

Fire resistance tests for service installations - Part 9: Single compartment smoke extraction ducts

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1366-9:2008 sisaldab Euroopa standardi EN 1366-9:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 26.05.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 19.03.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1366-9:2008 consists of the English text of the European standard EN 1366-9:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 26.05.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 19.03.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

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English Version

Fire resistance tests for service installations - Part 9: Single
compartment smoke extraction ducts

Essai de résistance au feu des installations de service -
Partie 9 : Conduits d'extraction de fumées relatifs à un seul
compartiment

Feuerwiderstandsprüfungen für Installationen - Teil 9:
Entrauchungsleitungen für einen Einzelabschnitt

This European Standard was approved by CEN on 21 January 2008.

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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 1366-9:2008) 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of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.

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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of 89/106/EEC Directive.

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

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 (in course of preparation)

Part 7: Conveyor systems and their closures

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)

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Introduction

This part of this European Standard has been prepared because a method of test for smoke extraction ducts used in single compartment applications has become necessary. This test exposes a smoke extraction duct to conditions intended to represent the pre-flashover stage of a fire.

Leakage is measured at both ambient temperature and exposure at 600 °C. During the tests, air/gases are drawn through the duct at a differential pressure between the inside and outside of the duct. Leakage is determined at ambient temperature by sealing the openings in the duct located in the furnace and taking flow measurements through a flow measuring device located just before the extraction fan. With respect to determining leakage at 600 °C, oxygen-measuring techniques are used.

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.

1 Scope

This part of EN 1366 specifies a test method for determining the fire resistance of smoke extraction ducts that are used for single compartment applications only. In such applications, the smoke extraction system is only intended to function up to flashover (typically 600 °C).

This method of test is only suitable for ducts constructed from non-combustible materials (euro class A1 and A2-s1, d0).

It is applicable only to four sided and circular ducts. One, two and three sided ducts are not covered.

This test has been designed to cover horizontal smoke extraction ducts intended for single compartment applications only.

This test method of part 9 is applicable only to smoke extraction ducts that do not pass through into other fire compartments. It represents fire exposure of a developing fire (pre-flashover). For smoke extraction ducts that pass through into other compartments, the method of test described in EN 1366-8 should be used.

The smoke extraction duct is part of the smoke extraction system which also includes smoke control dampers and smoke extract fans.

The method described in this test standard is complex and requires sophisticated instrumentation. It is not recommended therefore to try to test multiple assemblies in this test.

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 1363-1:1999, *Fire resistance tests - Part 1: General requirements*

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

EN 1366-1:1999, *Fire resistance tests for service installations - Part 1: Ducts*

EN 1751, *Ventilation for buildings - Air terminal devices - Aerodynamic testing of dampers and valves*

EN 60584-1, *Thermocouples - Part 1: Reference tables (IEC 60584- 1:1995)*

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 13943:2000, *Fire safety - Vocabulary (ISO 13943:2000)*

ISO 5221, *Air distribution and air diffusion - Rules to methods of measuring air flow rate in an air handling duct*