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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 38451-2019

**Respiratory protection - Self-contained open-circuit
compressed air breathing apparatus for escape**

呼吸防护 自给开路式压缩空气逃生呼吸器

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed and managed by the Ministry of Emergency Management of the People's Republic of China. This standard was drafted. Institute of Chemical Defense, Academy of Military Sciences, Institute of Military Engineering Technology, Academy of System Engineering, Academy of Military Sciences, Mays (China) Safety Equipment Co., Ltd., Shanghai Baoya Safety Equipment Co., Ltd., Honeywell Safety Equipment (Shanghai) Co., Ltd. the company. The main drafters of this standard. Yang Xiaobing, Wang Chunyu, Zhang Mingming, Fu Yahui, Yao Haifeng, Zhang Shouzheng, Ma Chuang, Wang Desheng,

Zhou Chuan, Yan Xiaoshan, Ding Songtao, Wu Lei, Liu Ruimin, Lu Yukun. Respiratory self-sufficient open-circuit compressed air Escape breathing apparatus

1 Scope

GB 38451-2019 is the Chinese national standard on respiratory protection - self-contained open-circuit compressed air breathing apparatus for escape, in the field of environment and health protection, safety. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 31 December 2019 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 July 2020. Classification: ICS 13.340.30, CCS C73. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the classification, classification, marking, technical requirements, test methods, identification and identification of self-sufficient open-circuit compressed air respirators for escape. package. This standard applies to self-sufficient open-circuit compressed air respirators for emergency escape in work and public places. This standard does not apply to oxygen respirators, diving respirators, and self-contained open-circuit compressed air respirators for work.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 529-2008 Determination of tear strength of vulcanized rubber or thermoplastic rubber (trousers, right angles and crescents)

GB/T 2410 Determination of light transmittance and haze of transparent plastics

GB 2626-2006 Respiratory protective equipment

GB 2890-2009 Respiratory self-priming filter gas mask

GB 3836.1-2010 Explosive environment Part 1. General requirements for equipment

GB/T 5099-1994 steel seamless gas cylinder

GB/T 7307-2001 55 ° unsealed pipe thread

GB/T 12586-2003 Rubber or plastic coated fabrics-Determination of flexural damage resistance

GB/T 12903-2008 Terms for personal protective equipment

GB/T 13277.1 Compressed air Part 1. Pollutant purification level

GB/T 16556-2007 self-contained open-circuit compressed air respirator

GB/T 18664-2002 Selection, use and maintenance of respiratory protective equipment

GB/T 23465-2009 Practical performance evaluation of respiratory protective equipment

3 Terms and definitions

The terms and definitions defined in GB/T 12903-2008 and GB/T 18664-2002 and the following terms apply to this document.

3.1 Self-contained open-circuit compressed air escape respirator forescape With its own compressed air source, it can provide clean air for personnel to breathe. The exhaled gas is directly discharged into the atmosphere for escape. A respirator.

3.2 Hood It can completely cover the head, eyes, nose, mouth to neck, and can also cover part of the shoulders or non-tight masks used in conjunction with protective clothing.

Note. Rewrite GB/T 18664-2002, definition 3.1.12.

3.3 Full facepiece A close-fitting mask that covers the mouth, nose, eyes, and jaw. [GB 2626-2006, definition 3.8]

3.4 Rated working time Respirator operating time determined under specified test conditions.

3.5 Static pressure After the positive pressure device of the air supply valve is opened, the pressure in the mask when the system air circuit is balanced. [GB/T 16556-2007, definition 3.5]

4 Classification, grading and marking

4.1 Classification Divided into two types according to the mask type, as follows:

- a) Full-face-type self-contained open-circuit compressed air escape breathing apparatus, marked with the code. FF;
- b) Hood-type self-contained open-circuit compressed air escape breathing apparatus, marked with code. H.

4.2 Classification According to the rated protection time (t), it is divided into four levels of 10min, 15min, 20min, and 30min, of which.

- a) $10\text{min} \leq t < 15\text{min}$, marking code. 10;
- b) $15\text{min} \leq t < 20\text{min}$, marking code. 15;

c) $20\text{min} \leq t < 30\text{min}$, marking code. 20;

d) $t \geq 30\text{min}$, marking code. 30.

4.3 Marking The product mark consists of five parts. name, this standard number, mask type, cylinder category and rated protection time. Mask type mark generation See

4.1 And

4.2 for code numbers and rated protection time marks. The letters F and G represent composite gas cylinders and steel gas cylinders, respectively. Example 1. Full-faced self-contained open-circuit compressed air escape respirator, using a composite gas cylinder, with a rated protection time of 15min ~ 20min, which is marked as. Escape breathing apparatus GB 38451-FF-F-

15 The meaning of each element in the mark is as follows: FF

--- full face mask; F

--- composite gas cylinder; 15

--- The rated protection time is 15min ~ 20min. Example 2. A hood-type self-contained open-circuit compressed air escape respirator using a steel gas cylinder with a rated protection time of 10min ~ 15min, which is marked as. Escape breathing apparatus GB 38451-HG-

10 The meaning of each element in the mark is as follows: H

--- steel cylinder; 10

--- The rated protection time is 10min ~ 15min.

5.1 Design requirements Check in accordance with

6.2 and evaluate in 6.12. The design of the respirator should meet the following requirements.

- a) Respirators should be simple, compact, reliable, and easy to inspect based on information provided by the manufacturer;
- b) The respirator should have no protruding parts or sharp edges, and the respirator should not be hung when the wearer passes through a narrow passage;
- c) The surface of the parts of the respirator that may come into contact with the wearer should be free of sharp edges and burrs;
- d) the respirator should be able to maintain its full function when in any direction;
- e) The respirator should be easy to wear and put into use, and it can be worn quickly even in adverse conditions such as dark and confined spaces;