



SLOVENSKI STANDARD
oSIST prEN 15871:2017
01-julij-2017

Prezračevanje stavb - Požarno odporni deli kanalov

Ventilation for buildings - Fire resisting duct sections

Lüftung von Gebäuden - Feuerwiderstandsfähige Leitungen

Ventilation des bâtiments - Tronçons de conduits résistants au feu

Ta slovenski standard je istoveten z: prEN 15871

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ICS:

13.220.50	Požarna odpornost gradbenih materialov in elementov	Fire-resistance of building materials and elements
91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air-conditioning systems

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EUROPEAN STANDARD
NORME EUROPÉENNE
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Ventilation for buildings - Fire resisting duct sections

Ventilation des bâtiments - Tronçons de conduits
résistants au feu

Lüftung von Gebäuden - Feuerwiderstandsfähige
Leitungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 156.

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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

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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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
European foreword.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Requirements	7
4.1 Resistance to fire	7
4.1.1 Performance characteristics of a duct system formed using fire resisting duct sections	7
4.2 Durability of resistance to fire	7
4.3 Reaction to fire	7
5 Testing, assessment and sampling methods	7
5.1 Resistance to fire	7
5.1.1 General	7
5.1.2 Fire resistance and leakage test	8
6 Assessment and Verification of Constancy of Performance (AVCP)	8
6.1 General	8
6.2 Type Testing	8
6.2.1 General	8
6.2.2 Test samples, testing and compliance criteria	9
6.2.3 Test report	10
6.2.4 Shared other party results	10
6.2.5 Cascading determination of the product type results	10
6.3 Factory product control (FPC)	11
6.3.1 General	11
6.3.2 Requirements	12
6.3.3 Product specific requirements	15
6.3.4 Initial inspection of factory and of FPC	15
6.3.5 Continuous surveillance of FPC	16
6.3.6 Procedure for modifications	16
6.3.7 One-off products, pre-production products (e.g. prototypes) and products produced in very low quantity	16
7 Marking, labelling and packaging	17
Annex A (informative) Example of inspection procedure	18
Annex B (normative) Test plan for factory production control supplemental requirements	19
Annex C (informative) Product, installation and maintenance information (documentation)	20
C.1 Product specification	20
C.2 Installation information	20
C.3 Maintenance information	21
Annex D (informative) Example of declaration of Performance (DoP)	22
Annex ZA (informative) Relationship of this European Standard with Regulation (EU) No 305/2011	24

ZA.1	Scope and relevant characteristics	24
ZA.2	System of Assessment and Verification of Constancy of performance (AVCP)	24
ZA.2.1	System of AVCP	24
ZA.2.2	Assignment of AVCP tasks	25
Bibliography	26

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[oSIST prEN 15871:2017](https://standards.iteh.ai/catalog/standards/sist/9852073b-635b-4b09-a676-edf1f6a41b82/osist-pren-15871-2017)

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prEN 15871:2017 (E)

European foreword

This document (prEN 15871:2017) has been prepared by Technical Committee CEN/TC 156 “Ventilation for buildings”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

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 EU Directive 89/106/EEC.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

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1 Scope

This European Standard:

- specifies requirements and gives reference to the test methods defined for fire resisting duct sections and their associated components (e.g. hangers and other items as fire stopping seals proven at the time of testing), which are intended to be installed in heating, ventilation and air conditioning (HVAC) systems in buildings, and
- specifies a method for the verification of constancy of performance of these products to the requirements of this document, and
- specifies the marking and information on installation and maintenance of these products.

This document:

- is applicable to fire resisting duct sections placed on the market used in fire resisting air distribution duct systems excluding smoke extraction systems, and
- governs associated components used together with duct sections (e.g. turning vanes, silencers, access panels, with the exceptions of, e.g. fire dampers which are covered by separate standards).

To avoid duplication, reference is made to a variety of other standards. To this end, it is advised to read this document in conjunction with EN 13501-3 for classification and EN 1366-1 and EN 15882-1 for details of the fire resistance testing and the direct and extended field of application.

This document does not consider in detail the detrimental and/or corrosive effects that can be caused by chemical processes present in the atmosphere, which are drawn through the system intentionally or inadvertently.

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2 Normative references

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The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 1366-1, *Fire resistance tests for service installations – Part 1: Ventilation 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 12792, *Ventilation for buildings – Symbols, terminology and graphical symbols*

EN 13501-1, *Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests*

EN 13501-3, *Fire classification of construction products and building elements – Part 3: Classification using data from fire resistance tests on products and elements used in building service installations – Fire resisting ducts and fire dampers*

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

prEN 15871:2017 (E)

EN ISO 1101, *Geometrical product specifications (GPS) – Geometrical tolerancing – Tolerances of form, orientation, location and run-out (ISO 1101)*

EN ISO 8015, *Geometrical product specifications (GPS) – Fundamentals – Concepts, principles and rules (ISO 8015)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12792, EN 1363-1 and EN ISO 13943 and the following apply.

3.1
fire resisting duct section
length of duct without any intermediate transverse joints designed to be combined with other fire resisting duct sections to form a fire resistant duct system; if applicable this includes e.g. access panels, seals, flanges, connection fittings incorporated in the duct section

Note 1 to entry: The fire resisting duct sections are placed on the market by the manufacturer and sold to another party to install in fire resisting duct systems.

3.2
fire stopping seal
product used between the fire resisting duct section and the fire compartment boundary structure to maintain the fire resistance when tested and having met the requirements of EN 1366-1 and EN 15882-1 as appropriate at the position where a fire resisting duct section passes through the fire compartment boundary structure (wall or floor)

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3.3
structural support
means of retaining the fire resisting duct section to the building structure

3.4
access panel
cover for an inspection opening within the duct

3.5
manufacturer
any natural or legal person who manufactures a construction product or who has such a product designed or manufactured, and markets that product under his name or trademark

3.6
fire resistant duct system
duct system which includes all items incorporated, e.g. fire resisting duct sections, duct seals and connections, support system and fire stopping seals, and has been classified in accordance with EN 13501-3

4 Requirements

4.1 Resistance to fire

4.1.1 Performance characteristics of a duct system formed using fire resisting duct sections

4.1.1.1 General

The performances given in 4.1.1.2 to 4.1.1.6 shall be determined.

4.1.1.2 Integrity

Integrity shall be based upon fire tests of ducts carried out in accordance with EN 1366-1 and EN 15882-1. The integrity (E) class shall be determined in accordance with EN 13501-3 and declared by the manufacturer.

4.1.1.3 Insulation

Insulation shall be based upon fire tests of ducts carried out in accordance with EN 1366-1 and EN 15882-1. The insulation (I) class shall be determined in accordance with EN 13501-3 and declared by the manufacturer.

4.1.1.4 Smoke leakage

Smoke leakage shall be based upon fire tests of ducts carried out in accordance with EN 1366-1 and EN 15882-1. The smoke leakage (S) class shall be determined in accordance with EN 13501-3 and declared by the manufacturer.

4.1.1.5 Mechanical stability

Mechanical stability shall be demonstrated by achieving integrity in accordance with 5.1.2.6.

4.1.1.6 Maintenance of cross section

Maintenance of cross section shall be demonstrated by achieving integrity in accordance with 5.1.2.7.

4.2 Durability of resistance to fire

Durability of fire resistance is ensured if the mounting and fixing conditions prescribed by the manufacturer's installation instruction are followed during the installation phase on site.

4.3 Reaction to fire

If reaction to fire is required in some member states, the components of a fire resisting duct section shall be classified in accordance with EN 13501-1.

5 Testing, assessment and sampling methods

5.1 Resistance to fire

5.1.1 General

The test samples shall be selected in accordance with Table 1. The fire resisting duct sections shall be installed in a furnace and subjected to the fire resistance test in accordance with EN 1366-1 and if required as described in EN 15882-1.

prEN 15871:2017 (E)**5.1.2 Fire resistance and leakage test****5.1.2.1 Resistance to fire**

The test method and equipment shall be in accordance with EN 1366-1.

5.1.2.2 Leakage test

The test method and equipment shall be in accordance with EN 1366-1 at ambient temperature.

5.1.2.3 Fire resisting duct sections – Structural supports

Observations shall be made as to the satisfactory performance of the structural supports according to EN 1366-1 and if required as described in EN 15882-1. The structural support method and relevant material names and references shall be recorded.

5.1.2.4 Fire resisting duct sections – Duct sealant materials

Observations shall be made as to the satisfactory performance of the duct sealant according to EN 1366-1. The duct sealant name and reference shall be recorded.

5.1.2.5 Penetration seals (between fire compartments)

Observations shall be made as to the satisfactory performance of the penetration seals according to EN 1366-1. The penetration seal method and relevant material names and references shall be recorded.

5.1.2.6 Mechanical stability

Observations shall be made as to the satisfactory mechanical stability of the fire resisting duct sections according to EN 1366-1.

5.1.2.7 Maintenance of cross section

Observations shall be made as to the satisfactory maintenance of cross section of the fire resisting duct sections according to EN 1366-1.

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<https://standards.itih.ai/catalog/standards/sist/9852073b-635b-4b09->**6 Assessment and Verification of Constancy of Performance (AVCP)****6.1 General**

The compliance of a fire resisting duct section with the requirements of this standard and with the performances declared by the manufacturer in the DoP shall be demonstrated by:

- determination of the product type;
- factory production control by the manufacturer, including product assessment.

The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the conformity of the product with its declared performance(s).

Annex D gives an example of declaration of Performance (DoP).

6.2 Type Testing**6.2.1 General**

All performances related to characteristics included in this standard shall be determined when the manufacturer intends to declare the respective performances unless this standard gives provisions for declaring them without performing tests. (e.g. use of previously existing data, classified without further testing (CWFT) and conventionally accepted performance).

Assessment previously performed in accordance with the provisions of this standard, may be taken into account provided that they were made to the same or a more rigorous test method, under the same AVCP system on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

NOTE Same AVCP system means testing by an independent third party, under the responsibility of a notified product certification body.

For the purposes of assessment, the manufacturer's products may be grouped into families, where it is considered that the results for one more characteristics from any one product within the family are representative for those same characteristics for all products within that same family.

Products may be grouped in different families for different characteristics.

Reference to the assessment method standards should be made to allow the selection of a suitable representative sample.

In addition, the determination of the product type shall be performed for all characteristics included in the standard for which the manufacturer declares the performance:

- at the beginning of the production of a new or modified fire resisting duct section (unless a member of the same family), or
- at the beginning of a new or modified method of production (where this may affect the stated properties), or

they shall be repeated for the appropriate characteristic(s), whenever a change occurs in the fire resisting duct section design, in the raw material or in the supplier of the components, or in the method of production (subject to the definition of a family), which would affect significantly one or more of the characteristics.

Where components are used whose characteristics have already been determined, by the component manufacturer, on the basis of assessment methods of other product standards, these characteristics need not be re-assessed. The specifications of these components shall be documented.

Products bearing regulatory marking in accordance with appropriate harmonized European specifications may be presumed to have the performances declared in the DoP, although this does not replace the responsibility on the fire resisting duct section manufacturer to ensure that the fire resisting duct section as a whole is correctly manufactured and its component products have the declared performance values.

6.2.2 Test samples, testing and compliance criteria

The number of test samples of fire resisting duct sections to be tested/assessed shall be in accordance with Table 1.

Table 1 — Number of samples to be tested and compliance criteria

Characteristic	Requirement	Assessment method	Number of samples	Compliance criteria
Resistance to fire	4.1.1	5.1.2	a	4.1.2
^a Number of samples depends of the manufacturer's decision for range of application and test standard EN 1366-1 and EN 15882-1.				