SLOVENSKI STANDARD
oSIST prEN 17020-4:2020

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Razširjena uporaba rezultatov preskusov trajnosti samozapiranja za vrata in okna, ki se odpirajo - 4. del: Trajnost samozapiranja požarno odpornih zastekljenih vrat v kovinskih okvirjih z vrtljivim krilom in oken, ki se odpirajo

Extended application of test results on durability of self-closing for doorsets and openable windows - Part 4: Durability of self-closing of fire resistance hinged and pivoted metal framed glazed doorsets and openable windows

Erweiterter Anwendungsbereich von Prüfergebnissen zur Dauerhaftigkeit der Selbstschließung für Feuerschutz- und/oder Rauchschutztüren und zu öffnende Fenster - Teil 4: Dauerhaftigkeit der Selbstschließung von verglasten Drehflügeltüren und zu öffnenden Fenstern mit Metall(rohr)rahmen

Application étendue des résultats d'essais de durabilité de la fermeture automatique des blocs-portes et fenêtres ouvrantes - Partie 4 : Durabilité de la fermeture automatique des blocs-portes vitrés battants et pivotants à ossature métallique et des fenêtres ouvrantes à ossature métallique résistants au feu

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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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Extended application of test results on durability of self-closing for doorsets and openable windows - Part 4: Durability of self-closing of fire resistance hinged and pivoted metal framed glazed doorsets and openable windows

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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 17020-4:2020) 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.

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 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 metal framed, glazed doorsets or openable windows as covered by EN 15269-5 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 may cover all or some of the following non-exhaustive list:

— doorsets and openable windows;

— door/window leaf;

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

— glazing and non-glazed panels in doorset and openable window, side, transom and/or overpanels;

— 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 1154, *Building hardware - Controlled door closing 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, *Building hardware - Single-axis hinges - Requirements and test methods*

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

EN 13501-2:2016, *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 15269-5:2014+A1:2016, *Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware – Part 5: Fire resistance of hinged and pivoted metal framed glazed doorsets and openable windows*

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 hinged and pivoted steel, timber and metal framed glazed doorsets*

EN 15685:2011, *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 resistance and/or smoke control characteristics*

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 15269-5 and EN 15269-20, 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/ui
- IEC Electropedia: available at http://www.electropedia.org/

3.1
full scale test
test of a full size doorset/openable window in accordance with EN 1191

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/openable window shall have been tested with EN 1191 to achieve a test result which could generate a classification in accordance with EN 13501-2 and EN 16034.

4.1.2 A review of the doorset/openable window construction parameters can indicate that one or more characteristics may be improved by a particular parameter variation. All evaluations shall be made on the basis of retaining the classifications obtainable from testing to EN 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 by testing, 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 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 similar specimen type to the original test against which the extended application is sought. Alternatively, column (4) in Annex A, 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 and openable windows incorporating single doors and also double doors with or without glazing, with alternative elements of building hardware, etc., it is recommended that careful consideration is given to the complete range of doorset designs and openable window 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 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 also to 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 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) in Annex A, 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 and pivoted metal framed glazed doorsets and openable windows.

The table shall only be used to assess a field of extended application when at least one positive self-closing durability test according 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/window 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.

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

NOTE Column (1) contains titles that are identical to the ones of EN 15269–5:2014+A1:2016, Table A.1, without reference to possible figures. For clarification the figures that are included in EN 15269–5:2014+A1:2016, Annex A may be used.

Table A.1 — Construction parameter variations

Construction Parameter	Variation	Possibility of extension	Additional Evidence Required
(1)	(2)	(3)	(4)
A Door leaf For double leaf door sets, both leaves shall be of the same basic construction.			
A.1 General			
A.1.1 Number of leaves	Single leaf from double leaf test	Possible	–
A.1.2 Number of leaves	Double leaf from single leaf test	Not possible without additional test	Additional test double leaf doorset
A.1.3 Intumescent seals between frame and door leaf/leaves	Location towards the frame rebate	Possible	–
A.1.4 Intumescent seals between frame and door leaf/leaves	Location away from the frame rebate	Possible	–
A.1.5 Intumescent seals between meeting edges of the door leaves	Location	Possible	–
A.1.6 Non intumescent seals between frame and door leaf/leaves (draught/smoke/acoustic etc.) – (Reaction to fire class A1) e.g. ceramic products (fitted in leaf or frame).	Location	Possible	–

Construction Parameter	Variation	Possibility of extension	Additional Evidence Required
A.1.7 Non intumescent seals between meeting edges of the door leaves (draught smoke/acoustic etc.) – (Reaction to fire class A1)	Location	Possible	–
A.1.8 Non intumescent seals between door leaves and/or frames (draught/smoke/acoustic etc.) – < Reaction to fire class A1 (fitted in leaf or frame)	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
A.1.9 Non intumescent seals between door leaves and/or frames (draught/smoke/acoustic etc.) – (Reaction to fire class A1), e.g. ceramic products (fitted in leaf or frame)	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 between door leaves and/or frames (draught/smoke/acoustic etc.) – (Reaction to fire class A1), e.g. ceramic products (fitted in leaf or frame)	Remove	Possible	–
A.1.11 Non intumescent seals between door leaves and/or frames (draught/smoke/acoustic etc.) – < Reaction to fire class A1 (fitted in leaf or frame)	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 between door leaves and/or frames (draught/smoke/acoustic etc. – < Reaction to fire class A1 (fitted in leaf or frame)	Remove	Possible	–

Construction Parameter	Variation	Possibility of extension	Additional Evidence Required
A.1.13 Ventilation grilles (louvres) in door leaf tested without ventilation grille	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.1.14 Ventilation grilles (louvres) in door leaf	Remove	Possible	–
A.1.15 Ventilation grilles (louvres) in the infill of the door leaf tested with ventilation grille	Location in vertical direction	Possible	–
A.1.16 Ventilation grilles (louvres) in the infill of the door leaf tested with ventilation grille	Location in horizontal direction	Possible	–
A.1.17 Ventilation grilles (louvres) in door leaf tested with ventilation grille	Location in horizontal and/or vertical direction	Possible	–
A.1.18 Ventilation grilles (louvres) in door leaf or in the infill of the door leaf tested with ventilation grille	Smaller size	Possible	–
A.1.19 Ventilation grilles (louvres) in door leaf or in the infill of the door leaf tested with ventilation grille	Larger size	possible providing the requirements of Annex B are fulfilled otherwise not possible without an additional test	Additional test single or double leaf doorset
A.1.20 Rebate (door leaves to frames)	Add	Possible	–
A.1.21 Rebate (meeting edges)	Add (one rebate or two rebates)	Possible	–

<table>
<tr><th>Construction Parameter</th><th>Variation</th><th colspan="4">Possibility of extension</th><th>Additional Evidence Required</th></tr>
<tr><td>A.1.22 Rebate (door leaves to frames and meeting edges)</td><td>Remove</td><td colspan="4">Possible</td><td>–</td></tr>
<tr><td rowspan="4">A.1.23 Latched condition for single and double leaf doorsets</td><td rowspan="4">Change in latching condition</td><td colspan="4">Possible in line with the following relationship:</td><td rowspan="4">Additional test double for single and double leaf doorsets or single for single leaf doorsets.</td></tr>
<tr><td></td><td>tested without a latch/lock</td><td>tested with a latch/lock but unlatched</td><td>tested with a latch/lock latched</td></tr>
<tr><td>extension to: without a lock/latch</td><td>—</td><td>Possible</td><td>possible</td></tr>
<tr><td>extension to: with lock/latch but unlocked/unlatched (disengaged)</td><td>Possible</td><td>—</td><td>possible</td></tr>
<tr><td>A.1.24 Latching/locking</td><td>Remove from door leaf tested with latching/ locking</td><td colspan="4">Possible</td><td>–</td></tr>
<tr><td colspan="7">A.2 Size variations</td></tr>
<tr><td>A.2.1 Size (area, width, height)</td><td>Decrease</td><td colspan="4">Possible</td><td>–</td></tr>
</table>