

საქართველოს ეროვნული სტანდარტი

კვამლისა და სითბოს საკონტროლო სისტემები.
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English Version

Smoke and heat control systems - Part 10: Power supplies

Systèmes pour le contrôle des fumées et de la chaleur -
Partie 10 : Equipement d'alimentation en énergie

Rauch- und Wärmefreihaltung - Teil 10: Energieversorgung

This European Standard was approved by CEN on 26 August 2005.

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.

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 Central Secretariat has the same status as the official versions.

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



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Foreword

This European Standard (EN 12101-10:2005) 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of an identical text or by endorsement, at the latest by April 2006, and conflicting national standards shall be withdrawn at the latest by April 2006.

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 EU Directive(s).

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

EN 12101 ‘Smoke and heat control systems’ consists of the following:

- 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: Fire and smoke control installations – Kits,
- Part 6: Pressure differential systems – Kits,
- Part 7: Smoke control ducts,
- Part 8: Specifications for smoke control dampers,
- Part 9: Control panels,
- Part 10: Power supplies.

EN 12101 is included in a series of European Standards planned to cover also:

- Gas extinguishing systems (EN 12094 and EN ISO 14520),
- Sprinkler systems (EN 12259),
- Powder systems (EN 12416),
- Explosion protection systems (EN 26184),
- Foam systems (EN 13565),
- Hose systems (EN 671),
- Water spray systems.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic,

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

Introduction

Smoke and heat control systems are used to protect people, buildings and/or building contents from the effects of smoke and heat in the event of fire. The most common systems are smoke and heat exhaust ventilation systems (SHEVS) and pressure differential systems.

Smoke and heat exhaust ventilation systems (SHEVS) create a smoke free layer above the floor by removing smoke and thus improve the conditions for the safe escape and/or rescue of people and animals and the protection of property and permit the fire to be fought while still in its early stages. They also exhaust hot gases released by a fire in the developing stage.

The use of smoke and heat exhaust ventilation systems to create smoke free areas beneath a buoyant smoke layer has become widespread. Their value in assisting in the evacuation of people from construction works, reducing fire damage and financial loss by preventing smoke logging, facilitating fire fighting, reducing roof temperatures and retarding the lateral spread of fire is firmly established. For these benefits to be obtained it is essential that smoke and heat exhaust ventilators operate fully and reliably whenever called upon to do so during their installed life. A heat and smoke exhaust ventilation system is a scheme of safety equipment intended to perform a positive role in a fire emergency.

Components for smoke and heat exhaust systems should be installed as part of a properly designed smoke and heat system.

Smoke and heat exhaust ventilation systems help to:

- keep the escape and access routes free from smoke;
- facilitate fire fighting operations by creating a smoke free layer;
- delay and/or prevent flashover and thus full development of the fire;
- protect buildings, equipment and furnishings;
- reduce thermal effects on structural components during a fire;
- reduce damage caused by thermal decomposition products and hot gases.

Pressure differential systems are used to either positively pressurise spaces separated from the fire or to depressurise the space containing the fire in order to limit or prevent the flow of smoke and heat into adjacent spaces. A typical use would be to pressurise an escape stair well in order to protect vertical means of escape.

Depending on the design of the system, natural or powered smoke and heat ventilation can be used in a smoke and heat control system.

Power supply equipment for a smoke and heat control system may be for pneumatic systems, low voltage or extra low voltage electrical systems, or a combination of any of these.

Smoke and heat control system power supplies may also provide power for day to day ventilation and for other fire safety equipment under fire conditions.