SLOVENSKI STANDARD
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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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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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EUROPEAN STANDARD

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 127.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 17020-5:2021) has been prepared by Technical Committee CEN/TC 127 “Fire safety in buildings”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

The EN 17020 series of standards for Extended application of test results on durability of self-closing for doorsets and openable windows:

— Part 1: Durability of self-closing of hinged and pivoted steel doorsets [currently at Enquiry stage];

— Part 2: Durability of self-closing of steel rolling shutters [currently at Enquiry stage];

— Part 3: Durability of self-closing of steel sliding doorsets [currently at Enquiry stage];

— Part 4: Durability of self-closing of fire resistance hinged and pivoted metal framed glazed doorsets and openable windows [currently at Formal Vote stage];

— Part 5: Durability of self-closing of hinged and pivoted timber doorsets [currently at Enquiry stage].

Introduction

The EN 15269 series of standards covering 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, does not include the durability of self-closing of the doorsets 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.

Before there can be any consideration for extended application, the doorset shall have been tested in accordance with EN 1191 to achieve a test result which could generate a classification in accordance with EN 13501-2 or correspond to a use category according to EN 16034 at least equal to the classification subsequently required from extended application considerations.

1 Scope

This document is applicable to single and double leaf, hinged and pivoted doorsets with timber based leaves or timber framed glazed doors, covered by EN 15269-3 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.

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 elements including vision panels and framed glazed doorsets;

— side, transom and/or overpanels;

— ventilation grilles and/or louvres;

— wall/ceiling fixed elements (frame/suspension system);

— glazing for door leaf, side, transom and flush over panels;

— 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 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, shutter and openable window assemblies and elements of building hardware — Part 1: Fire resistance test for doors, shutters 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 16034, *Pedestrian doorsets, industrial, commercial, garage doors and openable windows — Product standard, performance characteristics — Fire resistance 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 1935, *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 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 15269-3, *Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware — Part 3: Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows*

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*

prEN 15685, *Building hardware — Requirements and test methods — Multipoint locks, latches and locking plates*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 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 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 text of the definition

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 (and 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

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 to achieve a test result which could generate a classification in accordance with EN 13501-2 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 obtainable from testing to EN 1191, 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 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.

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 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 doors incorporating single leaf door assemblies and also double leaf door assemblies 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 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 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 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).

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 13501-2:2016, Annex A.

Annex A
(normative)

Construction parameter variations

Table A.1 below is designed to be used by experts competent in the field of fire and smoke resistance and self-closing durability testing of hinged or pivoted doorsets with timber based leaves.

This table shall only be used to assess a field of extended application when at least one positive self-closing durability test to EN 1191 has generated a classification according to EN 13501-2 and EN 16034.

The first two columns identify possible variations to the construction details of the specimen tested. It is presupposed that the variation does not restrain the door 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.

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

Table 1 — Timber groupings

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

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

Softwood: Wood of trees of the botanical group Gymnosperms

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

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

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 door sets: both leaves shall be of the same basic construction.				
A.1	**General**			
A.1.1	Number of leaves only applicable to doorsets tested without transom and/or flush over panels. See Annex C.	Single leaf from double leaf test	Possible	–
A.1.2	Number of leaves only applicable to doorsets tested without transom and/or flush over panels. See Annex C.	Double leaf from single leaf test	Not possible without additional test	Additional test double leaf doorset
A.1.3	Intumescent seals (fitted at leaf to frame interface). See Figure A.1.	Location towards the frame rebate	Possible	–
A.1.4	Intumescent seals (fitted at leaf to frame interface). See Figure A.2.	Location towards the frame rebate	Possible	–
A.1.5	Intumescent seals (fitted in meeting edges).	Change location	Possible	–
A.1.6	Intumescent seals.	Change location (from leaf to frame and vice versa)	Possible	–
A.1.7	Non intumescent seals (draught/smoke/acoustic etc.) – Reaction to Fire class A1 or A2 according to EN 13501-1, (fitted in leaf or frame including threshold).	Change location	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 door sets or single for single leaf doorsets

Construction Parameter	Variation	Possibility of extension	Additional Evidence Required
(1)	(2)	(3)	(4)
A.1.8 Non-intumescent seals (draught/smoke/acoustic etc.) – Reaction to Fire class B-F according to EN 13501-1 (fitted in leaf or frame including threshold).	Change location	Possible	–
A.1.9 Non-intumescent seals (draught/smoke/acoustic etc.) - Reaction to Fire class A1 or A2 according to EN 13501-1, (fitted in leaf or frame including threshold).	Add	Not possible without an additional test	Additional test double for single and double leaf door sets 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 leaf or frame including 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 leaf or frame including threshold).	Add	Not possible without an additional test	Additional test double for single and double leaf door sets or single for single leaf doorsets
A.1.12 Non-intumescent seals (draught/smoke/acoustic etc. – Reaction to Fire class B-F according to EN 13501-1 (fitted in leaf or frame including threshold).	Remove	Possible	–
A.1.13 Louvres in door leaf or panel.	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.1.14 Louvres in door leaf or panel.	Remove	Possible	–

Construction Parameter	Variation	Possibility of extension	Additional Evidence Required
(1)	(2)	(3)	(4)
A.1.15 Louvres in door leaf or panel tested with louvre	Location in vertical direction	Possible	–
A.1.16 Louvres in door leaf or panel tested with louvre	Location in horizontal direction	Possible	–
A.1.17 Louvres in door leaf or panel tested with louvre – See Figure A.3.	Smaller size (for area or dimensions)	Possible	–
A.1.18 Louvres in door leaf or panel tested with louvre.	Larger size (for area or dimensions)	Possible providing the requirements of Annex C are fulfilled, otherwise, not possible without an additional test	Additional test single or double leaf doorset
A.1.19 Leaf edge rebate (door leaf to frame - not at the meeting edges. See section A2 for meeting edge parameters) - See Figure A.4..	Add a rebate	Possible in line with Figures A.4, otherwise not possible without an additional test	Additional test double leaf doorset for single and double leaf or single leaf doorset for single leaf
A.1.20 Leaf edge rebate (door leaf to frame - not at the meeting edges. See section A2 for meeting edge parameters) - See Figure A.4.	Remove a rebate	Possible in line with Figures A.4, otherwise not possible without an additional test	Additional test double leaf doorset for single and double leaf or single leaf doorset for single leaf
A.1.21 Change in mode of operation (double acting from single acting and vice versa).	Alternative	Not possible without an additional test	Additional test single or double leaf doorset
A.1.22 Latched condition for single leaf doorsets.	Change in latching condition. (See also Section C of this table for hardware variation)	See rule A.1.23	–
A.1.23 Latched condition for single and double leaf doorsets – see Figure A.5.	Change in latching condition. (See also Section C of this table for hardware variation)	Possible in line with the following relationship:	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