



NSAI
Standards

Irish Standard
I.S. EN 1366-10:2011+A1:2017

Fire resistance tests for service installations - Part 10: Smoke control dampers

I.S. EN 1366-10:2011+A1:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

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EN 1366-10:2011+A1

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English Version

**Fire resistance tests for service installations - Part 10:
Smoke control dampers**

Essais de résistance au feu des installations techniques
- Partie 10: Volets de désenfumage

Feuerwiderstandsprüfungen für Installationen - Teil
10: Entrauchungsklappen

This European Standard was approved by CEN on 6 February 2011 and includes Amendment 1 approved by CEN on 6 February 2017.

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Contents

Page

European foreword.....	5
Introduction	7
1 Scope	8
2 Normative references	8
3 Terms and definitions	8
4 Test equipment.....	13
4.1 General.....	13
4.2 Connecting duct for multi compartment fire resisting smoke control damper: maintenance of opening test and EN 1366-2 test.....	13
4.3 Volume flow measuring station for multi compartment fire resisting smoke control damper: maintenance of opening test and EN 1366-2 test.....	13
4.4 Plenum for High Operating Temperature (HOT) test	13
4.5 Cycling equipment	13
4.6 Condensing unit.....	14
4.7 Gas temperature measuring devices.....	14
4.8 Exhaust fan system	14
4.9 Perforated plate.....	14
4.10 Flow measurement nozzles (fire test)	15
4.11 Ambient leakage measuring device.....	15
4.12 Pressure sensors for differential pressure control	15
4.13 Welded connecting tube	15
4.14 Extract fan connecting duct	15
4.15 Extraction fan	16
4.16 Thermocouples	16
4.17 Oxygen measuring equipment.....	16
4.18 Observation windows.....	16
5 Test specimen.....	16
5.1 Cross-section.....	16
5.2 Design	16
5.2.1 General.....	16
5.2.2 Supporting constructions.....	16
5.2.3 Inclusion of grilles.....	17
6 Test methods.....	17
6.1 General	17
6.2 Initiation regimes for elevated temperature and fire tests.....	17
6.2.1 Smoke control damper for systems with automatic activation.....	17
6.2.2 Smoke control damper for systems with manual intervention:	18
6.3 Cycling test requirements (to form part of the sequences of testing defined below).....	18
6.3.1 General.....	18
6.3.2 Smoke control damper to be used in dedicated Smoke control systems, operated only in the case of emergency.....	18
6.3.3 Differential pressure conditions	19

6.4	Single compartment smoke control dampers mounted on the surface of a duct.....	19
6.4.1	Sequence.....	19
6.4.2	Ambient leakage.....	19
6.4.3	Cycling test.....	19
6.4.4	Elevated temperature test.....	19
6.5	Multi compartment fire resisting smoke control dampers.....	20
6.5.1	Fire resistance test according to EN 1366-2 (for units mounted within or on the face of a compartment structure).....	20
6.5.2	Maintenance of opening test (for units mounted within a compartment structure).....	21
6.5.3	Horizontal duct test for surface mounted smoke control dampers on a horizontal duct.....	21
6.5.4	Vertical duct test for surface mounted smoke control dampers.....	22
6.6	Multi compartment fire resisting smoke control dampers (HOT Classification).....	24
6.6.1	Fire resistance test (for units mounted within or on the face of a compartment structure).....	24
6.6.2	High operating test (HOT 400/30 - cycling and maintenance of opening test).....	25
7	Test procedure.....	25
7.1	Pre-test calibration.....	25
7.1.1	Oxygen-measuring instrument.....	25
7.1.2	Perforated plate.....	25
7.1.3	Leakage measurement at ambient temperature.....	26
7.2	Fire test.....	26
7.2.1	Extraction fan.....	26
7.2.2	Ignition of furnace.....	26
7.2.3	Furnace conditions.....	26
7.2.4	Temperatures and pressures.....	27
7.2.5	Oxygen measurements.....	27
7.2.6	General observations.....	27
7.2.7	Reduction of cross-section/ maintenance of opening.....	27
7.2.8	Leakage calculations.....	27
7.3	Termination of test.....	27
8	Test report.....	28
9	Direct field of application of test results.....	28
9.1	General.....	28
9.2	Smoke control damper sizes.....	28
9.3	Pressure difference.....	29
9.4	Elevated temperatures.....	29
9.5	Cycling tests.....	29
9.5.1	Smoke control dampers meeting the cycling requirements for modulating applications.....	29
9.5.2	Smoke control dampers meeting the cycling requirements for use with combined smoke control and general HVAC applications and for smoke control systems that are cycle checked every day.....	29
9.5.3	Smoke control dampers meeting the cycling requirements for smoke control dampers that are operated only in the case of emergency.....	29
9.6	Initiation method.....	29
9.7	Application to duct constructions other than that tested.....	30
9.7.1	Single compartment smoke control dampers.....	30

EN 1366-10:2011+A1:2017 (E)

9.7.2 Multi compartment smoke control dampers	30
Annex A (normative) Cycling test.....	51
A.1 General.....	51
A.2 Purpose of the test	51
A.3 Method of Application	51
A.3.1 General.....	51
A.3.2 Smoke Control Damper with single blade.....	51
A.3.3 Smoke control damper with multi blades of smaller area.....	52
A.3.4 Report.....	53
A.4 Background for the torque value (informative)	53
A.4.1 Threshold rates of the working condition of the system.....	53
A.4.2 Previous experience.....	53
Annex B (normative) Leakage calculation from oxygen measurement	55
B.1 General.....	55
Annex C (normative) Maintenance of opening calculation.....	56
C.1 Calculation of the theoretical total mass M_{max} of hot gases during the fire test	56
C.1.1 Basis.....	56
C.1.2 Method	56
C.1.3 Summary	57
C.2 Calculation of the actual total mass M_{actual} of hot gases during the fire test.....	58
C.2.1 Basis	58
C.2.2 Method	59
C.2.3 Summary	59
C.3 Graphical representation of typical integral calculation from data.....	61
Bibliography.....	62

European foreword

This document (EN 1366-10:2011+A1:2017) 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 October 2017, and conflicting national standards shall be withdrawn at the latest by October 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1 approved by CEN on 2017-02-06.

This document supersedes EN 1366-10:2011.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

EN 1366 ‘Fire resistance tests for service installations’ consists of the following

Part 1: Ducts

Part 2: Fire dampers

Part 3: Penetration seals

Part 4: Linear joint seals

Part 5: Service ducts and shafts

Part 6: Raised access and hollow core floors

Part 7: Conveyor systems and their closures

Part 8: Smoke extraction ducts

Part 9: Single compartment smoke extraction ducts

Part 10: Smoke control dampers

Part 11: Fire protective systems for cable systems and associated components (in course of preparation)

A1 Part 12: Non-mechanical fire barrier for ventilation ductwork **A1**

Part 13: Fire resistance tests for service installations - Part 13: 1-, -2, 3- sided ducts (in course of preparation)

EN 1366-10:2011+A1:2017 (E)

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

When smoke and heat exhaust ventilation are being considered, it becomes apparent that a clear path needs to be made between the area where heat and smoke is being generated (the fire) and the outside of the building.

To create this path there need to be ducts and the smoke extract path needs to remain uninterrupted. This means that smoke control dampers at the fire and along the path have to be open and remain open. Smoke control dampers at branches, or on the surface of the duct, along the path need to be closed and remain closed. In fact, if the duct crosses a compartment boundary it becomes part of the fire compartment in which the fire started.

The purpose of this European Standard is to define test methods to evaluate the abilities of smoke control dampers to

- 1) be applicable to single compartment and/or multi compartment fire resisting applications;
- 2) be applicable to automatic systems or systems with manual intervention;
- 3) change state from closed to open at elevated temperatures, and vice versa;
- 4) once opened maintain a defined cross sectional area at elevated temperature;
- 5) maintain a satisfactory leakage performance when subjected to negative pressure at elevated temperatures.

The units need to be mounted for the tests in a manner representative of practice.

Temperature and integrity measurements need to be carried out on various parts of the test construction during the test. Leakage measurements required need to be measured by direct flow measurement at the prescribed pressure differentials. Ambient leakage of the units needs also to be recorded.

Performance of these tests need to allow products to comply with EN 12101-8 and be classified to EN 13501-4. The required temperatures, pressure differentials etc. are stated in EN 12101-8.

Completing the tests within this European Standard does not ensure full compliance with EN 12101-8, as other, additional, requirements are defined in EN 12101-8. Some of these may be required to meet the classification requirements of EN 13501-4 as well.

Caution

The attention of all persons concerned with managing and carrying out this furnace testing is drawn to the fact that fire testing can be hazardous and that there is a possibility that toxic and/or harmful smoke and gases can be evolved during the test. Mechanical and operational hazards can also arise during the construction of the test elements or structures, their testing and disposal of test residues.

An assessment of all potential hazards and risks to health shall be made and safety precautions need to be identified and provided. Written safety instructions need to be issued. Appropriate training needs to be given to relevant personnel. Laboratory personnel need to ensure that they follow written safety instructions at all times.

EN 1366-10:2011+A1:2017 (E)

1 Scope

This European Standard specifies test methods for smoke control dampers to assess their performance under elevated temperature or fire conditions.

It needs to be noted that the smoke control damper to be tested may require testing to EN 1366-2 and that this needs to be considered before carrying out these tests.

Smoke control damper tests are required to confirm that the furnace testing requirements of EN 12101-8 are met and EN 12101-8 needs to be considered before carrying out these tests.

Smoke control dampers tested to this European Standard should be classified using EN 13501-4 and this European Standard needs to be considered before carrying out these tests.

To this end this European Standard needs to be read in conjunction with EN 12101-8, EN 13501-4, EN 1366-2 and EN 1363-1, the latter giving further details for fire resistance testing.

For installation details the requirements for smoke extraction ducts need to be considered and these are defined in EN 1366-8 and EN 1366-9.

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 1366-2, *Fire resistance tests for service installations — Part 2: Fire dampers*

EN 1366-8, *Fire resistance tests for service installations — Part 8: Smoke extraction ducts*

EN 1366-9, *Fire resistance tests for service installations — Part 9: Single compartment smoke extraction ducts*

EN 1507, *Ventilation for buildings — Sheet metal air ducts with rectangular section — Requirements for strength and leakage*

EN 1751, *Ventilation for buildings — Air terminal devices — Aerodynamic testing of damper and valves*

EN 13501-4, *Fire classification of construction products and building elements — Part 4: Classification using data from fire resistance tests on components of smoke control systems*

EN ISO 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full — Part 1: General principles and requirements (ISO 5167-1:2003)*

EN ISO 13943:2010, *Fire safety — Vocabulary (ISO 13943:2008)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 13943:2010 and the following apply.

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