

საქართველოს სტანდარტი

კვამლისა და სითბოს საკონტროლო სისტემები-ნაწილი 8: კვამლისა და
შიბერის კონტროლი

საინფორმაციო ნაწილი. სრული ტექსტის სანახავად შეიძინეთ სტანდარტი.

საქართველოს სტანდარტებისა და მეტროლოგიის
ეროვნული სააგენტო
თბილისი

სსტ ენ 12101-8:2011/2018

საინფორმაციო მონაცემები

1 შემუშავებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს სტანდარტების დეპარტამენტის მიერ

2 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს 2018 წლის 29 აგვისტოს № 86 განკარგულებით

3 მიღებულია გარეკანის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 12101-8:2011 „ კვამლისა და სითბოს საკონტროლო სისტემები-ნაწილი 8: კვამლისა და შიბერის კონტროლი“

4 პირველად

5 რეგისტრირებულია საქართველოს სტანდარტების და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2018 წლის 29 აგვისტო №268-1.3-013991

აკრძალულია ამ სტანდარტის გადაცემა მესამე პირებისათვის ან/და მისი სხვა ფორმით გავრცელება

ICS

English Version

Smoke and heat control systems - Part 8: Smoke control dampers

Systèmes pour le contrôle des fumées et de la chaleur -
Partie 8: Volets de désenfumage

Rauch- und Wärmefreihaltung - Teil 8:
Entrauchungsklappen

This European Standard was approved by CEN on 17 March 2011.

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 CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
Introduction	5
1 Scope	8
2 Normative references	8
3 Terms and definitions	9
4 Smoke control damper requirements.....	12
4.1 General.....	12
4.1.1 Fire resistance.....	12
4.1.2 General application.....	12
4.2 Construction and components: characteristics.....	12
4.2.1 Construction and operation.....	12
4.2.2 Protection against corrosion.....	14
4.3 Fire resistance performance criteria: Single compartment smoke control dampers.....	14
4.3.1 Integrity, leakage, HOT400/30.....	14
4.3.2 Durability	14
4.3.3 Fire resistance classification and designation.....	15
4.3.4 Other performance criteria	15
4.4 Fire resistance performance criteria: Multi compartment fire resisting smoke control dampers	16
4.4.1 Integrity, insulation, leakage, HOT 400/30.....	16
4.4.2 Durability	16
4.4.3 Fire resistance classification and designation.....	17
4.4.4 Other performance criteria	17
5 Test methods.....	17
5.1 Ambient Leakage Tests.....	17
5.2 Fire resistance tests	18
5.2.1 General.....	18
5.2.2 Smoke control damper: integrity and insulation.....	19
5.2.3 Leakage rated smoke control damper	19
5.2.4 Response delay of a smoke control damper	19
5.3 Salt Spray Exposure Test	20
5.4 Cycling Tests.....	20
5.4.1 Damper durability cycling.....	20
5.5 Damper Aerodynamic Performance.....	20
6 Evaluation of conformity.....	21
6.1 General.....	21
6.2 Initial type testing	21
6.2.1 General.....	21
6.2.2 Modifications.....	21
6.2.3 Previous tests and product families	21
6.2.4 Test samples	22
6.2.5 Test report	22
6.3 Factory product control (FPC).....	22
6.3.1 General.....	22
6.3.2 General requirements.....	23
6.3.3 FPC specific requirements	23
6.3.4 Initial inspection of factory and FPC	25
6.3.5 Continuous surveillance of FPC	25

6.3.6	Procedure for modifications.....	25
6.4	One-off smoke control dampers, pre-production smoke control dampers (e.g. prototypes) and smoke control dampers produced in very low quantities	26
7	Marking and documentation.....	26
8	Product, installation and maintenance information (documentation)	27
8.1	Product specification	27
8.2	Installation information.....	27
8.3	Maintenance information	27
Annex A	(normative) Salt spray exposure test	28
A.1	General	28
A.2	Revised parameters	28
Annex B	(informative) Example of inspection and maintenance procedure	29
Annex C	(normative) Factory production control – test plan.....	30
Annex ZA	(informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive	31
ZA.1	Scope and relevant characteristics	31
ZA.2	Procedure for the attestation of conformity of smoke control dampers.....	34
ZA.2.1	System of attestation of conformity	34
ZA.2.2	EC certificate of conformity and EC declaration of conformity.....	35
ZA.3	CE marking and labelling.....	35
	Bibliography.....	38

საინფორმაციო ნაწილი. სრული ტექსტის საწინააღმდეგო შექმნის სტანდარტი.

Foreword

This document (EN 12101-8:2011) has been prepared by Technical Committee CEN/TC 191 "Fixed firefighting systems", 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 November 2011, and conflicting national standards shall be withdrawn at the latest by November 2011.

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 EU Directive(s).

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

This European Standard has the general title "*Smoke and heat control systems*" and consists of the following separate parts:

- Part 1: Specification for smoke barriers,
- Part 2: Specification for natural smoke and heat exhaust ventilators,
- Part 3: Specification for powered smoke and heat exhaust ventilators,
- Part 4: Installed SHEVS systems for smoke and heat ventilation (Technical Report (TR)),
- Part 5: Guidelines on functional recommendations and calculation methods for smoke and heat exhaust ventilation systems (TR),
- Part 6: Specification for pressure differential systems – Kits,
- Part 7: Smoke duct sections,
- Part 8: Smoke control dampers (this standard),
- Part 9: Control panels,
- Part 10: Power supplies.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard contains the basic performance and requirements for smoke control dampers that are to be used in conjunction with pressure differential systems and smoke and heat control systems. They can also be used to pressurise when gas extinguishing systems are used.

Particular reference is required to EN 1366-10, which defines the furnace testing associated with these products and EN 13501-4, which provides details on their fire resistance classification.

In addition to the prevention of transmission of smoke and combustion products from a fire zone, smoke control dampers are utilised to contain the spillage of otherwise harmful and toxic extinguishing gases from the affected area, and for the control of pressurising and excess air relief within pressurisation systems.

Smoke control systems are designed to fulfil the following basic functions. These are:

- a) the extraction of smoke from a single fire compartment to the outside of the building,
- b) the extraction of smoke from fire compartments of a building, using a SHEVS connected to one or more fire compartments. The smoke control system duct may or may not pass through other compartments of the building to reach the outside of the building,
- c) the use of pressurisation to maintain smoke free clear areas.

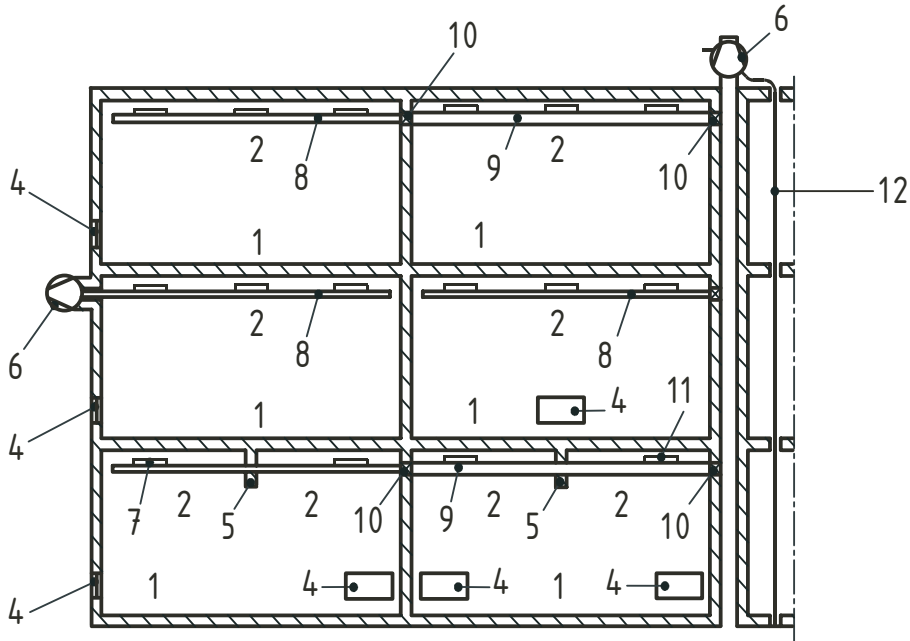
Smoke control dampers are commonly used in smoke and heat control systems as a means of limiting the number of ducts and high temperature fan units. The ducts into which such smoke control dampers are fitted generally serve a number of different fire compartments. The systems may be dedicated smoke extraction or possibly a combined environmental ventilation/smoke extraction.

The smoke and heat control system may remove smoke using either high temperature fans (in accordance with EN 12101-3) or natural ventilators (in accordance with EN 12101-2).

It may be necessary for a number of reasons (fire growth, smoke release, etc.) that the open smoke control damper(s) is (are) required to close and that the damper(s) previously closed is(are) required to open.

The tests defined in this standard are based on the assumption that when smoke is detected within a building, all smoke control dampers other than those serving the fire compartment/smoke reservoir (where the fire has initiated) remain closed or move to the closed position. All smoke control dampers serving the smoke affected fire compartment/smoke reservoir remain open or move to the open position, and the fan(s) started/natural vents opened.

NOTE Figure 1 gives examples of installation positions, but these are not the only positions where dampers may be fitted.

**Key**

- 1 Fire compartment
- 2 Smoke reservoir
- 4 Air inlet
- 5 Smoke barrier
- 6 Powered smoke and heat exhaust ventilator (fan)
- 7 Smoke control dampers for single compartments (FprEN 12101-8 and EN 1366-10)
- 8 Smoke control ducts for single compartments (FprEN 12101-7 and EN 1366-9)
- 9 Smoke control ducts for multi compartments (FprEN 12101-7 and EN 1366-8)
- 10 Smoke control dampers for multi compartments (FprEN 12101-8 and EN 1366-10) mounted inside or outside of wall or floor
- 11 Smoke control dampers for multi compartments (FprEN 12101-8 and EN 1366-10) mounted on the surface of the duct
- 12 Electrical equipment

Figure 1 – Example of powered smoke and heat exhaust ventilation

Further guidance on the application of smoke control dampers may be found within the rest of the EN 12101 series of harmonised standards and technical reports.

The areas for which products supplied to this standard are considered applicable include for example:

- a) commercial premises,
- b) shopping and retail centres,
- c) hospitals,
- d) multi-residential buildings.

Smoke control dampers are intended for use in the following types of systems, including:

- 1) pressurisation,

- 2) pressure relief,
- 3) extraction systems,
- 4) ductwork systems,
- 5) inerting fire suppression systems.

It is realised that all the above systems do not address smoke directly, but similar properties are required of such smoke control dampers to limit leakage in a fire and smoke control situation.