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NSAI Standards

Irish Standard
I.S. EN 1366-1:2014+A1:2020

Fire resistance tests for service installations - Part 1: Ventilation ducts

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This document is based on:	*Published:*
EN 1366-1:2014+A1:2020	2020-08-12

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2020-08-30	13.220.50
	NOTE: If blank see CEN/CENELEC cover page

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National Foreword

I.S. EN 1366-1:2014+A1:2020 is the adopted Irish version of the European Document EN 1366-1:2014+A1:2020, Fire resistance tests for service installations - Part 1: Ventilation ducts

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1366-1:2014+A1

August 2020

ICS 13.220.50; 91.140.30

Supersedes EN 1366-1:2014

English Version

Fire resistance tests for service installations - Part 1: Ventilation ducts

Essais de résistance au feu des installations techniques - Partie 1: Conduits de ventilation

Feuerwiderstandsprüfungen für Installationen - Teil 1: Lüftungsleitungen

This European Standard was approved by CEN on 13 June 2014 and includes Amendment approved by CEN on 1 June 2020.

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European foreword

This document (EN 1366-1:2014+A1:2020) 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of an identical text or by endorsement, at the latest by February 2021 and conflicting national standards shall be withdrawn at the latest by February 2021.

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

This document includes Amendment 1 approved by CEN on 1 June 2020.

This document supersedes [A1⟩ EN 1366-1:2014 ⟨A1].

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1⟩ ⟨A1].

[A1⟩ This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association. ⟨A1]

EN 1366 "*Fire resistance tests for service installations*" consists of the following:

— *Part 1: Ventilation ducts;*

— *Part 2: Fire dampers;*

— *Part 3: Penetration seals;*

— *Part 4: Linear joint seals;*

— *Part 5: Service ducts and shafts;*

— *Part 6: Raised floors;*

— [A1⟩ *Part 7: Conveyor systems and their closures;* ⟨A1]

— *Part 8: Smoke extraction ducts;*

— *Part 9: Single compartment smoke extraction ducts;*

— *Part 10: Smoke control dampers (in course of preparation);*

— *Part 11: Protective Systems for Essential Services (in course of preparation);*

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

— [A1⟩ *Part 13: Chimneys.* ⟨A1]

[A1⟩ *deleted text* ⟨A1]

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Introduction

The purpose of this test is to measure the ability of a representative ventilation duct assembly / system that is part of an air distribution system to resist the spread of fire from one fire compartment to another with fire attack from inside or outside the duct. It is applicable to vertical and horizontal ducts, with or without branches, taking into account joints and openings, as well as suspension devices and penetration points.

The test measures the length of time for which ducts, of specified dimensions, suspended as they would be in practice, satisfy defined criteria when exposed to fire from (separately) both inside and outside the duct.

The closed end of each horizontal duct at the back of the furnace is fully restraint. Outside the furnace, ducts exposed to fire from the outside are tested unrestrained, while ducts exposed to fire from the inside (horizontal only) are tested restrained.

The force measurement at horizontal duct B is not mandatory but can be done on the request of the sponsor.

The test takes into account the effect of fire exposure from the outside where a pressure differential is maintained in the duct as well as the effect of fire entering the ducts in conditions where forced air movement may or may not be present.

Caution

The attention of all persons concerned with managing and carrying out this fire resistance test is drawn to the fact that fire testing may be hazardous and that there is a possibility that toxic and/or harmful smoke and gases may be evolved during the test. Mechanical and operational hazards may 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 should be made and safety precautions should be identified and provided. Written safety instructions should be issued. Appropriate training should be given to relevant personnel. Laboratory personnel should ensure that they follow written safety instructions at all times.

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1 Scope

This European Standard specifies a method for determining the fire resistance of vertical and horizontal ventilation ducts including those access panels, which are integral part of the tested ducts. The test examines the behaviour of ducts exposed to fire from the outside (duct A) and fire inside the duct (duct B). This European Standard is used in conjunction with EN 1363-1.

Annex A provides general guidance and gives background information.

This European Standard is not applicable to:

a) ducts whose fire resistance depends on the fire resistance performance of a ceiling or wall (where ducts are located in cavities enclosed by fire-resistant shafts or ceilings);

b) ducts containing fire dampers at points where they pass through fire separations;

c) one, two or three sided ducts;

d) fixing of suspension devices (e.g. anchors) to floors or walls.

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 1363-1, *Fire resistance tests - Part 1: General Requirements*

EN 1364-1:1999, *Fire resistance tests for non-loadbearing elements - Part 1: Walls*

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

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

EN 12237, *Ventilation for buildings - Ductwork - Strength and leakage of circular sheet metal ducts*

EN 15882-1, *Extended application of results from fire resistance tests for service installations - Part 1: Ducts*

EN 60584-1, *Thermocouples - Part 1: EMF specifications and tolerances (IEC 60584-1)*

EN ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs with specified property classes - Coarse thread and fine pitch thread (ISO 898-1)*

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)*

EN ISO 5167-2, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 2: Orifice plates (ISO 5167-2)*

EN ISO 5167-3, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 3: Nozzles and Venturi nozzles (ISO 5167-3)*

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

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