

TABLE 4—DURATION AND SEQUENCE OF SPECIFIC ACTIVITIES FOR TEST 4, IN MINUTES—Continued
[42 CFR part 84, subpart H]

Activity	Service time—									
	3 min-utes	5 min-utes	10 min-utes	15 min-utes	30 min-utes	45 min-utes	1 hour	2 hours	3 hours	4 hours
Carries 23 kg. (50 pound) weight over overcast			1 time in 1 minute	1 time in 1 minute	2 times in 3 minutes	4 times in 6 minutes	6 times in 9 minutes			
Pulls 20 kg (45 pound) weight to 5 feet	15 times in 1 minute			15 times in 1 minute	60 times in 5 minutes	30 times in 2 minutes	36 times in 3 minutes			
Sampling and readings				2	2	2	2			
Walks at 4.8 km. (3 miles) per hour	1		1			2	6			
Pulls 20 kg. (45 pound) weight to 5 feet						60 times in 5 minutes	60 times in 5 minutes			
Carries 20 kg. (45 pound) weight and walks at 4.8 km. (3 miles) per hour						3	3			
Sampling and readings						2	2			

¹ Treadmill shall be inclined 15° from vertical and operated at a speed of 30 cm. (1 foot) per second.
² Perform test No. 1 for 30-minute apparatus; then perform test No. 4 for 1-hour apparatus; then perform test No. 1 for 30-minute apparatus.
³ Perform test No. 1 for 1-hour apparatus; then perform test No. 4 for 1-hour apparatus; then perform test No. 1 for 1-hour apparatus.
⁴ Perform test No. 1 for 1-hour apparatus; then perform test No. 4 for 1-hour apparatus; then perform test No. 1 for 1-hour apparatus twice (i.e., two one-hour tests).

Subpart I—Gas Masks

§ 84.110 Gas masks; description.

(a) Gas masks including all completely assembled air purifying masks designed for use as respiratory protection during entry into atmospheres not immediately dangerous to life or health or escape only from hazardous atmospheres containing adequate oxygen to support life are described as follows:

(1) *Front-mounted or back-mounted gas mask.* A gas mask which consists of a full facepiece, a breathing tube, a canister at the front or back, a canister harness, and associated connections.

(2) *Chin-style gas mask.* A gas mask which consists of a full facepiece, a canister which is usually attached to the facepiece, and associated connections.

(3) *Escape gas mask.* A gas mask designed for use during escape only from hazardous atmospheres which consists of a facepiece or mouthpiece, a canister, and associated connections.

(b) Gas masks shall be further described according to the types of gases or vapors against which they are designed to provide respiratory protection, as follows:

Type of front-mounted or back-mounted gas mask:

- Acid gas^{1,2,3}
- Ammonia
- Carbon monoxide
- Organic Vapor^{1,2,3}
- Other gas(es) and vapor(s)^{1,2,3}
- Combination of two or more of the above gases and vapors.^{1,2,3}
- Combination of acid gas, ammonia, carbon monoxide, and organic vapors.^{1,2,3}

Type of chin-style gas mask:

- Acid gas^{1,2,3}
- Ammonia

Carbon monoxide
Organic vapor^{1 2 3}
Other gas(es) and vapor^{1 2 3}
Combination of two or more of the above gases
and vapors.^{1 2 3}

Type of escape gas mask:

Acid gas^{1 2 3 4}
Ammonia⁴
Carbon monoxide
Organic vapor^{1 2 3 4}
Other gas(s) and vapor(s)^{1 2 3 4}
Combination of two or more of the above gases
and vapors.^{1 2 3 4}

¹ Approval may be for acid gases or organic vapors as a class or for specific acid gases or organic vapors.

² Not for use against gases or vapors with poor warning properties (except where MSHA or Occupational Safety and Health Administration standards permit such use for a specific gas or vapor), or those which generate high heats or reaction with sorbent materials in the canister.

³ Use of the gas mask may be limited by factors such as lower explosive limit, toxicological effects, and facepiece fit. Limitations on gas mask service life and sorbent capacity limitations shall be specified by the applicant in instructions for selection, use and maintenance of the gas mask.

⁴ Eye protection may be required in certain concentrations of gases and vapors.

(c) Gas masks for respiratory protection against gases and vapors other than those specified in paragraph (b) of this section, may be approved upon submittal of an application in writing for approval to the Certification and Quality Assurance Branch listing the gas or vapor and suggested maximum use concentration for the specific type of gas mask. The Institute will consider the application and accept or reject it on the basis of effect on the wearer's health and safety and any field experience in use of gas masks for such exposures. If the application is accepted, the Institute will test such masks in accordance with the requirements of this subpart.

§ 84.111 Gas masks; required components.

(a) Each gas mask described in § 84.110 shall, where its design requires, contain the following component parts:

- (1) Facepiece or mouthpiece and noseclip;
- (2) Canister or cartridge;
- (3) Canister harness;
- (4) External check valve; and
- (5) Breathing tube.

(b) The components of each gas mask shall meet the minimum construction requirements set forth in subpart G of this part.

§ 84.112 Canisters and cartridges in parallel; resistance requirements.

Where two or more canisters or cartridges are used in parallel, their resistance to airflow shall be essentially equal.

§ 84.113 Canisters and cartridges; color and markings; requirements.

The color and markings of all canisters and cartridges or labels shall conform with the requirements of the American National Standards Institute, American National Standard for Identification of Air-Purifying Respirator Canisters and Cartridges, ANSI K13.1-1973. ANSI K13.1 is incorporated by reference and has been approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018. Copies may be inspected at the NIOSH, Certification and Quality Assurance Branch, 1095 Willowdale Road, Morgantown, WV 26505-2888, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

§ 84.114 Filters used with canisters and cartridges; location; replacement.

(a) Particulate matter filters used in conjunction with a canister or cartridge shall be located on the inlet side of the canister or cartridge.

(b) Filters shall be incorporated in or firmly attached to the canister or cartridge and each filter assembly shall, where applicable, be designed to permit its easy removal from and replacement in the canister or cartridge.

§ 84.115 Breathing tubes; minimum requirements.

Flexible breathing tubes used in conjunction with gas masks shall be designed and constructed to prevent:

- (a) Restriction of free head movement;
- (b) Disturbance of the fit of facepieces or mouthpieces;
- (c) Interference with the wearer's activities; and
- (d) Shutoff of airflow due to kinking, or from chin or arm pressure.