

Respiratory protective devices — Fresh air hose breathing apparatus for use with full face mask, half mask or mouthpiece assembly — Requirements, testing, marking

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British Standard

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National foreword

This British Standard has been prepared under the direction of the Personal Safety Equipment Standards Policy Committee and is the English language version of EN 138:1994 *Respiratory protective devices — Fresh air hose breathing apparatus for use with full face mask, half mask or mouthpiece assembly — Requirements, testing, marking*, published by the European Committee for Standardization (CEN). Together with BS EN 139, BS EN 269 and BS EN 270 it supersedes BS 4667-3:1974, which is withdrawn.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 20, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Descriptors: Respiratory protective equipment, accident prevention, specifications, tests, marking

English version

Respiratory protective devices — Fresh air hose breathing apparatus for use with full face mask, half mask or mouthpiece assembly — Requirements, testing, marking

Appareils de protection respiratoire —
Appareils de protection respiratoire à air libre
avec masque complet, demi-masque ou
ensemble embout buccal — Exigences, essais,
marquage

Atemschutzgeräte —
Frischluf-Schlauchgeräte in Verbindung mit
Vollmaske, Halbmaske oder
Mundstückgarnitur — Anforderungen,
Prüfung, Kennzeichnung

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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.

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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*, the Secretariat of which is held by DIN.

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 the 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 February 1995, and conflicting national standards shall be withdrawn at the latest by February 1995.

According to the CEN/CENELEC Internal Regulations, the 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, 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 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 weight distribution are similar to those of the complete apparatus.

1 Scope

This European Standard specifies minimum requirements for fresh air hose breathing apparatus for use with a full face mask, a half mask or a mouthpiece assembly as a respiratory protective device. Two classes of apparatus are covered, the differentiation resulting from mechanical performance and not respiratory protection. Escape and diving apparatus and that used in abrasive blasting operations are not covered by this standard.

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.

EN 132:1990, *Respiratory protective devices — Definitions.*

EN 134:1990, *Respiratory protective devices — Nomenclature of components.*

EN 136:1989, *Respiratory protective devices — Full face masks — Requirements, testing, marking.*

EN 140:1989, *Respiratory protective devices — Half masks and quarter masks — Requirements, testing, marking.*

EN 142:1989, *Respiratory protective devices — Mouthpiece assemblies — Requirements, testing, marking.*

EN 148-1:1987, *Respiratory protective devices — Threads for facepieces — Standard thread connection.*

EN 148-2:1987, *Respiratory protective devices — Threads for facepieces — Centre thread connection.*

EN 148-3, *Respiratory protective devices — Threads for facepieces — Thread connection $M 45 \times 3$.*

EN 28031:1993, *Rubber and plastics hoses and hose assemblies — Determination of electrical resistance.* (ISO 8031:1987)

ISO 6941:1984/AMD 1:1992, *Textile fabrics — Burning behaviour — Measurement of flame speed properties of vertically oriented specimens.*

3 Definitions and nomenclature

For the purposes of this European Standard the definitions and nomenclature given in EN 132 and EN 134 respectively apply together with the following.

3.1

fresh air hose breathing apparatus for use with a full face mask, half mask or a mouthpiece assembly

apparatus which is not self-contained in which breathable fresh air is drawn from an air source with or without the assistance of a device

3.2

overflow valve

a non-return valve, fitted to the breathing hose, that is specifically designed to allow the excess air supply to escape to atmosphere

3.3

breathing bag

a device which compensates for variation in the air supply and provides for peak inhalation flow requirements

4 Description

NOTE The term "suitable facepiece" means a facepiece complying with EN 136, EN 140 or EN 142 as appropriate.

4.1 Fresh air hose breathing apparatus (unassisted)

This apparatus enables the wearer to be provided with breathable air supplied by his own breathing action through an air supply hose to a full face mask or mouthpiece assembly. The exhaled air flows into the ambient atmosphere. This type of apparatus is class 2 only and cannot incorporate a half mask.

4.2 Fresh air hose breathing apparatus (manually assisted)

This apparatus enables the wearer to be provided with breathable air which is forced through a low pressure air supply hose by a manually operated device (blower) to a suitable facepiece. In an emergency the wearer is able to inhale whether or not the blower is operating. The exhaled and excess air flows into the ambient atmosphere. This type of apparatus can be class 1 or class 2.

In certain circumstances a breathing bag or similar device may be necessary.

4.3 Fresh air hose breathing apparatus (power operated)

This apparatus enables the wearer to be provided with breathable air which is forced through a low pressure air supply hose by a motor driven blower or other device such as a compressed air injector to a suitable facepiece. In an emergency the wearer is able to inhale whether or not the device is operating. The exhaled and excess air flows into the ambient atmosphere. This type of apparatus can be class 1 or class 2.

In certain circumstances a breathing bag or similar device may be necessary.

5 Classification and designation

5.1 Classification

Apparatus shall be classified in terms of robustness of construction in accordance with Table 1.

Table 1 — Classification of apparatus

Class	Apparatus details
1	Light duty construction
2	Heavy duty construction

5.2 Designation

Respiratory protective devices meeting the requirements of this standard shall be designated as follows:

Fresh air BA EN 138 (class)(options)

Example: Fresh air BA EN 138 class 2

6 Requirements

6.1 Materials

6.1.1 All materials used in the construction shall have adequate mechanical strength, durability and resistance to deterioration by heat.

6.1.2 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

6.1.3 Materials that may come into direct contact with the wearer’s skin or that may affect the quality of the breathed air shall not be known to be likely to cause skin irritation or any other adverse effect to health.

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

6.1.5 Compliance with 6.1.1, 6.1.2, 6.1.3 and 6.1.4 shall be assessed in accordance with 7.2.

6.2 Water immersion

The apparatus shall continue to function satisfactorily after being submerged in water and shall meet the requirements of 6.19.

WARNING. The apparatus is not designed for use under water.

Testing in accordance with 7.3.

6.3 Cleaning and disinfecting

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

Testing in accordance with 7.2.

6.4 Practical performance test

The apparatus shall be such that it can be worn without avoidable discomfort, the wearers shall show no undue signs of strain attributable to wearing the apparatus, and it shall impede the wearer as little as possible when in a crouched position or when working in a confined space.

NOTE These 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 apparatus has imperfections related to wearer’s acceptance, the test station shall describe the tests which revealed these imperfections. This will enable other test stations to duplicate the tests and assess the results thereof.

Testing in accordance with 7.4.