



SLOVENSKI STANDARD

SIST EN 403:1996

01-april-1996

Oprema za varovanje dihal za samoreševanje - Kapuca s filtracijsko napravo za samoreševanje pri požaru - Zahteve, preskušanje, označevanje

Respiratory protective devices for self-rescue - Filtering devices with hood for self-rescue from fire - Requirements, testing, marking

Atenschutzgeräte für Selbstrettung - Filtergeräte mit Haube bei Bränden - Anforderungen, Prüfung, Kennzeichnung

Appareils de protection respiratoire pour l'évacuation - Appareils filtrants avec cagoule pour l'évacuation d'un incendie - Exigences, essais, marquage

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Ta slovenski standard je istoveten z: **EN 403:1993**

ICS:

13.340.30 Varovalne dihalne naprave Respiratory protective devices

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en

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EUROPEAN STANDARD

EN 403:1993

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 1993

UDC 614.894.41.7:620.1:62-777:614.8

Descriptors: Accident prevention, personal protective equipment, respiratory protective equipment, filters, fire, disposal specifications, tests, marking

English version

**Respiratory protective devices for self-rescue -
Filtering devices with hood for self-rescue from
fire - Requirements, testing, marking**

Appareils de protection respiratoire pour
l'évacuation - Appareils filtrants avec cagoule
pour l'évacuation d'un incendie - Exigences,
essais, marquage

Atenschutzgeräte für Selbstrettung -
Filtergeräte mit Haube bei Bränden -
Anforderungen, Prüfung, Kennzeichnung

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This European Standard was approved by CEN on 1993-04-05. 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.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword*

This European Standard has been prepared by the Technical Committee CEN/TC 79 "Respiratory protective devices" of which the secretariat is held by DIN.

The text has been submitted to the formal vote and has been approved by CEN as a European Standard.

This European Standard has been prepared under a mandate given to CEN by the Commission of the European Communities and the European Free Trade Association, and supports essential requirements of EC Directive(s).

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 October 1993, and conflicting national standards shall be withdrawn at the latest by October 1993.

In accordance with the CEN/CENELEC Internal Regulations, following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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Introduction

A given respiratory protective device can only be approved when the individual components satisfy the requirements of the test specification which may be a complete standard or part of a standard, and practical performance tests have been carried out on complete device where specified in the appropriate standard. If for any reason a complete device is not tested then simulation of the device is permitted provided the respiratory characteristics and weight distribution are similar to those of the complete device.

1 Scope

This European Standard specifies filtering devices with a hood for personal escape from particulate matter, carbon monoxide and other toxic gases produced by fire. It specifies minimum requirements for this device which is for single use. It does not cover devices designed for use in circumstances where there is or might be an oxygen deficiency (oxygen less than 17 % by volume).

Two types of devices are specified; namely, those designed to be carried on the person and those designed to be stored.

This standard specifies devices primarily designed for adult users. Some devices may not be suitable for children.

Laboratory and practical performance tests are included for the assessment of compliance with the requirements.

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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.

- EN 132: Respiratory protective devices; Definitions
- EN 136: Respiratory protective devices; Full face masks; Requirements, testing, marking
- EN 140: Respiratory protective devices; Half masks and quarter masks; Requirements, testing, marking
- EN 141: Respiratory protective devices; Gas filters and combined filters; Requirements, testing, marking
- EN 143: Respiratory protective devices; Particle filters; Requirements, testing, marking
- EN 146: Respiratory protective devices; Powered particle filtering devices incorporating helmets or hoods; Requirements, testing, marking
- EN 405: Respiratory protective devices; Valved filtering half masks against gases or gases and particles; Requirements, testing, marking

3

Definition, description and classification

3.1

Definition

For the purposes of this European Standard the definitions given in EN 132 apply.

3.2 Description

A filtering device with a hood for self-rescue from fire (short: filtering smoke hood) is a respiratory protective device dependent on the ambient atmosphere.

A complete device consists of a facepiece with combined filter and, if necessary, suitable packaging. It is not intended that any disassembly or assembly be carried out by the user.

The facepiece of a filtering smoke hood can be the hood itself or a full face mask, half mask, quarter mask, or mouthpiece assembly connected to the hood. The combined filter is attached to the facepiece and is not replaceable without tools.

3.3 Classification

Device designed to be carried on the person is classified as 'M' and that for storage 'S'.

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4 Requirements

4.1 Conditioning

Prior to laboratory or practical performance tests all test specimen shall be conditioned.

Testing in accordance with 5.2.

4.2 Materials

The device shall be sufficiently robust and be made of appropriate materials to withstand conditions it is likely to encounter during storage and use.

Materials that may come into contact with the wearer's skin shall not be known to be likely to cause irritation or any other adverse effect to health.

All metallic parts shall be corrosion-resistant or protected against corrosion e. g. by packaging.

The finish of any part of the device likely to be in contact with the wearer shall be free from sharp edges and burrs.

Testing in accordance with 5.1 and 5.3.

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4.3 Packaging

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The packaging shall be easy to open without tools. If materials sensitive to humidity are used in the device, they shall be protected against the effects of humidity e. g. by suitable packaging.

Testing in accordance with 5.1, 5.2.2 and 5.2.6.

4.4 Practical performance test

In addition to the machine tests described the device shall undergo practical performance tests under realistic conditions. These general tests serve the purpose of checking the equipment for imperfections that cannot be determined by the tests described elsewhere in this standard.

Where, in the opinion of the test station, approval is not granted because practical performance tests show the device has

imperfections related to wearer's acceptance, the test station shall provide full details of those parts of the practical performance tests which revealed these imperfections. This will enable other test stations to duplicate the tests and the results thereof.

Testing in accordance with 5.3.

4.5 Leakage

4.5.1 Inward leakage excluding filter penetration (breathing zone)

When the filtering smoke hood is tested in accordance with 5.4.1 the values of inward leakage shall comply with the following:

For filtering smoke hoods fitted in accordance with the instructions for use, at least 46 out of the 50 individual results for the inward leakage over each of the exercise periods as defined in 5.4.1 (i. e. 10 subjects x 5 exercise periods) shall be not greater than

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5 %

and, in addition, at least 8 out of the 10 individual wearer arithmetic means (10 subjects) for the inward leakage, averaged over all exercise periods shall be not greater than

2 %.

4.5.2 Leakage into ocular zone

The leakage of the test agent shall not exceed 20 %.

Testing in accordance with 5.4.2.

4.6 Filter**4.6.1 Gas capacity**

When tested in accordance with 5.5 the breakthrough time shall not be less than 15 min when the following test agents are used:

propenal (acrolein)

hydrogen chloride

hydrogen cyanide

carbon monoxide.

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4.6.2 Particle filter penetration

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The filter shall meet the requirements of EN 143 for penetration of particle filter class P2 using sodium chloride as test agent.

Testing in accordance with 5.6

4.7 Valves

If the device is equipped with valves, the valves shall operate correctly and independent of their orientation. They shall be protected against dirt and mechanical damage.

Testing in accordance with 5.1 and 5.3.

4.8 Inhalation and exhalation resistance

When tested in accordance with 5.7 the inhalation resistance shall not exceed 8 mbar and the exhalation resistance shall not exceed 3 mbar.

4.9 Flammability

The materials used shall not present a danger for the wearer and shall not be of highly flammable nature.

When tested in accordance with 5.8 the filtering smoke hood or other exposed parts shall not continue to burn or present any additional hazard to the wearer. It is not required that the filtering smoke hood still has to be useable after the test.

Testing according to 5.1.

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4.10 Carbon dioxide content of inhalation air

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When tested in accordance with 5.9 the carbon dioxide content of inhalation air (dead space) shall not exceed an average of 2 % by vol.

4.11 Head harness

If a harness is fitted it shall meet the requirements for harness specified in EN 140.

4.12 Vision**4.12.1 Visor**

The visors shall be reliably assembled to the device and shall withstand the stress to be expected.

Testing in accordance with 5.1

4.12.2 Impairment of vision

Visors shall not distort vision as determined in practical performance tests.

There shall be no significant impairment of vision by fogging as determined in practical performance tests.

Testing in accordance with 5.3.

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4.12.3 Field of vision

The field of vision is acceptable if determined so in practical performance tests.

Testing in accordance with 5.3.

4.13 Mass

The mass of the ready-for-use device without packaging or carrying device shall not exceed 1 000 g.

4.14 Connections

Connections between components shall be designed such that they cannot be readily separated by the user.

Testing in accordance with 5.1.

The connection between filter and hood assembly shall withstand axially a tensile force of 50 N.

Testing in accordance with 5.10.

4.15 Sealing

Each complete device or filter component shall be sealed and shall not be resealable except by the use of special equipment. The sealing shall be such that it can readily be opened when necessary but not inadvertently. When the packaging seal has been broken this shall be obvious by visual inspection.

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Testing in accordance with 5.1.

4.16 Integrity of filtering smoke hood at high carbon monoxide concentrations

When tested in accordance with 5.5.2.2 subsequent to 5.1 but with the variation to use 1,0 % by vol. carbon monoxide in air as test atmosphere the device shall maintain its mechanical integrity and shall not present a hazard to the wearer.