
Razširjena uporaba rezultatov preskusov trajnosti samozapiranja za požarno odporna in/ali dimotesna vrata in okna, ki se odpirajo - 3. del: Trajnost samozapiranja jeklenih drsnih vrat

Extended application of test results on durability of self-closing for fire resistance and/or smoke control doorsets and openable windows - Part 3: Durability of self-closing of steel sliding doorsets

Erweiterter Anwendungsbereich von Prüfergebnissen zur Dauerhaftigkeit der Selbstschließung für Feuerschutz- und/oder Rauchschutztüren und zu öffnende Fenster - Teil 3: Dauerhaftigkeit der Selbstschließung von Schiebetoren aus Stahl

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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 3 : Durabilité de la fermeture automatique des blocs-portes coulissants en acier

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ICS:

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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Extended application of test results on durability of self-closing for fire resistance and/or smoke control doorsets and openable windows - Part 3: Durability of self-closing of steel sliding doorsets

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This European Standard was approved by CEN on 24 July 2022.

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European foreword

This document (EN 17020-3:2022) 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of an identical text or by endorsement, at the latest by June 2023, and conflicting national standards shall be withdrawn at the latest by June 2023.

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A list of all parts in the EN 17020 series and the EN 15269 series 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, shutter assemblies and openable window, 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 the following types of steel based doorsets: horizontally sliding single and double leaf doorsets, horizontally sliding single and double leaf telescopic doorsets, vertically sliding single leaf doorsets and vertically sliding single leaf telescopic doorsets as covered by EN 15269-7 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 12605:2000 and/or EN 1191.

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

- door leaf (of the sliding doorset and its pass door);
- integrated pass doors;
- wall or ceiling fixed parts or items of the doorset, e.g. frame or suspension systems;
- ventilation grilles and/or louvres;
- glazing for door leaf;
- items of building hardware;
- decorative finishes;
- intumescent, smoke, draught or acoustic seals;
- alternative supporting construction(s).

2 Normative references

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

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

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

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

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

EN 1363-2, *Fire resistance tests - Part 2: Alternative and additional procedures*

EN 14637, *Building hardware - Electrically controlled hold-open systems for fire/smoke door assemblies - Requirements, test methods, application and maintenance*

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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 1906, *Building hardware - Lever handles and knob furniture - Requirements and test methods*

EN 1935:2002¹, *Building hardware - Single-axis hinges - Requirements and test methods*

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

EN 12433-1, *Industrial, commercial and garage doors and gates - Terminology - Part 1: Types of doors*

EN 12433-2, *Industrial, commercial and garage doors and gates - Terminology - Part 2: Parts of doors*

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 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 15269-7, *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 7: Fire resistance for steel sliding doorsets*

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 15685², *Building hardware - Requirements and test methods - Multipoint locks, latches and locking plates - Characteristics and test methods*

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

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

² 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 15269-1, EN 15269-7, EN 15269-20, EN 12433-1, EN 12433-2 and EN ISO 13943 and the following apply.

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

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

3.1

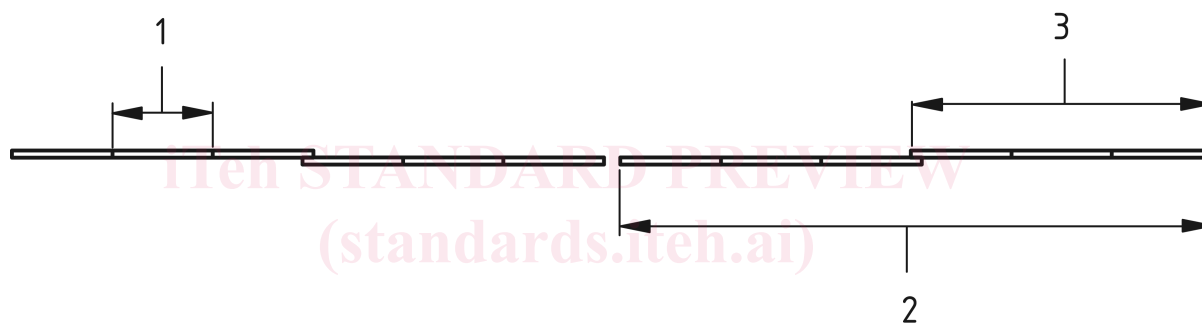
full scale test

test of a full size doorset in accordance with EN 12605:2000 and/or EN 1191

3.2

panel

part of a leaf or element of a doorset as indicated as 1 in Figures 1 and 2



Key

- 1 panel
- 2 leaf
- 3 element

Figure 1 — Double leaf telescopic sliding doorset



Key

- 1 panel
- 2 leaf

Figure 2 — Double leaf sliding doorset

3.3

leaf

movable part of a doorset indicated as 2 in Figures 1 and 2

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element**

part of a leaf indicated as 3 in Figure 1

**3.5
add**

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

**3.6
remove**

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

**3.7
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.

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 12605:2000 and/or EN 1191, as appropriate, to achieve a test result which could generate a classification for the durability of self-closing in accordance with EN 13501-2 for the required number of test cycles.

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 12605:2000 and/or EN 1191, as appropriate, including those with a lower number of opening and closing cycles. However, this shall never lead to an increased classification for any specific parameter beyond that achieved during any one test unless specifically identified in the relevant Construction Parameter Variation tables.

4.1.3 If, when following the extended application procedure, any part of the classified product cannot be achieved by 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(es) not prevent the doorset and/or integrated hinged pass doors from self-closing.

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

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

4.2.4 Where this is deemed to be possible, this can be recorded in the extended application report together with any appropriate restrictions and the stated rules from column (3) in Annex A, 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 sliding doorsets incorporating single leaf doorsets and also double leaf doorsets, with or without pass doors, 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 test 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).

4.3.5 Identify these parameter variations in Annex A, 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 Annex A, 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 Annex A, Table A.1, double leaf doorset configurations.

4.3.9 Select the required outstanding parameter variations from column (1) and column (2) of Annex A, Table A.1 and observe from column (4) of Annex A, Table A.1 which are the most appropriate weakest test 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 field of extended application, it is important that the test reports shall record details of any failures occurred throughout the test duration.

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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(s).

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). The failed parameter shall be omitted from the extended application report and the subsequent classification 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.

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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 sliding doorsets and/or integrated hinged pass doors, as appropriate.

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 12605:2000 and/or EN 1191, as appropriate, has generated a classification according to EN 13501-2 for the required number of test cycles.

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 and/or its pass door 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 test 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 leaf doorsets to double leaf 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.

All parameter variations in Table A.1 presuppose that the total mass of doorset and/or its pass door does not exceed the maximum mass having been tested. For simulation of a higher mass of the varied doorset the test specimen for durability of self-closing test can be loaded with additional weight(s) attached to the leaf according to the rules in Annex B.

Table A.1 — Construction parameter variations

Construction Parameter	Variation	Possibility of extension	Additional Evidence Required
(1)	(2)	(3)	(4)
A Door leaf			
A.1 General			
A.1.1 Number of door leaves (not applicable for vertically sliding doorsets)	Single leaf doorset from double leaf doorset test	Possible providing the overlap of the single leaf doorset (door leaf to frame) is similar to the overlap of the double doorset (meeting edge) and all the constructional details have been tested (in the double doorset), otherwise not possible without an additional test. Any size variations of door leaf shall be in line with A.2.1 to A.2.4 incl.	Additional test single leaf doorset
A.1.2 Number of door leaves (not applicable for vertically sliding doors)	Double leaf doorset from single leaf doorset test	Not possible without an additional test	Additional test double leaf doorset or double leaf telescopic
A.1.3 Number of elements of single leaf telescopic doorsets,	Decrease	Possible providing all constructional details have been tested, otherwise not possible without an additional test	Additional test single or double leaf telescopic doorset
A.1.4 Number of elements of single leaf telescopic doorsets,	Increase	Not possible without an additional test	Additional test single or double leaf telescopic doorset
A.1.5 Number of elements of double leaf telescopic doorsets – See Figure A.1	Decrease	Possible providing all constructional details have been tested and the reduction of elements is the same for both door leaves, otherwise not possible without an additional test	Additional test double leaf telescopic doorset
A.1.6 Number of elements of double leaf telescopic doors, (not applicable for vertically sliding doorsets)	Increase	Not possible without an additional test	Additional test double leaf telescopic doorset

Construction Parameter	Variation	Possibility of extension	Additional Evidence Required
(1)	(2)	(3)	(4)
A.1.7 Number of panels per door leaf or element – See Figure A.2	Increase	Possible if tested at least one leaf (single, primary or secondary) with the minimum of two panels and the intended jointing technique centrally located in the door leaf. Otherwise not possible without an additional test	Additional test single or double leaf doorset
A.1.8 Number of panels per door leaf or element – See Figure A.3	Decrease	Possible	-
A.1.9 Ventilation grilles (louvres) in door leaf tested without ventilation grille (louvers)	Add	Possible providing the requirements of Annex B are fulfilled, otherwise not possible without an additional test	Additional test single or double leaf doorset
A.1.10 Ventilation grilles (louvres) in door leaf	Remove	Possible providing the requirements of Annex B are fulfilled, otherwise not possible without an additional test	Additional test single or double leaf doorset
A.1.11 Location of Ventilation grilles (louvres) in door leaf tested with ventilation grille (louvres)	Alternative	Possible	-
A.1.12 Size of ventilation grilles (louvres) in door leaf tested with ventilation grille (louvres)	Increase/decrease	Possible providing the requirements of Annex B are fulfilled, otherwise not possible without an additional test	Additional test single or double leaf doorset
A.2 Size variations/single or multiple panel construction			
A.2.1 Size (area, width, height) of door leaf	Decrease	Possible	-
A.2.2 Width of door leaf – See Figure A.4	Increase	Possible providing the requirements of Annex B 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 Height of door leaf – See Figure A.5	Increase	Possible providing the requirements of Annex B are fulfilled, otherwise not possible without an additional test	Additional test double for single and double leaf doorsets or single for single leaf doorsets