
Razširjena uporaba rezultatov preskusov trajnosti samozapiranja za požarno odporna in/ali dimotesna vrata in okna, ki se odpirajo - 5. del: Trajnost samozapiranja lesenih vrat na tečajih z vrtljivim krilom

Extended application of test results on durability of self-closing for fire resistance and/or smoke control doorsets and openable windows - Part 5: Durability of self-closing of hinged and pivoted timber doorsets

Erweiterter Anwendungsbereich von Prüfergebnissen zur Dauerhaftigkeit des Selbstschließens für Feuerschutz- und/oder Rauchschutztüren und zu öffnende Fenster - Teil 5: Dauerhaftigkeit der Selbstschließung von Drehflügeltüren und zu öffnenden Fenstern aus Holz

Application étendue des résultats d'essai de durabilité de fermeture automatique pour les blocs portes coupe feu et/ou pare fumée et les fenêtres ouvrantes - Partie 5 : Durabilité de la fermeture automatique des blocs portes battants et pivotants en bois

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13.220.50	Požarna odpornost gradbenih materialov in elementov	Fire-resistance of building materials and elements
91.060.50	Vrata in okna	Doors and windows

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English Version

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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	9
4.1 General.....	9
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 hinged and pivoted doorsets incorporating side and/or flush over panels	69
Annex C (normative) Construction parameter variations	77
Bibliography	78

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European foreword

This document (EN 17020-5:2023) 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of an identical text or by endorsement, at the latest by September 2023, and conflicting national standards shall be withdrawn at the latest by September 2023.

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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 window 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.

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1 Scope

This document is applicable to single and double leaf, hinged and pivoted doorsets with timber-based leaves or timber framed glazed door leaves, covered by EN 15269-3 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 self-closing test(s), the extended application can cover all or some of the following examples:

- door leaf; pass doors;
- glazed doorsets including vision panels and framed glazed doorsets;
- side, transom and/or overpanels;
- ventilation grilles and/or louvres;
- wall or ceiling fixed elements (door frame/suspension system);
- 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 17020-5:2023 (E)

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, *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 13501-1, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*

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 15269-3, *Extended application of test results for fire resistance and/or smoke control for doorsets, shutter and openable window assemblies, including their elements of building hardware - Part 3: Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows*

EN 15269-20, *Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware - Part 20: Smoke control for doors, shutters, operable fabric curtains and openable windows*

EN 15685¹, *Building hardware - Requirements and test methods - Multipoint locks, latches and locking plates*

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)*

¹ Under preparation. Stage at the time of publication: prEN 15685:2023.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1191, EN 1363-1, EN ISO 13943, EN 1634-1, EN 1634-3, EN 12519, EN 15269-1, EN 15269-3 and EN 15269-20 and the following apply.

ISO and IEC maintain terminology 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/ui>

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

effective rebate depth

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

3.4

panel

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

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

3.5

exposed intumescent seal

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

3.6

concealed intumescent seal

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

3.7

facing

decorative facing

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

3.8

subfacing

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

3.9

add

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

EN 17020-5:2023 (E)

3.10

remove

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

3.11

alternative

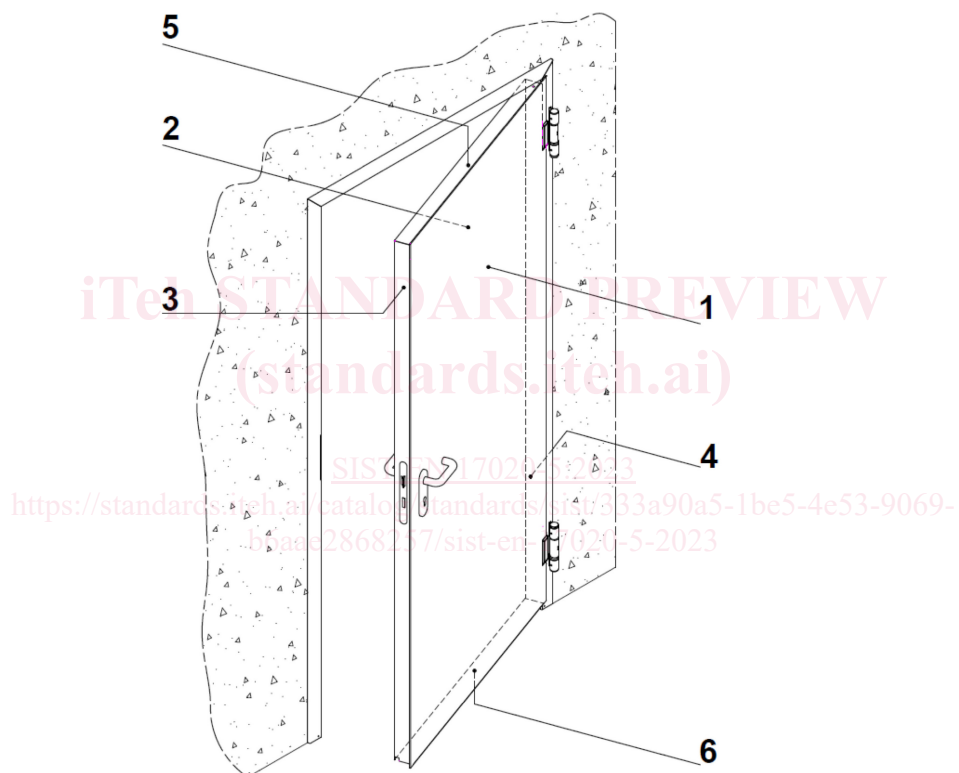
variation intended by the application of EXAP rules where the original construction parameter tested shall be substituted by another one either by change, interchange or exchange

Note 1 to entry: Finally, the alternatives are those variations that are permitted by the EXAP report.

3.12

faces and sides of a door leaf

the faces and sides of a door leaf as 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 12605:2000, 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 similar specimen type to the original test 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.

EN 17020-5:2023 (E)

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 and smoke control and durability of self-closing testing of hinged or pivoted doorsets with timber based door leaves.

This 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 extended 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.

Construction parameters tested on the inactive door leaf of a double leaf doorset can only be transferred to the active door leaf, when both door leaves have been tested with the same number of cycles.

Solid timber can be replaced by any other solid timber of equal or higher density.

Table A.1 — Construction parameter variations

Construction parameter	Variation	Possibility of extension	Additional evidence required
(1)	(2)	(3)	(4)
A Door leaf 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 leaves shall be of the same basic construction.			
A.1 General			
A.1.1 Number of door leaves only applicable to doorsets tested without transom and/or flush over panels	Single leaf doorset from double leaf doorset test	Possible	–
A.1.2 Number of leaves 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 Intumescent strips (fitted at door leaf to door frame interface). See Figure A.1	Location towards the door frame rebate	Possible	–
A.1.4 Intumescent strips (fitted at door leaf to door frame interface). See Figure A.2	Location away from the door frame rebate	Possible	–
A.1.5 Intumescent strips (fitted in meeting edges) – location	Change	Possible	–
A.1.6 Intumescent seals – location (from door leaf to door frame and vice versa)	Change	Possible	–

Construction parameter	Variation	Possibility of extension	Additional evidence required
(1)	(2)	(3)	(4)
A.1.7 Non intumescent seals (draught/smoke/acoustic etc.) – Reaction to Fire class A1 or A2 according to EN 13501-1, (fitted in door leaf or door frame including threshold) – location	Change	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
A.1.8 Non-intumescent seals (draught/smoke/acoustic etc.) – Reaction to Fire class B-F according to EN 13501-1 (fitted in door leaf or door frame or threshold) – location	Change	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
A.1.9 Non-intumescent seals (draught/smoke/acoustic etc.) - Reaction to Fire class A1 or A2 according to EN 13501-1, (fitted in door leaf or door frame or threshold)	Add	Not possible without an additional test	Additional test double for single and double leaf doorsets or single for single leaf doorsets
A.1.10 Non intumescent seals (draught / smoke / acoustic etc.) - Reaction to Fire class A1 or A2 according to EN 13501-1, (fitted in door leaf or door frame or threshold)	Remove	Possible	–
A.1.11 Non-intumescent seals (draught/smoke/acoustic etc.) – Reaction to Fire class B-F according to EN 13501-1 (fitted in door leaf or door frame or threshold)	Add	Not possible without an additional test	Additional test double for single and double leaf doorsets or single for single leaf doorsets