

**Tehnoseadmete tulepüsivuse katsed.  
Osa 1: Ventilatsioonikanalid**

Fire resistance tests for service installations - Part 1:  
Ducts

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1366-1:2001 sisaldab Euroopa standardi EN 1366-1:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.05.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1366-1:2001 consists of the English text of the European standard EN 1366-1:1999.</p> <p>This document is endorsed on 18.05.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> Selles EVS-EN 1366 osas sätestatakse vertikaalsete ja horisontaalsete ventilatsioonikanalite tulepüsivuse katsetamise kord nende mõjutamisel standardtulekahjuga. Katsetamisel uuritakse ventilatsioonikanali tulepüsivust tule mõjumisel väljastpoolt (kanal A) ja tule mõjumisel seestpoolt (kanal B). Standardit kasutatakse koos standardiga EVS-EN 1363-1.</p>	<p><b>Scope:</b></p>
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**Võtmesõnad:** buildings, fire resistance, fire tests, leaktightness, pipelines, testing conditions, thermal insulation, ventilation

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English version

Fire resistance tests for service installations  
Part 1: Ducts

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

Feuerwiderstandsprüfungen für  
Installationen – Teil 1: Leitungen

This European Standard was approved by CEN on 1999-02-18.

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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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## Foreword

This European Standard 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 2000, and conflicting national standards shall be withdrawn at the latest by February 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the Construction Product Directive.

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

Part 1: Ducts

Part 2: Fire dampers

Part 3: Penetration seals (in course of preparation)

Part 4: Linear joint seals (in course of preparation)

Part 5: Service ducts and shafts (in course of preparation)

Part 6: Raised floors (in course of preparation)

Part 7: Closures for conveyors and trackbound transportation systems (in course of preparation)

Part 8: Smoke extraction ducts (in course of preparation)

Part 9: Single compartment smoke extraction ducts (in course of preparation)

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

## Introduction

The purpose of this test is to measure the ability of a representative duct or duct assembly 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 exhaust 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.

All ducts are fully restrained in all directions where they are inside the furnace. 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 test takes into account the effect of fire exposure from the outside where a 300 Pa underpressure 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 by maintaining a velocity of 3m/s.

Ducts exposed to fire from the inside are supplied with air in a manner which is indicative of the "fan off" and "fan on" situations which could arise in practice.

### **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 shall be made and safety precautions shall be identified and provided. Written safety instructions shall be issued. Appropriate training shall be given to relevant personnel. Laboratory personnel shall ensure that they follow written safety instructions at all times.

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## 1 Scope

This Part of EN 1366 specifies a method for determining the fire resistance of vertical and horizontal ventilation ducts under standardized fire conditions. The test examines the behaviour of ducts exposed to fire from the outside (duct A) and fire inside the duct (duct B). This Standard is used in conjunction with EN1363-1.

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;
- b) ducts containing fire dampers at points where they pass through fire separations;
- c) doors of inspection openings, unless included in the duct to be tested;
- d) two or three sided ducts;
- e) fixing of suspension devices to floors or walls.

For evaluation of fire dampers see EN 1366-2.

For evaluation of smoke extraction ducts see prEN 1366-8.

For evaluation of service ducts and shafts see prEN 1366-5.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 520	Gypsum plasterboards -Specification - Test method (ISO 6308:1980 modified)
EN 1363-1	Fire resistance tests - Part 1: General requirements
EN 1363-2	Fire resistance tests - Part 2: Alternative and additional procedures
EN 1366-2	Fire resistance tests for service installations Part 2: Dampers
prEN 1366-5	Fire resistance tests for service installations Part 5: Service ducts and shafts
prEN 1366-8	Fire resistance tests for service installations Part 8: Smoke extraction ducts
prEN 1507	Ventilation for buildings - Ductwork - Rectangular sheet metal air ducts - Strength and leakage - Requirements and testing
prEN ISO 13943	Fire safety - Vocabulary (ISO/DIS 13943:1998)
EN 20898-1	Mechanical Properties of fasteners Part 1: Bolts, screws and studs (ISO 898:1980)
EN ISO 5167-1	Measurement of fluid flow by means of pressure differential devices - Part 1: Orifice plates, nozzles and venturi tubes inserted in circular cross-section conduits (ISO 5167-1:1991)
ISO 5221	Air distribution and air diffusion - Rules to methods of measuring air flow rate in an air handling duct