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Ships and marine technology — Breathing apparatus for ships —

Part 4: Self-contained breathing apparatus for emergency escape required by the IMO IBC and IGC Codes

Navires et technologie maritime — Appareils respiratoires pour navires —

Partie 4: Appareils respiratoires autonomes pour issues de secours exigés d'après les codes IBC et IGC de l'OMI

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 23269-4 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 1, *Lifesaving and fire protection*.

ISO 23269 consists of the following parts, under the general title *Ships and marine technology — Breathing apparatus for ships*:

— *Part 1: Emergency escape breathing devices (EEBD) for shipboard use*

— *Part 2: Breathing apparatus for shipboard firefighters*

— *Part 3: Self-contained breathing apparatus (safety equipment) required by the IMO IBC and IGC Codes*

— *Part 4: Self-contained breathing apparatus for emergency escape required by the IMO IBC and IGC Codes*

Introduction

The International Bulk Chemical (IBC) Code and the International Gas Carrier (IGC) Code of the International Maritime Organization (IMO) require that self-contained breathing apparatus (SCBA) for emergency escape purposes be carried on board chemical tankers and gas carrier ships. However, these SCBA codes prescribe limited specifications, e.g. the prohibition of filter-type respiratory protection, a minimum 15-minute duration of service, and prohibition against the use of the apparatus in fire-fighting or cargo handling operations. A need was recognized for technical specifications of such apparatus to provide a sufficient level of safety for users and a consistent design and performance standard to be used on vessels subject to the IBC and IGC Codes.

Ships and marine technology — Breathing apparatus for ships —

Part 4: Self-contained breathing apparatus for emergency escape required by the IMO IBC and IGC Codes

1 Scope

This part of ISO 23269 provides performance specifications for the self-contained breathing apparatus (SCBA) required by paragraph 14.2.8.2 of the International Maritime Organization (IMO) International Bulk Chemical (IBC) Code and paragraph 14.4.2.2 of the IMO International Gas Carrier (IGC) Code for emergency escape. Apparatus complying with this part of ISO 23269 are not intended for fire-fighting, cargo handling, or approach or entry into flames.

2 Normative references

The following referenced documents are indispensable for the application 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 23269-1:2008, *Ships and marine technology — Breathing apparatus for ships — Part 1: Emergency escape breathing devices (EEBD) for shipboard use*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 23269-1 apply.

4 General design requirements

The apparatus shall comply with all of the requirements of Clause 4 of ISO 23269-1:2008.

5 Environmental tests

The apparatus shall comply with all of the requirements of Clause 5 of ISO 23269-1:2008. When conducting the temperature cycling test of 5.3 of ISO 23269-1:2008, the temperature gradient between the defined temperatures of minus 30°C and plus 65°C shall be less than 2°C/min to prevent thermal shock.

6 Basic performance tests and requirements

6.1 General

The apparatus shall comply with all of the requirements of Clause 6 of ISO 23269-1:2008, except:

a) the breathing time for the rated working duration in accordance with 6.1 of ISO 23269-1:2008 shall be 15 minutes, and

b) the breathing time for overloading in accordance with 6.2 of ISO 23269-1:2008 shall be 5 minutes.

6.2 Chemical resistance test of the eyepiece and transparent materials

Apply the following solvents, one at a time using a suitable applicator, to the eyepiece or any transparent part:

a) trichloroethylene,

b) benzene,

c) solvent naphtha,

d) methanol,

e) kerosene.

One droplet of each chemical shall be applied to the test specimen, so that the droplet does not rinse. Exposure time shall be until the droplet evaporates or a maximum of 15 minutes, whichever occurs first. After exposure, the test specimen shall be assessed by visual inspection. No dissolution or deterioration to the extent that the test specimen becomes unusable should be observed, e.g. no holes, leaks, fogging, or hazing are formed.

6.3 Chemical resistance test of facepiece

If an SCBA will be marked and marketed for emergency use with a specific cargo listed in the IBC or IGC Codes, the facepiece shall be tested against the products to which it will be exposed. Immerse a facepiece in the chemical at a temperature of 22 ± 2 °C for 1 hour and hang in air of temperature 22 ± 2 °C and relative humidity 95% for 24 hours. There shall be no corrosion or crack to make the facepiece unusable. The test shall also be repeated for the liquids listed in Table 1.

Table 1 — Test liquids for chemical resistance test

Test liquids	Concentration
Sulphuric acid solution	1%
Nitric acid solution	1%
Sodium hydroxide	1%

7 Additional tests and requirements

7.1 Donning test

The apparatus shall be tested in accordance with 7.1 of ISO 23269-1:2008.

7.2 Practical performance test

The apparatus shall be tested in accordance with 7.2 of ISO 23269-1:2008, except that a vertical manhole (an opening 600 mm high and 800 mm wide, with the centre of the opening at a height of 900 mm from the floor) shall be added to the test course prior to the turning point.

8 Instructions for use

Each apparatus shall be provided with instructions for use that shall contain all the information, including diagrams, necessary for use and maintenance of the apparatus.

9 Marking

Each apparatus shall be marked with the

a) name of the apparatus,

b) type of the apparatus (e.g. compressed air EEBD, compressed oxygen EEBD, chemical oxygen EEBD),

c) year and month of the manufacture,

d) serial number,

e) manufacturer or trademark,

f) number and year of this part of ISO 23269, i.e. ISO 23269-4:2010,

g) expiration date of approval (if any),

h) next date of servicing/retest (if any), and

i) word “TRAINING” when the apparatus is only to be used for training purposes.