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**Respiratory protective equipment -
Practical performance evaluation methods**
呼吸防护用品 实用性能评价

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Respiratory protective equipment - Practical performance evaluation methods

1 Scope

This standard specifies the test requirements and test methods for evaluation of practical performance of respiratory protective equipment.

This standard is applicable to all kinds of respiratory protective equipment that are used for preventing respiratory hazards.

This standard is not applicable to diving breathing apparatus.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments (excluding corrections), or revisions, of any of these publications do not apply to this standard. However, the parties who agree on this standard are encouraged to study the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

GB/T 12903	<i>Personal protective equipment terminology</i>
GB/T 5703-1999	<i>Basic human body measurements for technological design</i>

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 12903, as well as the following apply.

3.1

respiratory protective equipment; respiratory protective device

respirator

protective equipment designed to protect the wearer from hypoxia and/or protect the

self-contained breathing apparatus (SCBA)

self-contained respirator

atmosphere-supplying respiratory protective equipment using the compressed air bottle, oxygen bottle, or oxygen generating device carried by the wearer as the air source.

3.8

supplied air respiratory protective equipment

supplied air respirator (SAR)

atmosphere-supplying respiratory protective equipment that introduces breathing gas through an airway tube with the help of the wearer's breathing or mechanical force.

3.9

escape respiratory protective equipment

escape respirator

respiratory protective equipment to be used only when escaping from a dangerous environment.

4 Test requirements

4.1 General test requirements

The following conditions shall be determined before performing practical performance test to any respirator with this standard:

- a) the number of samples, see Annex A;
- b) prepare the respirator-under-test to operative conditions according to the operating instructions;
- c) any prior testing or conditioning;
- d) test temperature and humidity;
- e) the selection and number of test-examinees, see Annex A;

- f) test items and sequence;
- g) allowable deviations from the test items specified in Table 1;
- h) specific requirements for all items to be observed in the test;
- i) pass/fail criteria.

4.2 Test-examinees

4.2.1 Selection of test-examinees

Test-examinees who have experience in wearing the same type of respirator-under-test shall be selected. Prior to the tests, the medical history of the test-examinees shall be checked to ensure that their physical conditions are satisfactory for the tasks involved; it can withstand the work intensity and meet relevant requirements.

The test-examinees shall be the target population as specified in the operating instructions. If certain types of respirators (such as escape respirators) are specified to be applicable to general public, the test-examinees shall be selected from the general public.

4.2.2 Information of test-examinees

The name, age, gender, height, weight and other information of the test-examinees shall be recorded.

The morphological facial length and facial width of each test-examinee shall be measured according to the definition or method specified in GB/T 5703-1999 and recorded in the test report.

4.3 Test conditions

The test temperature and relative humidity shall be 16°C~32°C and 30%~80% respectively, and shall be recorded in the test report.

Unless otherwise specified, parameters other than temperature specified in this standard shall be subject to a tolerance of $\pm 5\%$, and any temperature limits specified shall be subject to an accuracy of $\pm 1^\circ\text{C}$.

5 Test methods

5.1 Principle

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