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Extended application of test results for fire resistance for doorsets and shutter assemblies - For doors and shutters - Part 2: Steel hinged and pivoted doorsets

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EUROPEAN STANDARD

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ICS

English Version

Extended application of test results for fire resistance for doorsets and shutter assemblies - For doors and shutters - Part 2: Steel hinged and pivoted doorsets

Application élargie des résultats d'essais de résistance au feu des blocs-portes et blocs-fermetures - Pour portes et fermetures - Partie 2: Blocs-portes et blocs-fermetures en acier, pivotants ou battants

Erweiterter Anwendungsbereich von Prüfergebnissen zur Feuerwiderstandsfähigkeit von Türen, Toren und Klappen - Teil 2: Drehflügeltüreinrichtungen aus Stahl

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

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Ref. No. prEN 15269-2:2005: E

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Foreword

This document (prEN 15269-2:2005) 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 is one of a series of Standards intended to be used by experts or competent bodies for the purpose of producing an extended application report (EXAP). It is not intended to be used for the interpretation of test results by non-fire experts.

Editorial note: Clarification is needed to establish if such experts are Bodies Notified for either testing and/or Certification

prEN 15269 ‘Extended application of test results for fire resistance for doorsets and shutter assemblies – For doors and shutters’ consists of the following:

Part 1 General requirements

2 Steel hinged and pivoted doorsets

3 Timber hinged and pivoted doorsets

4 Glass hinged and pivoted doorsets

5 Aluminium hinged and pivoted doorsets

6 Timber sliding doorsets

7 Steel sliding doorsets

8 Timber horizontally folding doorsets

9 Steel horizontally folding doorsets

10 Steel rolling shutters

1 Scope

prEN 15269-2 covers single leaf, hinged or pivoted, steel based doorsets which incorporate a rebated steel door frame. It prescribes the methodology for extending the application of test results obtained from test(s) conducted in accordance with EN 1634-1.

NOTE this draft was created as a first 'model' proposal intended to seek CEN enquiry related to single leaf, hinged or pivoted steel based doorsets into rebated frames only. It is intended to expand the scope at a later date to cover all steel hinged and pivoted doorset types (e.g double leaf doorsets and flush door frames).

Subject to the completion of the appropriate test or tests selected from those identified in Clause 5 the extended application may cover all or some of the following:

— integrity only (E), radiation (EW) or insulated (EI_1 or EI_2) classifications;

— glazed elements, louvres and/or vents;

— side, transom or overpanels;

— items of building hardware;

— decorative finishes;

— intumescent, smoke, draught or acoustic seals;

— alternative supporting construction(s).

2 Normative references

The following referenced documents are indispensable for the application 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 1363-1, *Fire resistance tests — Part 1: General requirements*

EN 1634-1, *Fire resistance tests for door and shutter assemblies — Part 1: Fire doors and shutters*

prEN 1634-2, *Fire resistance tests for door and shutter assemblies — Part 2: Fire door hardware*

EN 13501-2, *Fire classification of construction products and building elements — Part 2: Classification using test data from fire resistance tests excluding ventilation services*

EN ISO, *13943, Fire safety — Vocabulary*

prEN 15269*, Extended application of test results for fire resisting and smoke control doorsets and shutter assemblies — Part 1 — General requirements for fire resistance*

3 Definitions

For the purposes of this part, the definitions given in EN1363-1, EN ISO 13943, EN 1634-1 and EXAP prEN 15269-1 together with the following apply:

3.1
full scale test
a test of a full size door element in accordance with EN 1634-1

3.2
small scale test
a test on elements of Building Hardware in accordance with prEN 1634-2 and where the decision process, given in prEN 1634-2, permits its use. This is abbreviated as SS in annex C

3.3
effective rebate depth
the dimension of the overlapping adjacent parts of door leaf edge relative to the door frame, transom or side panel or flush overpanel

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 must have been tested and classified in accordance with EN1634-1 and EN 13501-2 respectively in order to establish a classification for the doorset.

4.1.2 Evaluation to a higher classification is not possible.

4.1.3 All evaluations shall be made on the basis of retaining the classification obtained from testing to EN1634-1.

4.1.4 There is no procedure for evaluation of a lower classification. If, by following the ensuing procedure, any part of the classification cannot be achieved by extended application theory, that element of classification 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.

4.2.3 Review the type of classification to be retained from column (3) and establish from the contents of column (5) whether any extended application is available beyond the direct application rules in EN 1634-1 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 (5).

4.2.5 Where the variations required can only be achieved from additional testing, the additional test can be made on a similar specimen type (i.e. single-leaf doorset) to the original test against which the

extended application is sought. Alternatively, column (6) identifies an alternative weakest option for alternative testing and relevant specimen types are proposed in column (7). These types are identified by code numbers which can be interpreted from annex B or Annex C. These are generally specimen types which can present additional options for the product manufacturer.

4.3 Procedure for maximum field of extended application

Where a manufacturer envisages to manufacture a range of doors incorporating single doors and also double doors with or without side, transom or over panels, with or without glazing, louvres or ventilation grilles, with alternative element of builders hardware, etc., it is recommended that the test protocols provided in Annex A and Annex B for integrity only doors or insulated (including radiation control doors), respectively, be given careful consideration before testing commences.

Establish all the parameter variations which are required to be part of the product range, and in particular for single leaf hinged or pivoted steel based doorsets into rebated frames.

Determine which are the most important specification requirements and incorporate as many as possible into the specimen(s) for the E1 (annex A) or I1 (annex B) test.

Complete the E1 or I1 test(s) and prepare a field of direct application and a classification report from the results of the test.

Establish which of the original desired parameter variations have not been covered by the direct application classification report.

Identify these parameter variations in Annex C and establish if any extended application is possible without further testing.

Record this for the extended application report together with any restrictions and rules given in column (5).

Evaluate which, if any, of the desired parameter variations have not been covered by the field of direct application or the initial field of extended application derived from 4.3.6. above.

Determine if the product range is to include only single test doorsets or if the range is to also include double leaf configurations. Where only single doorsets are to be part of the product range then the outstanding construction parameter variations shall only be incorporated into specimens for the single leaf doorset tests indicated in the test protocols in Annex A or Annex B. 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 double leaf doorset configurations indicated in test protocols in Annex A and/or Annex B.

Select the required outstanding parameter variations from column (1) and column (2) of Annex C and observe from column (7) which are the most appropriate weakest specimen options for further testing.

If the complete selection of required parameter variations have not been covered by the tests completed in accordance with 4.3.9 and 4.3.10 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 maximise the field of extended application, it is important that the test reports shall record details of any premature integrity and/or insulation failure.

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

5.1 Prepare an extended application report in accordance with the requirements of Clause 5 of EXAP prEN 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 presented in accordance with annex A of EN 13501-2.

Annex A

Testing Protocol For Uninsulated Doorsets

RIGID CONSTRUCTION

Test E.1	largest single open outwards (worst case as prEN 1634-1)
Test E.2	largest pair open outwards
Test E.3	largest single open inwards with largest side panel on latch side and transom over panel(s)
Test E.4	widest pair open inwards with full width flush over panel

NOTE In the following list of test specification, the reference to “standard” means the manufacturer’s normal product parameter e.g. “standard thickness” relates to the manufacturers normally used material.

TEST E.1 SPECIFICATION FOR TEST SPECIMEN

Door Panel

— To open outwards

— Largest single door panel

— Thinnest door panel construction

— No cut outs for glazing/louvres

— Standard material thickness in mild steel

— Standard lipping/rebate edge detail

— Standard core/stiffener detail

— Standard adhesive/stiffener fixing technique

— Smallest intumescent seals (if applicable)

— Without smoke/draught seals

— Standard paint or galvanised finish

— Without kick plates or mouldings

Door Frame

— Standard cross section

— Three sided frame

— Standard panel to frame gap detail

— Thinnest material thickness in mild steel

— Smallest intumescent seals (if applicable)

— Without smoke/draught seals

— Standard infill to supporting construction

— Standard paint or galvanised finish

Hardware

— Standard latch fitted (may be held unlatched if required)

— Standard hinge/dog bolt arrangement

— Standard separating distances

— Standard fixings to door panel and frame

— Door closer in standard position

Supporting Construction

— Rigid

— Frame sunk into floor

— Minimum number of fixings

— Smallest size fixings at maximum centres

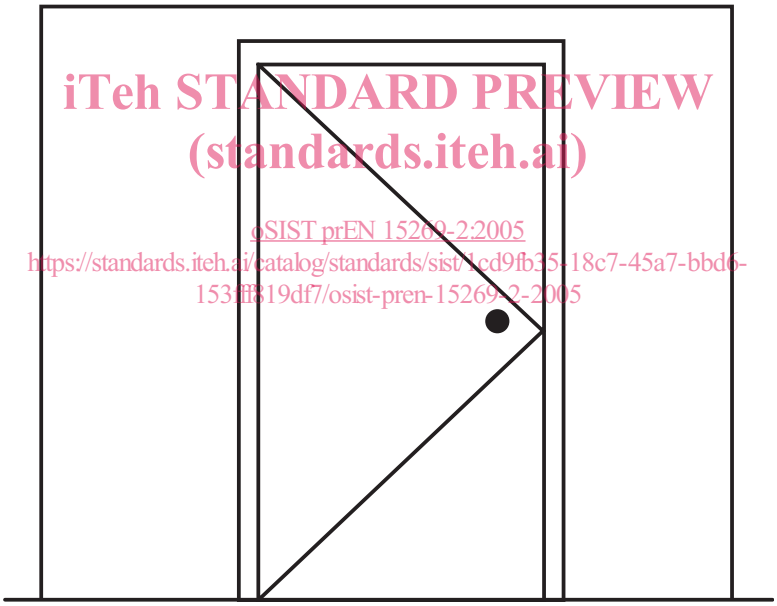
— Maximum envisaged gap under doors

Side Panels

— None

Over Panels

— None



Leaf to open away from the furnace.

Figure A.1 — Test specimen E1

TEST E.2 – SPECIFICATION FOR TEST SPECIMEN

Door Panel

— To open outwards

— Largest pair

— Thickest door panel construction

— Cut out in one leaf for largest louvre

— Thickest material envisaged in mild steel

— Standard lipping/rebate edge detail

— Standard/alternative core material/stiffening construction

— Standard/alternative adhesive/stiffener fixing technique

— Standard/alternative intumescent seals (if applicable)

— With smoke/draught seals fitted

— Standard/alternative painted/unpainted finish

— With kick plates of largest size

— without mouldings

Frame

— Standard/alternative cross section

— Three sided frame

— Standard panel to frame gap details

— Thickest material thickness in mild steel

— Alternative intumescent seals (if applicable)

— With smoke/draught seals fitted

— With standard/alternative infill to supporting construction

— Standard/alternative painted/unpainted finish

Hardware

— Standard/alternative latch (may be held unlatched if required)

— Standard/alternative hinges/dog bolts

— Standard/alternative positioning of hinges/dog bolts

— Standard/alternative fixings to door panel and/or frame

— Standard/alternative door closer/positioning

Supporting Construction

Rigid

— Frame not sunk into floor

— Minimum standard/alternative fixings and/or centres

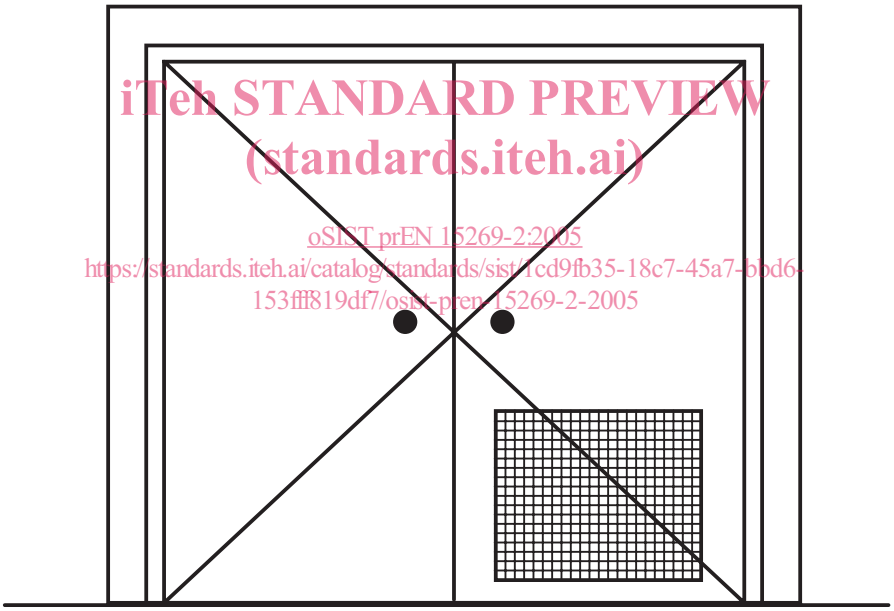
— Maximum gap envisaged under door

Side Panels

— None

Over Panels

None



Leaves to open away from the furnace.

Figure A.2 — Test specimen E2

TEST E.3 – SPECIFICATION FOR TEST SPECIMEN

Door Panel

— To open inwards

— Largest single door panel which can be incorporated into widest side panel and tallest transom panel

— Standard panel thickness construction

— No cut outs for glazing or louvres

— Standard material/alternative thickness in mild steel

— Standard/alternative lipping/rebate edge detail

— Standard/alternative core material/stiffening details

— Standard/alternative adhesive/stiffener fixing details

— Standard/alternative intumescent seals (if applicable)

— Standard/alternative smoke/draught seals

— Standard/alternative painted/unpainted finish

— Alternative thickness of decorative laminate

— With or without mouldings

Door Frame

— Standard/alternative cross section/without rebate option

— Three sided frame

— Standard panel to frame gap details

— Standard/alternative material thickness in mild steel

— Standard/alternative intumescent seal (if applicable)

— With/without standard/alternative smoke/draught seals

— Standard infill for flexible supporting construction

— Standard/alternative painted/unpainted finish

Hardware

— Standard/alternative latch (may be held unlatched)

— Standard/alternative hinges/dog bolts

— Standard/alternative separating distances