br>(2) | Possibility of extension<br>(3)                                                                                                                | Additional Evidence Required<br>(4)                                                                   |
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| A.3.40 Intumescent strips (fitted to door leaf or door frame)                                                                                                                       | Add              | Not possible without an additional test                                                                                                        | Additional test double for single and double leaf doorsets or single for single leaf doorsets         |
| A.3.41 Intumescent strips (fitted to door leaf or door frame)                                                                                                                       | Remove           | Possible                                                                                                                                       | -                                                                                                     |
| A.3.42 Dimension of intumescent strips (fitted to door leaf or door frame) — See Figure A.33 a)                                                                                     | Increase         | Possible                                                                                                                                       | -                                                                                                     |
| A.3.43 Dimension of intumescent strips (fitted to door leaf or door frame) — See Figure A.33 b)                                                                                     | Decrease         | Possible                                                                                                                                       | -                                                                                                     |
| A.3.44 Supplier/Manufacturer of intumescent strips (fitted to door leaf or door frame)                                                                                              | Change           | Possible for the identical intumescent seal otherwise not possible without additional test                                                     | -                                                                                                     |
| A.3.45 Material of intumescent strips (fitted to door leaf or door frame)                                                                                                           | Alternative      | Possible                                                                                                                                       | -                                                                                                     |
| A.3.46 Dimension of draught/smoke seals Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1); e.g. ceramic products (fitted to door leaf or door frame) — See Figure A.34 a) | Increase         | Possible by a maximum of 15 % in any cross sectional dimension and by a maximum of 10 % mass otherwise not possible without an additional test | Additional test double for single and double leaf doorsets or single for single leaf doorsets doorset |
| A.3.47 Dimension of draught/smoke seals Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1); e.g. ceramic products (fitted to door leaf or door frame) — See Figure A.34 b) | Decrease         | Possible                                                                                                                                       | -                                                                                                     |

| Construction Parameter<br>(1)                                                                                                                                  | Variation<br>(2) | Possibility of extension<br>(3)                                                                                                                | Additional Evidence Required<br>(4)                                                               |
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| A.3.48 Dimension of draught/smoke seals < Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1) — fitted to door leaf or door frame — See Figure A.35 a) | Increase         | Possible by a maximum of 15 % in any cross sectional dimension and by a maximum of 10 % mass otherwise not possible without an additional test | Additional test double for single and double leaf doorsets or single for single leaf doorsets set |
| A.3.49 Dimension of draught/smoke seals < Euroclass A1 (reaction to fire class A1 acc. to EN 13501-1) (fitted to door leaf or door frame) — See Figure A.35 b) | Decrease         | Possible                                                                                                                                       | –                                                                                                 |
| A.3.50 Supplier / Manufacturer Draught/smoke seals (fitted to door leaf or door frame)                                                                         | Change           | Possible for identical draught/smoke seals<br>Otherwise not possible without additional test                                                   | –                                                                                                 |
| A.3.51 Material of Draught/smoke seals (fitted to door leaf or door frame)                                                                                     | Alternative      | Possible by a maximum of 15 % in density otherwise not possible without an additional test                                                     | Additional test double for single and double leaf doorsets or single for single leaf doorsets     |
| A.3.52 draught/smoke seals Euroclass A1 or < (reaction to fire class A1 acc. to EN 13501-1) (fitted to door leaf or door frame)                                | Add              | Not possible without an additional test                                                                                                        | Additional test double for single and double leaf doorsets or single for single leaf doorsets     |
| A.3.53 draught/smoke seals Euroclass A1 or < (reaction to fire class A1 acc. to EN 13501-1) (fitted to door leaf or door frame)                                | Remove           | Possible                                                                                                                                       | –                                                                                                 |
| <b>A.4 Decorative and/or protective finishes</b>                                                                                                               |                  |                                                                                                                                                |                                                                                                   |
| A.4.1 Paints without contribution to fire resistance (on door leaf or door frame)                                                                              | Add              | Possible                                                                                                                                       | –                                                                                                 |

| Construction Parameter<br>(1)                                                                                                 | Variation<br>(2) | Possibility of extension<br>(3)                                                                                                                                       | Additional Evidence Required<br>(4)                                                           |
|-------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| A.4.2 Paints without contribution to fire resistance (on door leaf or door frame)                                             | Exchange         | Possible                                                                                                                                                              | –                                                                                             |
| A.4.3 Thickness of paints with positive contribution to fire resistance (on door leaf or door frame)                          | Increase         | Possible                                                                                                                                                              | –                                                                                             |
| A.4.4 Thickness of paints with positive contribution to fire resistance (on door leaf or door frame)                          | Decrease         | Possible                                                                                                                                                              | –                                                                                             |
| A.4.5 Supplier / Manufacturer of paints with positive contribution to fire resistance (on door leaf or door frame)            | Change           | Possible                                                                                                                                                              | –                                                                                             |
| A.4.6 Material/Composition of paints with positive contribution to fire resistance (on door leaf or door frame)               | Alternative      | Possible                                                                                                                                                              | –                                                                                             |
| A.4.7 Decorative laminates and timber veneers on the face (on door leaf or door frame) — See Figure A.36                      | Add              | Possible in line with direct application according to EN 1634-1 (EN 1191 refers to DIRAP of EN 1634-1) otherwise not possible without additional test                 | Additional test double for single and double leaf doorsets or single for single leaf doorsets |
| A.4.8 Decorative laminates and timber veneers on the face (on door leaf or door frame) — See Figure A.37                      | Remove           | Possible                                                                                                                                                              | –                                                                                             |
| A.4.9 Decorative laminates and timber veneers on the edges (sides and rebates) (on door leaf or door frame) — See Figure A.38 | Add              | Possible providing primary gaps remain within the tolerances given in EN 1634-1 (EN 1191 refers to DIRAP of EN 1634-1) otherwise not possible without additional test | Additional test single or double leaf doorset                                                 |

| Construction Parameter<br>(1)                                                                                                    | Variation<br>(2)                            | Possibility of extension<br>(3)                                                                                                                                                                   | Additional Evidence Required<br>(4)           |
|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| A.4.10 Decorative laminates and timber veneers on meeting edges (sides and rebates)                                              | Add                                         | Possible providing primary gaps remain within the tolerances given in EN 1634-1 (EN 1191 refers to DIRAP of EN 1634-1)<br>otherwise<br>not possible without additional test                       | Additional test double leaf doorset           |
| A.4.11 Decorative laminates and timber veneers on the edges (on door leaf or door frame) — See Figure A.39                       | Remove                                      | Possible                                                                                                                                                                                          | –                                             |
| A.4.12 Types and thickness of decorative laminates and timber veneers on the face (on door leaf or door frame)                   | Change material content, increase, decrease | possible providing the requirements of Annex C are fulfilled<br>otherwise<br>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 (sides and rebates) (door leaf to door frame) | Change material content, increase, decrease | Change of material possible<br>Decrease possible<br>increase possible providing primary gaps remain within the tolerances given in EN 1634-1<br>otherwise<br>not possible without additional test | Additional test single or double leaf doorset |
| A.4.14 Types and thickness of decorative laminates and timber veneers on the meeting edges (sides and rebates)                   | Change material content, increase, decrease | Change of material possible<br>Decrease possible<br>increase possible providing primary gaps remain within the tolerances given in EN 1634-1<br>otherwise<br>not possible without additional test | Additional test double leaf doorset           |
| A.4.15 Colour and pattern of decorative laminates and timber veneers on the face/edges (on door leaf or door frame)              | Alternative                                 | Possible                                                                                                                                                                                          | –                                             |

| Construction Parameter<br>(1)                                                                                                                                                    | Variation<br>(2) | Possibility of extension<br>(3)                                                                                                                     | Additional Evidence Required<br>(4)           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| A.4.16 Protective elements — face fixed (kick plates/push plates/armour plates) — See Figure A.40                                                                                | Add              | Possible providing no thicker than 1,5 mm and providing the requirements of Annex C are fulfilled 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           | Possible                                                                                                                                            | –                                             |
| A.4.18 Attachment technique for elements added to door leaf (adhesive/rivet/screw)                                                                                               | Alternative      | Possible                                                                                                                                            | –                                             |
| A.4.19 Mouldings/profiles — See Figure A.41                                                                                                                                      | Add              | possible providing the requirements of Annex C are fulfilled otherwise not possible without an additional test                                      | Additional test single or double leaf doorset |
| A.4.20 Mouldings/profiles — See Figure A.41                                                                                                                                      | Remove           | Possible                                                                                                                                            | –                                             |
| <b>B Door frame</b>                                                                                                                                                              |                  |                                                                                                                                                     |                                               |
| <b>B.1 General</b>                                                                                                                                                               |                  |                                                                                                                                                     |                                               |
| Size variations in height and/or width for the clear opening of the door frame are permitted in order to cover the size variations of the door leaf according to A.2.1 to A.2.4. |                  |                                                                                                                                                     |                                               |
| For intumescent strips or non-intumescent seals (draught/smoke/acoustic seals etc.) refer to section A.1                                                                         |                  |                                                                                                                                                     |                                               |
| B.1.1 Threshold/sill/door frame member to bottom of door frame                                                                                                                   | Add              | Possible                                                                                                                                            | –                                             |
| B.1.2 Threshold/sill/door frame member to bottom of door frame                                                                                                                   | Remove           | Possible                                                                                                                                            | –                                             |
| B.1.3 Height of hatch door frame above floor — See Figure A.42                                                                                                                   | Alternative      | Possible                                                                                                                                            | –                                             |
| <b>B.2 Materials and constructions</b>                                                                                                                                           |                  |                                                                                                                                                     |                                               |