
Smoke and heat control systems —

Part 2:

**Specifications for natural smoke and
heat exhaust ventilators**

Systèmes de contrôle de fumée et de chaleur —

*Partie 2: Spécifications pour les dispositifs d'évacuation naturelle des
fumées et de la chaleur*



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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 21, *Equipment for fire protection and fire fighting*, Subcommittee SC 11, *Smoke and heat control systems and components*.

This second edition cancels and replaces the first edition (ISO 21927-2:2006), which has been technically revised. It also incorporates the Amendment ISO 21927-2:2006/Amd1:2010.

The main changes compared to the previous edition are as follows:

- the test apparatus has been amended;
- the whole document has been revised.

A list of all parts in the ISO 21927 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

In a fire situation, smoke and heat exhaust ventilation systems create and maintain a smoke free layer above the floor by removing smoke. They also serve simultaneously to exhaust hot gases released by a fire in the developing stages. The use of such systems to create smoke-free areas beneath a buoyant layer has become widespread. Their value in assisting in the evacuation of people from buildings and other construction works, reducing fire damage and financial loss by preventing smoke damage, facilitating access for firefighting by improving visibility, reducing roof temperatures and retarding the lateral spread of fire is firmly established. For these benefits to be obtained, it is essential that natural smoke and heat exhaust ventilators (referred to in this document as NSHEV) operate fully and reliably whenever called upon to do so during their installed life. A smoke and heat exhaust ventilation system (referred to in this document as a SHEVS) is a system of safety equipment intended to perform a positive role in a fire emergency.

Smoke and heat control systems —

Part 2:

Specifications for natural smoke and heat exhaust ventilators

1 Scope

This document applies to natural smoke and heat exhaust ventilators (NSHEV) operating as part of smoke and heat exhaust systems (SHEVS), placed on the market. This document specifies requirements and gives test methods for natural smoke and heat exhaust ventilators which are intended to be installed in smoke and heat control systems in buildings.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 11925-2, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test*

ISO 21927-9, *Smoke and heat control systems — Part 9: Specification for control equipment*

ISO 21927-10, *Smoke and heat control systems — Part 10: Specification for power output devices*

IEC 60584-1, *Thermocouples — Part 1: EMF specifications and tolerances*

EN 54-5, *Fire detection and fire alarm systems — Part 5: Heat detectors — Point detectors*

EN 54-7, *Fire detection and fire alarm systems — Part 7: Smoke detectors — Point detectors using scattered light, transmitted light or ionization*

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

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>