SLOVENSKI STANDARD
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Oprema za varovanje dihal - Ustniki - Zahteve, preskuġanje, oznaļevanje

Respiratory protective devices - Mouthpiece assemblies - Requirements, testing, marking

Atemschutzgeräte - Mundstückgarnituren - Anforderungen, Prüfung, Kennzeichnung

Appareils de protection respiratoire - Ensembles embouts buccaux - Exigences, essais, marquage

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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 Management Centre has the same status as the official versions.

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Foreword

This document EN 142:2002 has been prepared by Technical Committee CEN/TC 79 "Respiratory protective devices", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by October 2002, and conflicting national standards shall be withdrawn at the latest by October 2002.

This document supersedes EN 142:1989.

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.

The annexes A and ZA are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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 successfully on complete apparatus where specified in the appropriate standard. If for any reason a complete apparatus is not tested then simulation of the apparatus is permitted provided the respiratory characteristics and mass distribution are similar to those of the complete apparatus.

1 Scope

This European Standard refers to mouthpiece assemblies for respiratory protective devices, except escape apparatus and diving apparatus.

It specifies minimum requirements for mouthpiece assemblies for use as part of respiratory protective devices.

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

2 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 (including amendments).

EN 132, *Respiratory protective devices - Definitions of terms and pictograms.*

EN 134, *Respiratory protective devices - Nomenclature of components.*

EN 148-1, *Respiratory protective devices - Threads for facepieces - Part 1: Standard thread connection.*

EN 148-2, *Respiratory protective devices - Threads for facepieces - Part 2: Centre thread connection.*

EN 148-3, *Respiratory protective devices - Threads for facepieces - Part 3: Thread connection M45 x 3.*

EN 13274-2, *Respiratory protective devices - Methods of test - Part 2: Practical performance tests*

EN 13274-3, *Respiratory protective devices - Methods of test - Part 3: Determination of breathing resistance.*

EN 13274-4, *Respiratory protective devices - Methods of test - Part 4: Determination of resistance to flame and flammability.*

3 Terms and definitions

For the purpose of this European Standard the definitions given in EN 132 and the nomenclature given in EN 134 apply.

4 Description

Air enters the mouthpiece assembly and passes directly into the mouth. The exhaled air flows back either through the facepiece connector into the breathing apparatus (closed-circuit breathing apparatus, pendulum breathing) or directly to the ambient atmosphere, via the exhalation valve(s), in other types of respiratory protective devices.

5 Designation

Mouthpiece assemblies meeting the requirement of this European Standard shall be designated in the following manner:

Mouthpiece assembly EN 142.

6 Requirements

6.1 General

In all tests all test samples shall meet the requirements.

6.2 Ergonomics

The requirements of this standard are intended to take account of the interaction between the wearer, the mouthpiece assembly, and where possible, the working environment in which the mouthpiece assembly is likely to be used. See annex ZA.

6.3 Design

The design of the mouthpiece assembly shall be such as to allow its inspection in accordance with the manufacturers instructions.

The mouthpiece assembly shall be sufficiently robust to withstand the rough usage it is likely to receive in service.

The mouthpiece assembly shall be designed so that there are no protruding parts or sharp edges likely to be caught on projections in narrow passages.

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

The mouthpiece assembly shall be designed to ensure its full function in any orientation.

The mouthpiece shall be so designed that inward leakage between lips and mouthpiece is negligible.

The mouthpiece shall be so designed that the airflow is not restricted unintentionally when the mouthpice assembly is being worn.

Testing shall be done in accordance with 7.3 and 7.13.

6.4 Materials

All materials used in the construction shall have adequate mechanical strength.

Exposed parts, i.e. those which may be subjected to impact during use of the apparatus shall not be made of aluminium, magnesium, titanium or alloys containing such proportions of these metals as will, on impact, give rise to frictional sparks capable of igniting flammable gas mixtures.

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

Testing shall be done in accordance with 7.3 and 7.13.

6.5 Cleaning and disinfecting

All materials used shall withstand the cleaning and disinfection agents and procedures recommended by the manufacturer.

Testing shall be done in accordance with 7.3 and 7.13.

6.6 Resistance to temperature

Following the conditioning in accordance with 7.4 and after being allowed to return to ambient temperature the mouthpiece assembly shall show no appreciable deformation and any incorporated threaded connector to EN 148-1 or EN 148-2 shall be gauged and shall comply with the appropriate standard.

Testing shall be done in accordance with 7.3.

6.7 Flammability

Parts of the mouthpiece assembly that might be exposed to a flame during use shall not burn or continue to burn for more than 5 s after removal from the flame.

Testing shall be done in accordance with 7.3 and 7.5.

6.8 Demountable parts

All demountable connections shall be readily connected and secured, where possible by hand. Any means of sealing used shall be retained in position when the connection is disconnected during normal maintenance.

Testing shall be done in accordance with 7.3 and 7.13.

6.9 Replaceable components

Unless integral with the mouthpiece assembly the following components (if fitted) shall be replaceable:

Head harness, connector(s), inhalation and exhalation valves.

Testing shall be done in accordance with 7.3.

6.10 Head harness

The head harness shall be designed so that the mouthpiece assembly can be donned and removed easily.

Testing shall be done in accordance with 7.13.

The head harness shall be adjustable or self-adjusting and shall hold the mouthpiece assembly firmly and comfortably in position.

Testing shall be done in accordance with 7.13.

Each strap of the head harness, buckles and other adjusting means shall withstand a pull of 50 N applied for 10 s in the direction of pulling when the facepiece is donned. No breaks or sliding of the straps shall occur.

The requirement applies to the buckles and attachment lugs as well as to the straps.

Testing shall be done in accordance with 7.3 and 7.6.

6.11 Connection

6.11.1 General

The connection between the mouthpiece assembly and the apparatus may be achieved by a permanent or special (e.g. insert) type of connection or by a thread connection.

Testing shall be done in accordance with 7.3.

The mouthpiece assembly shall not be equipped with a thread connection according to EN 148-3.

Testing shall be done in accordance with 7.3.

Correct and reliable connection between mouthpiece assembly and other parts of the respiratory protective device shall be assured.

Testing shall be done in accordance with 7.3, 7.11 and 7.13.

The connection between the mouthpiece body and the connector shall be sufficiently robust to withstand axially a tensile force of 50 N.

Testing shall be done in accordance with 7.7.

6.11.2 Thread connection according to EN 148-1

This thread connection may be used as the mouthpiece assembly connection for all respiratory protective devices, except closed-circuit breathing apparatus and positive pressure demand breathing apparatus.

If this thread connection is used then the relevant requirements of EN 148-1 shall be satisfied.

Testing shall be done in accordance with 7.3.

6.11.3 Thread connection according to EN 148-2

This thread connection may be used as the mouthpiece assembly connection for closed-circuit breathing apparatus.

If this thread connection is used then the relevant requirements of EN 148-2 shall be satisfied.

Testing shall be done in accordance with 7.3.

6.12 Inhalation valves and exhalation valves (if fitted)

6.12.1 General

Valve assemblies shall be such that they can be readily maintained and correctly replaced.

It shall not be possible to fit an exhalation valve assembly into the inspiratory circuit or an inhalation valve assembly into the exhalation circuit.

Inhalation and exhalation valve assemblies, sub-assemblies and piece parts that are by the manufacturer designed to be identical, are acceptable.

Differently designed inhalation and exhalation valves are acceptable if a precise and comprehensible description is given in the information manual supplied by the manufacturer. The description in the information manual supplied by the manufacturer should be supported by illustrations (photographs, drawings) on how to assemble the unit correctly.

To enable correct assembly, the parts shall be be precisely and comprehensibly described or marked.

An appropriate method of checking correct assembly shall be described, e.g. visual inspection, check by the wearer, test by maintenance personnel, etc.

A mouthpice assembly with centre thread connection to EN 148-2 shall not have valves.

Testing shall be done in accordance with 7.3.

6.12.2 Inhalation valve(s)

If a thread connection according to EN 148-1 is used, an inhalation valve shall be incorporated in the mouthpiece assembly. Where the facepiece is intended to be used with filters it shall be provided with an integral inhalation valve, if there is no valve in the filter.

Inhalation valve(s) shall function correctly in all orientations and shall meet the requirements of 6.14.

Testing shall be done in accordance with 7.12 and 7.13.

6.12.3 Exhalation valve(s)

Exhalation valve(s) shall function correctly in all orientations and shall meet the requirements of 6.14.

Testing shall be done in accordance with 7.12 and 7.13.

The mouthpiece assembly except one with a centre thread connection to EN 148-2 shall have at least one exhalation valve or appropriate means to allow the escape of exhaled air and, where applicable, any excess air delivered from a supplied air source.

Testing shall be done in accordance with 7.3.

Exhalation valve(s) shall be protected against or be resistant to dirt and mechanical damage. They may be shrouded or include any other device that may be necessary to comply with 6.13.

Exhalation valve(s) shall continue to operate correctly after a continuous exhalation flow of 300 l/min over a period of 30 s and meet the requirements of 6.14.

Testing shall be done in accordance with 7.8.

When the exhalation valve housing is attached to the mouthpiece body, it shall withstand axially a tensile force of 50 N applied for 10 s.

Testing shall be done in accordance with 7.9.

The inward leakage through the exhalation valve(s) shall not exceed 0,01 %.

Testing shall be done in accordance with 7.10.

6.13 Leaktightness

The leakage of the mouthpiece assembly shall not exceed that indicated by a change of pressure of 1 mbar in 1 min.

Testing shall be done in accordance with 7.11.

6.14 Breathing resistance

6.14.1 Mouthpiece assembly with thread connection according to EN 148-1

The breathing resistance shall not exceed 1,5 mbar for inhalation and 3,0 mbar for exhalation.