

English Version

Extended application of test results on durability of self-closing for fire resistance and/or smoke control doorsets and openable windows - Part 2: Durability of self-closing of steel rolling shutters

Erweiterter Anwendungsbereich von Prüfergebnissen zur Dauerhaftigkeit der Selbstschließung für Feuerschutz- und/oder Rauchschutztüren und zu öffnende Fenster - Teil 2: Dauerhaftigkeit der Selbstschließung von Rollläden aus Stahl

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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 17020-2:2021) 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.

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

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.

Before there can be any consideration for extended application, the doorset should have been tested in accordance with EN 12605:2017+A1:2020 to achieve a test result which could generate a classification in accordance with EN 13501-2 and EN 16034 at least equal to the classification subsequently required from extended application considerations.

1 Scope

This document covers steel rolling shutters as covered by EN 15269-10 or EN 15269-20.

This document prescribes the methodology for extending the application of test results obtained from durability self-closing test(s) conducted in accordance with EN 16034.

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

- shutter curtain;
- wall/ceiling fixed elements (frame/suspension system);
- decorative finishes;
- intumescent, smoke, draught or acoustic seals;
- alternative supporting construction(s).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

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 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 12605:2017+A1:2020, *Industrial, commercial and garage doors and gates - Mechanical aspects - 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 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 16034, *Pedestrian doorsets, industrial, commercial, garage doors and openable windows - Product standard, performance characteristics - Fire resisting 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 1363-1, EN 1363-2, EN 1634-1, EN 1634-3, EN 15269-1, 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/ui>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

full scale test

test of a full size doorset or rolling shutter in accordance with EN 16034

4 Determination of the field of extended application

4.1 General

4.1.1 Before there can be any consideration for extended application, the steel rolling shutter assemblies shall have been tested in accordance with EN 12605:2017+A1:2020 or 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 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 16034, 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 shutter 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 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) of Table A.1, 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) 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 steel rolling shutter assemblies incorporating manual and power drives, insulated and uninsulated version, with alternative elements of construction etc. it is recommended that careful consideration is given to the complete range of 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 Select the required outstanding parameter variations from column (1) and column (2) of Table A.1 and observe from column (4) of Table A.1 which are the most appropriate weakest specimen options for further testing.

4.3.9 If the complete selection of required parameter variations has not been covered by the tests completed in accordance with 4.3.8 above, then an appropriate test or tests may be repeated 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 which 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 variation.

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 and EN 13501-2, 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 resistance and self-closing durability testing of steel rolling shutter assemblies.

The table shall only be used to assess a field of extended application when at least one positive self-closing durability test to EN 12605:2017+A1:2020 or 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 rolling shutter 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.

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.

For figures relating to Table A.1 see Annex C.

Table A.1 — Construction parameters

Construction parameter	Variation	Possibility of extension	Additional evidence required
(1)	(2)	(3)	(4)
A General (See Figure C.1 for an example of a general arrangement of a rolling shutter construction)			
A.1 Size variations / construction			
A.1.1 Width between vertical guides (See Figure C.2)	Decrease	Possible providing tightness and clearances are not changed. Otherwise not possible without an additional test.	Full scale test
A.1.2 Distance between vertical guides (See Figure C.2)	Increase	Possible providing the static requirements to fixings, barrel and load-bearing constructions are fulfilled and the requirements of Annex B are satisfied (at ambient temperature). Otherwise not possible without an additional test.	Full scale test
A.1.3 Height from floor level to centre line of barrel (See Figure C.3)	Decrease	Possible	-
A.1.4 Height from floor level to centre line of barrel (See Figure C.3)	Increase	Possible providing the static requirements to fixings, barrel and load-bearing constructions are fulfilled and the requirements of Annex B are satisfied (at ambient temperature). Otherwise not possible without an additional test.	Full scale test
A.1.5 Expansion allowances between the end of the lath and guide	Decrease	Possible providing a minimum gap of 10 mm will remain during opening/closing Otherwise not possible without an additional test	Full scale test
A.1.6 Expansion allowances between the end of the lath and guide	Increase	Possible	-
A.1.7 Mounting	Face fixed on furnace side to within opening	Possible	-